2007

The relationship between self-directed informal learning and the career development process of technology users

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SCHOOL OF EDUCATION

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300 North Zeeb Road
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Abstract

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M.S. University of New York at Albany, 1975
B.A. Hartwick College, 1969

Dissertation Submitted in Partial Fulfillment
of the Requirement for the Degree of
Doctor of Education
Technology Specialization

Walden University
February 2007

ABSTRACT

Few new studies plus theoretical stagnation mark the inattention of educators to self-directed informal learning during career development in technology. Therefore this study explored the relationship between self-directed informal learning and the career development process among everyday technology users. Supporting questions addressed how self-directedness related categorically and holistically to informal learning during career development. This qualitative study used multiple narrative case studies to collect, analyze, and describe the results of life-story data recovered from 13 technology users purposefully selected using a sampling strategy grounded in the literature. Individual life-story narratives surfaced tacitly held perceptions and social identities associated with career-related learning. The data were analyzed categorically and holistically leading to a rich description of common themes and patterns as well as triangulating content validity methodologically and thematically. Findings culminated in a conceptualization of self-directed informal learning as entrepreneurial in nature, which without appropriate strategic guidance can become either a negative or positive influence on career development. Such guidance was best expressed as self-reflection on structured play. With much learning thought to be self-directed, the study's implications for social change are economically and educationally important. Results suggest that corporate trainers must replace maintenance learning that is transportable to lower wage locations with innovative learning that encourages resourceful self-directed learning. Educators must make room for story-based self-reflection, the heart of self-directed learning. Recommendations for implementing entrepreneurial learning are provided.

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CHAPTER 1: INTRODUCTION TO THE STUDY

Introduction

Formal and Informal Learning

The informal learning derived from everyday experiences is given little respect. As products of a formal education system, we tend to accept formal education as the only type of meaningful and valuable learning. We have come to accept that being formally educated makes us, somehow, smart in the routine applications of negotiating the context of living. Therefore, we tend to find the following scenarios troubling.

November 2005: "Laura Hanson relies on the Internet to make her a smarter shopper even when she isn't planning to buy online" (Liedtke, 2005, p. E-8).

December 2005: "While most Americans are graduating from college . . . far fewer are leaving higher education with the skills needed to comprehend routine data, such as reading a table about the relationship between blood pressure and physical activity" (Romano, 2005, P. A12).

January 2006: "Most college students cannot handle many complex but common tasks, from understanding credit card offers to comparing the cost per ounce of food" (Feller, 2006, ¶1).

Considering "the average literacy of college students is significantly higher than that of adults across the nation" (Feller, 2006, ¶10), how can we explain homemaker Laura Hanson's apparent success with routine data? Or the similar success of the estimated 2.5 million Christmas-shopping households using "the latest technology to alert shoppers to moneysaving deals…warn them about fraud risks…[and supplement their shopping] with price comparisons…product reviews and hard-to-find coupons" (Liedtke, p. E-8)?

The *Washington Post* article puzzles, “Experts could not definitively explain” this apparent phenomenon (Romano, p. A12). However, over 25 years ago, a largely unnoticed European report entitled *No Limits to Learning* encapsulated the problem:

> The preoccupation with the training of the young and the neglect of the needs of adults are problems widely recognized by many scholars of educational policy who have developed and supported the concept known as lifelong learning. In a period of rapid changes and rising complexity, it no longer makes sense to cram education into the first eighteen to twenty-odd years of life. (Botkin, Elmandjra, & Malitza, 1979, p. 66)

Engeström (2001), an educational psychologist and workplace analyst, observed that people have been conditioned “to depict learning and development as vertical processes, aimed at elevating humans upward, to higher levels of competence” (p. 154). What we should be observing, he stated, is the way “we construct a complementary perspective, namely that of horizontal or sideways learning and development” (p. 154). Brown and Duguid (2002) appear to have agreed with Engeström, referring to his conception of vertical and horizontal education as formal and informal learning (p. xviii). In this context, according to Merriam and Caffarella (1999) “informal learning refers to the experiences of everyday living from which we learn something” (p. 21). They continued, by pointing out that while “learning on one’s own is the way most adults go about acquiring new ideas, skills, and attitudes, this context has often been regarded as less important than learning that takes place in more formal settings” (p. 268).

Significantly, added Brown and Duguid (2002), formal and informal learning are not merely two distinct and individual types of learning. “Nor are they simply complementary. They live in tension with one another” (p. xviii). In other words, the competencies associated with formal learning are best understood as part of the emergent practice associated with the informal and situated application of those competencies.

Moreover, emphasized Brown and Duguid, the role played by informal learning has become acute in a technology-driven digital age when "we need not simply more information, but people to assimilate, understand, and make sense of it" on a day-to-day basis (pp.120-121).

Learning and Technology

Norman (1993) recalled that "psychologist Mervin Donald argued that human intelligence has evolved through a series of evolutionary steps to its present form—a form, moreover, that is highly dependent upon external, artificial representations of its power" (p. 121). Norman used Donald's argument to conclude, "The future of human evolution is through technology" (p. 123). What appears to be an outlandish remark was, to the contrary, closely aligned with the views of Brown and Duguid above. In other words, Norman was positing that our interactions with technology will drive where we go and who we become.

Predicting new technologies is not difficult said Norman (1993, p. 186). "The hard part is the social impact, the effect upon the lives, living patterns, and work habits of people, the impact upon society and culture" (p. 186). The social impact of technology is poorly understood and difficult to predict, added Norman because

> technology is not neutral. Each technology has properties—affordances—that make it easier to do some activities, harder to do others . . . Finally, each technology poses a mind-set, a way of thinking about it and the activities to which it is relevant, a mind-set that soon pervades those touched by it, often unwittingly, often unwillingly. (p. 243)

Affordances are the "possibilities for action that the environment offers to individuals" with the abilities to recognize and use them (Barab & Plucker, 2002, p. 167). Each new advance in technology provides new affordances to potential technology users,

potential “added powers and abilities [for] human society” (Norman, p. 8). The caveat, according to Norman, was that “each new advance [in technology] also add[ed] to the amount of knowledge that newer generations . . . have to learn” (p. 8). In fact, estimated Norman, “we all are probably familiar with twenty thousand different objects, each small, specialized, and requiring learning” (p. 102).

On the one hand, few can disagree with Greeno’s (1998) plea that “it is important to attend to the kinds of participation in learning and knowing that are afforded” (p. 14) by new technologies. On the other hand, few will disagree with Botkin et al. (1979), who claim that formal schooling is incapable of keeping pace with the complexity of contemporary society. Clearly, as Merriam and Caffarella (1999) have commented, in order for us to become “better learners ourselves, and to be better facilitators of other people’s learning, we need to understand how learning occurs” (p. 193). Brown and Duguid (2002) interpreted that as a need to better understand how formal and informal learning relate (p. xviii).

Learning and Career

Fortunately, as Norman (1993) contented, technologies rarely “can exist in isolation from a rich, supporting infrastructure . . . New technologies require new supporting staffs, people who have to learn the new technology, experiment with its potential, and produce the large quantity of material required to make the effort successful” (p. 194). Or, put into the words of Merriam and Caffarella (1999), the impact of technology on society “can be seen most dramatically in changes in the workforce” (p. 16). To support their claim, Merriam and Caffarella cited a United States study showing while adult education courses during the 1960s were split evenly between workplace and

nonworkplace content, over 90% of contemporary adults pointed to workplace-related reasons as motivating their self-directed educational pursuits (p. 12). “Clearly,” concluded Merriam and Caffarella, there is “a strong linkage” (p. 52) between one’s career role and what he or she desires to learn more about. As a result, a focus on career development “as a consensually ratified, goal-directed, patterned sequence of activity provides us with an analytic tool that revels many salient features” related to the learning experiences of people interacting with technology in the workplace (Moore, 1986, p. 168).

Others have been moved to action by the phenomenon of learning as it relates to the career development process. Scholarly attempts to discover the influences leading to an individual’s successes and failures as a psychologist (Williams, Soeprapto, Like, Touradji, Hess, & Hill, 1998), a doctor (Löyttyniemi, 2001), a traffic signal technician (Stasz, Ramsey, Eden, Melamid, & Kaganoff , 1996), a machine operator (Darrah, 1992), an artist (Gardner, 1993), an opera tenor (Diaz, 2004), and even a witch (Merriam, Courtenay, & Baumgartner, 2003) are but a few of the many recent explorations linking the individual, self-directed learning, and career.

In fact, so unique and humanly interesting are the stories associated with individuals and their careers that Studs Terkel’s (1974) *Working* became both a best selling book and an award-winning play. Similarly, Po Bronson (2002) has been able to turn summaries of 50 career transition stories into a *New York Times* best seller. Still, in spite of the immense interest in people and the work they do, very little is known about how self-directed informal learning (Merriam & Caffarella, 1999, p. 60), that is the life-long learning process that exists beyond a formally structured education and training

program of study (Livingstone, 2001, p 30) and directly influences and/or is influenced by one's career development choices (Beach, 1993; Brown, 2002; Hofer & Yu, 2003; Lave & Wenger, 1991; Livingstone, 2001; Rawson, 2000).

Learning and Narrative

Riverin-Simard (2000) was not alone in observing, "A lifecycle composed of comings and goings has already definitively replaced the three-phase cycle: education, work, retirement" (p. 119; see also, Bridges, 1994; Toffler, 1990). All aspects of life in American culture are changing. Changes in the workplace are among the most noticeable. Workplace changes are marked, on the one hand, by the rapid disappearance of many traditional worker roles, and, on the other hand, by the emergence of many new career opportunities based on social, economic, and technological changes (Bridges, 1994; Rifkin, 1995). "The end result," observed Chen (1998), "is that career change has become a regular part of working life during all stages" of one's life span (p. 442).

"The literature on self-directed learning," noted Grow (1991), "suggests that 'learning on your own' requires a complex collection of self-skills and learning skills which not all learners spontaneously acquire" (p. 139). Rawson (2000), in complete agreement with Grow, pointed out that the discussion integrating career development with learning is, indeed, related to continually learning new skills, "but it is much more about the start of a lifelong process of personal development" (p. 236). It is about how the individual tacitly perceives learning as part of his or her life-focusing self-narrative and socially expresses and negotiates that perception as part of a life-story narrative. From this different perspective, career development, rather than being framed by the organizational bureaucracy, "can be reconceptualized as an interpretive construct used by

people" (Young & Valach, 2000, p. 181). Moreover, there is potentially no aspect of one's interpretive construction of career development as critically important as the "continuing acquisition of knowledge and skills [which represents] the most distinctive feature of the human species" (Livingstone, 2001, p. 2).

Background

Searching for a Unifying Theory

There is no shortage of theories related to the workplace and career development. How a person fits into the world of work "represents a complex and fascinating process that forms the essence of . . . very successful self-help books, a rich fictional literature, and inspiring music and art" (Blustein, 1997 p. 263). Brown and Brooks's (1996) oft-cited 544-page tome describing a dozen current career theories is only one of many scholarly resources available. Likewise, there is no shortage of original theories about education and learning enumerated and described in myriad histories (Educational Products in Education, 2000; Gardner, 1985; Gordon, 1999), textbooks (Driscoll, 2000; Owens, 2001), and critiques (deMarrais & LeCompte, 1995; Evans, 1996; Fullan, 1993).

Interestingly, with all this popular, critical, and scholarly examination of the workplace and education, what is most difficult to come by is a single plausible theory depicting the relationship between individual career-related decision making and the various forms of individual learning. Merriam and Caffarella (1999) arrived at a similar conclusion resulting in their appeal that "we need to revisit the many models that have been developed and reuse, merge, or disregard those that are not useful" (p. 312). In other words, currently there is little available useful research related to this question: How does a person come to know what he or she needs to know in order to become and remain

competent within a given career trajectory?

Understanding How Adults Learn

Brockman and Dirkx (2004) affirmed: “Recent empirical studies report that the majority of what employees need to know to perform their work requirements is acquired through informal learning” (p. 1). Somewhat feigning a plebian reaction to Brockman and Dirkx’s claim, Livingstone (2000) commented, “It may be common sense to assume that the more time people spend in a particular type of work, the more time they will devote to learning about it” (p. 501). However, he continued, “no prior study seems to have verified this relationship” (p. 501).

Incredulously, then, without fully understanding why (Livingstone, 2001), politicians, industrialists, educators, and the mass media have made the personal continuation of learning, commonly referred to as lifelong learning, “the catch-cry of the new millennium” (Cornford, 2002, p. 357). Unfortunately, there is little foundational and directive research and even less general consensus as to what learning across one’s lifespan really is (Hofer & Yu, 2003; Livingstone, 1998, 2001), how it is instilled (Livingstone, 2001; Merriam et al, 2003; Rawson, 2000), what motivates it (Cornford, 2002; Livingstone, 1998, 2001; Merriam et al., 2003), how it varies with the age of the worker (Livingstone, 2001) or how it is personally employed to further one’s career (Livingstone, 1998, 2001).

The question of how people—more specifically, adults—learn in the workplace is not new. In fact, it has been a “central question [occupying] the attention of scholars and practitioners since the founding of adult education as a professional field of practice in the 1920s” (Merriam, 2001, p. 3). Yet, by Merriam’s admission, what has emerged from

the past 80 years of research "is a mosaic of theories, models, sets of principles, and explanations" (p. 3) putting to rest little more than the question that adults can, indeed, learn (p. 4). The literature bears out Merriam's assessment, often equating, conflating, or confusing "nonformal learning . . . social modeling . . . experiential learning . . . self-directed learning . . . action learning . . . reflection in action . . . tacit knowing . . . situated cognition . . . and communities of practice" (Marsick & Watkins, 2001, p. 26).

Refocusing on Self-Directed Learning

One of the important early "theory-building efforts" (Merriam, 2001, p. 4) associated with adult learning in the workplace was self-directed learning, "learning that is widespread, that occurs as part of adults' everyday life, and that is systematic yet does not depend on an instructor or a classroom" (p. 8). The seminal research and writings during the 1960s and 1970s of Allen Tough (Livingstone, 1999, 2000; Merriam, 2001; Merriam & Caffarella, 1999), "since corroborated by many others" (Livingstone, 2001), verified "the widespread presence of self-directed learning among adults" (Merriam 2001, p. 8; see also, Livingstone, 2001, p. 6). Interestingly, "although informal learning constitutes the bulk of learning that takes place within the workplace" (Brockman & Dirkx, 2004, p. 1), and in spite of the substantial evidence supporting the prominence of self-directed learning, there has been a steady shift away from researching these phenomena in recent years (Brockman & Dirkx; Merriam, 2001). The preponderance of empirical evidence uncovered by Tough "building on the work of Houle" (Merriam & Caffarella, 1999, p. 289), and since confirmed by Penland (Merriam & Caffarella, p. 49), has shown that adults spend approximately "*ten times as much time*" (Livingstone, 1999, p. 180, emphasis in original) engaged in "informal learning . . . than they do in organized

course-based learning," (p. 179).

In spite of the limited amount of major research into self-directed informal learning—while Livingstone (2001, 2005) acknowledges several studies from Canada, Merriam and Caffarella list only one such study in the United States—Merriam (2001) contends that "self-directed learning remains a viable arena for theory-building related to adult learning" (p. 10). A major problem confounding researchers, pointed out Merriam, is that "self-directed learning appears to be at a juncture in terms of which direction research and theory building should take" (p. 10): a focus on the individual agency of the learner or a focus on the sociohistorical context in which learning occurs (p. 11).

The "junction" that self-directed learning is stalled at is evident in the representative positions of Sternberg and Greeno. Taking an agentive perspective, "Sternberg . . . has argued that fuller development of metacognitive skills [developed during formal schooling], which involve planning, monitoring and evaluation, is only likely [after school] under the stimulus of work experience" (Cornford, 2002, p. 364). In contrast, Greeno (1998) proposed studying a potential learner's "activities in a domain of practice" (p. 21), especially as they relate to the "changes in the social organization of learning environments" (p. 22).

Unraveling the Agency Versus Context Duality

With literature about self-directed learning separated into at least two domains (Merriam, 2001), researchers looking to associate career development with learning are often left rehashing and rediscovering what has already been learned (Bruner, 1986; Gardner, 1985; Livingstone, 2001; Nickerson, 1997). Traditionally, the self-directed learning literature has focused largely upon formal education and training (Duff, 1998;

Livingstone, 1999, 2001). As a result, complained Livingstone (2001), there is much that remains to be discovered about types of learning other than formal education or formal training. To emphasize his point, Livingstone likened what is currently known about learning in relation to career development as the tip of an enormous "iceberg of informal learning" (p. 14).

"Informal learning," as Livingstone (2001) defined it, "is any activity involving the pursuit of understanding, knowledge or skill which occurs without the presence of externally imposed curricular criteria" (p. 4). Unfortunately, as Marsick and Watkins demonstrate, the literature remains confused on the role of individual agency and the role of social context related to informal learning, with the result that informal learning becomes indistinguishable from self-directed learning:

> Informal learning, a category that includes incidental learning, may occur in institutions, but it is not typically classroom-based or highly structured, and control of learning rests primarily in the hands of the learner . . . Informal learning can be deliberately encouraged by an organization or it can take place despite an environment not highly conducive to learning. (Marsick & Watkins as quoted in Marsick & Watkins, 2001, p. 25)

As a result, Marsick and Watkins are left puzzling over the very same duality acknowledged by Merriam: "What happens at the intersection of individual and [environment]?" (Marsick & Watkins, p. 32).

Hofer and Yu (2003) observed that "psychologists know too little about how self-regulated learning develops" to attempt to implement "formal interventions to increase it" (p. 30). As a result, few authors from either the domain of career development or learning venture into the realm of self-directed informal learning as a component of career development. With good reason, suggested Merriam (2001). The task is daunting. In order to understand how self-directed informal learning operates in conjunction with

career development, the researcher's focus must be placed less on the institutions with which the theories of career and learning are aligned; in other words, this must not become a rehashing of the old Dewey versus Prosser debate on vocational education (Gordon, 1999). Instead, researchers and theorists are more likely to uncover useful information about the learning process, specifically the role of "lifelong learning" (Cornford, 2002; Ettling & Hayes, 1997; Hofer & Yu, 2003; Rawson, 2000) by turning their critical gaze upon the individual's "sense of agency" (Kush & Cochran, 1993, p. 434; see also Billett, 1998; Brown & Duguid, 2000; Bruner, 1990; Lave & Wenger, 1991; Lent et al., 1996; Linde, 1993; Young et al., 1996) as it is expressed within the context of the individual's career trajectory (Collin, 2000; Höpfl & Atkinson, 2000; Littleton, Arthur, & Rousseau, 2000; Markus & Kitayama, 1991; McAdams, 1993; Richardson, 2000).

Seeking a Qualitative Exploration

In addition to the research paralysis precipitated by "insufficient dialogue" related to existing theory, Merriam and Caffarella (1999) singled out the "predominant use of the quantitative or positivist paradigm in databased studies" (p. 311) as detrimental to building useful research related to self-directed learning during career development. Merriam and Caffarella strongly believed "the study of self-directed learning has suffered" (p. 314) from designing studies "around the availability of instrumentation rather than tackling the more difficult task of identifying critical problems to be studied to advance an area of study" (p. 314). Livingstone (2001, 2005) concurred. Despite the initial usefulness of several current but limited government surveys, there remains a great need, according to Livingstone (2001), to augment the existing quantitative studies with

qualitative investigations in which “people are given an opportunity to reflect on actual learning practices in relation to their daily lives” (p. 14). Among the key questions that need to be explored, stated Livingston (1999), are whether self-directed informal learning “is initiated incidentally or by premeditation, and whether it occurs in individual or collective contexts” (p. 169). Similarly, “Candy argues that the unique features of self-direction in learning call for research orientations that allow for the voices of learners to be prominent and to take into consideration the important contextual dimensions of self-directed learning” (Merriam & Caffarella, 1999, p. 314). Heeding Candy’s suggestion to listen to the “voices of learners” and Livingstone’s (2001) call for “further case study research addressing the issues” (p. 28) related to self-directed informal learning, the current study addressed the gap that exists between theories of career development and theories of learning by exploring, interpreting, and explaining the dynamics of self-directed informal learning during the career development process.

Statement of the Problem

Little is known about the role of learning as an element of individual career development (Berryman & Bailey, 1992; Brown & Brooks, 1996; Lave & Wenger, 1991; Law, 2000; Livingstone, 1999, 2001; Murnane & Levy, 1996; White, 1997). Additionally, while there is some agreement regarding the role of informal learning in the workplace, according to Merriam (2001), Phillips (1997), and others (see Brown & Brooks, 1996), the problem of understanding the self-directedness of learning during career development is exacerbated by two strongly documented yet apparently conflicting theoretical views: Bandura’s (1977, 2001) agent-oriented social cognitive theory and Lave and Wenger’s (1991) social context oriented theory of social practice.

As a result, according to Livingstone (2001), “researchers’ knowledge of the extent, processes, content, outcomes, and trends” related to self-directed informal learning as a part of career development are, at best, “very crude” (p. 20). What we are left with, then, is a mosaic of theories related to career development (Brown & Brooks, 1996; Phillips, 1997) and learning (Driscoll, 2000; Gardner, 1985) but little understanding of how the informal learning process, which may comprise as much as 70% of practical career learning (Livingstone, p. 18), is self-directed by the individual as part of his or her individual career development.

Purpose of the Study

The purpose of this narrative case study was to interpret and explain the relationship between self-directed informal learning and the career development process among formative technology users. Life-story narratives collected from technology users whose career role is substantively influenced by their use of computer-related technologies were inductively compared within the tradition of qualitative case study inquiry to interpret and explain how the study participants apply self-directedness to informal learning in an effort to enhance their respective career trajectory. The researcher’s goal for the study was to “generalize [the] findings to ‘theory’” (Yin, 2003, p. 38) related to individual agency and social context. The outcomes of the study are being made available to enable educators, business trainers, and career-minded individuals to better appreciate, anticipate, intervene, and facilitate life-long learning within individual career trajectories.

Research Questions

In this narrative case study, an effort was made to interpret and explain the

following overarching question: How is self-directed informal learning related to the career development process of formative technology users?

Foundational questions (see Merriam, 2001, p. 11) supporting the answering of the overarching question were as follows:

1. How are the self-narrated career identities of self-direct learners thematically similar and thematically different?
2. How is self-directedness related to informal learning within the context of career development?
    a. How does one's perception of agentive control over learning affect one's perception of career-related informal learning?
    b. How does the career-related context in which informal learning occurs affect the agentive nature of self-directedness?

Significance of the Study

With a "permanent education culture . . . rapidly becoming a reality" (Livingstone, 1999, p. 168), a better understanding of the theoretical underpinnings driving social change related to learning and the workplace is essential. The need to explore and explain the relationship of learning during career development is inseparably linked to three critically important domains involving social change: economic productivity, education reform, and personal development.

The Economic Significance

In a recent speech presented to a conference exploring the effectiveness of adult education, Brockman and Dirkx (2004) pointed out that in spite of highly questionable results, "U.S. industry spends more than $120 billion annually on formal training

programs" (p. 1). Yet, continued Brockman and Dirkx, with the content being taught rarely transferring to job performance, "only a small minority of workers regard the knowledge and skills they gain through employers' training programs as important" (p. 1). There are serious indications that a misconceived idea of learning in the workplace not only wastes money on useless training but also forfeits productivity by not acknowledging the learning that is already there in abundance.

Contrary to the clarion call of popular writers such as Toffler (1980, 1990), Senge (1990), Drucker (1994, 1999), and Thurow (1999), and supported by educational writers (Berryman & Bailey, 1992; Marshall & Tucker, 1992; Murnane & Levy, 1996) as well as the United States government (National Commission on Excellence in Education, 1984; SCANS, 1992), we are, as Livingstone (1999) observed, "already living in a 'knowledge society'" (p. 164). Livingstone's position corroborated evidence from research conducted in the United States by Hull (1993); Darrah (1994); Stasz (1997); Stasz et al. (1996); and Mischel, Bernstein, and Schmitt (1998) demonstrating "that aggregate educational attainments have increased much quicker than aggregate educational requirements to perform existing jobs in both Canada and the U.S." (Livingstone, 2001, p. 29). The result is a growing condition of "underemployment" in a contemporary workplace (Livingstone, 1999, p. 171; Livingstone & Sawchuk, 2001) dominated by human capital economics (Thurow, 1999) and human capital education (Marshall & Tucker, 1992). Such "underemployment denotes the wasted ability of the eligible workforce," concluded Livingstone (1999, p. 171), and results in lost productivity (Livingstone & Sawchuk, 2001). In fact, stated Livingstone (2001), if economists and governments knew more about worker competencies derived from self-directed informal learning, human capital

might better be defined not in terms of “skill supply shortages but underemployment of people’s available skills and knowledge in our current job structure” (p. 29).

The Educational Significance

A main assumption linking educational attainment and the demands of the workplace, stated Greeno (1998), is a belief, based upon behaviorist educational theory, in which “complex skills are learned by acquiring simpler [basic] components followed by combinations of these into more complex behavioral abilities” (p. 16). Behaviorist views related to career development theory, learning theory, and the human capital practices that arise from them, according to the research of Livingstone and corroborated by the work of Darrah, Stasz, and others do not account for the vast amount of “informal self-learning and training relevant to actual job performance” (Greeno, p. 29). In other words, the basic skills conception of human resource development, a major foundational plank underpinning the current assumed relationship between formal schooling and contemporary career development, is quite probably fundamentally flawed.

Understanding the relation between self-directed informal learning and personal development, especially through one’s career, is of major importance as technological changes envisioned by Drucker, Toffler, and others push knowledge growth at an unprecedented pace. Unfortunately, as our society becomes increasing information-rich, the ability of formal education to keep pace quite possibly will decline (Collin, 2000; Drucker, 1994, 1999; Littleton, 2000; Murnane & Levy, 1996; Rifkin, 1995). More of the burden of staying current, as well as being able “to judge the worthless from the worthwhile” (Brown & Duguid, 2000, p. 219), will fall upon the individual. Therefore, with personal participation in self-directed informal learning pervasive in all aspects of

people's lives (Livingstone, 2001), and not significantly correlated with previous educational attainment, a better understanding of self-directed informal learning becomes essential in addressing the prospective "waste of human learning potential" (Botkin, Elmandjra, & Malitza, 1979, p. 73).

The Personal Development Significance

Potentially the most far-reaching aspects of the current study are related to the self-directed learning identity of individuals immersed in a postmodern economy undergoing revolutionary change (Storey, 2000; Thurow, 1999; Toffler, 1980, 1990; Zuboff, 1988). Currently, there is only partial evidence available suggesting how change is affecting individuals (Patton, 2000; Storey, 2000) in an environment of "growing complexity" and diminishing "capacity to cope with it" (Botkin, et al., p. 6). Even less data are available regarding how education might help individuals adjust to their new roles, especially the important role of career (Law, 2000). With the "accelerated growth of knowledge . . . greatly enhancing human power to control, transform, and create environments of increasing complexity and to shape their social future" (Bandura, 2002b, p. 272), the "mechanisms linking sociostructural factors to action . . . are left largely unexplained" (Bandura, 2001, p. 5). This is unhealthy for both the individual and society, stated McAdams (2001), concluding that "constructing one's own meaningful life story is a veritable cultural imperative" (p. 115) in these turbulent times.

Clearly there is a huge need to further the understanding of how learning relates to the career development process and how we can enhance that relationship (Marsick & Watkins, 2001). To approach this understanding, theories of "personal development (development *of* the person)" (Rawson, 2000, p. 229, emphasis in original), need to be

observed operating together with learning theories, theories of "self-development (development *by* the person)" (p. 229, emphasis in original), as an integrated process. The integration process and its tremendous promise for positive social change, instructed Livingstone (2001), can be accomplished only after we are able to "carefully assess the impact of informal learning . . . on specific skill development as well as . . . workplace productivity, community development and effective citizenship" (p. 25).

"The ability to be self-directed in one's learning," concluded Merriam and Caffarella (1999), "is critical to our individual and collective survival and prosperity in a world of continuous personal, community, and societal changes" (p. 315). Addressing that need will help provide career and high school counselors, curriculum designers, human resources departments, and working individuals an expanded view of career-related learning. This research study helps pave the way toward that understanding.

Nature of the Study

A qualitative narrative case study approach was employed to interpret and explain the data collected from the life-story narratives of 13 technology users engaged in the personal development necessary to build their respective careers. The qualitative paradigm was used "because qualitative research is concerned with process" (Merriam, 2003, p. 174), and surfacing and explaining how learning relates to the process of career development was more important to the current study than specific outcomes derived from one's career or from one's learning. Although the study of internal or tacit human processes can be conducted through several qualitative inquiry methods including phenomenology, ethnography, or interpretive biography, this study employed the case study tradition, in particular multiple case studies. Case study lends itself particularly

well to retaining “the holistic and meaningful characteristics of real-life events” (Yin, 2003, p. 2) while accommodating the personalities of the various participants into the study, study traits important to the current study of how individuals learn during career development.

The study was grounded in the current literature through a multiple step sampling strategy derived, in part, from previously reported studies related to self-directed informal learning. The sampling strategy was applied to a research population that included people from Chautauqua County, New York who have created and developed a career trajectory based in large part upon their role as a formative technology user, one whose career role is substantial influenced by his or her uses of computer-related technologies. Data collection accrued from taped and transcribed life-story narratives, a process that emphasized inquiry into “the meaning that actions and intentions have for the [participants]” (Conle, 2000b, p. 52). Each participant recalled in the form of life stories specifically requested key self-directed informal learning events associated with his or her career path. The large amount of data collected from the life story narratives was analyzed using both categorical-content and holistic-content perspectives (Lieblich, Tuval-Mashiach, & Zilber, 1998) aided by qualitative research computer software. The collected data were constantly compared for theoretical themes, global impressions, and patterns of agency and social context that might emerge to show how participants individually and comparatively experienced the relationship of self-directed informal learning within the context of career development.

Finally, an effort was made to describe the results of the “meticulous sorting of the material” (Lieblich et al., p. 113) on the one hand and the emergence of “subtle

categories that retain the richness and variation of the text" (p. 113) on the other hand. The description, a thick rich explanation of how participants apply self-directedness to informal learning in an effort to enhance their career trajectory, is used to lay the foundation for several conclusions and recommendations related to enhancing self-directed informal learning during career development.

Conceptual Framework

The current study was built upon the conceptual understanding "that people order their lives through narrative" (Josselson, 2004, p. 2; see also, Bruner, 1986, 1990; Clandinin & Connelly, 2000; Clandinin & Huber, 2002; Linde, 1993; McAdams, 1993, 2001). As a result, "because we see experience narratively" (Clandinin & Huber, p. 162), this study depicted an attempt to experience the experiences of the participants narratively (Bruner, 1986, 1990; Clandinin & Connelly, 2000; Conle, 2000b; Linde, 1993; McAdams, 1993). What that means is, the current study was constructed around a dual concept of narrative: as a theory for understanding human agency experienced in complex contexts, and as a method for collecting and analyzing the experiences of those individuals (Clandinin & Huber, p. 162).

Merriam (2001) was one of several (see Brown & Brooks, 1996) pointing out the theoretical impasse created by the debate between a focus on individual agency as the unit of analysis versus sociohistorical context as the unit of analysis for studying self-directed informal learning. Although both social cognitive and social practice theories are considered constructivist theories (Brown & Brooks, 1996), the former, a psychological perspective, placed the unit of analysis with the agent of the activity and the latter, a

sociological perspective, placed the unit of analysis within the social context the activity is embedded. Unfortunately, according to Saleebey's (1994) well-organized argument,

> much of the thinking and work of constructivist [theorists such as Lent et al. or Young et al., for example] has failed to do two things: (1) establish a link between individual constructions and the larger environment of social institutions and culture and (2) examine how any theory of practice is also a symbolic construction or "story." (p. 351)

Hung and Chen (2001) proposed that through the process of identity formation within a community of practice consisting of mutually engaged people, the individual agent can become psychologically invested in the sociocultural context. Identity formation, according to McAdams (1993, 2001) and others (Astington, 2000; Bruner, 1986, 1990; Chen, 1998; Gee, 1989; Josselson, 2004; Lieblich et al., 1998; Linde, 1993; McAdams, 1993; Riessman, 1993), occurs as "an internalized and evolving life story," (McAdams, 2001, p. 117). The conception of humans creating their lives through story (Josselson, 2004, p. 2), "ties together a number of important theoretical and empirical trends," stated McAdams (p. 117), related to "the complex relations between individual lives and cultural modernity" (p. 101).

Life-narrative stories, then, can be perceived as "serious and essential creations that grow out of the experiences" (Saleebey, p. 353) of individual agents acting within particular social contexts. Rather than dismissing or conflicting with social cognitive theory and social practice theory, narrative theory incorporates them and appreciates them as contributing themes to the self-narrative process (McAdams, Hoffman, Mansfield, & Day, 1996, p.344). This is important, pointed out Conle (2000b), because "the incorporation of theory into narrative inquiry can over-power an experiential narrative unless the theory in turn becomes a part of the story" (p. 58). Through the construction of the individual self-narrative, essentially a life story, agency remains a

characteristic of the individual while the meaning that enables agency is socioculturally accomplished rather than individually possessed (Pea, 1997). Based upon this interpretation, the generation of self narrative appears necessarily to depend upon a conceptual foundation that includes both a theory of social cognitive behavior and a theory of activity embedded in social practice.

The works of Clandinin and Connelly (2000), Conle (2000b), Linde (1993), McAdams (1993) and numerous others demonstrated that "stories are ideally suited to capture how a human actor, endowed with consciousness and motivated by intention, enacts desires and beliefs and strives for goals over time and in social context" (McAdams, 2001, p. 117). Methodologically, these researchers are "giving 'voice' to [informants] and thus representing their experiences" (Josselson, p. 6). Many of the studies conducted by these and similar researchers "use inductive and hermeneutical methods to examine in depth small samples of life stories collected from clearly defined . . . groups" (p. 114). In this manner they are analyzing and interpreting informants' "meaning with as little distortion as possible . . . from a [hermeneutic] consideration of the whole which is itself created through understanding of the parts" (p. 9).

The current study, therefore, was constructed upon a framework of narrative as theory and as method. Using this dual conception of narrative, the current study has attempted to go "beyond description to an assimilation of meanings" (p. 10) from originally conflicting theories and integrate them into a single perspective for understanding and explaining self-directed informal learning in the career context.

Definition of Terms

Activity: A type of social engagement during which there is "a continual

negotiation of people with each other and with the resources of their environments" (Greeno, 1998, p. 9).

Affordance: The "qualities of systems [including environments] that can support interactions and therefore present possible interactions for an individual to participate in" (Greeno, 1998, p. 9). An environmental affordance is a reference to "resources in the environment and enabling characteristics of a person or group [that allow] a type of activity that is possible whenever those environmental and personal properties are present" (Greeno, 1998, p. 9).

Agency: "The endowments, belief systems, self-regulatory capabilities and distributed structures and functions through which personal influence is exercised, rather than residing as a discrete entity in a particular place" (Bandura, 2001, p. 2). Agency suggests that the individual intentionally makes things happen by way of his or her actions.

Alignment: One's "ability to coordinate perspectives and actions in order to direct energies to a common purpose" (Wenger, 1998, p. 186); the term is used synonymously with working toward a state of equilibrium (p. 205) as in achieving "alignment between experience and competence" (p. 139).

Causality: The chain of narrative occurrences that the protagonist of a narrative deems "acceptable as a good reason for some particular event or sequence of events" (Linde, 1993, pp. 127-128). The element of causality helps maintain a sense of self-narrative continuity; but causality in a story, says Franzosi (1998) "is a necessary but not sufficient condition for the emergence of a story" (p. 521).

Career: Socially legitimate and purposeful work; it may be but it is not

necessarily synonymous with employment, job, or occupation (Collin, 2000; Dawis, 1996). In other words, being a "career criminal" is not a true career (lacks legitimacy), but being a "stay-at-home mom" is a true career (legitimate and purposeful).

Career development: "A lifelong process of getting ready to choose, choosing, and, typically, continuing to make choices" (Brown & Brooks, 1996, p. xv) from among the many socially legitimate roles and purposeful tasks available in our society. For this study career development assumes "a strategic life plan, as a personal application of management by objectives" (Höpfl & Atkinson, 2000, p. 134).

Career narrative: A person's story about his or her career development. "It is a story that connects the protagonist's past to the present in the sense that it conveys how the protagonist came to be what he or she is presently [and] what future is expected for the protagonist to enact based on his or her particular past and present being" (Christensen & Johnston, 2003, p. 151).

Career trajectory: The tracing and interpretation "of the directional continuity" (Collin, 2000, p. 94) of one's career development through "social space and time" (p. 87).

Coherence: "A property of texts; it derives from the relations that the parts of a text bear to one another and to the whole text, as well as from the relation that the text bears to other texts of its type" (Linde, 1993, p. 12).

Community of practice: "An activity system about which participants share understandings concerning what they are doing and what that means in their lives and for their communities" (Lave & Wenger, 1991, p. 98). Although a community of practice is identifiable as "a set of relations among persons, activity, and world, over time" (p. 98), the term does not necessarily "imply . . . co-presence, a well-defined, identifiable group,

or socially visible boundaries" (p. 98).

Context: "The surrounding environment, circumstances or facts which help give a total picture of something" (Young et al., 1996, p. 478).

Discourse: A way "of being in the world [that integrates] words, acts, values, beliefs, attitudes, and social identities as well as gestures, glances, body positions, and clothes" (Gee, 1989, pp. 6-7). Discourses, the term is often plural because people typically engage in more than a single Discourse at any given time, are a situation-specific "identity kit" people employ "so as to take on a particular role that others will recognize" (p. 7).

Engagement: Participation in the "process of negotiating meaning" within a community of practice (Wenger, 1998, p. 53); thus, engagement "is what defines belonging" to a community of practice (p. 74).

Formal education (training): A type of learning that is "formally structured and sequentially organized, in which learners follow a program of study or a series of experiences planned and directed" (Livingstone, 2001, p. 30) in accordance with "a pre-established body of knowledge" (p. 2).

Identity: A long-term yet continually negotiated (Lave & Wenger, 1991) self-definitional (Markus & Kitayama, 1991) "subset of personality" (McAdams, 1993, p. 266) through which a person ties together the multiple roles he or she "assumes in daily life" (p. 110). "Our identity," said Wenger (1998) "includes our ability and our inability to shape the meanings that define our communities and our forms of belonging" (p. 145).

Informal learning: An unplanned and non-sequential type of "lifelong process whereby an individual acquires attitudes, values, skills and knowledge from daily

experience" (Livingstone, 2001, p. 30).

Intention: "A representation of a future course of action to be performed" (Bandura, 2001, p. 6). An intention "is not simply an expectation or prediction of future actions but a proactive commitment to bring them about" (p. 6).

Knowing: A dynamic process that is "not simply [the] psychological construct existing in the head but [rather] an interaction . . . of individuals and physical and social situations" (Barab & Plucker, 2002, p. 165). Through the process of knowing, "each of us acts out our own interests, while at the same time seeking to establish some intersubjectivity of interest with co-participants in the activity" (Wells, 2000, p. 126). As a result, knowing "is inherent in the growth and transformation of identities" (Lave & Wenger, 1991, p. 122).

Learning process: The "evolving" (Lave & Wenger, 1991, p. 48), "iterative" (Duff, 1998, p. 336), "thinking-and-meaning-centered" (Resnick & Klopfer, 1989, p. 4) participation in "activities in which technical skills support individual contributions and in which conceptual understandings are both used and constructed" (Greeno, 1998, p. 17). As a result of the learning process, the learner becomes "a different person with respect to possibilities for interacting with other people" (Barab & Plucker, 2002, p. 173).

Legitimate peripheral participation: The mode of engagement of learners "in communities of practitioners [where] the mastery of knowledge and skill requires newcomers to move toward full participation in the sociocultural practices of a community" (Lave & Wenger, 1991, p. 29). Legitimacy "involves learning how to talk (and be silent) in the manner of full participants" (p. 105); and, "peripherality suggests that there are multiple, varied, more- or less-engaged and inclusive ways of being located

in the fields of participation defined by a community" (pp. 35-36).

Life story: "An internalized and evolving" (McAdams, 2001, p. 117) "oral unit" that expresses to others one's sense of self (Linde, 1993, p. 4).

Meaning: "The dynamic relation of living in the world" (Wenger, 1998, pp. 53-54); neither "pre-existing" nor "simply made up," neither existing "in us, nor in the world" meaning is situationally negotiated by participants engaging within communities of practice (pp. 56-57).

Narrative: "A form of framing experience (and our memory of it)" (Bruner, 1990, p. 56) as stories that "are event-centered . . . historically particular [and]located in a particular time and place" (Mattingly & Lawlor, 2000, p. 6). Narrative can refer to either a method of inquiry or the content of inquiry or both simultaneously (Conle, 2001).

Negotiation of meaning: "The production of . . . patterns anew that gives rise to an experience of meaning" (Wenger, 1998, pp. 52-53) during engagement in practice. The process associated with "the negotiation of meaning involves the interaction of two constituent processes . . . *participation* and *reification*" (Wenger, 1998, p. 52, emphasis in original). According to Wenger, "the concept of negotiation of meaning [is] the process by which we experience the world and our engagement in it as meaningful**"** (p. 53).

Operation: Any of "the routine aspects of production" (Keller & Keller, 1996, pp. 125-126). However, as "an element of action," an operation "can be contextualized by seeing it as one of a series of contiguous behaviors that comprise a step" (Young et al., 1996, p. 488).

Participation: "Not just . . . local events of engagement in certain activities with

certain people, but . . . a more encompassing process of being active participants in the *practices* of social communities and constructing *identities* in relation to these communities" (Wenger, 1998, p. 4, emphasis in original). In this manner, participation "is both personal and social [and] is a complex process that combines doing, talking, thinking, feeling, and belonging" (pp. 55-56). Here, participation is interpreted to involve "things other than schemata [including] ability to anticipate, a sense of what can feasibly occur within specified contexts, even if in a given case it does not occur" (Lave & Wenger, 1991, p. 20).

Practice: The "meaningful" (Wenger, 1998, p. 51) and "regular patterns of activity in a community, in which individuals participate" (Greeno, 1998, p. 6). Used in this manner, the "concept of practice connotes doing, but not just doing in and of itself. It is doing in a historical and social context that gives structure and meaning to what we do" (Wenger, 1998, p. 47).

Reciprocal: "The mutual action between events rather than in the narrower meaning of similar or opposite counteractions" (Bandura, 1977, p. 194).

Reification: The process and the product arising from giving form to understanding (Wenger, 1998). Through reification, "we project ourselves onto the world, and not having to recognize ourselves in those projections, we attribute to our meanings an independent existence" (Wenger, 1998, p. 58), thereby perceiving them "as having a reality of their own" (p. 58).

Resonance: The structuring principle in narrative (Conle, 2000a, p. 203) where "scenes in one story correspond metaphorically to the scenes in the other story" (p. 203). Importantly, added Conle, here metaphor is not used "as a figure of speech, but as a

process of understanding" (p. 202). Resonance is typically employed by the interviewer as a "process that carries the inquiry along" (p. 53) by responding to the interviewee with a narrative of his or her own.

Self-directed learning: "A process of learning in which people take the primary initiative for planning, carrying out, and evaluating their own learning experiences" (Merriam & Caffarella, 1999, p. 292).

Self-efficacy: "A dynamic set of self-beliefs that are specific to particular performance domains and that interact with other people, behavior, environment, and contextual factors" (Albert & Luzzo, 1999, p. 432). Self-efficacy, posited by Bandura (2001) to be central to defining personal agency, derives from four primary informational sources: "performance accomplishments, vicarious learning, verbal persuasion, and physiological arousal" (Albert & Luzzo, 1999, p. 432).

Self narrative: "Our internal, subjective sense of having a private life story that organizes our understanding of our past life, our current situation, and our imagined future" (Linde, 1993, p. 11). It is the individual's "interpretation of this text *in situ* [that] *is* his sense of self in that situation" (Bruner, 1986, p. 130, emphasis in original).

Social: The norms that "constrain how we talk, and dress, work home alone, make phone conversations" (Elmholdt, 2001, p. 3) and so forth, which specifically differs from the typical use of the term: social specifically "has nothing to do per se with whatever is done alone or with other people present" (Elmholdt, 2001, p. 3).

Technology: The, primarily computer-related, electronic information storage, processing, and communication hardware, software, and/or connectivity that provides people the capacity "to operate in several spaces simultaneously" (Collin, 2000, p. 92).

Assumptions

As with any research endeavor, a number of key assumptions have been made in this research study. Listed here are the critical assumptions underpinning the study:

1. The research participants in this study will be willing to openly share their career development experiences with the researcher.

2. The participants understand their world narratively and sustain their sense of reality through the construction of life stories that they believe to be essentially veridical.

3. The narrative approach to data collection will provide data that reveal both experiences related to the career development of the participant as well as to experiences related to self-directed informal learning.

4. The holistic-content approach for narrative data analysis will provide fruitful and useful insights into the interconnectedness of the career development process and self-directed informal learning.

5. It is assumed that the local setting is diverse enough and representative enough to provide a substantial enough population from which to draw a useful and purposeful sample.

Scope, Delimitations, and Limitations

Within the scope of this study, the qualitative research paradigm was employed to interpret and explain the relationship between self-directed informal learning and the career development process among currently employed technology users. The narrative multiple case study approach was deemed best suited for providing the individual depth and content breadth required for obtaining the rich description necessary to expand upon the current literature.

The case level unit of analysis (Merriam, 1998, p. 66; Yin, 2003, p. 22) for this multiple case study approach was each individual's storied accounts of self-directed informal learning as part of his or her personal career development process. The sample level unit of analysis (p. 66) was achieved first through participant-by-participant categorical coding and second by holistic content-based "constant comparison" of each participant's interview data with the accumulating database of all other interview data. Data were collected from the career life stories of participants describing the learning events and processes significant to their respective career development process. This data collection methodology, called the "narrative method" by Riessman (1993), was consistent with the work of Shoda and Mischel (2000) who have revealed that "identifying the characteristics of situations in which an individual displays a given behavior is an important step toward revealing personal qualities, such as the values, motives, and expectations that underlie distinctive patterns of behavior variation" (p. 409). Data analysis was focused on categorically determining and then holistically interpreting the general themes and patterns of participants' life stories, especially those relating to agency and social context.

Several limitations existed for the study:

1. One potential limitation concerned individual participant's willingness to participate coupled with their acceptance of life-story narrative as an appropriate means for collecting data about the career development process. Either instance could have affected the potential quantity and quality of the collected data. Approximately 30% of contacted individuals chose not to participate in the study. It was not known in most cases whether the failure to participate was related to time constraints, disinterest, or a lack of

confidence in the life story narrative process. The researcher's strict adherence to carefully established pre-interview protocols and the $25 dining gift certificate awarded to each participant ensured participant steadfastness for all individuals agreeing to participate. Additionally, in two cases the carefully constructed pre-interview protocols helped surface potential dissatisfaction with the narrative technique before the individual committed to participation. Finally, although the researcher was prepared to tactfully withdraw from a narrative interview if it did not proceed properly, the situation did not arise.

2. Similarly, Livingstone pointed out that, "self-reported estimates of informal learning" may tend to be inaccurate due to "the embedded and taken-for-granted character of . . . tacit learning" (p. 5). This was controlled for, based upon the experiences of Livingstone, by carefully defining for participants what the researcher was looking for. Also, through the use of what Conle (2000a, 2000b) called narrative resonance, the researcher called upon his personal experiences as well as surveyed information provided by each participant to create relevant examples of self-directed informal learning.

3. Due to the demographics of the rural/small city population of the research area, all participants were Caucasian and middle class, a condition Livingstone (2001) identifies as "dominant class bias" (p. 23). Purposeful sample selection using criteria pre-established by prior major studies went a long way in helping to mitigate this limitation. Additionally, although gender and ethnicity are not significant factors delimiting the current study (Livingstone, 2001), equality in participant gender was observed in the current study.

These potential limitations, along with other potential confounds are addressed in

detail in chapter 3.

Summary

Chapter 1 focused on setting forth the purpose of this qualitative research study, which was conducted using a narrative multiple case study approach, and establishing the fundamental research questions. Although research into self-direct informal learning has been under way for over 80 years, the research remains relevant because much of the current body of literature is dominated and confused by a dualistic and often contentious theoretical base arbitrarily forcing educators, trainers, counselors, and reformers to choose either an agent-dominated approach or a social context-dominated approach to the interpretation and management of the learning processes associated with career development. This study has taken the position that one way of uncovering useful examples of individual self-directed informal learning and demonstrating their potential interconnectedness with theories of social cognition and social practice is by listening to, hermeneutically appreciating, and inductively analyzing the career life-story narratives of individuals who have had to learn about and continually stay current with changes in computer-related technologies in order to maintain the development of their anticipated career trajectory.

Chapter 2 is devoted to introducing and positioning self-narrative theory as an integrative perspective for understanding the social cognitive conception of individual agency along with the social practice conception of sociocultural context as key thematic elements of self-directed informal learning during career development. In large part, chapter 2 serves the purpose of showing how the researcher's worldview and perceptions regarding career development and learning are grounded. This grounding, or sensitizing

of the researcher “as to what to look for in the data” (Strauss & Corbin, 1998, p. 50), is, according to Strauss and Corbin, an important standard of qualitative research. Additionally, this preliminary review of the literature has been undertaken as a way to justify the need for the study, uncover and present the properties and dimensions of key concepts that ultimately will be compared to the data, aid in the formulation of the research questions, and provide a thorough background to the study.

While chapter 2 dwells on Reynolds’s (1971) premise that “the newness of a new idea can only be appreciated if one is aware of the scope and quality of the old ideas that prevailed before the new idea was introduced” (p. 21), chapter 3 lays out the process for structuring the new ideas of narrative data collection and analysis into meaningful protocols to be applied to the phenomenon being researched. To that end, building largely upon the instruction of Clandinin and Connelly (2000), Conle (2000a, 2000b, 2001), Lieblich et al. (1998), and McAdams (1993, 2001) regarding life story narrative, Merriam’s (1998), Creswell’s (1998), and Yin’s (2003) guidance for case study research, and Livingstone’s (1999, 2001), Fenwick’s (2002), and Merriam’s (2003) previous research into self-directed informal learning, the chapter details the step-by-step process for generating a rich description of the learning process associated with the career development of three purposefully selected respondents.

In chapter 4, categorical content analysis followed by holistic content analysis are employed to analyze the data. The categorical analysis, applied to individual narratives, is used to uncover, code, and report the important categorical concepts consistent with the literature about how individual agency and social context interact during the career development process. The holistic analysis is applied for comparatively and thematically

interpreting the narrative data collectively across all participants. Using two separate and different qualitative analyses enriches the interpretation of the data and enhances the validity of the data analysis. Multiple tables list the relevant findings and observations associated with a conceptualization of learning during career development referred to as entrepreneurial learning.

Finally, chapter 5 concludes the study by displaying and describing a matrix of learner characteristics associated with self-directed informal learning activity during career development. The narrative explanation of the matrix quadrants and terminology provided for a rich description in response to the research questions: How are the self-narrated career identities of self-direct learners thematically similar and thematically different? and How is self-directed informal learning related to the career development process of formative technology users? The chapter draws to a close by describing the significance of the study findings to social change and by offering recommendations for enhancing career development related learning.

CHAPTER 2: LITERATURE REVIEW

Introduction

Early studies on informal learning in the workplace conducted by Zuboff (1988) and Darrah (1992) were among the first substantial additions to the career development literature describing how the individual employs everyday experiences to know how to maintain a functional competence for furthering one's career trajectory. Addressing similar issues from different disciplinary views, Albert Bandura's (1986) social cognitive theory and Jean Lave and Etienne Wenger's (1991) social practice theory each addressed the roles of self-directedness and informal learning as elements of career development. The theories proposed by Bandura and by Lave and Wenger took differing perspectives on the role of self-directedness related to informal learning: Social cognitive theory attempted to advance an agentive perspective of learning during career development (Bandura, 1986, 2001; Lent, Brown, and Hackett, 1996), while the theory of social practice took an equally adamant social contextual view (Lave & Wenger, 1991; Young, Valach, & Collin, 1996). Acknowledging Linde's (1993) study on how people justify their career-related choices, Ochberg and Comeau (2001) summed up the social cognition and social practice positions by concluding that "we describe our [career and learning] choices as reflecting either our personality or our circumstance" (p. 141).

Both Bandura's and Lave and Wenger's theories have attracted ardent advocates and have influenced other career development and adult learning scholars. In fact, stated Merriam (2001), the two theories have created the appearance of an unbridgeable "juncture in terms of which direction research and theory building should take" (p. 10). Scholars have been left pondering this question: Which is it, the internal personality (self-

directedness) or the external circumstance (social context) that directs our learning during career development? Or, is it some combination of both?

Livingstone (2001), representing the Center for the Study of Education and Work at the University of Toronto in Ontario, Canada, offered this appraisal of the same personality versus circumstances question: “There are at least two different knowledge traditions: a rational or scientific cognitive knowledge which emphasizes recordable and articulated descriptions as cumulative bases for increased understanding, and a practical knowledge tradition which stresses direct experience in various situated spheres” (p. 3). Working from Livingstone’s premise, this review of the literature examines, arguably (see Brooks & Brown, 1996; Phillips, 1997), the two most prominent theories underlying the role of learning during the career development process: Bandura’s (1986) social cognitive theory and Lave and Wenger’s (1991) theory of social practice. The review concludes by surveying the literature that offers a potentially integrative perspective: individual self-narrative as a point of convergence for cognition and practice.

The Rise of a Constructivist Perspective

“The twentieth century began with a logical positivism view of career” (Brott, 2001, p. 305), with the perception of an individual, according to Phillips (1997), as “an objective scientist [facing] consistent preferences . . . free of cognitive distortions and emotional distractions [fully capable of obtaining and using] information about the self, the alternatives, and the future” (p. 276). Theory based upon this approach has attempted to match individual to a career or an occupation “by using rational decision making strategies” (Brott, 2001, p. 305).

> This is a very logical and sequential approach . . . It is generally in order to define obstacles to progression, which have to be overcome. Under such assumptions, "success" then is merely a matter of commitment and motivation. Goals can be set and only a lack of motivation to achieve stands in the way of their accomplishment. At the same time, the rational view of career assumes that it is possible to compartmentalize work and non-work life . . . In short, the rational view of career is one where choice, progression, and consistency are under the control of the individual, and where personal management and planning are the keys to "success." (Höpfl & Atkinson, 2000, p. 134)

According to Brown and Brooks (1996), the majority of “theories of career choice and development [remain] rooted in positivism” (p. 9). Career theory based upon the logical positivist worldview defines the relationship between individual and environment as one of “person-environment fit” and “emphasizes assessment and diagnosis” (Brott, 2001, p. 304).

The 20th century closed, however, “with a movement toward a subjective perspectivism view of career . . . This approach is based on recognizing both continuity and change throughout an individual’s life by incorporating constructivist strategies” into career development (Brott, 2001, p. 305). The constructivist approach, or postmodern subjective perspectivist worldview, arose “in response to the perceived deficiencies of traditional positivist modes of social scientific enquiry” (O'Doherty & Roberts, 2000, p. 146). A constructivist approach “calls up and made for more interpretive and qualitative methods of study” (p. 146). The constructivist perspective views “the two components of the individual and [the environment as] mutually constitutive—that is, they construct each other” (Richardson, 2000, p. 198).

Two of the most influential constructivist theories influencing career development research are Bandura’s social cognitive theory—exemplified in the social cognitive career theory of Lent et al. (1996)—and Lave and Wenger’s social practice theory—the

foundation for Young, Valach, and Collin's (1996) contextual action theory of career. As Bandura's theory along with Lave and Wenger's evolved into emerging career development models, it became apparent, according to Merriam and Caffarella (1999), that, although these models of adult learning and career development were emanating from the same constructivist interaction between the learning individual and his or her career environment, "[t]he relative weight of these two factors varies from model to model" (p. 69). Merriam and Caffarella went on to elaborate as follows:

> Basically, a constructivist stance maintains that learning is a process of constructing meaning; it is how people make sense of their experience. Beyond that basic assumption, constructivists differ as to the nature of reality, the role of experience, what knowledge is of interest, and whether the process of meaning making is primarily individual or social. (p. 261)

With a focus on the roles of individual agency and social context, this review examines social cognitive theory and the theory of social practice as necessary complements underpinning a more integrative theory: individual self-narrative as a point of convergence for cognition and practice.

The Social Cognitive Perspective

According to Candy, "The constructivist view of learning is particularly compatible with the notion of self-direction, since it emphasizes the combined characteristics of active inquiry, independence, and individuality in a learning task," (quoted in Merriam and Caffarella, 1999, pp. 262-263). Moreover, as Merriam (1998) noted earlier, every theory will have its unique "disciplinary orientation [representing] the lens through which [one] view[s] the world" (p. 45); and, the "lens" that social cognitive career theory employs is clearly that of the psychologist. Using that particular lens, the single most important aspect of social cognitive theory is in "viewing people as active

agents in, or shapers of, their career development" (Lent et al., 1996, p. 373; see also, Chen, 1998, p. 440) and their lives in general (Bandura, 1986).

A widely popular idea, presented in Frank George's *Models of Thinking*, interprets learning as "the process of adapting to changing circumstance" (quoted in Botkin et al., 1970, p. 47). Bandura (1986, 2001) opposed a conception of passive human adjustment that deemphasizes human initiative. Bandura's (1986, 2001) justification for social cognitive theory represented a stark contrast to George's position: "Social structures are created by human activity, and sociocultural practices, in turn, impose constraints and provide enabling resources and opportunity structures for personal development and functioning" (p. 15). Instrumental to relating social cognitive theory to self-directedness during career development, explained Chen (1998), was the understanding that "life career phenomena do not exist without human involvement. People are their own actors in performing career developmental tasks, and they are the self-agents in shaping their lives" (p. 444). In other words, people take intentional action in response to perceived environmental conditions, setting up a series of reciprocal interactions between the individual and his or her environment (Bandura, 1986, 2001).

According to Bandura (1986), from the social cognitive perspective,

> people are neither driven by inner forces nor automatically shaped and controlled by external stimuli. Rather, human functioning is explained in terms of a model of triadic reciprocality in which behavior, cognitive and other personal factors, and environmental events all operate as interacting determinants of each other. (p. 18)

Bandura's theory, expressed as a three-way interactive model (Merriam & Caffarella, 1999, p. 260), attempted to depict self-directed behavior as a function of the interaction of the person as an individual agent for action within the contextual constraints of his or her environment. "This is a reciprocal concept," added Merriam and Caffarella, "in that

people influence their environment, which in turn influences the way they behave" (p. 260). Social cognitive theory, then, represented a perspective in which individuals are active agents in shaping their own learning behavior during career development (Chen, 1998; Lent et al., 1996).

As fundamental as it is to social cognitive theory, the triadic reciprocality among self-directed behavior, individual agency, and the contextual environment does not represent an even balance of the three elements. "Reciprocality," instructed Bandura (1986), "does not mean symmetry in the strength of bidirectional influences [in the model]" (p. 24). And, in spite of his claim that although "the patterning and strength of mutual influences [is not] fixed in reciprocal causation," but rather, the "relative influences exerted by the three sets of interacting factors will vary for different activities, different individuals, and different circumstance" (p. 24), there is little doubt that one of Bandura's triadic elements is central to all others: individual agency.

Tying together themes and hypotheses from behaviorism (Driscoll, 2000), cognitive science (Gardner, 1985), and intelligence theory (Sternberg, 1985), Bandura (2001) summarizes human agency in terms of social cognitive theory:

> To be an agent is to intentionally make things happen by one's actions. Agency embodies the endowments, belief systems, self-regulatory capabilities and distributed structures and functions through which personal influence is exercised, rather than residing as a discrete entity in a particular place. The core features of agency enable people to play a part in their self-development, adaptation, and self-renewal with changing times. (p. 2)

For Bandura (1986), self-directed behavior culminated in the person's ability to influence the contextual circumstances related to his or her career development:

> Self-directedness is exercised by wielding influence over the external environment as well as enlisting self-regulatory functions. Thus, by arranging facilitative environmental conditions, recruiting cognitive guidelines, and creating

> incentives for their own efforts, people make causal contribution to their own motivation and actions. (p. 20)

In later writings, Bandura (2002b) argued: “In personal agency exercised individually, people bring their influence to bear directly on themselves and their environment in managing their lives” (p. 270).

Agency is a manifestation of one’s intentional (Bandura, 2001, p. 6), planned actions to “produce different outcomes” in response to one’s perceived environment (p. 6). Although “the power to originate actions for given purposes is the key feature of personal agency” (p. 6), asserted Bandura, “that realization of forward looking plans requires more than an intentional state because it is not causally sufficient by itself. Other self-regulatory aspects of agency enter into the successful implementation of intentions” (p. 7). Successful agentive behavior, according to Bandura (p. 8), must be motivated and self-directed. Agentive behavior during career development must involve

> not only the deliberate ability to make choices and action plans, but the ability to give shape to appropriate courses of action and to motivate and regulate their execution. This multifaceted self-directedness operates through self-regulatory processes that link thought to action. (p. 8)

The concept of human agency provides social cognitive theory with the necessary “measures of personal determinants” for “understanding how personal factors affect actions and situations . . . of interactive processes” (Bandura, 1986, p. 28). On the one hand, agency is the means for measuring one’s response to an environment. That is, “by arranging facilitative environmental conditions, recruiting cognitive guides, and creating incentives for their own efforts, people make causal contribution[s]” (p. 20). On the other hand, agency provides a means for measuring activity. Or, in Bandura’s words,

> The interactive relationship between behavior and environmental events in social interchanges is not governed solely by the immediate behavioral reciprocities

> between actions and social counteractions. While behaving, people entertain thoughts about what they may eventually produce. Forethought can enhance, attenuate, or nullify the proximal effects of action. (p. 26)

Agency is at the core of all behavior and all interactions with one's environment.

Key to the intentional action of each individual agent is knowledge about one's self, that is, "self-referent thought" (Bandura, 1986). This foundational element of self-knowledge that individual agency is constructed upon what Kush and Cochran (1993; see also, Chen, 1998, p. 444) referred to as "confidence and self-determination" (p. 434) and Bandura (1977, 2001) called self-efficacy. The core element of self-knowledge, argued Bandura (1977), "the foundation of human agency" (Bandura, 2001, p. 10), is self-efficacy, the individual's belief in his or her "capacity to exercise some measure of control over their own functioning and over environmental events" (p. 10). It is this self-knowledge component of social cognitive theory that gives it its decidedly psychological perspective.

It is the individual's reflection upon his or her interactions with the environment that inform self-efficacy (Albert & Luzzo, 1999). Self-efficacy, as the central enabling mechanism of personal agency, is not the result of mere "exposure to stimulation," but rather the consequence of individual interaction with the environment (Bandura, 2001, p. 4) resulting in four principal "sources of information: performance accomplishments, vicarious learning, verbal persuasion, and physiological arousal" (Albert & Luzzo, 1999, p. 432). Reflection upon one's interaction with the environment based upon these information sources helps "to create a dynamic set of self-beliefs that are specific to particular performance domains and that interact with other people, behavior, environment, and contextual factors" (p. 432).

Given the complexity of the interactions among the components of social cognitive theory and the additional complexity of the possible actions related to specific environmental contexts, “there are undoubtedly more features that contribute to a sense of agency” (Kush & Cochran, 1993, p. 434). While social cognitive theory goes a long way in identifying the essential career development elements of outcome expectations, goals, self-efficacy, and personal agency, the exact relationship among these elements is not always clear. Merriam and Caffarella (1999) acknowledged that social cognitive theory “provides insights into social role acquisition,” (p. 261), an important concept related to career development. However, according to Brown and Brooks (1996), while social cognitive theory applied to career development is on the right track, the thinking behind it must be taken “to the next level” (p. 522).

Social Cognitive Career Theory

In the literature review for their study on career development, Paa and McWhirter (2000) noted that “the last two decades have seen an increasing awareness of the role of social cognitive processes in career development and career-related behavior [for which] Bandura’s . . . social cognitive theory provided the foundation” (p. 31). According to Albert and Luzzo (1999), Bandura (2001), Betz (2004), Brown and Brooks (1996), and others, one adaptation of social cognitive theory, the social cognitive career theory presented by Lent et al. (1996), is among the most comprehensive career-oriented application of Bandura’s work. According to Albert and Luzzo, social cognitive career theory (SCCT)

> emphasizes the importance of personal agency in the career decision-making process and attempts to explain the manner in which both internal and external factors serve to enhance or constrain that agency. Consistent with Bandura’s

> theory, SCCT recognizes the mutual interacting influences between people, their behavior, and their environment. (p. 431)

Consistent with Bandura's social cognitive theory, the social cognitive perspective on career development assumes, on the one hand, a psychological position in considering "persons as self-conscious agents who strive for career attainment by examining outcome expectations, establishing personal goals, and possessing and exercising self-efficacy" (Chen, 2003, p. 206; see also, Albert & Luzzo, 1999, pp. 431-432). On the other hand, the social cognitive view takes a sociological position in proposing "that career and achievement motivation result from the complex interaction of background, personal, and environmental variables" (Paa & McWhirter, 2000, p. 30).

The shaping of one's career life, stated Lent et al. (1996), involves choices, and "personal agency is reflected in the very term career '*choice*'" (p. 373, emphasis in original). Thus, the agentive view of career development, as expressed, for example, in social cognitive career theory, "presents a varying image of an agent who can decide, plan, act, and, in general, make things happen. In contrast, a patient or victim of circumstances is one to whom things happen" (Kush & Cochran, 1993, p. 434). Albert and Luzzo (1999) appeared to substantiate Kush and Cochran's claims of self-directedness related to career development by reporting on research that "has consistently revealed, over time, significant career decision-making benefits associated with a belief that career decisions are internally caused and controllable" (p. 433).

Conversely, Livingstone and Sawchuk (2000), referencing extensive workplace survey data collected by the Canadian government, called into question career decision making causality by pointing out that "a definite feature of working class learning is the emergence from collective social practices of critical insights into the limits of

competitive individualism and a sense of alternatives" (p. 139). In other words, as Livingstone (2001) went on to point out in a later publication, career choices, although observed at the individual level, are manifestations of lowered expectations on the part of individuals who are denied recognition for skills and capabilities they have acquired by means other than socially legitimated formal educational means (p. 16).

In response to challenges similar to those of Livingstone and Sawchuk, Bandura (2001) interceded on behalf of social cognitive career theory by positing that according to the social cognitive perspective, "sociocultural factors operate through psychological mechanisms of the self system to produce behavioral effects" (p. 15). In this manner, "economic conditions, socioeconomic status, and educational and family structures affect behavior largely through their impact on people's aspirations, sense of efficacy, personal standards, affective states, and other self-regulatory influences, rather than directly" (p. 15). As a result, social cognitive theory "is more concerned with the specific cognitive mediators [that] guide career behavior" (Lent et al., 1996, p. 377).

Additionally, stated Lent et al. (1996), social cognitive theory "emphasizes the means by which individuals exercise personal agency" to control the contextual factors of the environment in order to influence career outcomes (p. 377). Chen (1997) summed up social cognitive theory as it applies to career development as follows:

> If career is perceived as a synonym for a major part of one's life, it is necessary to examine how the self makes sense of career.…This calls for the individual to be an active agent, not a passive subject, in the search for meaning. As such, people launch their career projection into the social context, and modify this projection so that it becomes better integrated with the contextual change. (p. 314)

The empirical findings in a research study by Paa and McWhirter (2000) lent credence to Chen's remarks and to the social cognitive theory claims, as their adolescent subjects

reported that “personal variables had a stronger influence on [their] career motivation than did the background and environmental variables examined” (p. 40).

Social Cognitive Theory and Career-Related Learning

Describing learning from the social cognitive perspective is similar to describing personal development as a part of career growth. Rawson (2002) defined learning in generally accepted terms as a change in one’s understanding, knowledge, or skill. “If education involves, at least in part, preparation for life, then . . . in a world of change and unpredictability, continued personal viability cannot be based upon skills alone” concluded Rawson (2000, p. 228), sounding much like Chen (1997) expounding upon career as a life role. In other words, learning is not static. Moreover, pointed out Rawson, “knowledge forms part of the human response to the environment. When the environment changes, then not only the response but also the process of generating that response needs to change” (p. 233).

According to Bandura (1977), “The value of a theory is ultimately judged by the power of the procedures it generates to effect psychological changes” (p. 2). Therefore, it comes as no surprise that he viewed the personal change associated with learning as a function of individual human agency. In order for the cognitive change associated with learning to occur, the learner must posses “certain prior capabilities” that will be changed (p. 184). At that point Bandura, using the lens of individual agency, perceived that “the issue in question is whether the requisites for change, which all theories acknowledge, are cognitive skills or uniform mental structures” (p. 184).

Bandura (1977) answered his own rhetorical question by characterizing the agent-environment interaction as one in which “change is mediated through cognitive

processes, but the cognitive events are induced and altered most readily by experiences of mastery arising from successful performance" (p. 79). Through observing and evaluating the results of one's performance, or the performances of others (Bandura, 1977, 1986), "outcomes change behavior in humans largely through the intervening influence of thought . . . Because learning response consequences is largely a cognitive process, consequences generally produce little change in a complex behavior when there is no awareness of what is being reinforced" (Bandura, 1977, p. 18).

Shoda and Mischel (2000) explained Bandura's position as follows:

> an individual's proactive influence is seen not only in its intra-individual impact on [what is perceived in a situation], but also in shaping the situations themselves. This suggests an "ironic" path for self-regulation. By accepting and becoming aware of the predictable, automatic, and hence uncontrollable, effects of situations on the pattern of cognitions and affects, one may in fact gain control over them, not by "willpower," but by influencing the *situations* encountered, or how they are presented and experienced. In this process, goal-oriented cognitions and affects play a crucial role in transforming and creating new situations rather than becoming their victim, accounting for the agentic and pro-active quality of individuals. (p. 423, emphasis in original)

Some are better at this process than others. "The greater their foresight, proficiency, and self-influence, all of which are acquirable skills," contended Bandura (1977), "the greater the progress toward their goals" (p. 206) of acquiring knowledge. The individual is the dominant element, and the most important unit of analysis in the person-environment relationship.

Few will disagree with Bandura's (1977) assessment that the information upon which learning is built, "whether generated by direct or vicarious forms of experience, is not absorbed automatically. Preconceptions partly determine which aspects of experience are extracted and how they are perceived" (p. 185). Taking a psychological perspective, Bandura (1977) argued, "People's perceptual sets, derived from past experience and

situational requirements, affect what features they extract from observations and how they interpret what they see and hear" (p. 25). Both the features that the individual extracts from his or her environment as well as the interpretation of those features are strongly influenced by individual self-efficacy, "the most central defining element of personal agency" (Albert & Luzzo, 1999, pg. 432).

The significance of self-efficacy to the extraction and interpretation of those environmental aspects upon which learning is established is that individual self-efficacy expectations are believed to have specific behavioral consequences for the person-environment interaction, including "(a) approach versus avoidance behavior, (b) quality of performance of behaviors in the target domain, and (c) persistence in the face of obstacles or disconfirming experiences" (Betz, 2004, p. 341; see also, Bandura, 1977).

The behavioral consequences that fuel individual agency driven by self-efficacy beliefs are derivatives of a cognitive element Bandura (1977) called the "information function [:] In the course of learning, people not only perform responses but also notice the effects they produce. By observing the different outcomes of their actions, they develop hypotheses about which responses are most appropriate in which settings" (p. 17). The individual thus develops a remembered history of actions and situations to approach, persist in, or avoid based upon the perceived quality of his or her performances associated with the specific actions undertaken in specific situations. Finally, self-efficacy, and therefore agentive action, is influenced by social reinforcement that "conveys information to performers about the types of responses that are appropriate; selective reinforcement directs performers' attention to environmental cues that signify the probable consequences of various behaviors" (p. 128).

Critically important to social cognitive theory, social cognitive career theory, and their interpretation of how people learn is Bandura's (1977) early observation that the "results of one's own actions are not the sole source of knowledge" (p. 181). It is fortunate, declared Bandura (1986), that most learning is the result of "observation through modeling. By observing others, one forms rules of behavior, and on future occasions this coded information serves as a guide for action" (p. 47). Consequently, he added, such a "capacity to learn by observation enables people to expand their knowledge and skills on the basis of information exhibited and authored by others" (p. 47). Although psychological in perspective and agentive in nature, learning from modeled activity shows that Bandura's social learning theory could be interpreted as strongly emphasizing the social component of learning; however, such social interaction remains strongly mediated by individual agentive perceptions.

Agency, as it is defined by social cognitive theory, makes a clear reference to the goals or motives of the individual (Bandura, 1986, 2001). In fact, Bandura (2001) saw goals as the root of motivated action (p. 8), which led him to define individual intention as "a representation of a future course of action to be performed. It is not simply an expectation or prediction of future actions but a proactive commitment to bring them about. Intentions and actions are different aspects of a functional relation separated in time" (p. 6).

Bandura's position is not very different from that of another prominent educational psychologist, Robert Sternberg (1985), whose own theory posited the "purposiveness" of human intelligence, which Sternberg viewed as "directed toward goals, however vague or subconscious those goals may be" (p. 49). Likewise, Bandura

(2001) believed learning to be the goal-directed activity of an agent who desires "to intentionally make things happen by one's actions" (p. 2). Through the intentional application of one's agentive capacities, stated Bandura (1977),

> people are able to direct their courses of action toward valued goals by arranging the environmental conditions most likely to elicit appropriate behavior and by creating cognitive aids and self-reinforcing consequences to sustain it. Individuals may be told how to go about this process and be given some initial external support for their efforts, but that does not argue against the fact that self-produced influences contribute significantly to future goal attainment. (p. 205)

From Bandura's perspective, then, learning is the result of agentive intention directing action toward the achievement of predetermined goals.

Bandura spent a great deal of effort developing the social aspect of a theory of learning based upon his observations and beliefs that "humans have evolved an advanced capacity for observational learning that enables them to acquire knowledge, attitudes, values, emotional proclivities, and competences through the rich fund of information conveyed by actual and symbolic modeling" (Bandura, 2002b, p. 273). Important to this learning process based upon modeled activity is a condition Bandura (1977) labeled "attentional processes" (p. 24), ultimately the basis for self-efficacy. "People cannot learn much by observation," stated Bandura, "unless they attend to, and perceive accurately, the significant features of the modeled behavior. Attentional processes determine what is selectively observed in the profusion of modeling influences to which one is exposed and what is extracted from such exposures" (p. 24). By addressing the attentional process, concluded Bandura, individual agency can be enhanced toward more effective or efficient learning.

According to Bandura (1977), it is the individual's "capacity to use symbols [that] provides [him or her] with a powerful means of dealing with their environment" in order

to persist in goal attainment as one's evaluative process dictates (p. 13). In fact, emphasized Bandura, "the capacity for intentional action is rooted in symbolic activity" (p. 13). One key symbol-related self-regulatory element is the mediational capacity of thought, more appropriately in this situation, forethought:

> People set goals for themselves, anticipate the likely consequences of prospective actions, and select and create courses of action likely to produce desired outcomes and avoid detrimental ones. Through the exercise of forethought, people motivate themselves and guide their actions in anticipation of future events. (Bandura, 2001, p. 7)

By means of an agentive application of forethought, reasoned Bandura (2001), "foreseeable future events are converted into current motivators and regulators of behavior. In this form of anticipatory self-guidance, behavior is motivated and directed by projected goals and anticipated outcomes rather than being pulled by an unrealized future state" (p. 7). Importantly, it is not the goal itself that activates individual motivation and precipitates agentive activity. Rather, it is the "evaluative self-engagement" process of "goal setting" (p. 8). Of course, from the social cognitive perspective, all self-engagement is a function of the individual's self-efficacy beliefs, which "play a central role in the self-regulation of motivation through goal challenges and outcome expectations" (p. 10).

The evolution of social cognitive theory has not been problem-free in regards to Bandura's views about learning. Among his recent writings, Bandura (2002a) stated, "Efficacy beliefs determine goals and aspirations . . . Efficacy beliefs shape the outcomes people expect their efforts to produce" (p. 3). Based upon this scenario, agents "of low efficacy focus on costs and risks to be avoided rather than on opportunities . . . Those of high efficacy view impediments as surmountable through self-development and

perseverant effort" (p. 3). According to this view, the self-efficacy influenced trajectory of agentive activity has been predetermined in terms of intent, action, and goal achievement.

In contrast, the earlier Bandura (1977) was clear in asserting, "Self-motivation requires standards against which performance is evaluated" (p. 161). The result here appears to be that individual motivation arises "from the fact that people respond evaluatively to their own behavior" in attempting to pursue intended goals (p. 161). In this scenario, the individual does not directly determine the goal, but rather his or her evaluation of how to pursue the goal determines "the conditional requirements for positive self-evaluation" (p. 161). Bandura's earlier view seems to minimize the influence of self-efficacy in the agentive decision making process, instead positing that "once individuals have made self-satisfaction contingent upon goal attainment, they tend to persist in their efforts until their performances match what they are seeking to achieve" (p. 161). As opposed to the apparent self-efficacy driven perception of goal *determination*, Bandura's earlier and more socialized perception of goal *attainment* appears to be more aligned with the activity theory component of contemporary postmodern theories of learning and career development, including Lave and Wenger's theory of social practice.

The Social Practice Perspective

The sociologically dominated perspective of individuals as goal-directed agents motivated to action arising out of attention (Barab & Plucker, 2002) to the affordances embedded in the social context of praxis (Young et al, 1996) comprises, according to Barab and Plucker, a theory of social practice. Individual agency and cognition remain

important elements in a theory of social practice. However, the individual's purposeful behavior toward career development, from a perspective of social practice theory, is directed by a cultural understanding of social roles and the social negotiation of contextual meanings with others involved (Littleton, Arthur, & Rousseau, 2000). Here, the system of interactive participation changes, affecting "conceptions of what, how, and why one needs to know" (Barab & Plucker, 2002, p. 171). Thus, environmental context becomes the dominant element in this person-environment relationship.

Anthropologist Jean Lave, working in association with social learning theorist Etienne Wenger, envisioned, arguably, the most influential theory of social practice to date. Their theory of situated learning as legitimate peripheral participation

> emphasizes the relational interdependency of agent and world, activity, meaning, cognition, learning, and knowing. It emphasizes the inherently socially negotiated character of meaning and the interested, concerned character of the thought and action of persons-in-activity. This view also claims that learning, thinking, and knowing are relations among people in activity in, with, and arising from the socially and culturally structured world. (Lave & Wenger, 1991, pp. 50-51)

Central to understanding any theory of social practice is the concept of context. "The word *context*," instructed Brown and Duguid (2002), comes from the Latin *cum* (with) and *texere* (to weave) and etymologically suggests a process of weaving together" (p. 202, emphasis in original). Paraphrasing their conclusion, context not only provides people with what to learning, it tells them how to learn, where to learn, "what it means, what it's worth, and why it matters" (p. 200). Context, as summarized by Elmholdt (2001), clearly "is not a place or a description of a place but a concept, meaning a specific relation of person-in-the-world" (p. 13).

A social theory of practice, with its focus on environmental context, is not tantamount to a restatement of behaviorist theory. Although perceived differently from

social cognitive theory, participation of individual agents remains important to a theory of social practice. Spear and Mocker (1984) explained that social practice theory contends "that choice or free will takes place within an area of circumstances which, at the same time, provides for but also limits alternatives and actions. The circumstances can be said to have an organizing function, and any behavior must be understood within the existing context" (p. 9) of that organizing function.

Drawn from theory born of ecological psychology (Barab & Plucker, 2002), the organizing circumstances that make up the context of one's interactive environment are called affordances. "An affordance," as defined by Barab and Plucker, "is a specific combination of properties of an environment, taken with reference to an individual, that can be acted upon" (p. 169). Norman (1993) added that the affordances associated particularly with the elements within one's physical world suggest to the individual agent the "possible functions" of those environmental elements (p. 105). Moreover, continued Norman, people

> use the physical world and one another as sources of information, as reminders, and in general as extensions of our own knowledge and reasoning systems. People operate as a type of distributed intelligence, where much of our intelligent behavior results from the interaction of mental processes with the objects and constraints of the world and where much behavior takes place through a cooperative process with others. (p. 146)

In summing up his comments, Norman concluded, "It is things that make us smart" (p. 44). In particular, we are smart because we create, maintain, and use artifacts.

Where Bandura (1977) and the social cognitive theorists adamantly regarded the "intervening influence of thought" (p. 18) as the engine that drives agentive activity, Norman (1993) declared that "the power of the unaided mind is highly overrated" (p. 43). In fact, argued Norman, without artifacts, "memory, thought, and reasoning are all

constrained" (p. 43). Clearly in agreement with Norman, Wenger (1998) referred to artifacts and the process of creating artifacts as reification. That is, as people interact, the observation and understanding of that activity are given a form, for example as a document, a story, a painting, a formula, a law, a tool, or other artifact:

> This form then becomes a focus for the negotiation of meaning, as people use the law to argue a point, use the procedure to know what to do, or use the tool to perform an action…the process of reification so construed is central to every practice. Any community of practice produces abstractions, tools, symbols, stories, terms, and concepts that reify something of that practice in a congealed form. (Wenger, 1998, p. 59)

Crucial to Wenger's description of reification was the idea that knowledge is not somehow magically embedded in artifacts. "Judgment and discretion," claimed Brown and Duguid (2002), "are not features of [artifacts] . . . they are learned not by the acquisition of facts and rules, but through social relations and participation in human activities" (p. 54). In other words, the meaning inherent to artifacts must be individually discovered through a social process that Wenger called "the *negotiation of meaning*" (p. 52, emphasis in original), which "involves the interaction of two constituent processes" (p. 52): reification and participation.

The term *social*, as it was used by Wenger and other social practice theorists, referred to the "patterns of activity" (Moore, 1986, p. 169) that organize our interactive participation with others: "how we talk, and dress, work home alone, make phone conversations" (Elmholdt, 2001, p. 3) and so forth. These patterns, or norms (Elmholdt, p. 3), form the "implicit rules about the distribution of responsibilities, materials, and information" (Moore, p. 169) among participants during the negotiation of meaning. Such patterns, norms, or rules are often observed and associated with "a group of people who engage in a shared activity" (Merriam, Courtenay, & Baumgartner, 2003, p. 171). Lave

and Wenger (1991) referred to such a shared social activity system as “a community of practice” (p. 98).

It takes only a moment for each of us to tally up the many groups and organizations we belong to as parent, neighbor, worker, and so forth. That moment, however, is all one needs to realize that “an individual is part of, and can be described by, a very large number of human relationships” (Botkin et al., 1979, p. 40). Therefore, argued Wenger (1998), people “belong to several communities of practice at any given time. And the communities of practice to which we belong change over the course of our lives” (p. 6). The result is that new practices continually must be learned. Wenger described the process this way:

> Because the world is in flux and conditions always change, any practice must constantly be reinvented, even as it remains “the same practice.” . . . The process of change reflects not only adaptation to external forces, but an investment of energy in what people do and in their mutual relations. (p. 94)

This is what career development theorists Collin and Young (2000) labeled the social context of praxis.

Moreover, people do not merely keep up with change, as Lave and Wenger (1991) pointed out; they become part of the change process as they become more fully involved as knowing and capable participants in their community of practice:

> This means that the move of learners toward full participation in a community of practice does not take place in a static context. The practice itself is in motion. Since activity and the participation of individuals involved in it, their knowledge, and their perspectives are mutually constitutive, change is a fundamental property of communities of practice and their activities. (p. 117)

Although a published proponent of socially distributed cognition, Nickerson (1997) prodded other social practice theoreticians to form a more appreciative understanding of agentive behavior within a contextualized environment. Picking up

where Lave and Wenger's discussion on change left off, Nickerson argued that precisely because agency and environmental context are always being mutually constructed, the contribution of the individual cannot be ignored:

> There is little doubt of the importance of cultural, social, and situational variables as determinants of cognitive performance. Nor can we fail to acknowledge that what people can do on cognitively demanding tasks is influenced greatly by the nature of the tools and artifacts at their disposal. Probably it is not possible to understand an individual's behavior without understanding the context—goals, tools, other participants—in which it occurs. But it does not follow that what individuals bring, in their heads, to the problems on which they work is of no consequence, or that there are no questions worth asking about the cognitive capabilities that individuals possess. (p. 260)

Nickerson's perspective brings Lave and Wenger's theory of social practice much closer to Bandura's social cognitive theory.

A Contextualist Action Theory of Career

The social practice perspective, according to Young, Valach, and Collin (1996), was heavily influenced by action theory arising from the works of "Dewey (1890/1969), Mead (1934), and Vygotsky (1978)" (p. 477). Lave and Wenger appear to have built their social practice model for situated learning, in part, by drawing upon these early theoreticians and other sources also used by Yrjö Engeström (1996) in creating his "basic structure of human activity" (p. 68) model related to social interaction. Commenting on Engeström's theory, Cole and Engeström (1997) identified the important, and often ignored, relationship between individual agency and the institutionalization of legitimate activities particular to communities of practice:

> Another important feature of activity as a basic unit of analysis of human behavior is that when activities become institutionalized, they are rather robust and enduring. Once they gain the status of cultural practices, they often have radically longer half-lives than an individual goal-directed action. In fact, activity systems such as those that take place in schools and doctors' offices, for example,

> appear to reproduce similar actions and outcomes over and over again in a seemingly monotonous and repetitive manner that gives cultural constraints on action a seemingly overpowering quality. However, closer analysis of apparently unchanging activity systems reveals that transitions and reorganizations are constantly going on within and between activity systems as a fundamental part of the dynamics of human evolution. (p. 8)

Gold (1999), in a 23-year study culminating in his theory of punctuated legitimacy, endorsed such a series of mutually constructed and reconstructed equilibrated stages created through the institutionalization (i.e., socially legitimated reification [Wenger, 1998]) of participant actions.

By situating activity (Engeström, 1996, 2001) within a community of practice (Lave & Wenger, 1991), career development theory took on the direction of situated contextual action. From the combination of connections between theories of action, career, and environmental context, a contextual action theory of career has been constructed by Young et al. (1996) and expanded by Young and Valach (2001). The purpose of the contextual action theory of career development, according to Young et al., was to describe the career development process from a sociological perspective. While not objecting to or ignoring the social cognitive line of reasoning and the important construct of individual agency, the contextualist perspective, instead, saw agentive activity as arising from the motivational context of one's career environment:

> First, acts are seen as purposive, in the goal-directed rather than causal sense…. Second, acts are embedded in their context . . . Third, change has a prominent role in career . . . Fourth, because events take shape as people engage in practical action with a particular purpose, analysis and interpretation are always practical. (Young et al., 1996, p. 480)

Thus, the contextual action "approach is premised on the notion of the person as an agent, as goal directed and intentional, and on the social construction of processes such as career" (p. 495). In constructing a career, stated Littleton et al. (2000), the individual's

purposeful behavior arises from a cultural understanding of social roles and the social negotiation of contextual meanings with others involved. In other words, from the contextualist action theory point of view, “career is embedded in a network of meaning at the social level” (Young & Valach, 2000, p. 188).

For communities of practice to remain dynamic, for the transitions and reorganization within and between activity systems to continue, as reported by Cole and Engeström (1997), individual agency must provide “direction and drive” to career-related decision making and help “defuse ambiguity by providing vision and long-term goals” (Littleton et al., p. 110). As a result, it becomes imperative, stated Nickerson (1997),

> to note that in order for individual goal-directed actions to further the goals of [the community] to which an individual belongs, it is not necessary that the individual’s goals be identical with those of the [community]. It is not essential, in other words, for individuals to adopt the [community’s] goals for their own. What is necessary is that the relationship between the individual’s goals and those of the [community] be such that when individuals work to achieve their own goals they will in fact, albeit perhaps incidentally from their point of view, be furthering the goals of the [community] as well. (pp. 247-248)

Social Practice Theory and Career-Related Learning

As noted previously, what Collin and Young (2000b) referred to as praxis, Lave and Wenger (1991) called situated learning within a community of practice. In both definitions there is an emphasis on the interdependent relation between an agent and a contextualized environment. Each emphasizes the social negotiation of meaning as the basis for intentional action by the individual engaged in practice. Important to Lave and Wenger’s theory of social practice is that cognition (i.e., thinking, learning, knowing) and communication (i.e., negotiation of meaning) “in and with the social world [in which practice is embedded] are situated in the historical development of on-going activity” (p. 51). The Lave and Wenger view suggested that the interacting systems involved in praxis

(which include learning) are cumulative (Wenger, 1998) and, not only larger than the agent, but actually subsume all elements of individual agency (Greeno, 1998).

In either case, the reference is to the idea that people do not merely keep up with change, they become part of the change process as they become more fully involved as knowing and capable participants working their way from the periphery (of little situated knowledge) to the core (of greater situated knowledge) within the community of practice, as Lave and Wenger (1991) explained:

> This means that the move of learners toward full participation in a community of practice does not take place in a static context. The practice itself is in motion. Since activity and the participation of individuals involved in it, their knowledge, and their perspectives are mutually constitutive, change is a fundamental property of communities of practice and their activities. (p. 117)

Because the engaged practice within a community of practice is continually changing, the community of practice continually changes, and what constitutes functional knowledge related to practice within the community must, therefore, be constantly in flux. Thus, learning, asserted Lave and Wenger (1991), never can be

> simply a process of transfer or assimilation: Learning, transformation, and change are always implicated in one another, and the status quo needs as much explanation as change. Indeed, we must not forget that communities of practice are engaged in the generative process of producing their own future. Because of the contradictory nature of collective social practice and because learning processes are part of the working out of these contradictions in practice, social reproduction implies the renewed construction of resolutions to underlying conflicts. (pp. 57-58)

Here, the system of interactive participation changes, affecting "conceptions of what, how, and why one needs to know" (Barab & Plucker, 2002, p. 171), making the environment the dominant element in this constructivist learning scenario. "A social theory of learning," stated Wenger (1998), "integrate[s] the components necessary to characterize social participation as a process of learning and of knowing" (pp. 4-5) in

such a way that learning "is configured socially with respect to practices, communities, and economies of meaning" (p. 226).

Wenger (1998), not unlike Bandura (1977, 1986), acknowledged the importance of observational learning in the workplace. However, Wenger provided a different interpretation: "Observation can be useful, but only as a prelude to actual engagement . . . Teachers, masters, and specific role models can be important, but it is by virtue of their membership in the community [of practice] as a whole that they can play their roles" (p. 100). For Wenger, the relation between engagement and observation was central to the learning process.

Additionally, Wenger (1998), again similar to Bandura, made note that the outcomes related to observation are different from those derived from performance. However, there was once again an important difference in interpretation. Rather than the effectiveness of learning and performance representing competing outcomes related to the "strength" of the individually perceived "consequences" of activity (Bandura, 1977, p. 122), Wenger suggested that observation is the key to entry into participation, and it is through socially engaged participation in the community of practice that performance leads directly to learned behavior. That is, observation at the periphery of the community of practice helps prepare an individual for entering into fuller participation in the community of practice, but observation does not steer engagement. Instead, observation paves the way for developing engagement in a community of practice.

Moreover, beyond observation, stated Wenger (1998), there is a need for a tangible way for people to communicate their participatory experiences. Therefore, Wenger theorized an understanding between engagement and observation during the

learning process, referring to the relationship as the "duality between participation and reification" (p. 69) manifested, as previously discussed, in artifacts. Artifacts, then, become the sociocultural resources through which cumulative human knowledge is contained, distributed, individually engaged, and socially negotiated. Wenger concluded, while artifacts, as the reification of individual experiences, collect, distribute, and anchor the knowledge necessary to learning, social participation provides the means for learning to remain relevant and dynamic (p. 65).

Finally, Wenger (1998) hypothesized that "meaning—our ability to experience the world and our engagement with it as meaningful—is ultimately what learning is to produce" (p. 4). A strong advocate of theory based upon activity in context, Wenger, borrowing heavily from Vygotsky (Wertsch, 1985), clarified that the "meaning" associated with learning "is not meaning as it sits locked up in dictionaries" (p. 51). Wenger emphasized that "living is a constant process of *negotiation of meaning*" (p. 53, emphasis in original). With his focus on meaning-making, Wenger was categorically stating that the agentively acquired product of learning (knowledge) is subsumed by the more important concept of the socially enabled process of learning (knowing).

The Narrative Perspective: Social Cognition in Practice

> All the world's a stage,
> And all the men and women merely players.
> They have their exits and their entrances,
> And one man in his time plays many parts…(Shakespeare quoted in Harrison, 1948, p. 789)

William Shakespeare has turned out to be more of a psychologist than many would have suspected. Although simplistic in its poetic description, Shakespeare's *As You Like It* portrayal of the seven stages of life anticipated the career-related life stages of

several major career development theories (Gottfredson, 1996; Super et al., 1996), as well as Howard Gardner's (1993) belief that each of the seven types of human intelligences "has a natural life course" (p. 204). Apparently Shakespeare must have been a good observer of human interaction, one reason that Bruner (1990), in an explication of human acts of meaning, clearly had the words of the Bard in mind:

> When we enter human life, it is as if we walk on stage into a play whose enactment is already in progress—a play whose somewhat open plot determines what parts we may play and toward what denouements we may be heading. Others on stage already have a sense of what the play is about, enough of a sense to make negotiation with a newcomer possible. (p. 34)

Certainly more than Shakespeare's lyrical portrayal of aging captured Bruner's imagination: Jaques, the character voicing the now famous "All the world's a stage" lines, represented the first Shakespearian character to be given dimension as a complex individual via the convention of narrating his "character from every angle by bringing [him] into contact with a variety of persons and situations" (Harrison, 1948, p. 776). In life as in the art of the theater, suggested Conle (2000a), if we are, indeed, "actors on a stage we did not design and involved in actions not of our own making, we can perhaps begin to understand the roles into which we have been drafted, if we proceed narratively" (p. 211).

Conle's (2000a) remarks suggest that Shakespeare's keen observational powers represented in Jaques' narrative represent a foreshadowing of Sigmund Freud's remarks "in *The Relation of the Poet to Daydreaming* that each of us is a cast of characters" (quoted in Bruner, 1990, p. 42). Bruner (1990) believed that, in the same manner that Shakespeare let the reader come to know Jaques,

> to understand man you must understand how his experiences and his acts are shaped by his intentional states, an . . . the form of these intentional states is

> realized only through participation in the symbolic systems of the culture. Indeed, the very shape of our lives—the rough and perpetually changing draft of our autobiography that we carry in our minds—is understandable to ourselves and to others only by virtue of those cultural systems of interpretation. (p. 33)

The narrative perspective of self envisioned by Bruner (1986, 1990), Ceballo (1999), Conle (2001), McAdams (1985, 1993, 1996), Schank (1990) and a host of others appreciated that people are the stories they construct and perform, "complete with setting, scenes, character, plots, and theme" (McAdams, 2001, p. 101). Through the creation and performance of a narrative of oneself, explained McAdams, "people . . . reconstruct the personal past, perceive the present, and anticipate the future in terms of an internalized and evolving self-story, an integrative narrative of self that provides modern life with some modicum of psychosocial unity and purpose" (p. 101). The elements of a narrative perspective of self also can be used to integrate the several disparate tenets of social cognitive theory and the theory of social practice.

Theory Integration through Character

A play, as Bruner suggests, is both the dramatic composition and the interpretive performance of that composition. Performance, mediated by interpretation, is not composition. In narrative theory the tacit creation of the dramatic composition of one's composite narrative of self, one's "self-definition or identity" (Markus & Kitayama, 1991, p. 246), is often called one's *self-narrative* (Bruner, 1990; Chen, 1997; Linde, 1993; Patton, 2000). The explicit interpretation, or dramatic performance of one's self-narrative, is commonly termed one's *life-story narrative* (Ceballo, 1999; Clandinin & Connelly, 2000; McAdams, 1993). Given narrative form, these tacitly composed and explicitly performed components of one's narrative of self are "among the most

important social resources for creating and maintaining personal identity. Narrative is a significant resource for creating our internal, private sense of self and is all the more a major resource for conveying that self to and negotiating that self with others" (Linde, 1993, p. 98).

The constructs of self-narrative and life-story narrative can be used to incorporate and integrate the disparate views of social cognitive theory and the theory of social practice, in part, through their common understanding of individual identity. Each individual's personal narrative, stated Chen (1997), "functions to provide one with a certain sense of very personalized (role-oriented) identity to encounter the environment" (p. 312). Nowhere is this more apparent, added Bandura (2002) than during career development:

> These pursuits do more than simply provide income for one's livelihood. Occupations structure a large part of people's everyday reality and serve as a major source of personal identity and self-evaluation. As an interdependent activity, occupational pursuits also structure a good part of people's social relations. (p. 279)

Arguing a position consistent with Bandura's, Patton (2000) commented that today the "interconnection between the personal and the social is reflected in the broader understanding of career that incorporates multiple life roles" (p. 69). Referring to just such a view of social participation during career development, Lave and Wenger (1991) noted that "it seems necessary to posit that the skillful learner acquires something more like the ability to play various roles in various fields of participation" (p. 20). Markus and Nurius (1986) referred to this link between various individual identities and perceived environments as a person's "possible selves" (p. 954).

Possible selves, as described by Falk (2001), "encompass identity of self, others,

groups, community, region, country, and so on. They are the personal and social resources that participants draw on to act in new roles" (p. 567). So important are these perceptions of roles to career development claimed Blustein (1997), that "it is virtually impossible to consider the factors that promote [career] exploration without including explicit attention to the broad array of relevant life roles" (p. 265). Botkin et al. (1979) are even more adamant, flatly declaring that "participation is practicing roles" (p. 32).

Bandura's (1986) social cognitive-related writings showed him to believe otherwise. Perceiving the workplace to be comprised of multiple roles, he reasoned,

> does not transform one from an agent to an object. One is just as much an agent reflecting on one's experiences as in executing the original courses of action. The same self performing multiple functions does not require positing multiple selves pursuing different roles. (p. 21)

It is this kind of thinking, argued Bandura (1977), that leads to the stereotypical "misconceptions that people develop about occupations, ethnic groups, social roles, and other aspects of life" (p. 184). Socially derived "role prescriptions, specifying how people are supposed to behave in carrying out their assigned roles, serve as structuring influences on the nature of reciprocal exchanges" (p. 199), thus diminishing the influences of individual agency.

The conception of individual roles perceived as multiple possible selves delineated by contextual engagement within social practice theory appears diametrically opposed to the singular agentive self manipulating multiple functions in social cognitive theory. McAdams (1993) offered a unifying alternative. If there is something in a person's life that ties together the multiple roles,

> then that something is identity. And if identity takes the form of story, then the different selves in [a person's] life, embodied in the multiple roles [one] assumes in daily life, may be seen as potential characters in the story. (p. 110)

Through a narrative of self, explained McAdams (1993), “the problem of many roles in one identity is therefore resolved to the distinction between character and story. The many are the main characters; the one is a story within which the characters are given form, function, and voice” (p. 118). The theory of a narrative self integrates the relativism of sociocultural structuring with the multitasking capability of agency through the narrative conception of a protagonist story character.

“Agentivity” as the main character of one’s self-narrative, the first of Bruner’s widely accepted narrative elements (see, also Conle, 2000b; Josselson, 2004; McAdams, 1993; Richardson, 2000), addressed Nickerson’s (1997) call for an individualized locus for intelligent activity. Bruner (1986) was clearly beginning “to distinguish, in some way, the intelligence that the human being brings to a situation” (p. 244). Therefore, working from Bruner’s position, self-narrative is more than the personal reconstruction of experience by an agent. In continually constructing the self as the protagonist of one’s self-narrative, “people are the ‘authentic’ authors of their own becoming” (Gare, p. 97).

Characteristic of this “agentivity” stage, explained Bruner (1986) “is the triggering of *presupposition*, the creation of implicit rather than explicit meanings” (p. 25, emphasis in original), a position consistent with the research of Gardner (1993) and Sternberg (1985), as well as with the observations of Nickerson (1997) and Josselson (2004). The idea of agency [i.e., Bruner’s agentivity] appreciates that self-narrative involves the individual in “large-scale systems of social understandings and of knowledge that are grounded in a long history of practice” (Linde, 1993, p. 219). In this way, human agency provides the critical element involved in equilibrating “presuppositions about what can be taken as expected, what the norms are, and what

common or special belief systems are necessary to establish coherence" (p. 219) within one's narrative. It is the self-narrative, argued Bruner (1990), that allows the individual to interpret and make personal sense of the constraints of culture.

Following a similar line of reasoning, Pea (1997) pointed out that the self arises out of the contextual activity of the individual agent. However, emphasized Pea, agency employs "not only intelligence contributed by the individual agent . . . The resources that shape and enable activity are distributed in configuration across people, environments, and situations" (p. 50). In this way, concluded Pea, while agency remains a characteristic of the individual, the intelligence that enables agency is socioculturally accomplished rather than individually possessed (p. 50).

At this point, two obvious questions arise: What happens when social events or cultural norms conflict with the self-narrative image the individual is constructing? And, because the individual self is a participant in the very activity that is being meaningfully negotiated, how does the self maintain an objective position capable of change? The individual self, as a player on the multiple social stages of life, becomes as an actor playing multiple roles: the protagonist of multiple on-going narratives. In other words, in seeking an "'outside' position from which it can perceive of itself" (Adams, 2003, p. 232), the self approximates a voiceless narrator's perspective. Bruner (1985) called this process "*subjectification*: the depictions of reality not through an omniscient eye that views a timeless reality, but through the filter of the consciousness of protagonists" (p. 25, emphasis in original) in multiple cognitively indexed (Schank, 1990) self-narratives.

Linde (1993) contended that "some people report that they experience it as a narration, often in the third person. Some people see it unfolding like a movie" (p. 11).

Additionally, stated Linde, there exists

> an implicit distance between the [individual self] and the [story] protagonist. This distance permits us to tell a story about some bad or ill-judged or embarrassing action we took, since, even though the protagonist acted improperly, the [self] knows better and can therefore tell the story in a way that indicates present allegiance to the norm that was in the past broken. (p. 189)

Subjectivity allows character (i.e., agent), setting (i.e., context), and plot (i.e., activity) in a self-narrative to become so inseparably integrated that "it is only with difficulty that we can conceive of each of them in isolation" (Bruner, 1986, p. 39). Through the interaction of all of the elements of a narrative self as a whole, cognitive and contextual, the individual is able to determine how his or her identity fits into his or her activity within the context of a community of practice.

Theory Integration through Setting

In the everyday world of work and life, "setting" locates a place for "engaging with the world" (Wenger, 1998, p. 13). Such a setting provides people "the social systems of shared resources by which groups organize and coordinate their activities, mutual relationships, and interpretations of the world" (p. 13). This interpretation of setting represents what Falk (2001) called "a context of use" (p. 570):

> A context of use is a place where the skills are used, such as a workplace . . . or a community setting. The context of use always involves networks of either people or texts created by people. The context of use is, therefore, always a social place. The people networks either consist of real people or texts and artifacts that are a product of people in our society. That is, without the context of use . . . skills cannot be used. Nor can they be useful. (p. 570)

Gardner (1993) and Bruner (1986, 1990), among others, have pointed out that the context underlying participation within a community setting is "framed by its culture" (Brown et al., 1989, p. 34). However, as Cole (1997) astutely observed, there are two

dimensions to social interactions located within a cultural framework: one existing "'vertically' in the different time dimensions occupied by each of the participants, and [one existing] 'horizontally' with respect to past, present, and future" (p. 19). Therefore, "meaning and purpose are socially constructed through negotiations among present and past members" of any community (Brown et al., 1989, p. 34).

Clandinin and Connelly (2000) agreed with Cole's observation, but added a third dimension: "the notion of *place* (situation)" (p. 50, emphasis in original). From this three-dimensional perspective, they stated, individual meaning is located in a personal and social balance defined temporally and "in specific places or sequences of places" (p. 50). As it relates to the construction of a narrative self, Gare (2002) interpreted this three-dimensionality to mean that

> firstly, [individuals] situate themselves in an historically developing tradition. Secondly, they function as members of a community in which a central problem is interpretative understanding of people with different perspectives on the world. Thirdly, they try to understand the world. (p. 91)

It is interesting, pointed out Hotchkiss (1996), that how individuals interact with the context of, say, a work setting is described differently by different groups of theorists:

> Psychologists . . . are interested in how the constellation of personal attributes, including aspirations, aptitudes, interests, and personality traits, shape subsequent job performance and satisfaction. Sociologists, in contrast, generally are more interested than psychologist . . . in how institutional factors such as formal rules, informal norms, and supply-and-demand forces shape the setting in which individuals work. (p. 282)

Pointed out in the discussion so far is the dual focus regarding how one views the contextual setting of a changing world (Merriam, 2001): Social practice theorists focus "on understanding the changing world" (Clandinin & Connelly, 2000, p. 8), while social cognitivists focus "on understanding how one understands a changing world" (p. 8). Lave

and Wenger (1991) envisioned the individual situated in and negotiating meaning with an environment "arising from the socially and culturally structured world" (pp. 50-51). Bandura (2001), on the other hand, perceived people as agents taking action to make their environment personally meaningful.

Bruner construed the sociologists' ideas of context and activity along with the psychologists' ideas of intention and cognition as primary determiners of an individual narrative self, the part of each individual that interacts with (or in some way mediates between) perception of and participation in, for example, the workplace setting. The result Bruner achieved, according to Shoda and Mischel (2000), is that "by incorporating contexts and psychological situation into the conception and assessment of [self], the construct of [self] is enriched and deepened rather than threatened and diminished" (p. 408). In other words, the mediating element between the intentions of agency and the affordances of environmental context is one's self-narrated version of his or her personal being projected within and upon that context.

What Bruner and the others are saying was most simply captured by McAdams's (1993) remark that "identity refers to meaning" (p. 267). Moreover, meaning, stated McAdams, is manifested in one's ideology: "Identity is built upon ideology . . . A person's ideology functions as a 'setting' for identity" (p. 81). Consistent with Lave and Wenger's (1991) conception of social context within communities of practice, "ideology," continued McAdams, locates the person's narrative of self "within a particular ethical, religious, and the epistemological 'time and place'" (p. 81). Such a perspective, pointed out Young et al. (1996), "moves away from the picture of the highly separate and individualized person and moves to an understanding of context that is more

dynamic and interwoven than is represented by a set of Russian nesting dolls. Career identity, values, interests, and behaviors are not shaped from the outside 'in'" (p. 486).

The social cognitive perspective acknowledges that the "social environment in which people live shapes the development of the basic beliefs and values that come to form the ideologies motivating action" (McAdams, 1993, p. 84). However, argued Bandura (1986), "what part of the potential environment becomes the actual environment . . . depends upon how people behave" (p. 28); that is, narrative setting is strongly influenced by the narrating agent whose actions "determine which of the many potential environmental influences will come into play and what forms they will take" (pp. 28-29). Patton (2000) concurred, arguing that Bruner, for one, does "not acknowledge the active role individuals have in giving meaning to experiences and constructing their own values" (p. 71).

Patton, in acknowledging that "values need to be conceptualized as socially constructed notions" (p. 71), agreed with social practice theorists that values "are a function of context as they are rarely settled upon introspectively" (p. 71). Thus, he was able to take a narrative position that integrated the two theoretical views:

> Individuals construct reality through interactions with a changing society, culture, and economy. Narratives of self-identity, including an understanding of personal values, reflexively interact with these changing institutions as an individual works to construct and reconstruct personal self-identities. (p. 71)

Ceballo's (1999) anticipated views similar to Patton's in observing that "compelling arguments illustrate that our identities are not merely additive, gender plus race equaling an identity, but much more complicated and fluid in nature" (p. 312). As a consequence, narrative identity is, as Lave and Wenger believed, a function of situated context; however, as Bandura posited, narrative identity will vary with setting: "Certain

aspects of our identities . . . will be more salient in certain contexts, at different developmental time periods, and in varying combinations" (p. 312).

Finally, pointed out Ceballo, "it is only logical that the different parts of our identities will not always peacefully coexist: there will be contradictions and inconsistencies" (p. 312) as settings continually change and new identities continually emerge. The result is that setting becomes important in yet another way: "The extent to which [one's personal narrative] is true to the facts of [his or her] life in [the] world is an important standard of its adequacy" (McAdams, 1993, p. 273). That is, an appropriate narrative of self "does not transcend its resources; it is true to its context" (p. 273). An appropriate narrative of self is grounded in the social reality depicted by social practice theory as well as the personal reality of social cognitive theory.

Theory Integration through Plot

As opposed to setting, which tends to be more of a structural feature (Young et al., 1996), it is through action that narrative characters "stress [their] interest in change, processes, and human intentionality" (p. 478). "*Action,*" added Young et al., "also signals our interest in the middle- and long-term meaning continually in contrast to episodes that connote being disconnected to whatever happens afterward" (p. 478, emphasis in original).

Action, as described by Young et al., is driven by intention; and, intention, as Bandura (1986) described it, is driven by goals and perceived outcomes. Focused on the potential for change manifested in action, Bruner (1986, 1990) proposed goal-directed activity as the primary characteristic of narrative. In taking that stand, Bruner highlighted the significance of the cognitive tools the individual brings to the process of negotiating

meaning. Bruner's position, shared by Shoda and Mischel (2000), "yields a conception of the person as agentive and potentially proactive and empowered" (p. 408). Not only does the individual through self-narrative "intrinsically contextualized and interact with the social world," as narrative agent he or she "selects, constructs, and transforms situations rather than being victimized by them" (p. 408), a theme strongly promoted by Bandura (1977, 1986, 2001), Lent et al. (1996), and McAdams (1993). The conception of agency, and the locus of control afforded to it in the construction of a narrative of self, is vitally important because together they represent a critical determiner of individual motive, a major component of causality (Linde, 1993).

A useful narrative of self, asserted Bruner (1990), requires the establishment and maintenance of a sequential order. One's narrative of self, reasoned Franzosi (1998), as a personal reflection of a self anchored in on-going events, "implies a change in situations as expressed by the unfolding of a specific sequence of events. The chronological sequence is a crucial ingredient" (p. 520) of narrative. Drawing heavily upon the works of John Dewey, Clandinin and Connelly (2000) also understood one's experience with change as theoretically framed by continuity and interaction (p. 32). Similarly, Linde (1993), turning to her early narrative research, concluded that the narrative sequence, plot, or "order . . . is the basis for the two major coherence principles of life stories: causality and continuity" (p. 127).

Because one's self-narrative "is . . . a discontinuous unit, told in separate pieces over a long period of time [and because] it is a long-term unit, it is necessarily subject to revision and change as the [self] drops some old meanings and adds new meanings to portions of the life story" (Linde, 1993, p. 4). The element of causality helps maintain a

sense of self-narrative continuity. Linde believed that "establishing adequate causality is one of the most important tasks" related to the self-narrative story (p. 111). It was her position "that establishing causality permits the creation of a self whose past is relevant to its present, since events in the self's past can be interpreted as causing present states and events" (p. 111). From this premise, Linde defined

> adequate causality as a chain of causality that is acceptable [within the narrative] as a good reason for some particular event or sequence of events. In the case of the particular data of this study, establishing adequate causality [to support a choice] means establishing that good reasons exist for the speaker's choice . . . or showing that, even if the reasons do not look good (or indeed are not good enough) somehow, they still can be seen as acceptable, given special circumstances or special understandings. In particular, correct and sufficient causality requires the narrator to establish that the protagonist exercised correct and sufficient agency. (pp. 127-128)

Perceived in this manner, "the narrative mode leads to conclusions not about certainties in an aboriginal world, but about the varying perspectives that can be constructed to make experience comprehensible" (Bruner, 1986, p. 37). Thus, recalling Markus and Nurius's (1986) conception of "possible selves," Bruner concluded that self-narrative comprises of "multiple perspectives: beholding the world not univocally but simultaneously through a set of prisms each of which catches some part of it" (Bruner, p. 26; see also, Conle, 2000b).

Independently establishing acceptable causality for sufficient agency through the "interplay between self-referent thought and social processes" (Lent et al., 1996, p. 376) appears to describe self-efficacy, the key component of social cognitive theory. Interdependently establishing acceptable causality, on the other hand, describes the social negotiation of meaning important to contextual activity theory. McAdams (1993) acknowledged this in pointing out that "life is too big to make everything meaningful for

identity" (p. 266). As a result, said McAdams, while the unique personality traits associated with the self-referent thought of self-efficacy "may shape many of your daily activities," the self-narrative story underpinning one's "identity becomes involved only during those moments or for those behaviors that promise further self-definition" (p. 266). "Of course," concluded McAdams, "it is sometimes difficult to know what those behaviors may be" (p. 266), which is the reason why Linde (1993) argued that social negotiation of meaning is critical to making sense of the narrative events in relation to the whole (p. 68).

Causality in narrative, then, according to Franzosi (1998) "is a necessary but not sufficient condition for the emergence of a story. The events in the sequence must be bound together by some principles of logical coherence" (p. 521). As a result, neither the independent establishment of causality nor the interdependent establishment of causality by itself can justify sufficient agency. On the one hand, where causality is primarily negotiated intrapersonally, coherence requires substantially more interpersonal negotiation; on the other hand, none of "these socializing processes can ever be 'perfect' and human uniqueness and creativity flourish in the cracks and fissures of these processes" (Gee, 1999, p. 63).

Logical coherence is the result of combining the two theoretical perspectives—the cognitive and the contextual. In Linde's (1993) words, "Coherence is a property of texts; it derives from the relations that the parts of a text bear to one another and to the whole text, as well as from the relation that the text bears to other texts of its type" (p. 12). Applied to the life-story narrative, coherence is characterized as **"**a cooperative achievement of the [narrator] and the addressee" (p. 12). Gee (1989) called this a

"Discourse." Coherence, then, internalized as a self-narrative Discourse, "is not an absolute property" of individual agency, but rather serves to situate self-narrative (p. 12) within the three dimensions of social legitimacy, temporality, and space proposed by Clandinin and Connelly (2000). Thus, being situated places constraints on one's self narrative, requiring that the narrating self work

> to construct a text whose coherence can be appreciated, and at the same time the addressee works to reach some understanding of it as a coherent text and to communicate that understanding. The coherent text that the addressee constructs may not, of course, be the same as the text that the speaker believes was constructed. As long as the gap is not too great, the discrepancy will probably not be noticed. But if it becomes very large, further negotiation about the meaning of the text may be necessary.(Gee, 1989, p. 12)

At its essence, as Linde (1993) explained it, coherence "provides the environment in which one statement may or may not be taken as a cause of another statement" (p. 163). Where the self-narrative characteristic of causality deals largely with the negotiation of the meaningful sequence of events, the self-narrative characteristic of coherence deals primarily with the negotiation of "beliefs and relations between beliefs that any person in the culture may be assumed to know (if not share) and that anyone may use" (p. 163). In this type of environment the self-narrative "functions as an extremely effective negotiation of group values in a situation where such values are and will remain ambiguous" (p. 120).

In other words, concluded McAdams (1993), "Stories are less about facts and more about meanings . . . There is a narrative truth in life that seems quite removed from logic, science, and empirical demonstration" (p. 28). This means that verisimilitude for a self-narrative is not achieved through faithful attention to the physical order of events but rather to the meaningful order of events within the plot of the narrative. Linde (1993)

elaborated on this topic as follows:

> The order of events of the histoire need not entirely match that of the plot. The plot is the order in which the reader or listener becomes aware of what happened—that is, the order of appearance. This need not match the actual order of occurrence. (p. 68)

As a result, self-narrative is made coherent within the moral setting of the protagonist self by establishing a view of "the way things are, the way things ought to be, and (most especially) the kind of person the [self] claims to be, as demonstrated by the actions of the protagonist" (Linde, p. 81), a view sounding extraordinarily similar to Bandura's conception of self-efficacy (Bandura, 1977; Betz, 2004; Lent et al., 1996). Clearly, "narrative is a presentation of the self" (Linde, p. 81) in negotiation with a localized social environment and the broader culture. Extremely important to the negotiation of self-narrative coherence, as Linde discovered in her research, is that the narrating self begins each negotiation from the perspective that it represents "a good person who behaved correctly [with the result that] all personal narratives are shaped to make some version of this point, and therefore all such narratives must be changed or replaced as the speaker's understanding of what a good person is changes" (p. 31). In other words, as Markus and Nurius (1986) have suggested, there exists no consistently accurate "good person" rubric for every situation.

This concept of "our identities [incorporating] the past and the future in the . . . process of negotiating the present," Wenger (1998) termed a "trajectory" (p. 155), a term used frequently by contemporary career theorists to depict an individual's overall career pattern (Collin, 2000; Höpfl & Atkinson, 2000; Super et al, 1996). It is our "sense of trajectory," according to Wenger, that "gives us ways of sorting out what matters and what does not, what contributes to our identity and what remains marginal" (p. 155). A

sense of trajectory provides an acknowledgeable coherence to the multi-dimensional assemblage of elements comprising the model of one's self.

Theory Integration through Story

"There is far more to human cognition than what goes on in the brain: we are social, interacting creatures" asserted Norman (1993, p. 117)). Bandura (2001) was one among many affirming Norman's remark:

> Without a phenomenal and functional consciousness people are essentially higher-level automatons undergoing actions devoid of any subjectivity or conscious control. Nor do such beings possess a meaningful phenomenal life or a continuing self-identity derived from how they live their life and reflect upon it. (p. 3)

The subjective consciousness Bandura spoke of is, according to narrative theory, created by humans as self-narrative. This self-narrative, however, as Bandura suggested, is not something that is subconscious. It is, rather, a consciously developed psychosocial record of the meaningful phenomena of one's lifespan. As a record, it is not a recorded track that people continually rerun and add onto, but rather a reference—a "digest" (Schank, 1990, p. 29)—available for later use. Additionally, in the form of life-story narrative, self-narrative becomes a means of catching a momentary glimpse of another individual's narrative of self, providing access in much the same socially negotiated manner that the individual accesses it.

Bruner's (1990) sympathetic stance toward human intentionality as an element of agency (p. 9) evoked and expanded upon Bandura's belief that the intentional action of personal agency in negotiating a narrative of self ultimately arises from the individual's use of the cultural medium of language (p. 13). Bruner (1986), however, taking a

somewhat sociological view of social cognition, asserted that the state of individual agency that determines the individual's sense of being, the self,

> is a construction, a result of action and symbolization . . . I think of Self as a text about how one is situated with respect to others and toward the world . . . The interpretation of this text *in situ* by an individual *is* his sense of Self in that situation. It is composed of expectations, feelings of esteem and power, and so on. (p. 130, emphasis in original)

Norman (1993) agreed, offering that "we are social, interacting people alert to interpretations, meanings, and reasons" (p. 152). Additionally, he noted, "people are highly emotional as well" (p. 118).

Embellishing the line of thought initiated by Bruner and Norman, McAdams (2001) interpreted self-narrative as

> a product of choice. We choose the events that we consider most important for defining who we are and providing our lives with some semblance of unity and purpose. And we endow them with symbolic messages, lessons learned, integrative themes, and other personal meanings that make sense to use in the present as we survey the past and anticipate the future. (p. 110)

In a similar vein, Norman had pointed out that people "tend to be driven by patterns, by events" (p. 118) in their lives, which they are able to "form [into] representations, to compare one representation with another, and to . . . form causal explanations of the events of the world" (p. 119). What people are doing, suggested Norman (1993), is creating "mental scenarios in which [they] construct representative explanatory descriptions" (p. 120). Norman called these mental scenarios "mental models," positing that "mental models allow us to understand prior experiences, the better to predict future ones" (p.120).

An important capacity related to the model of self one constructs, asserted Gardner (1993), is that it allows the individual to "offer an account of himself . . . that

puts forth in logically acceptable fashion all those properties of himself [sic], and all of his own experiences, that seem worthy of note" (p. 295; see also, Bruner 1986, 1990; Gare, 2002; McAdams, 1993). Equally important, being a model, the individual "can continue to edit this description of himself as events transpire over the years, and his own 'self-concept' alters" (p. 296). The process of creating "mental models" (Norman, 1993), "myth-making" (McAdams, 1993), or "framing" (Bruner, 1990) is culturally, psychologically, and cognitively linked through our involvement with symbols, especially language:

> The typical form of framing experience (and our memory of it) is in narrative form . . . what does *not* get structured narratively suffers loss in memory. Framing pursues experience into memory, where, as we have known since the classic studies of Bartlett, it is systematically altered to conform to our canonical representations of the social world, or if it cannot be so altered, it is either forgotten or highlighted in its exceptionality. (Bruner, 1990, p. 56, emphasis in original)

Clandinin and Huber (2002) directly linked "these narrative understandings of knowledge and context" to a person's identity (p. 161), thereby defining each individual's identity as "a storied life composition, a story to live by" (p. 161). Bruner, for one, agreed with Clandinin and Huber's connection between narrative and identity, but rejected the idea that one's self-narrative is his or her "story to live by." Narrative accounts of oneself, according to Bruner (1986), are "in Paul Ricoeur's phrase…'models for the redescription of the world.' But the [narrative] is not by itself the model. It is, so to speak, an instantiation of models we carry in our own minds" (Bruner, 1986, p. 7).

Roberts and Rosenwald (2001) agreed with Bruner and Linde, perceiving the resources used to construct one's "evolving" self-narrative as "psychosocial" (p. 94), that is, each internalized element used in building the self-narrative "is socially relevant and

socially shaped [which is] true of sublimations, identifications, and roles" (p. 94). Roberts and Rosenwald continued as follows:

> Taken together, the psychosocial and evolving aspects of identity imply that its formation involves tension between (a) the adaptive demands of new external tasks that the individual encounters and (b) the restraints imposed by earlier workings of identity components and syntheses. (p. 94)

While there remains some question about the role narrative plays in identity formation, there is little dissention regarding its form. Most narrative scholars think first of narrative in the form of a story. McAdams (1993) described this view as follows:

> Indeed, much of what passes for everyday conversation among people is storytelling of one form or another. This appears to be so pervasively true that many scholars have suggested that the human mind is first and foremost a vehicle for storytelling. We are born with a narrating mind, they argue. (p. 28)

Reporting on several anthropological studies, McAdams (2001) pointed out that "In all human cultures, people tell stories to other people" (p. 114). McAdams (1993) argued that "we create a self that is whole and purposeful because it is embedded in a coherent and meaningful story" (p. 92). Seemingly tempering his psychological understanding of personal identity to include a stronger social element, McAdams (2001) added, "The very concept of a story is inherently social in that stories exist to be told in a social context" (p. 114).

Josselson (2004) boldly integrated the psychological with the sociological:

> It is not just the material "facts" of a life that are of concern here, but the particular meaningful shape that emerges from selected inner and outer experiences. "Facts," in the naïve historical sense, are understood to be created rather than reproduced since the presence of the past only shapes the retelling. Meanings of past events change over the lifespan as the beginnings of the story are reshaped to lead to endings that are immutable and in process . . . Plus, the person always creates the life story in an interpretive and constructive way. (p. 2)

Reiterating a position identical to Norman's, Josselson described narrative, in the form of

stories, as the means people employ to integrate the social and the psychological. Through the narrative form of the story, people interweave their personal perceptions of social interaction "into a fabric [they] experience—and can tell—as a life history" (p. 2). In this manner, stated Josselson, stories become "the linguistic forum in which the connectedness of human experience as lived can be expressed" with each individual's "implicit meaning of life . . . made explicit" so it can be shared with others (p. 2).

"We need stories and context" asserted Norman (1993, p. 152). Schank (1990) had made a similar case in reasoning that "our knowledge of the world is more or less equivalent to the set of experiences that we have had, but our communication is limited by the number of stories we know to tell" (p. 12). "It is the story—the chronological succession of events," concluded Franzosi (1998), "that provides the basic building blocks of narrative. Without story there is no narrative" (p. 520).

Strongly encouraged by Zuboff's (1988) studies regarding the importance of the human oral tradition in new learning situations, Bruner's (1990) understanding of the characteristics of narrative acknowledged the oral traditions of human culture:

> Narrative requires . . . four crucial grammatical constituents if it is to be effectively carried out. It requires, first, a means for emphasizing human action or "agentivity"—action directed toward goals controlled by agents. It requires, secondly, that a sequential order be established and maintained—that events and states be "linearized" in a standard way. Narrative, thirdly, also requires a sensitivity to what is canonical and what violates canonicality in human interaction. Finally, narrative requires something approximating a narrator's perspective: it cannot, in the jargon of narratology, be "voiceless." (p. 77)

"One is not situated in social space as . . . [an] agent simply through individual words, but through narratives" agreed Gare (2002, pp. 95-96). He continued, stating that "Complex projects of joint action, involving the integration of a number of subordinate actions, take the form of a narrative and must be narrated by actors to coordinate their

actions with each other" (p. 96). Gee (1989), in describing Discourse, had previously contended that "at any moment we are using language we must say or write the right thing in the right way while playing the right social role and (appearing) to hold the right values, beliefs, and attitudes" (p. 6). This requires an assurance of a "rational interaction built right into everyday communicative practice" (Conle, 2000b, p. 23). Gee thus defined human Discourses as "ways of being in the world; they are forms of life which integrate words, acts, values, beliefs, attitudes, and social identities" (pp. 6-7).

While there can be many Discourses based upon the many roles (Blustein, 1997; Gee, 1989; Madill et al, 2000; McAdams, 1993) or many "possible selves" (Markus & Nurius, 1986) an individual assumes, as Gardner (1993) pointed out, there are two types of narrative discourses. Narrative as a discourse related to a self, can be internal—intrapersonal (Gardner, 1993)—as a form of self-narrative, or external—interpersonal (Gardner, 1993)—as a form of a socially interactive life-story narrative; yet both have similar characteristics, features that are not sharply defined but rather possess fluid boundaries between each other.

Although there are many good working definitions that might be used to sum up the conception of one's personal narrative, Mattingly and Lawlor (2000) provided one of the most useful and comprehensive descriptions:

> Narratives are event-centered and historically particular, located in a particular time and place. Stories concern action, more specifically human action, and particularly social interaction. Stories have plots. They have a beginning, middle and end, so that while they unfold in time, the order is more than mere sequence but reveal a "sense of the whole" . . . Stories show how human actors do things in the world, how their actions shape events and instigate responses in other actors, changing the world (and often the actors themselves) in some way. Stories also reveal the way events and other actors act upon someone, shaping her possibilities, the way she views herself and her world. Whether hinted at or badly

> stated, stories explore the complex motives that drive individuals to act in some ways rather than others and they also reveal the constraints of environment, of body, of social contexts that delimit a person's possibilities for action. (p. 6)

Widdershoven instructed the qualitative researcher that "the implicit meaning of life is made explicit in stories" (quoted in Josselson, 2004, p. 2). Narrative inquiry, then, can be "seen as particularly suited to get at [the] 'practical knowledge'" (Conle, 2000b, p. 51) informants hold regarding how they direct their own informal learning as part of their career trajectory. As a result, for the current study, each self-narrative story offered by interviewees provides insight into a

> world [that] carries its own structure so that specificity always implies generality . . . That is why stories can be so powerful in conveying ideas, often more so than an articulation of the idea itself . . . The generality of any form of knowledge always lies in the power to renegotiated the meaning of the past and future in constructing the meaning of present circumstances. (Lave & Wenger, 1991, p. 34)

The value the integration of personal narratives into the study of learning in the workplace provides the researcher, says Chen (2003), is that it "can ultimately widen the scope of theoretical options, extend professionals' vision toward potentiality for comprehensiveness, and moreover, it can lead to the development of new dimensions for research and facilitate creativity and refinement in practice" (p. 205). "Rather than reducing people to objects," contended Gare (2002), researchers can "tackle social problems by studying the narratives dominating people's lives" (p. 99). This is the "stage" upon which the current research was played out.

The Narrative Perspective and Career-Related Learning

"Stories are ideally suited to capture how a human actor, endowed with consciousness and motivated by intention, enacts desires and beliefs and strives for goals over time and in social context" (McAdams, 2001, p. 117). Additionally, "in order to

exist in the social world with a comfortable sense of being a good, socially proper, and stable person, an individual needs to have a coherent, acceptable, and constantly revised [self-narrative] story" (Linde,1993, p. 3). The self-narrative story represents the point of union for the double helix design of human meaning-making that leads to the learning associated with personal development—where culture interfaces with individual, participation interacts with reification, and social cognitive theory integrates with the theory of social practice. It is at this pivotal hub that the self-narrative story plays "a vital role in the transfer of information and discoveries" (McLellan, 1994, p. 7).

Lave and Wenger (1991) envisioned "learning, thinking, and knowing [as] relations among people in activity . . . arising from the socially and culturally structured world" (pp. 50-51), while Bandura (2001) perceived of "people operat[ing] as thinkers of the thoughts that exert determinative influence on their actions" (p. 4) toward or within a given environment. These apparently contrasting perspectives demonstrate not so much divergent views as a useful "tension between human agency and social structures as the most potent influences on adult learning" (Merriam & Caffarella, 1999, p. 275-276). The combination of the two views, applied to the career development of a computer user, suggests that "learning is mediated through a triadic, dialogical relationship" (Brockman & Dirkx, 2004, p. 1) of the individual, the computer-related tasks, and work-related artifacts. The result is an "ongoing process of becoming [a computer user that] is embedded in these relationships and within a broader community of practice" (p. 1).

Significant in the workplace analysis of Brockman and Dirkx is their reiteration of the useful observations articulated by Jerome Bruner: the distinction "between *learning about* and *learning to be*" (Brown & Duguid, 2000, p. 128, emphasis in original).

Especially in this "age of the Web," stated Brown and Duguid, most "people learn *about* a lot of things" (p. 128, emphasis in original). On the other hand, few people are engaged in learning to be. "Learning to be requires more than just information. It requires the ability to engage in the practice in question" (p. 128). It is "in learning to be, in becoming a member of a community of practice," continued Brown and Duguid, that "an individual is developing a social identity" (p.138).

Both constructivist theories, social cognitive theory and social practice theory, are in general agreement regarding the importance of "learning to be" to the creation and evolution of individual identity. "Our data confirm," stated Merriam et al. (2003), "that intensive learning is at the heart of the process [of building an identity]. It is the lynchpin [sic] without which there would be no change in identity" (p. 186). Sounding a similar note, Lent et al. (1996) asserted that "basic social cognitive and behavior . . . processes . . . help to transform native aptitudes. Thus, behavior is seen as operating largely through intervening *learning experiences* that both refine abilities and shape self-efficacy and outcome expectations" (p. 390, emphasis in original). Differences between the two theoretical positions appear during analyses related to what Merriam and Caffarella (1999) identified as "the locus of control over the learning activity" (p. 254).

The social practice perspective challenges the notion, fundamental to the social cognitive view, "that learning is something that occurs within the individual" (Merriam & Caffarella, p. 242). Instead, Young et al. (1993), Lave and Wenger (1991), and other social practice theorists viewed "learning from a situated perspective" that focused on learner "perception and the settings in which those perceptions are made" (Merriam & Caffarella, p. 241). For these theories, it is the learning setting, the "context . . . and how

this influences the perceptions learners make [that] is ‘the element that makes sense of cognition’ (Wilson, 1993a, p. 338)” (p. 242). It is, therefore, the “core idea in situated cognition . . . that learning is inherently social in nature” (Hansman, 2001, p. 45). In other words, “social groups [i.e., communities of practice] provide the resources for their members to learn (Brown & Duguid, 2000, p. 137). In the final analysis, “the resources for learning lie not simply in information, but in the practice that allows people to make sense of and use that information” (p. 133).

On the other hand, pointed out Merriam and Caffarella (1999), “learning is a personal process” (p. 1). Brown and Duguid (2000) concurred, stating that “of course, whatever the strengths of communities of practice, people learn on their own, picking up information from numerous sources about numerous topics” (p 128). “Meaning,” continued Merriam and Caffarella taking the social cognitive perspective, “is made by the individual and dependent on the individual’s previous and current knowledge structure. Learning is thus an internal cognitive activity” (p. 262). Bandura (1977) summed up these positions: “Practices derived from social learning . . . are well suited for cultivating personal competencies that serve as a genuine basis for exercise and perception of self-determination” (p. 113). In the final analysis according to Bndura, personal change from a social cognitive perspective is associated with learning as a function of individual human agency. In order for the cognitive change associated with learning to occur, the learner must posses “certain prior capabilities” that will undergo change (p. 184).

As much as the current literature has emphasized the differences between these two theoretical perspective, there is much that is obviously similar. For example, Bandura (1977) characterized the agent-environment interaction as one in which “change is

mediated through cognitive processes, but the cognitive events are induced and altered most readily by experiences of mastery arising from successful performance" (p. 79). Through observing and evaluating the results of one's performance, "outcomes change behavior in humans largely through the intervening influence of thought . . . Because learning response consequences is largely a cognitive process, consequences generally produce little change in a complex behavior when there is no awareness of what is being reinforced" (p. 18). Comparing Bandura's description to Merriam and colleague's (2003) explanation of Lave and Wenger's (1991) legitimate peripheral participation (LLP) within a community of practice reveals some striking similarities:

> LLP is a process of changing participation and changing identity. By legitimately being included in the group even though it is at first on the periphery, through participation, learners move toward the center . . . Thus, this movement from the periphery to the center means becoming progressively engaged and active in the practice of the community . . . Note that the core is defined by participation and commitment, rather than expertise and mastery, although those are components of the core. (Merriam et al., p. 172)

As much as Bandura hedged on the importance of social context (e.g., Where do the criteria for evaluating mastery performances come from?), Lave and Wenger hedged on the importance of personal mastery and prior knowledge (e.g., Can progressive engagement actually occur without growing expertise or mastery?). Both agreed, however, with the assumption that the "identity under development shapes what that person comes to know, how he or she assimilates knowledge and information. So, even when people are *learning about* . . . the identity they are developing determines what they pay attention to and what they learn" (Brown & Duguid, 2000, p. 138, emphasis in original). Neither theory, however, provided an adequate explanation for how and why this important psychosocial process actually occurs. Wells's perspective (2000) does.

With his focus on the process of learning as meaning-making, Wells (2000) elaborated on the agentive role during the construction of meaning:

> what is primary is the actual *activity of representing*. Representing . . . is a fundamental human activity; it is something we do as an essential means of perceiving and of knowing, and is central to all forms of action . . . Representing is also the distinctively human way of constructing knowledge; it is through the intentional making and using of artifacts of different kinds that we become conscious of our own activity and at the same time come to understand that which the artifact is used to represent. (p. 123, emphasis in original)

Wells's perception of meaning making as the "actual activity of representing," that is, as the "intentional construction of artifacts," appeared to hit the bulls-eye of a target designed by Bandura (1977) as social learning theory and carefully described by Wenger (1998) as the contextualized engagement of participation and reification. Additionally, Wells went on to describe "the active, social nature of representing—of making representational artifacts to mediate activity with others," pointing out in his discussion, as Vygotsky (Wertsch, 1985) had done previously, that "it is through the attempt to make such representations with and for others that we make meaning for ourselves and, in the process, develop an understanding of our experience of being-in-the-world" (Wells, 2000, pp. 123-124). In other words, meaning, understanding, and learning are constructed during the intentional agentive process of reification in preparation for sharing and negotiating the interpretation of a specific experience with others.

"Viewed as an experience of identity," argued Wenger (1998), "learning entails both a process and a place. It entails a process of transforming knowledge as well as a context in which to define an identity of participation" (p. 215). Learning, therefore, arises from the engagement of social context and reified prior experience: the confluence

of the social element of place and the individual element of process (Barab & Plucker, 2002). McAdams (1993) defined the psychosocial reification of one's experience of identity as story construction: "We create a self that is whole and purposeful because it is embedded in a coherent and meaningful story" (p. 92).

"Stories," pointed out Brown and Duguid, "are good at presenting things sequentially (this happened then that)" (p. 106), an important consideration in social practice theory as the learner moves through the stages involved in progressing from the periphery to the core of the community of practice. Also, stories "are good for presenting [things] causally (this happened because of that)" (p. 106), an important component related to personal self-efficacy and social cognitive theory. "Thus stories," asserted Brown and Duguid, "are a powerful means to understand what happened (the sequence of events) and why (the causes and effects of those events)" (p. 106). "Stories," they concluded, "are thus central to learning" (p. 107).

"'Thought is not begotten of thought,' wrote Vygotsky (1934/1986, p. 252)" (Kozulin, 1999, p. 81), but rather, thought is a manifestation of "unconscious creative impulses . . . transformed and shaped by symbolic devices available to an [individual]" (p. 81). According to Bandura (1977), "Behavior is learned symbolically through central processing of response information before it is performed . . . In other words, people guide their actions by prior notions rather than by relying on outcomes to tell them what they must do" (p. 35). Similarly, the situated learning associated with social practice theory, "develops in the course of everyday practice [as] people create and interpret descriptions of what they are doing" (Elmholdt, 2001, p. 2). Stories, as the individual's symbolic representation of his or her socially negotiated and cognitively digested

everyday experiences, are the foundation for one's identity and, therefore, the stage that learning activity plays out on.

Multiple career theorists have tied stories to career development. Donald Super, with his Life-Span, Life-Space Theory of career was among the first to report a link between career development and the individual's storied account of his or her career trajectory: "Each life can be characterized by a pattern that connects the past, present, and future . . . Accordingly, life-theme assessment analyzes an individual's autobiography to find this thread of continuity and then uses it to make sense of the past, explain the present, and draw a blueprint for the future" (Super, 1996, p. 157). Mitchell and Krumboltz (1996), explaining their theory of career development, largely agreed with Super's direction: "Each person has a unique history of learning experiences that results in the chosen career path" (p. 238).

Young and Valach (1996) identified a number of features of narrative relative to career and action:

> First, narrative can create coherence and continuity out of separate, unrelated actions. It serves to construct and enable intentional, goal-directed action. Second, narrative provides a guide for action . . . The overall story or narrative supplies a framework within which to understand the particular and act in the present. In this way, career is constructed and the future of the career is suggested. (p. 492)

Chen (2003) acknowledged the relationship between story and career development in suggesting that the benefit of digesting learning experiences of the workplace into stories "is that the [individual] may have a better sense of the relationship between learning and development" (p. 210). Moore (1986) applied a similar perspective to his observations of the workplace, reporting that stories "help us to identify the cognitive, manual, and relational demands of various task episodes and to trace the ways participants organize

human, informational, and material resources to get the work done and to afford neophytes access to knowledge" (p. 140). Norman (1993) flatly declared that "stories are marvelous means of summarizing experiences . . . Stories are important cognitive events, for the encapsulate, into one compact package, information, knowledge, context, and emotion" (p. 129).

Clandinin and Huber (2002) observed that in order to understand our identity and the social context of our actions through stories "our attention is turned to how we are engaged in living, telling, retelling, and reliving our lives within particular social and cultural plotlines" (p. 161). Similarly, Chen (2003) emphasized the role of plot in the individual's creation of a career development story:

> The biographical concept rests on the basic premise that a person's life career experiences provide the resources for narratives to take shape. As these experiences accumulate, new contents yield to an existing story or to the construction of a new story. In this sense, career narrative is always in a constant state of progress. The past and present are organized into plots and episodes, reflecting what has happened and what is happening. (pp. 208-209)

In defining one's career development story as event-driven, the story can be "seen as a cycle of narrative evolution" (Chen, 2003, p. 209). Moreover, he asserted, in perceiving one's career development as a story, "the narrative flow is always interwoven with a narrator's involvement in plots and episodes, reflecting dilemmas, conflicts, hesitations, resolutions, enjoyment, and other analogous psychological experiences that are connected to the narrator's self-awareness" (p. 207). In other words, the story of one's career evolves as "events in the story . . . disrupt an initial state of equilibrium that sets in motion an inversion of situation, a change of fortunes" (Franzosi, 1998, p. 521).

Marsick and Watkins (2002) noted "that learning begins with some kind of a trigger, that is, an internal or external stimulus that signals dissatisfaction with current

ways of thinking or being. This trigger or experience encountered is often a surprise" (p. 29). Merriam and Caffarella (1999) made a similar observation, locating their view in the work of "Aslanian and Brickell (1980) [who] found that more adults 'learn in order to cope with some change in their lives' (p. 111) and concluded that this learning is tied to a triggering event" (p. 107). Moreover, stated Merriam and Caffarella, triggering events are often related to one's career and "the learning resulting from these triggering events is not always related to the event itself" (p. 107).

Marsick and Watkins created the final link between career development story creation and individual learning. Reporting on several studies, Marsick and Watkins concluded that "unplanned or unexpected events" (p. 27) trigger story creation episodes that result in "informal and incidental learning" (p. 27). They continued,

> Informal learning in the workplace . . . can be characterized as follows . . . It is integrated with daily routines . . . It is triggered by an internal or external jolt . . . It is not highly conscious . . . It is haphazard and influenced by chance . . . It is an inductive process of reflection and action . . . It is linked to the learning of others. (p. 28).

Marsick and Watkins's description has been substantiated by "recent empirical studies" reported by Brockman and Dirkx (2004, p. 1). These reports concluded that much of what people "need to know to perform their work requirements is acquired through informal learning" (p. 1). Additionally, they pointed out, as had Livingstone (1999, 2001), "Although informal learning constitutes the bulk of learning that takes place within the workplace, it is the least recognized in the literature and in practice" (Brockman & Dirkx, p. 2). The current study anticipated helping to resolve this oversight.

Summary

Theoretical differences regarding learning are born, much as with theories of career development, out of an incompatibility between positivist and constructivist worldviews. That is, differences exist because there is little general agreement as to whether it is the person, the world, or their relationship that is the locus of knowledge and the appropriate unit of analysis for the thoughtful study of learning. Moreover, even within the constructivist worldview, Bandura's social cognitive theory and Lave and Wenger's theory of social practice represent competing theories of agency and social context that confuse the selection of an appropriate unit of analysis for studying individual human learning.

Bandura's social cognitive theory in not far removed from Lave and Wenger's theory of social practice. Essentially, both are utilizing a humanistic interpretation (Merriam & Caffarella, 1999) of cognitive responses to one's environment. Both views relate to the construction of meaning based upon previous knowledge, social interchange, and goal-directed activity. The basic difference between the two theories is the locus of learning. For social cognitivists, learning is centered in psychologically influenced human behavior. For followers of social practice theory, learning is situated in and socially distributed across all elements of activity.

These similar yet different theories appear to assume very different means for the construction of knowledge. However, by perceiving the agentive focus of social cognitive theory and the contextual focus of the theory of social practice as two sides of the same "social theory" coin through self-narrative theory, a single unit of analysis emerges: the life-story narrative. It is commonly accepted that individuals experience their world

narratively. That narrative is made available for sharing in the form of stories that adhere to specific characteristics of agency, sequential order, social legitimacy, and narrative perspective. Understanding this process, the narrative researcher can gain access to the individual's tacit understanding of his or her self-directed pursuit of informal learning within the context of career development.

This study, therefore, is quite different in character from numerous other studies exploring individual career development in which a narrative of self is used. It does not seek to determine career turning points, social blocks, or psychologies of learning. This study is looking for how individuals go about narrating stories about what, how, and why they have learned. Looking forward to chapter 3, the research topic is nicely aligned with the constructivist manner of the narrative case study approach to qualitative inquiry.

CHAPTER 3: METHODOLOGY

Introduction

The purpose of this narrative case study was to discover, interpret, and explain the role of self-directed informal learning as it relates to the career development process of formative technology users. Chapter 3 delineates the methodology for conducting the study and the rationale for each of the researcher's decisions.

First, the selection of the qualitative paradigm and case study as the research tradition followed are explained and used to segue into the research questions that were pursued during the study. Second, the processes by which the methodology of the study was implemented are laid out and explained. In detailing the methodology of the study, the cases comprising the study are identified and their boundaries are clarified. The bounded cases are then expanded into a description of the sample that was used and how that sample was selected. A brief clarification of the role of the researcher leads into a discussion of the data collection process. An explication of and justification for narrative life story as a means for data collection is provided along with a description of the means for data management. Evidence is provided and a defense made for the validity and quality of data collection and for the study as a whole. Finally, the discussion of the narrative technique is expanded into an account of the categorical-content and holistic-content perspectives that were used to analyze the data collected during the study. How those data were organized for presentation is discussed as well. Chapter 3 concludes by addressing the ethical issues inherent in this type of study.

Research Design

The current study was conducted within the qualitative paradigm for scholarly research and organized in the manner of the case study tradition. Data were collected through self-narrated life stories solicited from thirteen purposefully selected participants. The collected data were interpreted using two proven narrative analysis techniques. The prominent role of narrative in both the data collection and data analysis processes underscores labeling the research tradition employed here as *narrative* case study. An explanation for the determination of the research design follows.

Paradigm

The study was conducted, as called for by Livingstone (1999, 2001) and Merriam (2001, 2003), to add needed depth to the literature about self-directed informal learning. In meeting that challenge, the current study was conceived within the qualitative research paradigm. Two characteristics of the qualitative paradigm make it ideal for the current study: "Qualitative research is concerned with process [and] qualitative research is flexible" (Merriam, 2003, p. 174). The purpose of this study demonstrates an endeavor to critically examine how self-directed informal learning relates to the career development process. Additionally, the phenomenon explored is closely connected within the literature to two important thematic processes that underpin self-directedness, informal learning, and career development: sociocultural context and individual agency (Bandura, 1977, 1986; Lave & Wenger, 1991; Merriam & Caffarella, 1999) .

The researcher attempted to explore the phenomenon of self-directed informal learning naturalistically within the "everyday setting" (Creswell, 1998, p. 17) of the study participants; or, using the words of Denzin and Lincoln, "in terms of the meanings people

bring to them" (quoted in Creswell, 1998, p. 15; see also, Merriam, 1998, p. 6). "Because meanings cannot be grasped directly," observed Josselson (2004), "and all meanings are essentially indeterminate in any unshakeable way, interpretation becomes necessary" (p. 3); and, interpretation in this context, as Merriam pointed out, represents "a dynamic, continuously evolving process" (p. 174) that is best suited to the open and flexible nature of the qualitative paradigm. Taken together these study characteristics, related to understanding process and necessitating flexibility, describe an approach consistent with the qualitative paradigm of scholarly research (Creswell, 1998; Merriam, 1998). This is a decision consistent with the observations of revered career theorist Donald Super, who, writing about learning during the career development process, concluded that "the assessment of occupational self-concepts relies on qualitative methods" (quoted in Super et al., 1996, p. 156).

Tradition

The current research was conducted using the case study research tradition. According to Yin (2003), "Case studies are the preferred strategy when 'how' or 'why' questions are being posed, when the investigator has little control over events, and when the focus is on a contemporary phenomenon within some real-life context" (p. 1). With a preponderance of "how" research questions and its focus on the phenomenon of individual informal learning within the context of the career development process in the rapidly changing field of computer technology, the current study was, by Yin's definition, a classic candidate for the case study tradition. Moreover, Yin pointed out what Livingstone (2001) previously suggested, that "surveys can try to deal with phenomenon and context, but their ability to investigate the context is extremely limited"

(Yin, p. 13). As an alternative to the survey methodology, one would "use the case study method" in order to deliberately explore such "contextual conditions" (p. 13) as career development in the contemporary technology workplace. In this manner, stated Franzosi (1998), the case study tradition allows the researcher to shift "concerns away from variables to actors" (p. 527).

Finally, the case study tradition is commonly applied "in many situations to contribute to our knowledge of individual" behavior (Yin, p. 1), a condition describing the current study. In this capacity, the "case study is preferred in examining contemporary events" (p. 7), such as workplace activities, in which the self-directed learning behaviors of the individual participant cannot be controlled or even directly observed, but need to be uncovered, interpreted, and explained.

Both Creswell (1998) and Merriam (1998) identified "the case as . . . a unit around which there are boundaries" (Merriam, p. 27). The unit to be analyzed, Merriam went on to state, can be almost any type of entity or phenomenon (p. 27). For this study the phenomenon of interest was individuals' storied recall of how they self-directed their informal learning in order to develop their current career trajectory. Additionally, the case is bounded, or constrained, according to Creswell, by time, place (p. 61), events or processes (p. 64). The current research, in which individual cases of self-directed informal learning were the cases studied and the individually narrated career life-story was "the primary unit of analysis" (Yin, 2003, p. 23), was best described as potentially bounded by individual perceptions. Therefore, the focus was on self-directed informal learning as it might be manifested in individually recalled events, potentially constrained

by personal perceptions of time and place, and perceived to comprise the process of career development.

In addition to the implied agency associated with the individual bounding of each case, Creswell argued that the case must also be identified in terms of its context (p. 61). Yin referred to context as "the role of theory in [the] design work" related to the case (p. 28); that is, the "research design embodies a 'theory' of what is being studied" (p. 29). Determination of the case context was important because it provided the lens for the researcher's "focus" (Creswell, p. 62) or "design" (Yin, p. 28) for determining the "logic linking the data" (p. 21) to the underpinning theories and research questions, as well as for determining "the criteria for interpreting the findings" (p. 21).

As previously discussed, the current study was located within a setting described by the "junction" (Merriam, 2003, p. 10) of sociocultural context and individual agency. The literature places the current study within the context of (a) studies exploring singular explanations related to individual agency within the social cognitive perspective (Paa & McWhirter, 2000; Struthers, Weiner & Allred, 1998), and (b) studies related to individually situated learning within the social practice perspective (Merriam, 2003; Moore, 1986).

Additionally, previous research conducted by Livingstone (1999, 2001) and others (see Livingstone, 2001, p. 8) collected survey-based empirical data exploring self-directed informal learning categorically by educational attainment (p. 16), occupational class (p. 17), and age (p. 18). As a result, to better profile self-directed informal learning as it relates to career development, the design of the current study was theoretically integrative. In order to encompass the many nuances of such a complex theoretical

context, Yin's (2003) suggests the use of a multiple case study design.

According to Yin (2003), multiple case study design can accommodate the integration of multiple theories into a single "holistic" design comprised of "multiple holistic cases" (p. 52). In this manner, data are collected individually from each case and then analyzed holistically to explain "the global nature of" the phenomenon of self-directed learning during career development. Born of the research questions and the purpose of the study, the multiple case study design for the current research strongly influenced the manner in which data was collected and analyzed, as described later in this section. The rationale for the multiple case study design also precluded the use of other research traditions.

From its qualitative surface, the current study might appear to be equally suited to several highly regarded research traditions: the ethnographic study, the biographical study, and the phenomenological study, as well as the case study (Creswell, 1998; Merriam, 1998). Both Creswell and Merriam depicted the ethnography as a study focused upon entire cultural or social systems rather than "a bounded system" (Creswell, p. 66) within the whole. Describing the cultural behaviors and influences of the workplace, much like the study conducted by Livingstone and Sawchuk (2000), might strongly suggest the use of an ethnographic approach (Creswell, 1998; Merriam, 1998).

By way of contrast, rather than focusing on the behavior of the workplace, the focus of the current study was on more singular units of interest: significant individual examples of self-directed informal learning associated with the individual's career development. Here, the internal processes of the participants related to a specific set of events were only loosely connected to the behavior of all individuals interacting to create

the culture of the workplace. As a result, it was not "detailed observation of the natural world by the investigator" (Yin, 2003, p. 14), the hallmark of ethnographic research, that was critical; rather, it was the intimate examination of the self-directed informal learning of the individual (Livingstone, 2001, p. 25) that drove the choice for the research tradition. In the words of Young et al. (1996), "Ethnographic studies are usually less explicitly concerned with the intentional, goal-directed action constructed by agents" (p. 495), an extremely important component of the internal learning explored in the current study.

Biography as a research tradition, especially in the form of the "new ethnography . . . that originated in Europe [as] narrative analysis" (Girden, 1996, p. 43), offers an exceptionally potent means for discovering and describing "turning point moments" (Creswell, 1998, p. 47) or "nuclear episodes" (McAdams, 1993, p. 296) in an individual's life. Written or oral biographies, a useful component of this research study, as detailed in the data collection section, were, in and of themselves, too limiting for the nature of the current research study:

> While the studies are particularly useful in describing social meaning as well as behavior in internal processes recalled from the perspective of social meaning, being retrospective, they are less able to address the career-related action that occurs at the moment. They can also be limited by their individual focus; that is, data are gathered from one source only. (Young et al., 1996, p. 495)

Just as the workplace sets the boundaries too expansively and minimizes the role of the individual agent, examining a single individual sets the boundaries too narrowly and minimizes the role of the sociocultural context multiple individuals interact within.

Phenomenology, as a qualitative tradition of inquiry, allows the researcher to attempt to "describe the meaning of the lived experiences for several individuals about a

concept or the phenomenon" (Creswell, 1998, p. 51). Indeed, the current study easily could be construed as a phenomenological study. Two key considerations move the current study away from phenomenology and into the case study tradition. First, according to Merriam (1998), the focus of the phenomenological approach is on the participants' interpretation of the phenomenon under study (also see Creswell, 1998). The focus of the current study was upon the researcher's interpretation of the phenomenon of self-directed learning based upon data retrieved from the participants. Second, in an effort "to depict the essence or basic structure of experience," (Merriam, 1998, p. 16), the phenomenological researcher must "suspend all judgments about what is real," suggesting that the reality of career development "is inextricably related to one's consciousness of it" (Creswell, 1998, p. 53). Such a position was untenable when operationalized within the theoretical framework of the current study, which appeals to a pragmatic view of a contextual environment that "is independent of individual minds . . . but it is not independent of the minds in the community" as a whole (Lomborg & Kirkevold, 2003, p. 195). The case study tradition, as described above, best represented the appropriate manner for achieving the purpose and answering the research questions of the current study.

Research Questions

This narrative case study has endeavored to discover, interpret, and explain the following overarching question: How is self-directed informal learning related to the career development process of formative technology users? The foundational questions supporting the answering of the overarching question were as follows:

1. How are the self-narrated career identities of self-direct learners thematically

similar and thematically different?

2. How is self-directedness related to informal learning during career development?

a. How does one's perception of agentive control over learning affect one's perception of career-related informal learning?

b. How does the career-related context in which informal learning occurs affect the agentive nature of self-directedness?

Methodology

The current study was conducted within the qualitative paradigm for scholarly research and organized in the manner of the case study tradition. The qualitative nature of the study was predicated upon uncovering "the meaning people have constructed" (Merriam, 1998, p. 6) engaging in self-directed informal learning during the career development process. The study addressed the research questions using a multiple case study approach. Within the case study approach, both literal and theoretical replication must be employed to "state the conditions under which a particular phenomenon is likely to be found [and] when it is not" (Yin, 2003, pp. 47-38). Therefore, a carefully constructed set of reproducible protocols was used to identify a useful population and determine the sampling strategy for collecting data. The selection of participants for the current study follows.

Participants

The research population included people from Chautauqua County, New York, who had created and developed a career trajectory based in large part upon their role as a

formative technology users; that is, one or more computer-related information storage, processing, and/or communication technologies made up a significant part of the career role from which the majority of their livelihood was derived.

Description of the Population

The research site, due to constraints of limited resources, was restricted to Chautauqua County, a mostly rural region comprising the most southwestern county of New York State. Chautauqua County, however, is neither small in physical size (it is about the size of the state of Rhode Island) or amenities. The area is broken in two physically by the 900-foot Lake Erie Escarpment and logistically by the placement of its two largest cities, Jamestown (population 30,000) in the south and Dunkirk (population 15,000) north of the Escarpment. Jamestown is home to one of the largest community colleges in New York State, while the Dunkirk area is home a top-rated state university. The county has been ranked as one of the leading regions for money available through local altruistic foundations; it has a nationally acclaimed Arts Council; and it is home to the world-renowned center for arts and education, Chautauqua Institution.

Although strategically located at the center of a 500-mile radius that includes all the major population centers of the northeastern United States and central Canada, the county hosts only several major manufacturing industries; thus, local and regional governments, health care systems, educational systems, and tourism employ the largest number of people. Although major retailers such as K-Mart, Sears, and Wal-Mart have discovered the area, a large part of the local economy is entrepreneurial, including part- and full-time employment associated with selling items on eBay.

The research location, in sum, can be considered largely middle-income blue

collar rural America. Still, Chautauqua County is well ensconced as an active member of the information society. It is wired "wall-to-wall" with fiber-optic cable, even the smallest school systems are well-equipped with the latest computer and networking equipment, the state college is noted within the state university system as a technology school, and one of the largest sectors of entrepreneurial start-ups is technology-related companies. In short, the research site was adequate for conducting the current study.

The qualitative research paradigm suggests the population should include those who are most able and willing to provide insight into the phenomenon under study: self-directed informal learning during career development. Given Livingstone's (2001) empirically based predication that approximately 71% percent of employed adults engage in "keeping up with new general knowledge in job or career" (p. 11), there existed in Chautauqua County an adequate population to work with for the current study.

The population became more narrowly defined when the case study constraints were applied. First, the population of this case study was bounded by the process of career development marked by formative technology use. The rationale for using such a population rested in the general acknowledgement by the relevant literature that, as a result of continuing technological change and the increasing demands on employees to work with ever-more information (Storey, 2000), what is required of technology users, "more than in previous eras, is the ability to learn more quickly to cope with the increased volume of information and to process information more effectively" (Cornford, 2002, p. 358). In other words, there was reasonable certainty that a local population of contemporary formative technology users included potential study participants who were continuously finding ways to informally learn about and develop their respective careers.

The population for the current study was bounded by the theoretical context of the study also. Intrinsically, the population for the study was bounded by a sociocultural setting defined by the interaction of social context and individual agency. According to the relevant literature, the pervasiveness of this condition adds no new constraint to the population under consideration. The contextual focus dictated by the research of Livingstone (2001), however, significantly altered the composition of the study population by incorporating constraints of time (age range), place (workplace type), and prior events (formal educational attainment).

Sampling Strategy

The selected study site offered a substantial population that was capable of meeting the needs of the current study. Therefore, a strategy was required to determine exactly how to bring the identified population into the current study in the most efficient and results-oriented manner consistent with the study's purpose. Yin (2003) addressed just such a point in the case study design process:

> The main point at this juncture is that you should try to aim toward analytic generalization in doing case studies, and you should avoid thinking in such confusing terms as "the sample of cases" or the "small sample size of cases," as if a single case study were like a single respondent in a survey or a single subject in an experiment. (p. 33)

Instead of fretting about sample representation, stated Yin, "a good case study investigator should make the effort to develop [the] theoretical framework" of the study (p. 33). Yin was referring to the process of purposeful sampling.

Creswell and Merriam agreed that, for qualitative case study research, purposeful sampling generally provides the most productive units for analysis during theoretical development: "Purposeful sampling is based on the assumption that the investigator

wants to discover, understand, and gain insight and therefore must select a sample from which the most can be learned" (Merriam, 1998, p. 61). Following the instruction of Merriam and Creswell, a purposeful sampling strategy was developed by determining "what selection *criteria* are essential in choosing the people . . . to be studied" (Merriam, p. 61, emphasis in original).

Based upon the available population and the contextual constraints described above, the following purposeful sampling strategy was employed:

1. Sample members were selected such that there were at least two members (see Yin, 2003, p. 51) in each of the following age categories:

    a. 25-34 years old

    b. 35-44 years old

    c. 45-54+ years old

2. Sample members were selected such that there were at least two members in each of the following educational attainment categories:

    a. High school or GED diploma

    b. Community college diploma (AA, AS) or equivalent

    c. Bachelor's degree (BA, BS)

    d. Master's degree (MA, MS, MBA) or greater

3. Sample members were selected such that there were at least two members in each of the following work environment categories:

    a. Self-employed

    b. Organization management

    c. Service or industrial worker

4. Approximately an equal number of male and female participants were selected even though Livingston's (2001) empirically research has demonstrated that there is no significant correlation between self-directed informal learning and participant sex or ethnicity.

5. Participant selection and interviewing continued until the researcher was satisfied that content "saturation" (Strauss & Corbin, 1998, p. 136) related to the research questions had occurred, that is, until such time "when no new information seem[ed] to emerge during" (p. 136) the narrative interview process.

6. Although not specifically addressed in the literature, the researcher made a strong effort to satisfy contextual saturation, as well. In other words, multiple similar contexts for the purpose of comparison were considered during sample selection. For example, when a participant was found to be developing a career in a not-for-profit domain, a second participant in another not-for profit setting was sought out.

7. Participants were considered part of the sample only upon completing and approving the narrative interview and its transcript.

Applying a purposeful sampling strategy that accommodated the purpose of the study while also acknowledging previous similar research resulted in the selection and interviewing of 13 individuals. Table 1 includes data supplied by each participant on a preliminary demographic report. The table depicts the manner in which sampling met the strategic demands set forth for the study.

Table 1

Participant Demographics

Name	Gender	Age	Education	Job Class	Career Path
Anne	Female	25-34	HS/GED	Manager	Key Account Manger Client Services
Belle	Female	45-54	AA/AS	Self-Employed	Internet Retail Sales
Cassy	Female	25-34	BA/BS	Staff/Worker	Marketing, Sales, Public Relations
Dirk	Male	35-44	AA/AS	Manager	President, Multimedia Development Co.
Earl	Male	45-54	HS/GED	Self-Employed	Computer Repair Shop Owner
Fred	Male	45-54	HS/GED	Self-Employed	Motorcoach Tour Packager
Gabe	Male	45-54	MA/MS	Staff/Worker	Millwright/Teacher
Halle	Female	35-44	MA/MS	Manager	Director of Distance Learning
Ian	Male	25-34	BA/BS	Manager	Lead Programmer
Jake	Male	45-54	HS/GED	Manager	Radio Station General Manager
Kari	Female	25-34	BA/BS	Staff/Worker	Administrative Assistant
Link	Male	45-54	MA/MS	Manager	Instructional Technology Coordinator
Mary	Female	35-44	BA/BS	Staff/Worker	Administrative Assistant

Although this type of qualitative case study research specifically rejects the use of a randomly selected sample, randomness was considered beneficial to the sampling strategy in that it could help remove potential researcher bias during the initial stages of sample selection. Therefore, while a strict adherence to the sampling strategy protocols was maintained, the first participant was randomly selected based upon the recommendation of a technology professional who also was randomly selected (name

drawn from a hat) from three other technology professionals known to the researcher. The recommended participant was contacted, interviewed, and asked to recommend one or two other formative technology users who might be interested in participating. In this manner, although participants were personally addressed at all times by their given name, for the purposes of the narrative transcript and data reporting, each was assigned an alphabetical pseudonym in the order he or she was interviewed. Thus, Anne was interviewed first. Belle, who was selected to meet the sampling strategy from a grouping of names provided by Anne, was interviewed second. The remainder of the sample was generated, and interviews conducted, in the same "snowball" or "networking" (Merriam, 1998, p. 63) manner until the researcher had contacted, engaged, and interviewed enough purposefully selected participants, who, as a group fulfilled each of the points deemed strategically important to completing the final purposeful sample.

Each offer to participate was by personal invitation of the researcher through a congenial telephone conversation (see the upcoming subsection on instruments and materials) to create an initial bond of interest, confidence, and trust between the interviewer and the participant (Lieblich et al., 1998; McAdams, 1993; Riessman, 1993). At the end of the interview phase for all participants making up the purposeful sample, each participant was provided a transcript of his or her life story narrative, and each was rewarded for his or her time with a $25 fine dining gift certificate.

Researcher's Role

"The researcher is the primary instrument of data collection and analysis" (Merriam, 1998, p. 42). In that capacity, stated Yin (2003), the researcher has "two jobs: (a) to follow your own line of inquiry, as reflected by your case study [design], and (b) to

ask your actual (conversational) questions in an unbiased manner that also serves the needs of your line of inquiry" (pp. 89-90). In the capacity of participant interviewer for the study, it was incumbent upon the researcher to maintain the intimacy required for soliciting and directing a person's career life story narrative (see the data collection section for a full account of the life story procedure), but sufficient distance so not to unduly influence the plot, settings, characterizations, or themes of each story (Conle, 2001; Lieblich et al., 1998; McAdams, 1993). Josselson (2004) pointed out that the "art of research practice in part lies in producing a genuine personal encounter between interviewer and interviewee so that the possibilities are maximized that the interviewee will reveal meanings that are central, important and authentic" (p. 7).

As a result, in the role of interviewer the researcher implemented an interview strategy that was open-ended enough to evoke depth in the personal insights of the interviewee yet structured enough to maintain a focus on the purpose of the study. Additionally, it was the role of the researcher as interviewer to probe the interviewee purposefully and tactfully, when necessary, without asking leading questions (Girden, 1996; Livingston, 2001; Merriam, 1998) or steering the interviewee toward a specific theoretical bias, such as an agentive or communal bias (Livingstone, 2001, p. 23) that might change the content of the story being narrated.

The integrity of the research interview process was well guarded by the various protocols associated with each stage, as described in the discussion of the research instruments and materials that follows. Additionally, the extensive discussion provided in the literature review represents the researcher's effort to make explicit his tacit beliefs, meanings, and understandings associated with self-directed informal learning. Still, at

this point, it is important to address the topic of presuppositional bracketing, or the "sorting out [of] the qualities that belong to the researcher's experience of the phenomenon" (Drew, 2004, p. 215) being addressed in the study.

The somewhat idealistic theory underpinning presuppositional bracketing is derived from "[Husserl's] (1931) thought that the result of this process of bracketing would be a purge of assumptions regarding not only various ranges of things in the world but of the world itself and even of the vary self carrying out the bracketing" (LeVasseur, 2003, p. 413). The "technique" associated with bracketing is described as the attempt by the researcher "to hold prior knowledge or belief about the phenomenon under study in suspension in order to perceive [the phenomenon] more clearly" (p. 408). The scholarly assumption driving this discussion "is that inquiry should not affect its object and that results are untrustworthy if it does" (p. 409).

Unfortunately, "agreement upon the methodological principles has not evolved in phenomenology" (p. 409) and related research methodologies. The result is little common agreement regarding the technique, and even less regarding its value to qualitative research in which the "lived experiences" (p. 408) of participants are the phenomenon being examined, as was the case in this study. For example,

> Heidegger, a student of Husserl . . . disagreed with Husserl's notion of phenomenological reduction [associated with bracketing]. Heidegger (1962) held that consciousness could not be separated from "being in the world." Because of this, we are unable to completely bracket prior conceptions and knowledge—we are necessarily embedded in a historical context" (LeVasseur, 2003, p. 415; see also, Merriam, 1998).

It is Heidegger's "study of being" (p. 415) that underpins much of the contemporary thought regarding narrative theory (Gare, 2002) as it was used by the researcher in the current study.

Data collected through life-story narrative, especially life stories taken largely at face value as in the current study, confound presuppositional bracketing further:

> Salsberry (1989) observed that all knowledge of the external and internal world is mediated by conceptual frameworks. Presumably, these concepts are operative not only in the researcher's interpretation of events but also in the participants' remembered telling of events. Thus, the vexing question of whether we can ever be free of our own conceptual understanding and particular historical point of view is doubled: Even if we, as researchers, can bracket our own viewpoints, what of the participants? Does the fact that participants do not bracket their own preconceived notions in the telling of experience mean that our knowledge is based on a flawed understanding, already skewed from the things themselves? (LeVasseur, 2003, p. 416)

Although "bracketing is considered, ultimately, an untenable project" (LeVasseur, p. 415) for hermeneutic studies such as those involving the holistic analysis of narrative data, there are useful methods for achieving some of the results associated with the idea of bracketing. What agreement there appears to be regarding bracketing relates to "a reflective process by which [the researcher's] opinion and prejudice are suspended to focus attention on what is essential in the phenomenon" (p. 411; see also Ashworth, 1999; Drew, 2004). LeVasseur suggested that such a reflective process can be achieved by a curiosity that assumes "we do not know or understand something in order to attain the philosophical attitude" (p. 417), and through application of "the hermeneutical circle" (p. 418). Together, these elements of the reflective process provide a good description of how the current research was conducted so as to keep presuppositions from unfairly biasing the results of the study.

The concept of the hermeneutical circle derives from scholarly curiosity and "refers to the process of understanding as a dynamic process of fusion of horizons (Gadamer) in which statements are considered as answers to questions. Questions arise within a pre-understanding which is itself the result of having asked questions, and so on"

(Capurro, 2000, p. 81). The application of a hermeneutical circle was achieved in the current study in the following manner:

1. Setting forth the theories underpinning the research in a unique and novel manner: that is, employing a theory of self-narrative to subsume the historically competing theories of social cognitive theory and the theory of social practice.

2. Employing early in the study an extensive and varied literature review clearly setting forth the theoretical bases the researcher was working from.

3. Using categories from previous studies as part of the sampling strategy as opposed to importing preconceived theoretical structures into categorizing data during data analysis.

4. Using an extremely open-ended interview process augmented by interactive questioning (probing) derived exclusively from the content of the data being provided.

5. Applying coding and data comparison software to examine and compare emerging patterns of data in terms of thematic categories suggested by the relevant literature (holistic-content perspective).

6. Applying coding and data comparison software to determine the prominence of emerging patterns of data that will provide the bases for questioning the individual perceptions to discover related themes (holistic-content perspective).

7. Enhancing the comparative value of the study by establishing multiple related studies according to a thematically determined recombination of data.

8. Providing for participant review of the respective data transcription.

9. Creating a data matrix that clearly lays out the analytic results of the study.

10. Reflecting on the analysis of the data through the current literature.

It is clear that the current study, rather than becoming bogged down in the presuppositions of the researcher, has instead made "progress toward sense and meaning by questioning prior knowledge" (LeVasseur, 2003, p. 418), thus expanding the literature by bringing new meaning to the individual experience of self-directed informal learning in the context of career development.

In the description of the research site, Chautauqua County was depicted as a physically large county distinctly divided between north and south. However, the researcher has lived and worked throughout the county for over 30 years. As a result, there was a possibility that one or more of the purposefully selected sample would be familiar to the researcher. That posed little or no problem. The data collection process left little room for unnoticed manipulation by the interviewee. According to Linde (1993), McAdams (1993), Lieblich et al. (1998), Conle (2000b, 2001), and others, a person's life story narration must have a coherence and continuity that is meaningful to the narrator. Altering the narrative in an attempt to include events, settings, characterizations, or themes merely to please or disturb the interviewer is believed to be a difficult thing to do.

Although it is often argued by narrative researchers "that having personal familiarity with the experiences in question gives them a privileged position for interpreting such experiences," (Josselson, p. 11), the researcher heeded Josselson's warning that "issues of over-identification with participants under study may become problematic" (p. 11). To avoid challenges related to such "over-identification," the researcher avoided interviewing close friends or daily workplace acquaintances. Additionally, the researcher's avoided manipulation of the interview process or undue influence due to overidentification by naming the participants alphabetically from the

first interviewed (Anne) to the last (Mary). This process was used to expose data reporting anomalies that could be attributed to researcher influence.

Finally, although the researcher was not the person transcribing the tape recordings to the printed page, it remained his responsibility to give adequate instruction to the professional transcriber so that the most accurate account of each narrative was reproduced (Lieblich et al, 1998). The researcher was responsible for reviewing the taped narratives, editing the transcribed narratives as necessary (Lieblich et al, 1998), and coding the data for analysis.

Data Collection

In order to stay true to the theoretical context of the study, the population must comprise individuals who are more apt to provide data about how they learn on their own (process) during the growth stages of a technology career (structure). This is very different from a situation that is totally process dominated (e.g., participants demonstrate their individual ability to learn) or from one that is totally structure dominated (e.g., the participants demonstrate knowledge they recall about computer technology from previous formal learning experiences), both of which would tend to better define a population for use in a quantitative study. Conversely, data collection for this research endeavor was strongly influenced by the qualitative nature of the study, its multiple case study approach, and the purpose for the research (see the upcoming section on data collection procedures). For the current study, the influences of paradigm and tradition dictated that the data collected remain relevant to understanding "the experience of individuals and the perception they had about that experience" (McCann & Clark, 2003b, p. 31).

According to McCann and Clark (2003b), such a desire for implicit data demands

the use of open-ended interviews: “It is only when in-depth interviews are used that these psychosocial processes—the beginning, end, antecedents and consequences—can be identified” (p. 32). Girden (1996) identified the narrative as the “more prominent” (p. 43) interviewing method for observing “a segment of one’s life that is of interest to the researcher” (p. 43). The following three sections address the description of and procedures for data collection via life-story narrative interview.

Instruments and Materials

At the outset, an important distinction must be made between data collection instruments used to inform the study and data reporting instruments used to inform the researcher. Conle (2000a, 2000b), Josselson (2004), and McAdams (1993, 2001) are among the majority of narrative researchers who placed high regard on the process of reflexivity, the relationship that exists between an interviewer and a narrator, during narrative data collection. “Reflexivity,” stated Josselson, “involves the researcher asking himself or herself, and making plain, how he or she is positioned to understand the meanings of the participants” (p. 11).

Developing the narrative interview experience into “an inherently relational activity” (p. 11) required that the researcher become privy to relevant background data in order to more effectively positioning himself within his relationship with the participant. To this end, the data collection employed three data reporting tools meant to inform the researcher (telephone contact, an initial person-to-person contact, and demographic survey) and one data collection instrument used to inform the study (narrative interview). The data reporting instruments included an initial telephone conversation with the potential participant, an initial face-to-face meeting, and a preliminary demographic

survey completed by each participant and returned to the researcher. A life story narrative provided by each participant comprised the data collection instrument for the study. Each instrument is described below. How each instrument is employed will be addressed in the next section on procedure.

Initial telephone report.

Setting the stage for the narrative interview is an important part of the interview process (Creswell, 1998; Josselson, 2004; Merriam, 1998). The first contact with each participant by the researcher, and therefore the first impression of the researcher, was via telephone. To ensure consistency during the initial telephone conversation with each prospective participant, the researcher employed a loosely followed script, reproduced as Appendix A: Initial Telephone Contact Script. The researcher identified himself, explain why he was calling, provided a brief overview of the project, explained the demands upon the prospective participant as well as the rewards, obtained permission to hand-deliver for completion the general demographic survey form, reviewed anticipated logistics of time and place for data collection, addressed potential ethical concerns, answered questions, and traded contact information.

Initial face-to-face meeting report.

Following up the telephone contact, a short personal meeting with the potential participant provided the researcher an opportunity to review with the participant the purpose of the study, readdress any participant questions or concerns, confirm the participant's willingness to participate, gather the consent form signature, set forth the procedures that would be followed for the interview, discuss how the interview data would be used and what would become of the interview data at the conclusion of the

study. Taking care of the “red tape” at this point in the process left the interview time as unencumbered as possible. The initial meeting allowed for researcher and participant to meet face-to-face, providing a major step in establishing the comfort level necessary for conducting the later life-story narrative interview. At this time, the researcher conducted an extremely brief and greatly simplified “dry run” of the life story narrative process, using a question unrelated to the purpose of the study. In addition to enhancing the comfort level and preparing the potential participant for what might lie ahead, the narrator’s response suggested to the researcher the suitability of the individual as an adequate life story narrator, a step strongly endorsed by Franzosi (1998), Mattingly and Lawlor (2000), McAdams (2001), and Saleebey (1994), each of whom built a strong case for distinguishing between discourse as linearly related facts and discourse as narrative story.

Also during the initial visit, the researcher hand-delivered two copies of the demographic survey form (described in the subsection immediately following): one copy filled out with demographic information about the researcher and one blank form to be completed and returned by the participant within one week’s time via a prepaid, pre-addressed envelope. As an alternative, each participant was offered the same forms made available via e-mail, which all opted for. The researcher-completed sample form served a dual purpose:

1. It provided a model for the participant’s responses.

2. It contained demographic information about the researcher/interviewer, thereby further acquainting the interviewee with the researcher, and placing both on an equal footing prior to the interview process.

See Appendix B: Face-to-Face Meeting Protocol for a checklist of events describe here.

Demographic survey report.

The demographic survey instrument was used to verify appropriate sample selection in accordance with the study's sampling strategy; to provide the interviewer with sufficient background data for conducting a comfortable and informed interview; and to provide the interviewer with possible cues and probes, if needed during the life-story narrative, in order to obtain more details, clarification, or examples (Merriam, 1998, p. 80). As was the situation with the telephone conversation and the face-to-face meeting, data from the demographic survey was used only as a reporting aid to inform the researcher/interviewer and was not analyzed, employed, or included as part of the results of the study. A copy of the demographic survey form is included as Appendix C: Demographic Survey Form. While the survey data depicted above certainly enhanced data collection, it did not (nor was it intended to) provide summary data for comparing and contrasting participants, nor did it provide data that was specifically relevant to or specifically informed the purpose of the study.

Life-story narrative data collection instrument.

The tool of choice for collecting the core data for this research was the life-story narrative. As already noted, the qualitative nature of this study "requires the surfacing and examination of the 'tacit mental processes' that have been employed to construct 'mental models of the world'" (Rawson, 2000, p. 227) in which self-directed learning is manifested as career development. "People convey change through stories" (McAdams, Josselson, & Lieblich, 2001, p. xx); therefore, the life-story narrative was the tool selected for allowing the researcher to surface experiences of self-directed learning in

terms of each individual's perspective on his or her career growth and development. Life-story narrative is a data collection tool flexible enough to adapt the research focus to each participant within his or her respective context, while also lending itself to uncovering unexpected paths and cues that might add depth to the understanding of the phenomenon being researched (Strauss & Corbin, 1998).

The narrative interviews were conducted, for the most part, in a neutral location (home or unused office) and most often at the close of the work day or in the early evening. Table 2 provides the setting information for each interview. All but one of the interviews continued without interruption for approximately 1½ hours. Earl, being a lone employee, opted to conduct the interview between waiting on customers bringing in PCs to be left for service. What was originally thought to be a less than desirable interview location, turned out to be advantageous in that the researcher had the opportunity to "listen in" on Earl's conversations with customers, and recorded two of Earl's interactions with his customers as part of the interview. Earl's customer interactions were almost indistinguishable from the rest of his interview: Earl used stories in the responses to his customers. In both instances, a story initiated with a customer became Earl's segued into the interview narrative after the customer left. Overall, data gathering characteristics had little or no influence on the integrity of the collected data.

Table 2

Data Gathering Characteristics

Name	Setting	Structure	Time	Words
Anne	Home; evening	Fluid	1.25 hours	10,233
Belle	Home; evening	Methodical	1.20 hours	8,242
Cassy	Neutral space; afternoon	Methodical	1.30 hours	10,152
Dirk	Neutral space; afternoon	Rambling	1.5 hours	14,750
Earl	Workplace; morning	Rambling	1.35 hours	8,124
Fred	Home; evening	Fluid	1.40 hours	14,020
Gabe	Neutral space; afternoon	Rambling	1.25 hours	12,101
Halle	Workplace; afternoon	Fluid	1.20 hours	11,956
Ian	Workplace; morning	Rambling	1.50 hours	15,639
Jake	Workplace; afternoon	Rambling	1.30 hours	13,896
Kari	Neutral space; afternoon	Methodical	1.15 hours	13,556
Link	Neutral space; afternoon	Fluid	1.4 hours	11,257
Mary	Home; evening	Methodical	1.15 hours	10,130

The current study was concerned primarily with stories about each individual's identity as a self-directed learner in a career development role. While care had to be taken, said Schreiber, "to avoid imposing too much structure on the interview," thereby compromising "the quality of the data" (quoted in McCann & Clark, 2003a, p. 8; see, also, Yin, 2003, pp. 89-90), some stabilizing format, some "instrumental rationality" (Conle, 2000b, p. 56), was deemed necessary. Therefore, the interviewer was guided by an opening statement and four "identically phrased, open-ended questions . . . designed to

elicit first impressions, significance, and meaning of the [life] experiences" (Girden, 1996, p. 48) encountered as self-direct learning by each individual during the career development process (see Appendix D: Narrative Interview Protocol). Finally, how each participant defined what constituted a "story" was largely left up to him or her (Bruner, 1986; Clandinin & Connelly, 2000; McAdams, 1993).

Each interview question was strongly grounded in the research literature. The current study followed the lead of numerous narrative studies detailed in the research literature by, in the words of Mattingly and Lawlor (2000), asking participants "to tell stories about particular [significant] incidents in their interactions" (p. 8) with their respective environments. Additionally, the current interview questions appealed to "event-specific knowledge" (McAdams, 2001, p. 108), which, according to McAdams, is a means for gaining access to a participant's personal goals as they relate to the individual's activities.

Acknowledging the reported success of Markus and Nurius (1986), the current study queried participants using questions with a "tell us about what is possible for you" (p. 958) connotation regarding self-directed informal learning in the career environment. For the purposes of the current study, this type of questioning worked well, because, as Markus and Nurius pointed out, "empirical findings on what people believe is possible for them suggest that individuals do have access to this type of self-knowledge and are willing to share it" (p. 957). An awareness of the Markus and Nurius study influenced the interview questions in other ways. Important to the current study was their well-supported suggestion that "the value of considering the nature and function of [self-narrated stories] is most apparent if we examine . . . the current or *working* [self-

narration]" (p. 957, italics in original). Therefore, the interview questions used in this study drew on the current working self-narrative of each participant.

Clandinin and Connelly (2000) said that any narrative inquiry must explore "four dimensions" (p. 50) of interaction associated with participant activity related to his or her working self-narrative:

1. Inward, "toward [one's] internal conditions, such as feelings, hopes, aesthetic reactions, and moral dispositions" (p. 50).

2. Outward, "toward [one's] existential conditions…the environment" (p. 50).

3. Backward, into the temporal past.

4. Forward, into the temporary future.

Following Clandinin and Connelly's advice, the interview protocol for the current study included four guiding questions that purposefully focused each participant on his or her current understanding of the personal and social significance of self-directed career learning "synchronically" (McAdams, 2001, p. 102) in the here and now as well as "diachronically" (p. 102) across time.

Finally, the interview questions were influenced by the researcher's careful reflection on the questions being asked. Following the instruction of Josselson (2004), the researcher continually tested, edited and retested the interview questions on friends and acquaintances, who were formative technology users. The purpose of this venture, according to Josselson, "involves the researcher asking himself or herself, and making plain, how he or she is positioned to understand the meanings of the participants" (p. 11). In other words, the interview questions that follow are included, in part, because they were perceived by the researcher to be personally meaningful for understanding how self-

directed informal learning is related to career development.

The order and content of the four interview questions was as follows:

1. Introduction: In your demographic report, you stated that you are _____. Describe, in simple story form, a typical day during which you use technology as part of your career role.

2. Scenario 1: I am interested in better understanding the many ways that people take charge of informally acquiring skills and knowledge related to advancing their career. The demographic survey you completed listed several types of these self-directed informal learning activities. What I would like you to do now is tell me a story about how you went about acquiring a currently *significant* [pause] *career related* skill (or knowledge) associated with using technology [pause] that you have learned *informally* [pause]. (Based on Linde, 1993; Livingstone, 2001, pp. 24-27)

3. Scenario 2: Expand the story you just told me by telling about how your career-related environment *influences* your career-related learning and *shapes* your career goals? (Based on Linde, 1993; Livingstone, 2001, pp. 24-25; Livingstone & Sawchuk, 2000, p. 136; Madill et al., 2000, p. 18; McAdams et al. 1996, p. 352; Plunkett, 2001, p. 162)

4. Scenario 3: Now it is time to create a story about the future. Based upon your *current* understanding of your career trajectory (where you think you are going with this career), tell me a story about how you will go about acquiring a *significant* technology-related career skill or knowledge that you would like to learn? (Based on Josselson, 2004, p. 21; Linde, 1993; Markus & Nurius, 1986, p. 962; McAdams & Bowman, 2001, p. 12)

5. Scenario 4: Finally, I am interested to learn what you believe you are gaining from the self-directed informal learning you do or have done. Place into story form, how

this type of learning has enhanced or diminished your career development either technically, politically, socially, practically, or personally. (Based on Bandura, 2002, p. 280; Kush & Cochran, 1993, p. 438; Linde, 1993; Livingstone & Sawchuk, 2000, pp. 138-140)

The interview session concluded with the researcher's request of the participant to add anything to the record that he or she thought might be important to the conversation or that the researcher might have overlooked.

A comment is needed regarding the use of probing during the interview sessions. "Narration depends on the interaction between interviewer and narrator" (Girden, 1996, p. 44), which suggests that a level of technical, social, and psychological comfort must be created by the interviewer for the interviewee. Therefore, in order to provide interviewees with the information necessary to provide the most useful narratives, the interviewer offered examples in a manner that Conle (2000b), a significant and prolific contributor to the literature on narrative research, referred to as "resonance" (p. 203). She described the narrative phenomenon of "resonance" as occurring when one person engaging in the narrative interchange reacts to the story of the other person with a similar or related story of his or her own (Conle, 2000a, p. 53). As a result, whenever possible, as a technology profession himself, the researcher/interviewer addressed interviewee questions and responses by providing a story from the researcher's background that, in his opinion, best resonated with the narrative of the interviewee. Thus, as Conle (2000a) predicted, resonance became "the process that carries the inquiry along" (p. 53).

The interview protocol was used either to guide the interview as an interactive conversation (Conle, 2003b; Girden, 1996) or, if the participant could not maintain a

continuous narrative, the scenarios contained in the protocol were verbalized by the interviewer in an outright manner. In either case, all parts of the interview protocol were included. The interviews with Belle, Cassy, Kari, Jake, and Mary were the most methodical, proceeding largely in a question-response style often punctuated with one or more prompts. The interviews with Anne, Fred, Halle, and Link proceeded as interactive, fluid conversations. Dirk, Earl, Ian, and especially Gabe needed little in the way of prompts, but their narratives rambled considerably. Although the more rambling narratives made transcribing and coding more labor-intensive, the presence or lack of formal structure did not appear to have a noticeable affect on the usefulness of a narrative for the current study. Table 2 compares the narrative structure for each participant.

One other aspect of the interviews that did not appear to affect the useful quality of the narratives was the length of each interview: length in terms of time and in terms of number of words. The three longest interviews, each lasting a full 1½ hours, were with Dirk (14,750 words) and Ian (15,639 words). The two shortest interviews, each just over 1 hour 10 minutes long, were with Kari (13,556 words) and Mary (10,130 words). The differences in the number of words provided per participant appeared to be related to pensiveness and narrative delivery rather than narrative content; some interviewees merely were faster or more polished talkers. Table 2 compares the narrative delivery characteristic for each participant.

Data collection tools.

The tools associated with each of the data collection instruments are, according to Creswell and Merriam, the basic tools of the qualitative researcher: the telephone (or on-line computer with email capabilities) and a reliable recording device. The use of the

telephone is explained in detail in the next section for procedures; therefore, a few words are directed here toward the use of the devices that were employed to record each life-story narrative. The researcher, as described to each participant during the initial telephone conversation, recorded the participant's life story narrative using one of a matched pair of Sony Clear Voice audio cassette recorders (model number TCM-465V), one used as the primary recorder and the other used as backup. This particular Sony audiocassette recorder is equipped with an extendable microphone that has proven very successful at picking up even low-volume conversation within a large conference room. It also provides a reliable counter and cue marker, both of which were useful for coordinating interviewer written observations with the taped data. The audio cassette tapes used were Type 1 (normal bias) TDK-D90 (45 minutes per side). Prior to each interview, the researcher placed a new tape and two fresh batteries into the primary recorder, and tested both recorders for proper operation. At least two additional D90 tapes and four replacement batteries were carried at all times. The actual use of the tape recorders is discussed in the following section about procedures.

Procedures

The preceding discussion includes specific event-related protocols that drove the data collection procedures (Yin, 2003, pp. 67-69). Therefore, the purpose here is to enumerate and depict the sequence of data collection events.

1. Determined sample per sampling guidelines discussed in chapter 3: gainfully employed formative technology user defined by age grouping, educational attainment grouping, and work class grouping.

2. Made initial telephone contact per the protocols described in the appropriate subsection above and Appendix A: Initial Telephone Contact Script.

3. Made initial face-to-face contact per the protocols described in the appropriate subsection above and Appendix B: Face-to-Face Meeting Protocol.

4. Conducted any necessary follow up to the demographic survey form data: called participant if the form did not arrive by mail within 10 days of the face-to-face meeting, called if any parts were illegible, called if any data were unclear, called to acknowledge receipt and to confirm interview time and place.

5. Conducted the narrative interview per the protocols described in the appropriate subsection above and Appendix D: Narrative Interview Protocol.

a. Arrived at the prearranged interview place 15 minutes early to prepare the interview site: conducting a site overview to determine probable distractions, setting up and testing the tape recorders.

b. Determined new time and/or place to meet if the prospect for significant disruption to the impending interview existed.

c. Took up a seat across from the participant (at a comfortable distance for natural conversation or across a table, if that is the situation), tested the microphones again, placed the microphones in a prominent but not central position to the conversation, and addressed any lingering questions or concerns for either himself or the participant.

d. “Broke the ice” by asking the participant briefly to describe his or her current career role (i.e., job or occupation).

e. Interacted with the interviewee during the interview only as necessary to show interest (e.g., Oh, that's interesting.), acknowledge points (e.g., You really said that?), clarify points (e.g., Now, that happened when?), and answer procedural questions (e.g., Sure, you can take a break for a drink of water.).

f. Addressed interviewee questions related to the interviewer's content question and interviewer content-related probes through the process of resonance (telling a similar personal story), as described in the instruments subsection above.

g. Monitored the audiotape usage in order to allow time between questions to change audiotapes as necessary.

h.Concluded by thanking the interviewee for his or her time and commitment to the researcher project, reviewing the process and timeframe for getting a copy of the transcribed interview to the participant for review, and the awarding of the dining gift certificate.

6. Used a Fisher double audio cassette deck to duplicate the interview audiotapes immediately following each interview; one copy being placed into a locked storage to be retained for five years, the other to be made available for transcribing the tape-recorded interview to a Microsoft Word 2000 document saved to a 128 MB Lexar JumpDrive™ (or equivalent) provided by the researcher to the transcriber.

7. Finalize arrangements with an experienced office secretary who had been recommended by the local Chamber of Commerce and who had provided to the researcher an example of the types of transcription she engaged in on a regular basis (no

professional transcribers were listed in the yellow pages for the Chautauqua County region).

8. Agreed with transcriber on transcription conventions to be used.

a. Use only a very basic set of transcription codes because there would be no need to analyze the transcript from a linguistic or psychological perspective for this study.

b. Render the transcription of interviewee speech patterns as close to common proper usage as the transcriber was capable of deciphering using a sample transcription and instructions for transcription provided in Lieblich et al. (1998), the researcher and the that.

9. Agreed with transcriber on the transcription page protocols adapted from Lieblich et al. (1998), Löyttyniemi (2001) and Riessman (1993).

a. An agreed upon header for each narrative was consistently employed (see Appendix E: Sample Transcription).

b. Each line of the transcribed data for each separate narrative text was sequentially numbered beginning with the first line numbered as 1.

c. RDP was used to indicate the interviewer.

d. The interviewee's alphabetized pseudonym was used to identify him or her (see the section on ethics for more detail).

e. A pause of three seconds or more was indicated by entering […] into the flow of text.

f. Unclear or inaudible words were keyed in as: [unintelligible].

g. Potentially informative non-word occurrence such as laughs, sighs, weeping, made-up words, and so forth were enclosed in parentheses at the point in the text they occur: [laugh].

h. Quotation marks were used to designate dialogue reported by someone else including the narrator by the interviewer, the interviewer by the interviewee, or the interviewee by the interviewee.

10. Copied the files from the portable media to a project file on a state-of-the art PC (1.8GHz Pentium IV processor, 1GB RAM, Windows XP Professional OS, Microsoft Office 2000 Professional).

11. Read the completed transcription while listening to the audiotapes of the transcribed interview making corrections or edits were as necessary to aid the interpretation of the data by the researcher.

12. Saved copies of the final edited version of each narrative to the researcher's project file, to a Memorex CD-R disc, and to a medium of choice designated by each interviewee (floppy diskette, CD-R, or e-mail attachment).

13. Followed review of the edited version of the transcription by the interviewee with additional final edits as suggested or requested by the interviewee.

14. Saved working copies of the new version of each transcribed narration as previously noted for use during data analysis.

Validity and Reliability of the Study

This study was constructed with the necessary criteria for judging the quality of the research being done. For qualitative research addressing how-style questions, Yin (2003) suggested three distinct tests for demonstrating research quality: construct

validity, internal validity, and reliability (p. 34). Following are descriptions of the rigorous standards that were employed to assure the current study is of the highest quality.

"Construct validity," according to Yin, is built upon the investigator's success with two procedural endeavors: (a) selecting the appropriate case or cases to be studied and (b) demonstrating that the research is actually about that case or those cases (p. 35). Among the best demonstrations of construct validity, stated Yin, are the researcher's use of "multiple sources of evidence," creating a "chain of evidence," and by having "key informants review [a] draft [of the] case study report" (p. 34). These validity criteria are most appropriately associated with the data collection component of a research study. The current study engaged each of these judging criteria.

Multiple evidence sources can refer to a researcher's use of several distinct types of evidence including documents, archival records, direct observation notes, physical artifacts, and interviews (Yin, p. 86). When obtaining and evaluating several different types of evidence is not practical, which it often is not (Yin, p. 97), a useful alternative for the researcher is to isolation a single evidence source type and apply it to multiple participants. This latter was the data collection procedure employed by the current study. More specifically, the data collected for the study were recombined 14 different ways in order to comprehensively challenge and evaluate the evidence.

A term often associated with the use of multiple sources of evidence is "triangulation" (Yin, p. 97; see also, Creswell, 1998; Merriam, 1998). There are several distinct forms of triangulation (Yin, pp. 98-99). While the current study was not specifically concerned with achieving "converging lines of inquiry" (p. 98) by way of

triangulating multiple data source types or by way of triangulating the input of multiple investigators (see the section on data analysis feasibility and quality), it did employ two other means for triangulating data.

As noted in the conceptual framework for the study and expanded upon in the literature review, the current study used "theory triangulation" (p. 99), integrating respected theories related to self-narrative, social cognition, and social practice (theoretical replication [Yin, p. 49]) in order to inquire into and explain self-directed informal learning during career development. Additionally, by using an identical interview protocol (literal replication [Yin, p. 49]) with multiple participants, the study benefited from "methodological triangulation" (p. 99), creating converging lines of inquiry across multiple resources while remaining focused on only a few key concepts, themes, or facts.

There also existed for the study both a strong chain of evidence as well as a strong data review component. Data collection via audio tape and transcription provided an enormous evidentiary database (over 12 hours of audio recordings and more than 300 pages of transcribe narratives) that will be maintained by the investigator 5 years after the study concludes. The magnitude of the data base, augmented by the researcher's comments and memos (Strauss & Corbin, 1998, p. 110), according to Yin (pp. 34-36, 101-105), greatly strengthen the construct validity of the study (see also, Clandinin & Connelly, 2000, pp. 116-117). Finally, as carefully described in the data collection procedures, the collected narrative data was used only after it had been read and verified by each life-story narrator, thus completing a strong case for the construct validity of the current study.

Creswell (1998) and Merriam tended to conflate a study's construct validity with internal validity, referring to them jointly as describing how well the data collection fits the research questions (Merriam, p. 201). Yin (2003), however, related the internal validly of a study to data analysis (p. 34). Moreover, he described internal validity as exclusive to "causal (or explanatory) case studies, in which an investigator is trying to determine whether event *x* led to event *y*" (p. 36). Although the researcher's purpose for the current study did not include the intention to be predictive or aspire to determine specific causal links between theories or data, the researcher has attempted to explain the relationship of self-directed informal learning and career development. Developing a logic for analyzing how self-directedness and informal learning relate and how together they are related to career development was especially important for a study built upon researcher inferences extracted from narrated events that the researcher cannot directly observe (p. 36). Therefore, the analytic strategy for the current study, being specifically related to data analysis procedures, is described in detail as part of the discussion regarding the feasibility and quality of the data analysis that follows.

Qualitative research studies focusing on how-style questions that lead to explanatory or descriptive conclusions should not be held accountable to demonstrate "external validity," stated Yin (p. 37). Yin went on to make a weak distinction (p. 34) between external validity (related to research design) and a study's reliability, or the ability of another researcher to replicate the study (related to data collection). Merriam made no such distinction. "External validity," according to Merriam (1998), "is concerned with the extent to which the findings of one study can be applied to other situations" (p. 207). In other words, Merriam was describing the generalizability of a

study. “The narrative inquirer,” commented Clandinin and Connelly (2000), “does not prescribe general applications and uses but rather creates texts that, when well done, offer readers a place to imagine their own uses and applications” (p. 42).

Therefore, although the current study demonstrates reliability according to Yin’s criteria of using procedural protocols, creating a case study database, and replicating the data collection procedure over multiple cases (p. 34), there is no effort made to suggest the current study is generalizable. In keeping with Clandinin and Connelly, Merriam, Creswell, and Lieblich et al. (1998) that generalizability is not a hallmark of qualitative case study research, especially narrative studies, the current study was not concerned with specific proofs of reliability leading to its generalizability.

Data Analysis

“We (re)present our data, partly based on participants’ perspectives and partly based on our own interpretation” (Creswell, 1998, p. 20). Recognizing that perspective and interpretation are both doorways to a subjective and potentially biased explanation, this researcher made every effort to “strive to have a general analytic strategy—defining priorities for what to analyze and why” (Yin, 2003, p. 109). The data analysis procedures and the discussion regarding the quality of the analysis follow.

Procedures

The data available to the researcher for analysis consisted exclusively of audio taped narratives and their respective transcribed texts. This is not out of the ordinary for case study, biographical, or ethnographic narrative analysis research as suggested by Yin (2003, p. 97) and exemplified by Conle (2000a, 2000b), Josselson (2004), Landman

(2001), Lieblich et al. (1998), Löyttyniemi (2001), McAdams (1993), and Merriam (2003).

For this study, two methods of data analysis were combined. First, because both the theoretical framework and the sampling strategy were grounded in a specific portion of the research literature, a categorical-content perspective (Lieblich et al., 1998) was used to organize, interpret, and compare the current data according to the categories already employed in quantitative surveys administered by Livingstone (1998, 2001) and others. Second, a holistic-content perspective (Lieblich et al, 1998) was employed to comparatively interpret the data, between study cohorts and collectively, in terms of the major themes, global impressions, and patterns that emerged. That is, in the words of Franzosi (1998), an effort ws made to "tease out of [the text of each narrative] the common threads ('themes')—common to the texts, but as they apply to real human beings" (p. 548).

The category-content perspective.

The category-content perspective (Lieblich et al, 1998) was employed as a guide to organize, interpret, and compare the data according to categories previously used in multiple quantitative surveys administered by Livingstone (1998, 2001) and others, while accommodating a clear focus on the major research questions of the current study. As described by Lieblich et al. the first analysis of the collected data proceeded as follows:

1. A category-content analysis was performed on each narrative in the order the interviews were conducted and immediately after acceptance of the transcript by the interviewee.

2. The categories for sorting and coding the data for analysis were “predefined by . . . theory” (Lieblich et al, 1998, p. 113). Based upon the researcher’s interpretation of the relevant literature four major analytic categories were created. These were then broken into three or four sub-categories, and the sub-categories into 114 codes for finely categorizing each line of each transcribed narrative. See Appendix G: Category-Content Literature Reference, for a hierarchical listing of categories, sub-categories, and codes; the definitions associated with each; and, the supporting theoretical underpinnings. Data coding and sorting was conducted with the aid of HyperRESEARCH™ 2.6, a qualitative study evaluation software tool (explained in more detail under the next sub-section heading).

3. Following the categorical analysis of each individual transcribe narrative text, HyperRESEARCH™ 2.6 was employed to conduct additional categorical data sorting according to the demographic categories used by Livingstone (1998, 2001). This resulted in the construction for analysis of 12 different cohorts:

a. Study 1: ages 25-34.

b. Study 2: ages 35-44.

c. Study 3: ages 45-54+.

d. Study 4: highest formal degree: high school or GED degree.

e. Study 5: highest formal degree: AA, AS or equivalent technical degree.

f. Study 6: highest formal degree: BA or BS.

g. Study 7: highest formal degree: MA, MS, MBA.

h. Study 8: career level: staff or service worker.

i. Study 9: career level: management or supervisory.

j. Study 10: career level: self-employed.

k. Study 11: female participants.

l. Study 12: male participants.

Additionally, Studies 8, 9, and 10 were recombined to realign participants according to both their own perception of there career level role and that of the researcher.

4. Starting with the second transcribed narrative (Belle's), a procedure very similar to the process Merriam refers to as "analytic induction" (p. 160) was employed. That is, with the completion of the third category-content analysis, "a rigorous process of successively testing each new incident or case against" (p. 160) previously coded cases was instituted in order to keep the researcher's working definitions of the categories fresh and consistent. This lead to the creation of additional codes (those marked with an asterisk in Appendix G).

5. With each rereading of the narrative texts, extensive annotative notes were added to the accumulating database.

6. Finally, the results of multiple reports generated from the data using HyperRESEARCH™ 2.6 were entered into Microsoft Excel in order to graph the results as line, bar, and pie charts (which will be discussed in the upcoming sections for results and discussion).

Appendix F: Sample HyperRESEARCH Report, shows a portion of a typical data analysis report. The sample provided is part of a 114-page report (one page for each coded element) created to compare the frequency of participant responses for each coded element. In this sample, the code being shown is in the category: Career Development-Agency, subcategory Competence, and code Causalities. Made visible by this report is

the number of researcher-determined instances in which each narrator demonstrated an obvious awareness that there may be multiple causalities precipitating the learning of a similar skill or piece of knowledge. Also shown as part of the sample is an example of several of the many source annotations, that is, researcher notes, comments, epiphanies, or memos (Strauss & Corbin, 1998), added to specifically meaningful locations within the coded text.

The categorical-content perspective lent itself well to searching out individual instances of agency and individual instances of contextual influence. By transferring categories, codes, and code count percentages to a Microsoft Excel worksheet, very revealing pie charts were created for each participant, a sample of which is available as Appendix H: Categorical Content Pie Charts. By reporting code counts as percentages of all coded responses for a given participant, wordiness did not influence the patterns of coded occurrences for the elements being observed. While the Excel pie charts were helpful for informing the researcher regarding patterns that may be present within the coded texts, because code counts were subjectively determined by the researcher the charts are not statistically precise. The purpose of the categorical-content analysis was not to quantify the data, but rather to use previously employed quantitative categories to organize the current data for the holistic comparative analysis suggested by the qualitative paradigm of the study.

The holistic-content perspective.

The holistic-content perspective (Lieblich et al, 1998) was the second data analysis procedure employed. The holistic-content perspective assumed a dynamic capacity for comparatively interpreting the data between study cohorts and collectively

across all participants in terms of the major themes, global impressions, and emerging patterns. The perspective begins with the premise “that the participants are telling us, as best they are able, their sense of their subjective experience and meaning-making” (Josselson, 2004, p. 5). Taking each narrative at face value, the stance of the researcher becomes that of an interpreter “trying to unearth and highlight meanings that are present in the informant/participant’s communication” (p. 4), all the while understanding that “there is no single valid interpretation…of a text, even within a single interpreter” (p. 20).

Based largely upon the detailed description provided by Lieblich et al, the holistic-content perspective for data analysis became a five-step procedure for expanding upon the categorical-content analysis to explore a variety of study-specific cohorts and for applying a robust narrative story analysis. The holistic-content perspective was engaged as follows:

1. Having read and reread the individual narrative transcriptions multiple times as part of the category-content analysis step, the researcher was already in compliance with the recommendation of Lieblich et al. (1998) to read “the material several times until a pattern emerges, usually in the form of foci of the entire story” (p. 62). Copious annotative notes related to the individual narrative texts were reread and compared to each other to begin the holistic-content analysis process. Such a procedure is consistent with Creswell’s suggested starting point in his data analysis spiral for case study researchers.

2. Patterns and themes initially recorded as annotations for individual texts were compared in order to create a “global impression” (Lieblich et al., p. 62) of the all the career life-story narratives, first as study-related cohorts, then collectively.

HyperRESEARCH™ 2.6 was used to create a series of different reports to aid in checking emerging global patterns and general themes (see the upcoming section on data management for more information).

a. Once again the categorical-content analysis coding counts were charted. This time actual individual counts were placed on a line graph in order to seek relative response patterns among members of study-specific cohorts. A sample line graph is available as Appendix I: Sample Cohort Line Graph. The line graph in Appendix I shows the counts for all agentive codes (only a small portion of the Excel spread sheet that the graph is base upon is included) for the youngest cohort in the study, those ages 25-34. Certainly a wordier narrative had the potential for greater count values; however, what was more interesting than actual count value was the relationships between cohort member lines on the graph.

b. Noted at this point were the "unusual features of the story such as contradictions or unfinished descriptions" (p. 62), as well as any content that the researcher believed might be instructive to the stated purpose for the study. The actual text references that were found to be instrumental in defining the emerging patterns or themes were "bookmarked" for later recall and use.

3. The process the researcher employed to determine the "special foci of content" (p. 63), that is, patterns or themes, that were emerging from the narrative stories taken as a whole, is similar to the "constant comparative method" documented by Merriam (1998).

a. The constant comparative method is a "recursive and dynamic" (p. 155) strategy weaving careful reading and rereading with the continual comparison of

content data to the emerging patterns, themes, or other aspects of the holistic story that the researcher "might wish to pay special attention" (Lieblich et al., p. 62).

b. Especially helpful to such a holistic interpretation of the data was being able to explore the common story elements associated with the participant narratives. Stories, according to Bruner (1986), have coherently constructed plots that build upon predictable actions toward observable themes; such was the case for the majority of the narratives collected in the current study. Although story elements can be, and were, plotted as line graphs and pie charts, the most revealing holistic observations arose from multiple readings of the individual stories using the constant comparative method (Merriam, 1998). In other words, the multiple readings of the narratives as stories, individually, then among cohorts, then again from first to last as a group, with a critical eye to the continually accumulating source annotations, ultimately revealed a story about the stories.

c. The flexibility of the report generating capability of HyperRESEARCH™ 2.6 proved invaluable for "visualizing" the data during this phase of the data analysis.

4. Additionally, as HyperRESEARCH™ 2.6 was used to examine, sort, hierarchically collect, and view relationships among narrative text passages, it's report capabilities were also employed to collect and compare researcher annotations, or "memos" (Strauss & Corbin, 1998), as well as reference quotations related to each coded pattern or theme.

5. After each pattern or theme had been followed throughout the holistically analyzed texts, the researcher inspected each pattern or theme by paying particular attention to:

a. How they related to the formal research questions for the study.

b. How they related to Clandinin and Connelly's (2000) four narrative dimensions.

c. The transitions between and among patterns and themes.

d. "The context for each one [creates] salience in the text" (Lieblich et al., p. 63).

e. "Opposites or extremes . . . bring out significant properties" (Strauss & Corbin, 1998, p. 94).

When the researcher had proceeded through the five steps comparing each individual narrative text to all the narrative texts combined, and he was comfortable that he had saturated the salient possibilities for analysis, a matrix of major patterns and/or themes was developed referenced to the HyperRESEARCH™ 2.6 codes in the study database and, ultimately, to the specific passages supporting them. Finally, using the relationships displayed through the matrix and the levels of abstraction demonstrated in the diagram, a description of "entrepreneurial learning" arose, laying the foundation for the researcher preparation of a "rich, thick" (Merriam, p. 211), holistic interpretation of the relationship of self-directedness to informal learning, and self-directed informal learning to career development.

Data and Research Management

The main data analysis tool employed by the researcher in the current study was HyperRESEARCH™ 2.6; its salient attributes are listed below:

1. Teacher/student freeware downloadable from ResearchWare, Inc. at http://www.researchware.com/hr/downloads.html.

2. Integrates multiple media (text, audio, video).

3. Code List Editor allows viewing and editing of the Master Code List.

4. Annotation Window allows adding a memo or annotation to any code reference in the study.

5. Codes are hyperlinked to original text passages for easy recall.

6. Code Map Window allows for exploring graphic representations of the relationships between Master Code.

7. Hypothesis Tester helps build theories and test them against the codes applied to the data.

8. Multiple queries, filters, and report options are available.

Feasibility and Quality

Feasibility, according to Leedy (1997), is a function of the right problem, the right data, and the right evaluation. Based on those criteria, the current study was a very feasible research endeavor. The research problem, presented in chapter 1, brings together two well-researched and highly regarded areas of theoretical concern: learning and career development. Chapter 1 demonstrated a gap in the current literature that this study addressed. The literature review of chapter 2 demonstrated the current study to be a logical step in the current evolution of research related to learning during the career

development process (Bandura, 2000a; Brooks & Brown, 1996; Lent et al., 1996; Livingstone, 2001; Young & Valach, 2000). Additionally, chapter 2 made a strong case for discovering the data related to the problem within people's everyday self-narrated career experiences. The study's methodology, described in chapter 3, points out that the current study, in faithfully following the time-honored qualitative research tradition and the highly documented case study approach, properly located the necessary data, obtained the data, analyzed it, and richly reported it. Finally, chapter 3 is thorough in demonstrating the potential for the study's outcome to be considered valid and relevant.

Allowing that the current study has been, indeed, a feasible study to conduct, there remains the question raised earlier of internal validity for the study. In other words, was the theoretical foundation fully evaluated? Was the data properly employed as evidence? Were the researcher's inferences sound? (Yin, 2003, p. 36). Yin offerred several criteria for judging the quality of case study data analyses. First among Yin's means for judging the quality of a study's internal validity is explicating a "general analysis strategy," which was evident in the preceding section. Four other means for judging the internal validity that are evident in the current study include exploration of rival explanations (p. 112), explanation building (p. 120), pattern matching (p. 116), and cross-case synthesis (p 133).

The judging criteria related to rival explanations, explanation building, pattern matching, and cross-case synthesis were closely related in the current study. The literature review made clear that this study evolved out of theories strongly supporting the exploration of the participants' narrated events interpreted against a multitheory backdrop comprised of social cognitive theory, theory of social practice, and self-

narrative theory. With the researcher bringing to the data analysis multiple possibilities for describing, comparing, accepting, and rejecting rival theories, “the more confidence you can place in [those] findings” (p. 113).

Because this was an explanatory case study, explanation building (p. 120) was an important part of the data analysis strategy. Typically, according to Yin, “explanation building has occurred in narrative form” (p. 120), which was the situation for the current study. “Because…narratives cannot be precise,” continued Yin, “the better case studies are the ones in which the explanations have reflected some theoretically significant propositions” (p.120). The strategy for the current study has included the careful integration of three major theoretical positions into a thick, rich, explanation of how the theories are involved in relating self-directed informal learning to career development.

As it relates to the current study, a “pattern matching” strategy, according to Yin (p. 116), is composed of rigorous analyses based upon “repeated comparisons” (p. 118) of data in order to determine supporting patterns as well as alternative patterns for explaining the theoretical relationship between self-direct informal learning and career development. Pattern matching brings together the surfacing of rival theoretical evidence with the building of a logical explanation for the relationships of the theories, events, and contexts being observed. The more often the patterns can be examined and synthesized across multiple cases, the more validity the data analysis acquires. Yin called for a comparative evaluation “of at least two cases” (p 133). The current study accommodated cross-case syntheses employing four carefully developed categories applied to 12 different cohort groupings.

A final comment is in order regarding the number of evaluators necessary for

analyzing and interpreting case study data. Most narrative researchers are in clear agreement that there can be only one valid interpreter of the data. Because the interviewer and the narrator tend to "resonate" (Conle, 2000a, 2000b) in the joint creation of the narrative, "the outcome of [the text's] reading by a different 'model reader' is unpredictable" (Franzosi, 1998, p. 545). McAdams et al. (1996) lent credibility to Franzosi's claim, reporting that in studies where multiple interpreters were used, reliability coefficients for the raters were low enough to not be relevant (p. 361). As a result, the current study followed the path of most narrative research studies by recognizing that the potential for the best quality analysis rested with a single interpreter.

Ethical Issues

Whenever research includes the potential for entering into the private world of an individual's personal life story, the issues of research participant preparation and confidentiality must become a primary concern. The paramount concern must be for the emotional well-being of the participants. Therefore, as this researcher employed life-story narrative as a data collection tool and narrative analysis of the narrative texts as the data analysis tool, he remained constantly aware that the telling of one's story in the potentially conflicting context of career development may create an unanticipated personal impact on any given participant. To that end, the researcher maintained the right for any participant "to voluntarily withdraw from the study at any time" (Creswell, 1998, p. 114). None did. In fact, as predicted by McAdams (1993), most participants found the experience of recalling how they have succeeded or attempted to succeed as being extremely pleasurable.

Additionally, the researcher provided each participant the opportunity to examine

and request changes to the transcribed narrative text. With the exception of a few misspelled proper names, no changes were requested for any of the thirteen transcripts.

Certainly the idea of personal life stories evokes a concern for participant confidentiality. As previously noted in the section about data collection, the researcher personally contacted each participant. During the ensuing conversation, the researcher explained the nature and the purpose of the study, but made no mention of intended outcomes or developing hypotheses. The initial contact conversation was used exclusively to determine the willingness of the participant to engage in the study and to answer participant questions about the study, including the appropriateness of his or her involvement in it. The initial contact was used to complete the "red tape" of participation including completion of consent forms.

No interviews were set up or conducted until the researcher had completed the appropriate application for use of human subjects, returned it, and received approval from the Walden University IRB. Finally, no interviews were conducted until the researcher's advising committee and the appropriate Walden University boards and personnel had reviewed and accepted the research proposal.

Summary

Storey (2000) summarized the current perception of the context in which one's career as a technology user currently exists:

> Advances in communication and information technology, allowing the almost instantaneous transmission of information worldwide, have facilitated the internationalization of organizations. Technological advances in other areas have led to radical changes in organizational structures . . . Technological advances have also had an impact on the makeup of certain sectors of the economy; for

> example, reduced entry costs have enabled small businesses to compete against large corporations. (p. 25)

Although theories exist that attempt to explain how the individual goes about learning what is necessary to develop his or her career within such a rapidly and continuously changing context, one group of prominent theories uses as the unit of analysis the individual as agent while an equally well-respected group perceives learning as distributed across the career context the individual is a part of. Neither theory set, however, appears to take notice of the important contribution of self-directed informal learning as a major component of career development. Therefore, this researcher conducted a study within the qualitative research paradigm using a narrative case study approach selected because it is known to be a "method to explore social processes and reveal the human characteristic of anticipating and responding to various life circumstances" (Lomborg & Kirkevold, 2003, p. 191). In these case studies, life-story narratives were collected from a purposeful sample to provide depth in analysis and for comparison with previous data related to self-directed informal learning.

The carefully constructed protocols for data collection via open-ended interviews soliciting each participant's life-story narrative combined with the narrative analysis of the data through categorical and holistic perspectives led to a rich description of self-directed informal learning as part of the career development process. In addition to fully understanding and correctly applying each step of the methodology, the role of the researcher was challenged by various interpretations regarding the use of the literature review, limitations affecting the sampling procedure, and ethical consideration regarding the use of personal life story narratives. However, the study gained credibility and viability by way of a rigorous validation of the data gathering and analysis procedures.

CHAPTER 4: RESULTS

Overview

A 1979 report exploring the state of education in Europe and the United States concluded that much more attention must be paid to lifelong learning (Botkin et al, 1979). This position is especially true during today's rapid technological changes and increasing social complexity (Brown & Duguid, 2002). According to Merriam and Caffarella (1999), the primary way people respond to the lifelong learning needs precipitated by change is through informal learning; that is, they learn from the everyday experiences they encounter. This condition has precipitated a significant social dilemma.

Little is known about how people direct their continued learning especially during career development. While there is some agreement that most career-related learning in the workplace is acquired informally, understanding the connection between self-directedness and informal learning during career development is complicated by two well-documented yet apparently conflicting theoretical views: Bandura's (1977, 2001) agent-oriented social cognitive theory and Lave and Wenger's (1991) social context–oriented theory of social practice. Therefore, the purpose of this narrative case study was to interpret and explain the relationship between self-directed informal learning and the career development process.

Technology is the driving force of change in our lives and our careers (Bandura, 2002a; Bridges, 1994; Brown & Duguid, 2002; Collin, 2000; Drucker, 1999; Storey, 2000; Toffler, 1990). Technology, on the one hand, is meaningless without context; on the other hand, given context, technology is not neutral (Norman, 1993). In other words, predicting the influence of technology on people is, at best, a very difficult task.

Fortunately, the effect of technology on society is most readily observable in a common context: the workplace (Merriam & Caffarella, 1999). That understanding drove both the selection of the population for the study and the sampling strategy.

The research population included people from Chautauqua County, New York, who had created and developed a career trajectory based in large part upon their role as formative technology users; that is, one or more computer-related information storage, processing, and/or communication technologies made up a significant part of the career role from which the majority of their livelihood was derived. Applying a purposeful sampling strategy that accommodated the aims of the study while also tying it to previous similar research, resulted in the selection and interviewing of 13 participants, all of whom used technology as a significant part of their everyday career-related endeavors.

This qualitative case study explored how participants self-directed their everyday learning to advance their respective careers. The narrative interview, also referred to as a career life story, was the only data collection tool deemed flexible enough to adapt the research focus to each participant as a free-acting agent within his or her respective context (Conle, 2000a, 2000b; Josselson, 2004; McAdams 1993, 2001). The researcher's main analytic task for the study was to "generalize [the] findings to 'theory'" (Yin, 2003, p. 38) regarding how individual agency and social context interact during the career development for purposefully selected individuals using technology daily.

In order to organize qualitatively acquired data for interpretation at the three levels of (a) each individual narrative, (b) comparatively across the narratives of multiple study-specific cohorts, and (c) comparatively across all narratives, two methods of data analysis were necessary: a categorical-content perspective (Lieblich et al., 1998) used for

uncovering, coding, collecting, and reporting the important categorical elements associated with agency and community located within each narrative; and a holistic-content perspective (Lieblich et al, 1998) for comparatively and thematically interpreting the narrative data among study cohorts and collectively across all participants. The findings, reported below, support an integrated view of agentive and contextual informal learning during career development that the researcher calls “entrepreneurial learning.”

The Effects of Perceived Agency

A Category-Content Perspective

Using what Lieblich et al (1998) referred to as the category-content perspective, the data analysis for the first question underpinning this study was informed by Thorén-Jönsson and Möller’s (1999) perspective that one’s “sense of agency related to career development” may be a product of three “mutually influential” (p. 73) categories reflected in the person’s confidence in an ability to learn, an acknowledged sense of career competence, and a verbalized sense of agentive values and goals. Procedurally, the three categories were broken into more manageable and individually labeled coding categories, listed and described in Appendix G, Category-Content Literature References.

Each participant’s narrative text was read multiple times and, using the software program HyperRESEARCH™ 2.6, specific reference points within each narrative were coded using the categorical labels. A sample of the coding procedure is graphically demonstrated in Appendix J, Sample HyperRESEARCH™ 2.6 Coding. The coded occurrences for each narrative were then tabulated and graphed based upon raw count, the number of times the researcher perceived each occurred in a given narrative (see

Appendix I, Sample Cohort Line Graph), and by percentage of narrative responses, which weighted each coded element according to all of the major categorical responses provided by that participant (see Appendix H: Category-Content Pie Charts). The management of the data in this manner was not meant for quantitative evaluation, but rather to make more visual possible participant response patterns for qualitative comparison.

Confidence in Learning Ability

The agentive characteristic of confidence in one's ability to learn was explored in terms of nine distinctly different but related subcategorical elements, also broken into three groupings. The first grouping of subcategories related to one's awareness of his or her manner of learning: an ability to identify and assess the resources important to learning, an awareness of how one learns best, and comfort with one's learning style. The second subcategorical grouping described three agentive activities with the potential for contributing to learning: learning associated with doing a task, learning based upon trial and error, and one's motivational response to failure. Finally, the third grouping of subcategories was associated with confidence in learning related to one's assessment of his or her limitations in responding to the learning task or the learning environment.

The findings show that although the degree of confidence demonstrated by each participant varied dramatically across the subcategories (from 0 responses for some coded categories to as many as 32 references in one), three agentive attributes appeared to play the greatest role in career-related learning for these participants: the identification and assessment of learning resources, learning by doing, and the acknowledgement of one's limitations. Table 3 shows the raw count for each of the seven "confidence in learning" codes. Assessing one's resources (Assess), leaning by doing (Doing), and

acknowledging one's limitation (Limits) each appeared almost twice as often as other elements in the participant narratives. Additionally, unaided references to assessing one's resources and learning by doing appeared in the career life-stories of every participant, once again attesting to the pervasiveness of these agentive elements of learning. Once again, at this point it is important to point out that the values shown in any of the tables tabulating raw count scores are not meant for quantitative evaluation. They merely represent one possible interpretation of each participant's response patterns.

Table 3

Confidence in Learning Raw Coded Count

AGENTIVE ANALYSIS	Confidence in Learning												
	Anne	**Belle**	**Cassy**	**Dirk**	**Earl**	**Fred**	**Gabe**	**Halle**	**Ian**	**Jake**	**Kari**	**Link**	**Mary**
Assess	8	7	7	11	6	5	3	10	14	3	8	2	10
How To	2	2	2	13	0	2	2	9	4	0	5	5	3
Comfort	4	2	3	8	4	8	2	2	7	0	6	3	3
Doing	7	5	5	12	5	3	9	2	8	4	8	10	6
Trial	4	1	6	3	2	9	0	0	2	1	2	4	4
Motives	7	2	4	8	2	7	4	2	2	2	7	3	1
Limits	3	0	8	13	5	3	0	7	11	14	10	1	9

Assessing learning resources.

Assessing one's learning resources, the ability to "judge worthwhile from worthless" (Brown & Duguid, 2000, p. 219), arose multiple times in every career self-narrative, and was a dominate topic in the stories of Belle, Earl, Halle, and Mary. What became apparent, however, was that most participants appeared to have made their selection and assessment from a very limited, possibly prefiltered, set of alternatives, typically choosing between only two alternatives. Thus, Ian assessed his preference for books over periodicals; Link, his preference for technology websites over search engines; Earl, his clear choice for technical Web sites over book indexes; Belle, chat rooms over

electronic workshops; and Halle, taking a formal class over reading a manual.

The second pronounced finding from this sub-section was the awareness of a meta-cognitive foundation for resource selection. Even working within a limited set for resource selection, Ian, like most of the participants, revealed a reflective knowledge of self as the basis for his assessment of why he preferred books to periodicals as a reference source:

> **Ian:** I like books. I look for a good book . . . I like books because, you know, I just, they're usually, I can get absorbed in a book. You know, I mean, like, they start getting into deep, you know detailed discussions about, well not discussions, but ah, you know, discourse about a topic. So, I can get like, you know, I can get, I don't know, it just seems like I can go to a much deeper level of learning with a book than like, say, a periodical.

Dirk, who worked with Ian, employed a similar meta-cognitive inventory of his own needs and assessed the resources that might satisfy them. The results of his self-reflection were very different from his coworker:

> **Dirk:** I have so many things on my plate, I have such a little amount of time to learn something that I, by necessity, had to figure out, "How can I figure out or how can I fully understand a certain skill programmatically without taking a thick 2,000 page book and reading through the whole thing to find the twenty pages that relate to what I'm trying to do?" . . . I got onto Google and I started looking for snippets of code.

Belle's narrative showed a self-reflective evaluation of her learning style in conjunction with a perceived time constraint to arrive at yet a different learning resource. To meet her specific needs for determining whether she needed an eBay store, she selected as her most effective learning resource the outcomes of others:

> **Belle:** I watched other sellers who were successful. And I watched sellers that had stores. And I watched sellers that weren't successful . . . I figured there were probably books on setting up stores but I thought it would be a lot faster just to look at how other people were doing it.

Anne, Dirk, Ian, and Link also told stories in which self-reflective episodes culminated in

using the outcomes of others as learning exemplars.

No participant was more complete in reflecting on the connections between self and the assessment of learning resources than Halle. She was able to describe how her anticipation of other's needs influenced her own agentive response, leading to her assessment of what she might need in the way of learning resources:

> **Halle:** I know what the end product needs to look like but I don't know how to flip the switches and do the buttons and how to make that work, but I need to know what the end product is looking like in order for everybody else to function . . . You know, how much are they going to ask me . . . You know, if it's something we implement, that level has to go a lot higher because now I have to talk with the technical folks and be able to explain how I want it integrated in the system and how I envision it should work.

In regards to the study participants' narratives depicting instances of agentive evaluation of learning resources, their respective episodes showed varying degrees of understanding a connection among a limited resource selection, their meta-cognitive perceptions of self, and the ability to successfully envision or predict outcomes. All participants, however, included narrative episodes in which their assessment of learning resources was, in some way, influenced by other people. The main difference among participants, and a third useful finding, was whether artifacts or people became the primary trigger for precipitating the agentive activity of assessing learning materials. Fred said that the three main resources for learning about technology are the "owner's manual," "reference material on a CD," and the manufacturer's "Web site." Conspicuously missing was any reference to other people as viable learning resources. Anne, Dirk, Ian, and Mary also applied their agency primarily to the selection and evaluation of artifacts (e.g., books, websites, etc.) as opposed to human resources. Belle, Cassy, Earl, Gabe, Halle, Jake, and Link focused varying proportions of their stories on

judging the value of available human resources.

Cassy, for example, had to assess the relative value of human contributions to her learning needs as she attempted to use a complex software program that had no manual:

> **Cassy:** And so I started calling people that I felt were knowledgeable about . . . programming and called and asked for their help. I got some answers but didn't completely, I couldn't completely get the information I needed and so then I turned to tech support.

Link also applied his agency to appraise human resources as learning role models:

> **Link:** Ah, looked over shoulders. Learned from people who were very, very experienced and very knowledgeable. Smart guys. Yeah. Stayed away from the ones who weren't so smart.

In a manner similar to Link's, Belle discussed evaluating those she chose to interact with in eBay chat rooms. By typing questions onto chat room bulletin boards and then evaluating the responses, she used other eBayers as learning resources. Belle was, so to speak, looking over electronic shoulders as she learned to build a better eBay marketing site.

A fourth finding from this subsection was that agency—even well-intended agency—can be positive or negative in its influence on learning and learning outcomes. Jake and Mary are of interest to the discussion on assessment of learning resources for distinctly different reasons. Jake, once a member of an internationally known rock band, was the relatively new general manager of a not-for-profit radio station. He was finding the adjustment very difficult. One reason he was frustrated derived from the many, often faulty or unwarranted, comparisons he was prone to make between the successes of his band-playing days and running a modern radio station.

Mary, who felt trapped in a noncreative position as an administrative assistant, provided a narrative that rambled through multiple episodes that she perceived to

represent the thwarting of her best agentive efforts to develop her career. In one episode she assesses, potential human resources, the textbook, and her formal college course on government:

> **Mary:** It was a little bit hard, because I was an exception to most of the students that were in my class. Most of the students that were in my class were not involved . . . in government, and I was. Being in the police department, I was a government employee so I really, I had first hand experience. So to me, reading this crap was really boring because I already felt like I knew, you know, I had the basic concept at least of all this dry material that you were forced to read. Especially as far as public policy, government type issues. I found very dry and boring.

Later in her narrative, Mary expressed her preference for Web-based learning only to follow that pronouncement with an almost identical criticism of her web-based instructor and classmates as essentially irrelevant sources of information compared to her own broad experiences.

In summary, common to Jake's and Mary's assessment of learning resources was their belief that what they had done in the past represented the best benchmark for what they should do in the future. The meta-cognitive links that other participants assembled between learning needs, learning style, and resource assessment appeared to have become replaced by a single fossilized positive past experience for Jake and Mary.

Knows how to learn.

One's understanding of how he or she learns and acknowledging a comfort with that learning style appear to go hand-in-hand. Thorén-Jönsson and Möller (1999) reported that often a "participant's own conceptions of their capabilities and limitations [are] most important" (p. 73) in helping to establish the "thought patterns and emotional reactions" (p. 75) underpinning the confidence needed to make critical learning decisions. The

previous discussion on assessing learning resources supports that belief. Thus, one would expect the unaided reports of participant learning styles to be abundant in narratives about one's learning and career development. A surprisingly finding from this subdivision showed that was not the case. Although only Jake failed to create any substantive discussion of his learning style, few returned repeatedly to the topic. Even so, this was a critically important category as far as findings associated with the study. It was here that the quality of the few responses far outstripped their quantity.

The second finding related to learning style was that those participants who were most comfortable with how they learned had a strategy in place for self-directing their learning. Dirk, for example, observed that people most often turn to the Internet for information but then tend to struggle in their search for useful information. Using that introduction for one narrated episode, Dirk went on to describe his understanding of how be "breaks down," "segments," or "chunks" word phrases in order to more effectively use an Internet search engine as a resource to find information about creating interactive CD-ROMs:

> **Dirk:** I probably saw what I wanted to do and . . . by working backwards from this is what I want to do and then utilizing the Internet to help me . . . I didn't go into the Internet and say, "Interactive . . . video CD-ROM with . . . document integration," because you'll find nothing . . . I had to chunk that into little tiny functions and then find a little bit of information about this one, a little about that one, and then use my own formal education to utilize what I'm finding.

Fred, like Ian, was partial to books as a learning resource. Where Ian "can get absorbed in a book," Fred employed a dual strategies. In a manner reminiscent of Ian's, Fred would read a book for it depth, or using a strategy similar to Dirk's, he would synthesize larger topics into searchable groups of words:

Fred: I use them in several different ways. I sometimes, depending on the subject

> . . . sit down and read one of these books from cover-to-cover. Not normally, but sometimes I do. And sometimes I would read the section of the book that I'm interested in, one particular facet of the program or whatever I'm reading about. More often, what I do is use them as a reference work. Like you look up a word in the dictionary, I look up a topic in these books if there's a particular thing I want to do at that point.

Fred went on to explain how he knew which learning strategy to use by generalizing his searching technique from books to all learning. He continued by expressing his understanding that knowing how to learn starts with visualizing outcomes:

> **Fred:** I find that that system of . . . identifying the task that you need to solve, finding out general information about that task, then actually attempting it, and then trouble-shooting it afterwards, works for just about anything. It doesn't have to be technology. It can be anything in life.

Earl's description of his learning process for computer service, although worded somewhat less eloquently, was striking similar to Dirk's and Fred's:

> **Earl:** Basic trouble shooting skills . . . Well, I mean, I hate to say, I've been bitten more than once to where, you know, we jump into something, go blazing off on a tangent, to where if we would have just stepped back and used basic trouble shooting skills of isolation, we would have saved ourselves a tremendous amount of time . . . Like I said, basically for working on computers . . . if you take and just have those three major basic components, processor, motherboard and memory, you should get a beep out of it. If you're not getting a beep out of it, then you've got a major component problem in there. Start your way back . . . So like I said, if you keep it basic, to where, I mean, you look at the main components and work your way . . . from there.

Most of the participants said that knowing how to learn required knowing how to assess learning resources followed by having a strategy for ferreting out of those resources the information of value. Belle summed it up: "You have to know how to look for it." Anne, Cassy, Halle, Ian, and Kari each provided often detailed explanations of and confidence in their particular yet very similar information-seeking procedures.

Several of the participants went beyond providing a logical, step-by-step description of how they thought they were learning. They described a deeper meta-

cognitive awareness of their learning in which they imagined themselves part of socially legitimate outcomes in varying contexts. These scenarios became the third finding from this section. Link, for example, described himself as a "patient learner." He added, "One of the things that I know is that I'm the type of learner that I'm rather particular. I have high standards for myself."

Belle's insightful naturalistic metaphor depicting her learning strategy suggested that she appeared to benefit from self-observation and self-directed learning:

> **Belle:** I think in the beginning it was a mushroom and now it's step-by-step. In the beginning because I switched from Macintosh format to IBM/PC format I had to learn a lot about the differences in the two operating systems. I had to learn a lot of new programs. Now I learn little bits and pieces. And I make more choices in what I learn rather than just learning a whole lot.

Cassy also characterized herself as a patient learner. Cassy's realization that her typical mannerism of "being patient with myself and being willing to learn new things that I had never learned before," rather than complementing her engagement with Tech Support for a product she was trying to learn, had become conflicting. That reflective recognition led to a self-directed reaction in which she redirected her learning strategy to become "more aggressive." When prodded to explain what that meant, she responded:

> **Cassy:** Uhm. I guess not being afraid to ask questions. Not being afraid to push to get answers and to get answers.

Cassy provided greater insight yet with her perception that she learned best when she believed others were giving her the opportunity to be autonomous, to be "in control" of her own learning:

> **Cassy:** [Laugh] I think, I'm more in control of it but a lot of my opportunities come from, you know, if there's just one person that gives me a chance or sees something in me . . . and they'll give me those opportunities. But, I think I'm mostly in control of it because . . . I enjoy learning.

A sense of legitimate autonomy, the acknowledgement of or endorsement by important others that one's learning is important, was also remembered by Anne, Dirk, Halle, Ian, and Kari as a motivational component energizing their self-directedness. This observation, although related to one's contextual awareness, represents a fourth relevant finding associated with this section on learning style.

Mary, too, was a self-reflecting individual who had formed an idea of how she learned best. Unfortunately, Mary's perception of her way of learning came off as inconsistent and unstable. Even though Mary acknowledged that her high school learning successes were ill-conceived, that early experience remained her learning model:

> **Mary:** In high school I was very much a learner from hearing. I hated to read. I wouldn't read textbooks, but I would listen to lectures and I would . . . retain it long enough to take the test, and I did quite well all through high school and it's surprising [Laugh] . . . I made it through in that way. When I got to college it became much more difficult because there was a lot that the teachers weren't lecturing on that they expected you to read. And because I hated reading, you know, it became very loathsome because I'd have to read a chapter over and over.

Moreover, finding course lectures boring and class discussions ill-informed, Mary had left herself few learning resources beyond a foundationless faith in herself:

> **Mary:** Because I went to Empire [an on-line college], though, I think I'm a very good person, you know, a person who can really focus and teach themself, teach myself something, rather than needing somebody to stay on top of me in order to learn something.

Mary's ability to assess her ability to learn and select appropriate resources for learning became more suspect. The result was that she encountered few positive endorsements, or at least failed to recognize them, and her career-related learning had become negatively affected.

The study shows that the participants had developed, reflected upon, and, for the most part, were comfortable with their chosen learning style. When they were not finding

their learning strategy functional, most of them modified it within what they believed to be legitimate boundaries. Halle provided the perfect summary to these findings:

> **Halle:** I guess I equate it to, I mean, if it, perhaps to some extent I think, you know, when you recognize what your learning style is, your preferences or how, you know, what preferences you use in different situations, you can adapt more readily to those learning situations.

Learns by doing.

"Observation, learning through doing, experimentation and making mistakes," stated Merriam et al. (2003) about their own study on adult learning, "were mentioned by participants as critical" to self-directing one's own learning (p. 178). Anne used her own words to mimic exactly what Merriam and her associates reported. Detailing how she went about learning complicated procedures with Microsoft Excel, Anne described herself as a "kinesthetic," that is, hands-on, learner:

> **Anne**: I would call it a kinesthetic learning pattern, where I read things and I watch things and then I play with things . . . Trial and error, for the most part. But I do, I think of the most logical easy way to do something and if it doesn't work, then I seek guidance through the developers [i.e., Help and Tech Support] that created the software.

Halle told a nearly identical story:

> **Halle:** I'm usually a fairly hands-on learner. Like let me do it and let me figure it out. My preference with this right now which I would like to do is, I would like somebody to come in and sit down with me and just walk me through it. Let me do it but say, "Ok, do this. Do this." And show me.

Although not a revelation, the first finding from this section was that every participant took time to describe him or herself as a "hands-on learner" to some degree. Earl recalled that because of his military training a "big thing was OJT, on-the-job-training . . . That's where they taught you pretty much how to push a broom and work your way up from there." Gabe described his learning to create career fairs for at-risk

students as “going by the seat of my pants!” In fact, each participant narrated, often extensively, examples of learning through doing.

What arose from this section was much more than the quantity of individual examples of learning by doing. The reflective insights that accompanied some of the narrative sequences greatly informed the questions associated with the study. For example, a second finding was that beyond learning to perform a task, several learners were able to demonstrated the ability to step back and observe the structure of their learning and describe their learning process.

Kari, one of the two youngest participants, described how learning by doing was not only a significant part of her learning style, she was confident it would continue to serve her throughout her career trajectory. Interesting, however, was the apparent need for Kari to legitimatize her agency through her immediate superior before she could go on to claim credit for its value as a learning resource:

> **Kari:** He said that I’m not truly going to learn it until I’m doing it myself. I mean everything in my life, every job in my life, that’s the way I’ve been. I don’t learn it a hundred percent and actually get it to the point where I have my own confidence in it and it’s my own until I do it on my own for awhile . . . Over and over again and learning it on my own and doing it. So I think, too, in this business that’s what it’s going to be for me.

Ian, like most of the other narrators, described his cognitive interaction with his learning while he was actively engaged in an activity. His description was about how he learned to edit code for Java programs his company was creating:

> **Ian:** Yeah, I mean sometimes I recognize myself, like doing something over and over again. Like . . . there tends to be patterns that you see yourself repeating something, and you’re not automating it. You see something; you try to look for ways to automate something that you repeat over and over again.

Kari referred to it, Ian implied it, and Dirk clearly stated that learning through doing was "something that is teachable." Belle, one of the older participants, lent credibility to those hypotheses. While attempting to narrate her learning process for taking digital pictures for use on eBay her reflection on that learning process carried her to an interesting realization. She became aware that there is a cognitive structure associated with learning by doing:

> **Belle:** And some of your questions made me realize that I was thinking about things subconsciously, doing things with a lot of thought process behind it that I didn't even realize was there.
>
> **RDP:** Uh huh. And you knew how to do it. Learned it somewhere.
>
> **Belle:** Yeah but it's been so long and it's so automatic that I forgot all about the thought processes behind it.

Most episodes of learning through doing were closely associated with trial and error. Additionally, a third finding associated with this subsection was that most trial-and-error learning was directed or motivated by failed attempts at doing a task or solving a problem. "Observation, learning through doing, experimentation and making mistakes were mentioned by participants as critical" to self-directing one's own learning, stated Merriam et al. (2003, p. 178). That generalization was evident among the participants of the current study, as well.

Describing his first attempt at servicing a "crashed" server, Ian, in one of several moments of levity, pointed out that learning by doing was more fun when he didn't know for sure what he was doing: "Oh, well, it was splendid. I got to learn all about what to, what <u>not</u> to do when a server goes down." Similarly, Fred defined key segments of his learning by doing as "a matter of trial and error much of the time."

Many of the trial-and-error episodes narrated were task oriented. Cassy began to

describe what appeared to be a similar task-oriented event; however, she revealed a much greater insight into her learning associated with trial and error. She revealed her discovery that trial and error is not always a linear process; while it may appear linear, in reality it exists at multiple levels with overlapping problems each requiring separate task actions:

> **Cassy:** Well, it was one problem after another and I probably spent something like eight days trying to figure out how to fix this program because it was not only the program, it was something else behind that and it just kept leading to other problems.

The fourth finding arising from the narrative content of this sub-section involved the agentive effort of several learners to push task-related endeavors into problem-solving endeavors by purposefully forcing task solutions to fail. This is the point where successful trial-and-error learning appears to require that the learner be motivated rather than discouraged by failure. Based on their own studies, Merriam and Caffarella (1999) believed, "Successfully intelligent people motivate themselves . . . and are not afraid of failure" (p. 180). This was reflected in the current study in that several of the participants narrated episodes in which they were encouraged to learn more deeply due to their experiences with early failures in their respective endeavors. Halle, for example, when asked how she responded to college instructors who were negative or resistive to using technology in their classrooms responded almost defiantly.

> **Halle:** It makes me learn it more because, you know, I want to be prepared to answer any questions that they may say, "Well you can't possibly teach XYZ online" . . . So I know I need to identify where those resources are when they ask a question about something technology-related and be able to connect them…

Discussing his trials and tribulations at attempting to integrate a Microsoft Access database into Microsoft Outlook, Fred punctuated his failures by vowing not to give up.

RDP: You can't imbed it.

Fred: No, you cannot imbed it. It has to be done completely at once, one file. And that's what I hate about Outlook: That it is not dynamic. So I don't see, to answer the question, at this point an ideal solution to it. It's usually a work around.

RDP: But you're going to keep looking. [Laugh]

Fred: I'm going to keep looking!

Fred was not the only participant to narrate a resolve to learn that grew out of frustration or failure. However, Fred, who relied heavily upon trial-and-error learning, apparently had learned much from his reflections. He provided a lengthy, but insightful, reflection on the importance of failure to his learning process:

> **Fred:** And probably the most important part is the part that drives most people crazy, and that's when things go wrong. Mistakes, errors, are more instructive than anything else. They force you to get into the nuts and bolts a little more. Find out why things work. If you have success the first time, you may never look at it again. You say, "Oh, that worked." You know, and then you really haven't learned a lot about it except that you stumbled across something that worked. Where as if it went wrong, by the time you fix it, you've learned seven other things and you get a better understanding of how the thing works in the background. You get an understanding of the underlying technology or whatever's underneath that makes that work. So that in the future you are better able to handle it, expand it or troubleshoot at a later point. So it's good to have things go wrong.

Moreover, Fred advocated that the best way to test one's learning was to readdress the task at hand in an effort to "try and make it fail." Earl used similar words in taking a similar position regarding his troubleshooting of computer problems. Link narrated a lengthy story related to seeking out failure as a learning tool associated with network troubleshooting. He went on to identify the "skill" associated with precipitating failure in order to learn: "patience." Dirk, in discussing the same concept, identified patience differently.

RDP: How do you teach yourself patience?

> **Dirk:** Well, you don't. You don't learn patience but tenacity. I think it's a motivational thing. It's looking at it and saying "OK, I didn't find what I want right now," and sometimes you have to move on to something else for that, for the rest of that day or what not and then know that, "OK, I'm going to come back to this at this other point." Sometimes it takes that just to get fresh again. It's kind of like when you're looking for a needle in a haystack, and it's right there next to your foot but you don't notice it. You know? And then the next day you stand in the same spot and you look down, "Oop, there it is." I think that happens a lot in programming, a lot.

While not every participant made reference to himself or herself as a patient or tenacious trial-and-error learner, most did narrate episodes in which reflective persistence played an important positive role—all except Jake and Mary. Jake, for example, found learning by doing to be slow, inefficient, and costly. He recalled that he learned little from over a decade of hands-on experiences in the recording studios. The learning part, according to Jake, was not a priority. In the present, with time and money remaining key elements in his story, Jake's narrative recounted his dismay at carrying the "burden" of learning by doing. In fact, rather than make the effort to learn to deal with problem, Jake offered what came to be his primary alternative: hire someone else to do it.

> **Jake:** And all of a sudden you're spending more time doing that than you are making programs. So you know, I'm just learning about all of that and I'm learning it by doing it. I don't know, but I do know that you've got to get good people, so it was great to get [SS] in here to relieve that one burden.

To say that Jake was oblivious to his situation and to the potential advantages of learning by doing, trial and error, and being motivated by failure is not accurate. He had clearly reflected carefully on these elements of his agency and had made his own choices:

> **Jake:** I don't have any patience. I could deal with an interest in finding things but, it's a lot of time . . . a lot of this technical stuff doesn't come really natural to me. I didn't grow up with it maybe like kids today do. It's just, a lot of that is not intuitive for me. I didn't even know what . . . they used certain words and phrases [for] and I just never really spent the time to catch a lot of the lingo.

The interesting part here was that Jake's justification for his agentive path with respect to learning by doing, trial and error, and evoking failure, especially as they related to learning about technology, had a point of commonality with Mary's narrative. They both blamed their lack of trial-and-error interest on lacking proficiency with "the lingo."

Mary was among the participants who offered many narrative episodes about learning through doing. In fact, she described every episode of meaningful learning as something she had taken the responsibility to accomplish on her own. One such learning event was in response to an inquiry about how she had learned Microsoft Word: "It was really nothing, too, you know. I taught myself all the Microsoft programs." Moreover, when queried as to the method she employed for learning these computer programs, Mary quickly revealed that it "was 100% trial and error." What appeared to be a strongly self-directed and purely agentive approach to learning was undermined by two additional revelations Mary offered in concluding that same narrative episode:

> **Mary:** That was 100% trial and error. They don't have . . . they do have workbooks or something that came with [the programs] but they're very technical, and again if I don't know the terminology, you can't look it up [Laugh], without reading the entire handbook, and I don't have time for that. And I'm not about, I'm not very patient, so I just use trial and error. If something worked . . . or if I just happened to trip upon it, that's the way it goes. And I haven't delved really deeply into it because I'm hoping that I won't have to deal with it very long, because I don't want to . . . That's not something that interests me.

As a result, a fifth finding from this subsection was that the value of trial-and-error learning appeared to be directly related to one's ability to observe and utilize a previously acquired structure or strategy for connecting past and current learning. For Mary, trial and error was not a means for problem solving, but rather a means for addressing specific, even unrelated, tasks with the least amount of effort. This was not unlike Jake's approach. Moreover, what precipitated this approach, according to Mary

and Jake, were three elements perceived to be important to their sense of agency for learning: lacking the appropriate "terminology," lacking the time to learn, and lacking the interest. Their sense of agency took their learning trajectories in a direction totally opposite the other participants. What seemed to be missing from their narrative episodes related to learning through doing was, as Ian put it, that they never started asking questions.

Acknowledges limitations.

The participants' perceptions of what limited their ability or capacity to learn, for the most part, were characterized in four ways: limited experience, limited application, limited communications, and personal quirks. Kari, for example, narrated several career-related incidents in which she described herself as "too green to know that yet." Halle acknowledged that, as she started her position, her foundational experience with instructional television "was really from a student's perspective." Ian was one of several participants who wove into his learning narrative numerous episodes involving his various perceived limitations, derived often from inexperience in the face of the types of problems he attempted to address. Cassy narrated several episodes in which lack of experience played a role in her becoming "sort of a programmer." Fred's story about his lack of experience with Web site construction is representative of the others:

> **Fred:** I think that our customer base, like they have in the past, will catch up with the technology and that then it will be required of us to present that to them, to give them that technology at that time. Actually writing things for a website is something that I have done very little of and whenever I do it, I have to get out all my information again and look through it and find out how to do it and that sort of thing. But I think that is one area that I'm going to be forced to take more of an interest in and get on the ball and get more information on the website for people. So that's the area I foresee probably where a lot of my learning is going to have to take place.

What stood out in each of the stories regarding the participants' lack of experience was two-fold. First, they visualized themselves as *not* being something: Fred was not a web designer, Anne was "technical but not developer technical," Cassy was "not a programmer," Mary referred to herself as "not a code person," Jake identified himself as "not an expert" on sound editing, and Halle, told a story in which she was "not a music person." Second, in each instance, except for those involving Jake and Mary, which will be addressed below, the story tellers used the depictions of what they were not as motivational resources to initialize a strategy they were considering for getting to where they wanted to be, just as Fred exemplified above.

The line can be very fine between having the experience available to learn from and being able to apply what one has gleaned from that experience. Translating previous experience into useful application can be hindered in several ways. Dirk, for example, narrated an episode in which he felt limited by becoming stuck in an earlier paradigm for thinking about how ideas relate in a digital world:

> **Dirk:** One fault that I know I have, is that I have never learned the real paradigm of [Adobe] Director. I am programming Director with my old school programming mindset which is very function-based, very sequential-based, you know, subroutine-based as opposed to object-oriented. It is actually an object-oriented environment that I am using as though it wasn't. I need to learn that paradigm.

Dirk appears to have reflected upon his limitation, acknowledged it as a solvable problem, and anticipated a possible solution.

It was an interesting discovery that very few of the stories related to personal limitations associated with career activities were specifically single task-oriented. Rather, the stories of career activity limitations were generally part of a larger problem, as was Dirk's. Most of these narrators were not, in Earl's words, "sweating the small stuff."

Additionally, almost every limitation was coupled with an already anticipated strategy, resolution, or outcome. Ian provided a representative scenario; however, in his story his agentive response had taken him to the next step. He actually had taken directive action and enacted his solution by having taken a formal college course:

> **Ian:** I took a database course at [a SUNY college], I guess it's almost two years ago. The reason why I took it is because I didn't really understand a whole lot about designing a database or anything like that. I just knew some basics, database tables and I had the key.

The large number of stories that addressed communications as a limitations was of interest, even though it was not a complete surprise, because a lack of experience can also be linked to one's perceived lack of communication skills. Kari described communication as an important link between acquired knowledge, the knowledge needed to enhance application, and experience:

> **Kari:** I loved college . . . I mean I learned something new every single day. And…I hate the fact that I'm not completely emerged in this business yet because I don't have, I have a clear understanding of what it is. I've got the book knowledge. I mean I've passed the licensing exam. They make you know more than you need to know. But, at the same time, there's a lot of hands-on stuff that I don't know. There's a lot of day-to-day lingo and stuff I need to pick up on and really get myself into the culture.

Anne, Cassy, Gabe, Jake, and Mary each related a story in which their perceived limited access to the "jargon" or "terminology" of the workplace affected their learning.

Similar to Jake, Mary's narrative had a large number of references to her own limitations. There were stories about limited experience:

> **Mary:** They wanted buttons added to the website and I had never used quote, unquote buttons . . . So that's something new, and using Photoshop, which I had never worked in before coming onboard there. I had been using Fireworks for the web design packages that I had worked with before.

There were stories in which she was limited in here capacity to use an application:

> **Mary:** And then because I was redesigning the website for the [City Police Force] I had been working on one that had been created by the chief's son, who was a professional web designer out in Illinois. And I had been working on it but it got to the point where I was just making a mess of the web.

There were stories depicting limitations based upon communications:

> **Mary:** Because the terminology was difficult. I mean, it's easy to look stuff up online or in a book but you've got to know the terminology first, otherwise you can't look it up, if you don't know what it's called . . . I had been asked to co-direct the [City Civic Ballet] during that time, and it had been years since I had been a dancer and, like, the terminology was gone.

Where each of the other participants incorporated into their narratives positive stories emanating from limitations that motivated them to aspire to new learning, Jake and Mary approached each of their limitations negatively, as a hindrance to their current course of action or as the rationale for why they could not do one thing or another. Additionally, Jake and Mary narrated limitations that were singularly task oriented: creating a button in PhotoShop or editing a voice track in Adobe Audition. As a result, their responses were also singular and limited to addressing only a singular specific task.

Another limitation of interest that arose in numerous narratives can best be described as a limiting personal or emotional quirk. Dirk found himself occasionally "fragmented" by his tendency to "over-commit," that is, he would say he can do more than he could get done in the timeframe he was allotted. Earl was occasionally haunted by the specter of the repair-person who was "his own worse enemy," that is, who caused more problems than he fixed. Kari was often "frustrated" by not having the experience to go with her acquired book knowledge. In each of these situations, the limiting personal quirk was the basis for motivating the participant toward achieving their respective goals. For Jake and Mary, the quirk they were dealing with was a perception of learning as being, in Mary's words, "not something that interests me."

Finally, one other finding, exemplified in the following exchange, stands out from this subsection:

> **RDP:** How do you know when: "I've learned this enough?"
>
> **Halle:** Hmm. [Laugh] What a good question. You know, I don't know if I have a good sense of that always.

None of the participants indicated they were aware of when they had reached the point that they should consider limiting their agentive response to a perceived learning need—except for two people: Jake and Mary.

The findings from this section on confidence in learning ability address the research question related to how one's perceived agentive control over learning affects his or her perceptions of career development. Findings and notable observations arising from the analysis of the data in this section are assembled in Table 4. Similar tables at the end of each section list a review of the findings and important observations noted during the data analysis for the section. The relevance and relationships associated with these findings and observations is expanded upon later in chapter 4 during the holistic analysis of the data. There is no quantitative value associated with the list. Rather, it is meant to facilitate qualitative comparisons associated with the respondent data.

Table 4

Learning Ability Findings and Observations

How does one's perception of agentive control over learning affect one's perception of career-related learning?	
Learning Ability	**Findings/Observations**
Assessing	Participants made resource selection and assessment from a limited, often pre-filtered, set of alternatives, typically choosing between only two alternatives
Assessing	There was a large degree of participant awareness of the meta-cognitive foundation for resource selection
Assessing	Participants differed as to whether artifacts or people became the primary trigger for precipitating the agentive activity of assessing learning materials
Assessing	Agency—even well-intended agency—can be positive or negative in its influence on learning and learning outcomes
How to learn	Participants acknowledged but did not dwell on the topic of their learning style
How to learn	Participants who were most comfortable with how they learned had a strategy in place for self-directing their learning
How to learn	Participants imagined themselves part of socially legitimate outcomes in varying contexts
How to learn	Participants demonstrated a sense of legitimate autonomy, the acknowledgement of or endorsement by important others that one's learning is important
Learn by doing	Participants took time to describe themselves as a "hands-on" learners
Learn by doing	Participants were able to step back and observe the structure of the learning process
Learn by doing	Most trial and error learning was directed or motivated by failed attempts at doing a task or solving a problem
Learn by doing	Participants attempted to push task-related endeavors into problem-solving endeavors by purposefully forcing task solutions to fail
Learn by doing	The value of trial and error learning appeared to be directly related to one's ability to observe and utilize a previously acquired structure or strategy for connecting past and present learning
Limitations	Participants expressed limitations by depicting themselves as not being something, using the depictions of what they were not as motivation for getting where they wanted to be
Limitations	Participant references to personal limitations associated with personal action were rarely single task-oriented
Limitations	Participants addressed communications as a limitations possibly because a lack of experience can also be linked to one's perceived lack of communication skills
Limitations	Although participants often coupled career activity limitations with an already anticipated strategy, resolution, or outcome they did not have a similar plan for communicative limitations
Limitations	Participants were cognizant of personal or emotional quirks as limitations to learning and often had strategies in place for attempting to deal with these
Limitations	Participants were unaware of when they had reached the point that they should consider limiting their agentive response to a perceived learning need

Sense of Career Competence

The agentive characteristic of one's sense of personal career competence was explored in terms of eight distinctly different yet related subcategorical elements. These subcategories were also broken into three groupings of related data coding points. The first set of elements was grouped based on their collective relevance to constructing career-related interest: an internal career-related respect suggesting that what one does is important or meaningful, a sense of career satisfaction, and a general feeling of contentment with one's career trajectory growth. The second subcategorical grouping can be construed to be related to one's taking career-related action: detecting inter-relationships for transferring personal knowledge within one's career trajectory, and an awareness of the multiple causalities associated with the complexities of problem identification and problem solving. Finally, the third grouping of subcategories was seen as collectively related to the manner of how one went about applying his or her personal agency during career development: Are they risk-takers open to using novel solutions to creatively solve problems? Do they acknowledge and demonstrate a focused desire to develop? Is task selection and problem solution judged according to personal criteria?

Presented in Table 5 below, the coded raw count scores representing participant responses suggest that the participants' sense of career competence was potentially dominated by three elements in particular: the ability to observe relationships between career-related learning events, the ability to judge learning tasks according to one's own perceptions and criteria, and a strong desire to develop in one's chosen career path. The table values are useful for qualitative comparison only and are not meant to be applied quantitatively.

Table 5

Career Competence Raw Coded Count

AGENCY ANALYSIS	Sense of Career Competence												
	Anne	Belle	Cassy	Dirk	Earl	Fred	Gabe	Halle	Ian	Jake	Kari	Link	Mary
Respect	3	1	0	4	2	1	1	2	3	3	0	1	0
Satisfied	6	1	1	6	4	2	5	1	5	0	4	0	3
Content	2	0	1	0	0	0	0	1	3	1	2	1	0
Novelty	7	6	5	14	0	2	4	2	10	0	2	1	0
Develop	8	4	7	12	0	2	4	6	12	0	10	1	10
Judges	6	2	2	8	1	2	6	9	13	2	3	5	13
Relates	19	6	7	17	5	8	5	8	17	3	2	7	0
Causality	9	4	3	5	1	6	3	7	5	1	3	2	1

Career respect.

Career-related respect, and the agentive response to learning that such respect might instill, can be generated internally or externally (Robertson & Merriam, 2005). This section focuses on the intrinsic regard each study participant held for the career path he or she was pursuing. While career respect might be considered inseparable from career satisfaction and career contentment, this proved not to be the case. However, a sense of career satisfaction, or one's sense of career accomplishment (Thorén-Jönsson & Möller, 1999), and career contentment, or one's sense of "having one's own niche" (p. 76), each uniquely coded characteristics of career competence, are so closely aligned with each other and with one's career-related respect, the three are considered together for the sake of simplicity. Taken as a group, career respect, satisfaction, and contentment generated the fewest number of unaided narrative responses from study participants. However, the responses provided were often succinct, clearly related to learning, and mostly positive.

Belle, for example, demonstrated a career leap of faith that took her career and learning trajectories in a totally new direction:

RDP: Do you look at what you do with eBay as a career?

Belle: Yes I do. I didn't in the beginning but I do more now.

RDP: What makes it that?

Belle: In the beginning it was just kind of fun and kind of a hobby but I take it more seriously now and I want to make it grow.

Anne used her intrinsic career-related respect as motivation for working 80- to 100-hour workweeks in order to learn new ways to communicate with clients:

> **Anne**: Well, since there's no one else in my company who focuses on actually how to reach out to our clients and train them with maximum exposure but with minimal available time being taken away, I'm going to be saving our company hundreds of thousands of dollars by getting this [project] going and ready for them.

In a similar manner, Earl took great pride in announcing, "We build some pretty amazing systems here!" Ian's words showed pleasure derived from his role in helping his company create novel interactive digital products, stating, "A lot of things that we're doing, like this particular content management system, it's pretty innovative." And, Fred punctuated his internal respect for what he does with his declaration that there is nothing else he could picture himself doing:

> **Fred:** For us it's, it's just like this is the bread and butter. This is how we make our living, and you've got to keep making a living. As far as, you know, like you say, "You could sell the business," a lot of people do that. I can't imagine selling this business because our business is actually what we do.

With most of the participants having demonstrated a substantial amount of intrinsic respect for their career trajectory, one would expect that personal career satisfaction and contentment would be high as well. That was generally the case. Anne's narrative included her exuberant satisfaction for the career-related task she was about to tackle:

> **Anne:** It's going to go really slick. It's going to be great. It's going to be awesome. And then what I'm going to do from there is just learn how to translate it to the older version.

Dirk got equally excited as he used the opportunity of the interview query to announce, "We won a competition where Sony placed in it." Ian, more subdued, still left no doubt that he was satisfied with his career choice: "You know, I'm satisfied because I do get to learn a lot of interesting things on the job." Belle recognized that "I am not doing it for money because if I was I'd be making more. So I must be doing it for satisfaction, for the satisfaction of creating the auction." Finally, Gabe found career satisfaction not in being the "most popular teacher on campus," but rather in knowing that his students are able to "go out there and in three or four years they're still working and they're doing well."

Fred summed up what the others were describing. Stating that just learning about technology was not enough, Fred, like the others, gained his satisfaction from doing something useful with technology:

> **Fred:** I like to do things, I find technology fun. A lot of people, however, who find technology fun, that's their only driving force and these are the types of people who buy all these fancy computers with neon lights in them and all this stuff because it's the technology that is interesting to them. To me, not just the nuts and bolts technology, which I find very interesting, but what's interesting to me, is what you can do with it. Not what it is.

An important observation from this subsection was that contentment often arises from a sense of being an asset to one's career workplace. Anne tied her narrative episode of new career learning and new product development syllogistically into being perceived as a more valuable employee:

> **Anne**: I end up being able to solve issues for our clients much more quickly because of my level of knowledge. That makes our clients more dependent on us which makes me more valuable to my company. [Laugh]

Ian wrapped together the entire spectrum of career-related respect, career satisfaction, and personal contentment:

> **Ian:** I love the freedom on this job, which is the reason why I love this job. I can influence the direction the company goes in. And that forces me, of course, to develop . . . in certain areas of my career. And then, in fact, a lot of times it just ends up being things that I wanted to learn about anyways. In particular Java . . . I like Java. I'm good at it so that makes me a better asset to the company.

As has been the case throughout this chapter, Jake's and Mary's narratives have represented an often divergent perspective. Jake, for instance, was not happy with his new career trajectory. He missed his days as a professional musician with a labeled rock and roll band:

> **Jake:** So it's been a big change for me now to be in this position. But again here I am.
>
> **RDP:** What's the change?
>
> **Jake:** Well, it's a less inward thing. And I'm not dealing with you know, four other real professionals who are very good at their job. I deal with a lot of people who are terrible on the job.

Moreover, as general manager of a contemporary not-for-profit radio station, Jake had to deal regularly with technology, especially computers. His discontentment and lack of career satisfaction were points he returned to regularly throughout his narrative.

Mary, although she enjoyed a few "little successes" whenever she taught herself "something . . . where I did it completely on my own," had, overall, little intrinsic respect for her position as an administrative assistant. Interestingly, she never directly stated that she had no respect for her own position, rather she provided multiple narrative episodes in which she degraded the position through the recalled actions or words of others. One such example occurred as Mary took an opportunity to digress when asked about the importance of a four-year degree for an administrative assistant:

> **Mary:** I mean, it was well-known that I was probably the lowest paid person across the board. But because my title was administrative assistant, even though I had skills far beyond a lot of people in the room, because I had that title, people look down on secretaries and administrative assistants. They kind of discard them as lower, not as intelligent. Obviously they're not paid well in comparison to other positions.

Unfortunately, Mary's successes, although potentially useful to her career workplace, appear to represent her way of getting even with a system that she often described as demeaning.

Although the mostly negative narrative responses of Jake and Mary represent a somewhat predictably expressive pattern related to their unique situations, what was not expected was that another, previously very positive narrative respondent, revealed a genuine discontented with his career path. Link stated that his commitment to his career trajectory was due not to career interest but rather to familial obligation:

> **Link:** You know, let's think about that. My daughter has five more years of school, my younger daughter, and then four years of college, nine years.
>
> **RDP:** Can you look out that far?
>
> **Link:** I know I'll be in this field for the next nine years, yeah. Where will I be in it? I don't know. Where will I fit? I haven't got a clue. Because the whole, when will I wear down? When will I finally say, "I just can't keep up with it. You've got to find something for me where I just," you know, "just can survive, but I can't keep up with this pace." Because this is an incredible pace that we keep now, the hours we put in.

Link represented the only clear break between career respect and career satisfaction and contentment. As such, an important finding resided in Link's response, suggesting that only one and not all three components are necessary to maintain career development learning. Link, in spite of his lack of satisfaction and contentment and driven by concern for his family's well-being, continued to learn in order to move his career forward:

> **RDP:** I doubt if you take a lot of this home and use it at home . . . what you learn in your career as far as practical application. [Laugh] But I'm just assuming.
>
> **Link:** I don't. Isn't that awful? I don't use any of this at home. Well, because I don't want to.
>
> **RDP:** Why is that awful?
>
> **Link:** Well I have to do the learning part. The learning part is still there but I don't apply what I learn here at home. I try to stay away from the computers and I don't like to answer the telephone.
>
> **RDP:** So there's a dramatic line between your career and your home, the two lives.
>
> **Link:** Yes. Yes. Yes, my hobbies are sitting at home and working on an old house. I mean that's, you know, doing woodwork.

For most of the other participants, there was a clear, positive connection among their combined sense of career respect, satisfaction, and contentment leading to a generally acknowledged perception that one's career learning related to technology and career trajectory were in phase with each other.

Detects interrelationships.

> **Halle:** Had I not learned stuff through my career, you know, five years ago, I would never have dreamed I would have been in this position. So this would have never been a goal for me because I didn't know it existed at this level. And the more I get into my job has probably changed the path of where I would want to go in the future because I just…know more about the field than I did even three years ago. So, definitely, [doing what I do] has pointed me in a different direction . . . I probably would never have looked at curriculum development and instructional design and training teachers had I not been in this position learning what I've been learning through this position and through my career. Probably never would have been a goal I would have considered, which I do now.

Halle's description of her career path exemplified Robertson and Merriam's (2005) observation that one's desire for career-related learning and development is enhanced through key occurrences acting as "catalysts" to precipitate common elements of knowledge resident in "multiple projects occurring at the same time" (pp. 275-276). The findings of the study augment that observation. Indeed, key learning triggers were

present and they did appear to motivate participants to want to learn. Additionally, participants recalled relationships between career stages as well as between learning stages that were equally stimulating and important to continued learning. Therefore, the study depicts three distinct but related areas in which participants were less likely to describe a series of carefully planned events, but rather an evolution in which an event, or stage, or task "contained within it the seeds required for the next" (Spear & Mocker, 1984, pp. 6-7).

Participant narratives demonstrated that many were aware that the relationships among circumstances influencing learning events were often "assembled over a longer period of time and from a number of separate and unrelated settings" (Spear & Mocker, 1984, p. 7). In other words, the narrators told stories about how some relationships they observed tended to be causally constructed. As a result, it does not make sense to separate the discussion of participant perceptions of interrelationships from their perceptions of the various causalities inherent to those relationships.

Career respect and career competence are the residual effects of career-related learning empowering career development throughout one's career trajectory (Elmholdt, 2001, pp. 8-9). A career trajectory, then, in terms of the current study, is a narrative tracing and interpretation of the causally related components of one's career development through "social space and time" (Collin, 2000, p. 87). Most of the participants provided an unaided overview of how their respective career had developed to its current point at the time of the interview. Link was particularly thorough in depicting the history of his career trajectory:

RDP: So, you aren't actually a business person.

Link: No.

RDP: And you weren't actually a computer repair person.

Link: No.

RDP: And, as far as the network goes, and all of the components of the network, what does it take for you to know enough to manage all of those areas?

Link: OK. I actually have been out of school for quite awhile. My undergraduate is in music. I have a bachelor's of music degree. I then, after getting out of that, ended up working for a paper company, a printing company which is in Dalton, Massachusetts. The job that I ended up with happened to be that of a process control technician. I got that primarily because as a musician growing up, I had amplifiers and stuff that needed to be fixed and I couldn't afford to hire somebody to fix them so I would pull them apart. It was all solid-state stuff, and replace, you know, transistors, capacitors, and do the testing on them. So I kind of taught myself how to do that.

RDP: And, how did you get from music to networking?

Link: Love for music. And there is that hook that I always, because there's a lot of musicians that end up in computers, and I think it has to do with I was really strong in theory, understanding the theory of music, how everything went together and all that stuff. And it's sequential and its logical. Just like computers: sequential, logical. That's the bridge.

RDP: That is the bridge? And do you think you probably learned what you learn today the same way you learned music then?

Link: Yeah, I don't find myself shifting gears to do that. I know that I'm getting older and grayer, I have to struggle harder of course; things are changing faster, too. Man!

The narratives of Earl and Ian included a series of interrelated steps propelling their career trajectories. Both had dropped out of high school, found education, and then refocused their respective career. Dirk and Anne had used the experiences of earlier dead-end positions to achieve a degree of corporate success; and, Belle and Cassy, were using mechanical photographic skills from a previous career path to further their current digital career ambitions. One unique narrative belonged to Gabe, who told a story about a new endeavor with a corn-burning stove that integrated his two previous careers of engineer and teacher with a new career interest in farming.

Although the events they described were dissimilar, Jake and Halle had similar experiences to which they responded differently. Halle had to relearn how to learn and in doing so built the foundation for her current professional success:

> **Halle:** I went to a very different high school . . . I actually struggled when I went to a four year institution that was very regimented and very structured because I had never been in a situation that was: sit in class, let me lecture, you take a test, and stuff . . . So, in some ways, it hasn't changed, but because we talked so much about learning styles, we also talked about learning in different ways. So, you know, where my preference may be to be very collaborative, there's also times, and I've learned to, you know, when I am very independent or very hands on, or very, I need to sit and listen.

Jake, on the other hand, filled his narrative with nostalgic reminiscing about his band-playing days when "we had a camaraderie and we had a group thing and we had an attitude." Halle was able to take from her past what would work in the present while Jake continued to build causal career relationships from his early model. This observation represents an important finding associated with this subsection.

Mary's narrative, as previously described, demonstrated little inner respect for her career as an administrative assistant. Although she spoke often of early career-altering events, she made no effort to discuss any relationships between the events. Instead, each of her career-related set-backs was described as being caused by the people and the events around her.

In addition to the many narrative episodes that described triggering events, there was also a large number of episodes in which a single event or task became the catalyst for new career-related learning. Each of the participants described at least one episode—most described several—in which new learning was triggered by career-related demands. The major difference in the narratives was the type of event each participant thought important enough to relate. Most described new learning as triggered by responding to a

set of complex tasks; others, primarily Jake and Mary, narrated episodes in which the catalyst for learning was generally a single specific task.

The story that most exemplified the triggering nature of causal events was narrated by Gabe. His story accounted for both a change in his career trajectory and in his learning trajectory:

> **Gabe:** Ok, let's back up. To me, that's the number 1 thing, health and safety. When I was an engineering manager at another company before I came to American Axle, I had a guy get caught in a machine, crushed and died. And that was a pretty traumatic thing in my life considering that the guy worked for me, even though he was a temporary employee. I was still responsible for his safety and his health . . . You know why he probably died? He couldn't read. Ok? So, he couldn't read the lock out placard. He was too embarrassed to tell anybody from what I've been told . . . The man couldn't read and he died because of that. We could have saved a life if we had known that, Ok? And that's what spearheaded me to go over to [the University] and start teaching.

Gabe was forced to deal with what Kari called the "gray area" that exists among the many separate and different fields of knowledge a person has to address while working on a complicated problem or complex set of tasks. Earl made a similar observation, noting that learning in the gray area is **"**an everyday occurrence. I mean, there's stuff, little challenges, in their own little way that come in every day. It's not just software. It's not just hardware. A lot of times it's software and hardware." Earl had his own way of dealing with the gray area:

> **Earl:** I get into a lot of Microsoft's tech stuff. And usually . . . I'll stumble across something that had something to do with, that related to a prior issue or a problem and stuff. And then it's kind of funny . . . because like I said, we'll be looking up something and then this like little thing or something will pop up that we've actually been looking for out of the blue and it's in someplace not where we thought it would be. And it had to do with something that related to either a problem that we had with a customer's unit or something that we might have caused.

Fred described an almost identical episode related to working with Microsoft

Access. However, he did not "stumble across" a solution. Rather he described the learning process associated with uncovering knowledge as purposeful and repeatable:

> **Fred:** So if you become familiarized with the look and feel of a Windows program, it becomes a lot easier to learn the next Windows program. Chances are many of the menus are going to look the same. Things are going to be in the same places and so on, so it doesn't take that long to pick it up . . . So the more you learn, the easier it is to learn from one program to another one.

What Earl suggested, Fred identified: learning is facilitated, or triggered, when one recognizes what it is he or she is looking for and has a strategy for finding it. Several of the participants described career-related learning in this manner.

Anne, whose career trajectory began with her experiences in art class and learning to speak Spanish while working in various restaurants, believed these experiences had uniquely prepared her to envision a product outcome for her company:

> **Anne:** Nobody in our company is really graphic-oriented or training-oriented the way I am just because of my experiences in the retail and kitchen worlds before this. So this is pretty much just on my plate.

Similarly, Cassy recalled that her previous position with a regional newspaper had given her "the writing experience and the interviewing experience" to build a career trajectory toward her goal of "getting into marketing." Belle, as previously noted, learned through observing other eBay retailers, both those who were selling a lot and those who were not doing well. "The practical advantage is," stated Belle, "that what I've learned I can apply to other jobs if I have to . . . What I've learned transfers over to anything else that I might want to do that's not eBay." In other words, Belle used a type of categorical analysis of sellers to structure her own learning.

Halle explained in detail her learning process as a "collaborative learner." She also spoke often and in detail about her career goals. Dirk was equally elaborate in

comparing his information "chunking" process to reading comprehension while also narrating at length his near and future goals. As much and as often as Dirk credited his "entrepreneurial spirit" and "leaps of faith" for product creation, he ended each of those episodes mentioning the importance of formal education. Eventually, he explained why:

> **Dirk:** I've never lost the entrepreneurial part of me. But anyways, I see that the formal . . . I didn't understand in a formal sense the basic building blocks of programming until I went to college and that's where [two instructors] imparted to me the understanding of sequence selection, iteration, and understanding some of these basic building blocks, and Boolean logic, Boolean mathematics, and they ended up giving me like a creative programming award at the college because I always had that real creative flair to the things that I was trying to do. But it was getting that foundation!

Fred, too, credited "several very good teachers" for helping him "learn how to learn" through the "empowerment" he achieved when the teachers gave him the skills to find information when he needed it.

Ian's comments summarized the value of the findings for this segment of the study. First, he found that the exploration of relationships with an outcome in mind can lead to an understanding of the foundational causalities for learning. Also, he was one of several who acknowledged the use of a repeatable structure or strategy for acquiring information that can be used repeatedly:

> **Ian:** I could use those tools, like the knowledge that I have in programming can be used definitely to develop, you know, programs for mathematical analysis. Before when I was a mathematics major, I wouldn't have been able to do that because I didn't know, I didn't understand, you know, the syntax. I didn't understand really how a computer worked….So, yeah, those are tools: the computer and programming. The knowledge I have in programming [and computers] are definitely tools that I could use, that are at my disposal for use in mathematics like in the future.

Risk takers.

Making choices that entail learning risks, risks that one may perceive as costly in

terms of personal, economic, social, or political status, is clearly an agentive endeavor. Participant perceptions of risk as reasonably controllable appeared to be enhanced by having available criteria for assessing one's performance in undertaking the risk-related endeavor. Still, participants were rarely motivated to take risks without some anticipated gain. As a result, the participants' capacity for accepting career-related risks in learning was strongly influenced by their desire to develop as well as their ability to create their own set of standards for assessing the risk and for judging their performance.

Although participants narrated episodes demonstrating their comfort level with risk, their desire to develop, and how they judged themselves, many narratives integrated the three seamlessly. Narrative differences arose mainly in the sequencing of the three elements. Dirk, for example, explained how his capacity to judge his ability to produce led to risk taking that ultimately furthered his career development:

> **Dirk:** Well . . . it falls back into my own lap. It's my own fault, but when I meet with clients I am a very enthusiastic, tenacious individual who dreams a lot, and so I'll see what they're trying to do, what they're trying to showcase and I get these bizarre ideas, and I'll spew them out without thinking about it first . . . That's where I should probably shut up and wait a day to let it leak out a little bit, because a lot of times what I'm saying we could do, yeah, we can do that in the sense that I could be a brain surgeon. It would take a lot of education but I could, I mean, it's in the realm of possibility, but it might not be really feasible . . . because of that . . . shortcoming or maybe that's a good thing about me, I am forced by my career to learn, because I'll get into a situation . . . Now I've got to figure it out.

Gabe, too, demonstrated a type of fire–aim–ready approach to developing his career as a vocational education instructor. He described how he worked with a group of adult students to create career fairs in local high schools:

> **Gabe:** Well, we decided that, OK, we were going to put career fairs on. OK, well what is a career fair? We had to write our definition of what we thought. And what we did was . . . the thing that we always said . . . was continual improvement.

Ian took a more traditional, ready–aim–fire approach. Although he "fantasized" about learning all sort of novel technologies and theories, his sense of agency, informed by his judgment of what would best serve his career, kept him from taking some actions in favor of pursuing others:

> **Ian:** It's just one of those things that I'd like to learn more about. Then I'd fantasize about, "Well, gosh, you know it'd be neat to spend more time learning about computer science and theory." You know, like more about Turing engines.
>
> **RDP:** Uh huh. Even when you don't need it for a client?
>
> **Ian:** Well . . . it depends on what it is. A lot of times . . . there are things that I've had to drop, though. A lot of those, a lot of the things I want to learn about, I don't end up learning because, if I, you know, my job kind of gets in the way of my exploration sometimes but . . . You know, I'm satisfied because I do get to learn a lot of interesting things on the job. So, it does sort of like, I can't learn just about anything I want to learn about…

Belle's narrative offered a scenario similar in structure to Ian's. She found that she had to rein in the excitement and risk associated with selling items via eBay auctions in favor of selling through an eBay store, which would be more profitable to her developing career.

Anne provided yet another combination of the three agentive elements of risk, development, and personal evaluation. Anne was motivated by her strong desire to develop within her career trajectory. That development then influenced her perceptions as well as the judgment of her performance, which resulted in a novel outcome:

> **Anne**: It's hand in hand. I seek out things that I want to learn, definitely but that is within the realm of what can actually be used. I could go out there and spend every living waking moment I have at work learning things to come up with a brand new program that nobody and other clients are going to be able to use because their network systems just won't be able to support it. That's not going to be of any use to anybody at the end of the road. What my particular goals are with this project and most projects that I do are making sure that it can be used by our clients so there is a portion of technology dictating what I'm learning. I am learning Flash, something that's already been developed. I am learning AVI files, something that's already been developed. However, integrating those and playing with those, I may come across things that nobody has thought of integrating

> before which could be something new. And the way that I'm going to go about putting them together may be something new as well.

Halle provided another version of how the agentive elements of career competence can be combined. Describing how her career development needs influenced her career-related learning triggered a scenario in which Halle judged her needs based upon her perceptions of change and novelty affecting her career role:

> **Halle:** Just about everything I do, my career environment influences my learning that way because everything from the interactive TV to the online courses, it's changing so fast that in order to keep up with it, I have to learn how . . . I've got to be doing continual, "New feature came out. How does that work? How does that impact what I'm doing next? . . . And a large part of what I make decisions on is based on information that we're getting. So you know, learning, that drives a lot of where I'm going . . . So that can help me then make other choices where we need to go.

For each of these narrative episodes in which the participant was about to make, was making, or had made an agentive effort to self-direct learning, the result was a specific action being taken. There was more than a sense of agency being expressed. The agency was real.

There was an interesting anomaly related to the data derived from the participants' narrative recall of risk, career development, and personal evaluation. Earl, Jake, Link, and Mary each avoided any discussion of risk-taking in their respective narratives. Additionally, for Earl, Jake and Link the lack of recalled events associated with risk was accompanied by a similar absence of story content related to a desire for personal career growth as well as to a scarcity of episodes depicting personal judgment related to career development choices. What was different between the three narratives was the evaluative focus for each narrator: While both Earl and Link judged episodes primarily related to their own task-related efforts, Jake judged episodes related to events:

> **RDP:** Did you have a comfort level with either Macs or PCs?
>
> **Jake:** I don't have any comfort level with any computers, really . . . I had a Mac, I had an Apple at home, for a while that I finally just got sick of because *ClarisWorks* sucks . . . I mean that's the one thing that the PC is pretty good is *Word*, you know, and *Excel* is pretty good. But the *ClarisWorks* stuff is just a nightmare, and it really turned me off.

The same anomaly stood out in Mary's narrative. Mary made no positive references to accepting risk as a stimulus for her career growth. However, Mary's narrative showed her to be consumed by a desire for career development that remained greatly elusive throughout her narrative. Mary's tribulations regarding career development seemed to arise largely from an inability to determine what her career trajectory actually was and how events in her workplace related to it:

> **Mary:** Uh hmm. That's where I'd like to go, marketing . . . Whether it be Web or print . . . I think I would get bored if I was stuck to just one.

Finally, Mary used the judgmental portions of her narrative to critique, not her own efforts, but rather the people and events in her environment that she believed responsible for hindering her career development. For example, pursuing the discussion related to marketing, Mary had few responses related to what she needed to learn about, but was quick to point out what she thought she didn't need to know:

> **Mary:** I mean, I liked being at UB and I . . . felt that I learned it but I wasn't working on my work, so I didn't, wasn't learning specifically what I needed to know. I was learning what they wanted to teach me. Does that make sense?

Although Jake and Mary used their own personal criteria to judge learning events, they were the only participants who appeared unable or unwilling to take positive, legitimate, and consistent action arising out of potential learning opportunities. Table 6 below summarizes the findings of this section.

Table 6

Career Competence Findings and Observations

How does one's perception of agentive control over learning affect one's perception of career-related learning?	
Competence	**Findings/Observations**
Career interest	Participant satisfaction arose from doing something useful and contentment derived from perceiving oneself as an asset
Career interest	In considering the importance of career respect, career interest, and career satisfaction, only one, and not all three, is necessary to sustain career development
Relationships	Key learning triggers were present within career trajectories and they motivated participants to want to learn and develop
Relationships	Triggers precipitating learning that evolved into career development most often were associated with addressing complex tasks or problem solving, whereas triggers for routine learning were generally associated with simple task completion
Relationships	Some participants were able to take from their past what would work in the present, while others built ineffective causal relationships by attempting to let gleaned understandings from the past shape present learning behavior
Relationships	The exploration of relationships with an outcome in mind can lead to an understanding of the foundational causalities from which a repeatable structure or strategy for acquiring useful information can be created
Development	Risk, desire to develop, and the use of personal criteria to judge outcomes appear as key elements driving career development in most learning scenarios, but they can be arranged in any sequence to precipitate effective learning activity
Development	Participant desire to develop by itself appeared to be insufficient means to trigger career learning without reflective evaluation of personal task-related efforts

Values and Goals Related to Agency

Along with one's confidence in an ability to learn and a personal sense of career competence, the foundation for career-related learning, according to Thorén-Jönsson and Möller (1999), includes the individual's awareness of certain underpinning career goals and their associated personal values. As shown in Table 7, data for the study were coded for the presence of seven separate agentive goals and values: maintaining clear, career-related interests; focusing on career success; striving to achieve one's own expectations; aspiring for greater career autonomy; creating one's own sphere of authority; and added after the coding began, acknowledging career as only one segment of a fuller life.

Table 7

Agentive Values Raw Coded Count

AGENCY ANALYSIS	Values and Goals												
	Anne	**Belle**	**Cassy**	**Dirk**	**Earl**	**Fred**	**Gabe**	**Halle**	**Ian**	**Jake**	**Kari**	**Link**	**Mary**
Interests	6	3	4	13	4	0	2	5	9	2	9	6	3
Success	11	5	6	16	2	9	1	3	7	3	10	3	0
Expects	22	5	19	19	3	8	1	2	29	8	32	8	4
Independ	3	1	0	5	0	7	0	1	4	0	1	0	0
Sphere	0	3	0	14	0	9	2	3	1	6	0	0	3

Career-related interests.

"If the person has an interest in the topic or activity, then he or she will pursue it," stated Robertson and Merriam (2005, p. 275). Such was the finding from this study, with important corollaries added: Interests drove career learning; however, it was not always career-related interests that drove career development. Moreover, participants rarely discriminated carefully regarding which interests they opted to pursue because their situation more often than not made apparent only one viable option. Finally, as has been the situation with other data analyses in the study, often an individual's interests were indistinguishably interwoven with his or her desire for success, personal expectations, and desire for autonomy. All but personal expectations are discussed in this subsection of the data analysis; the narrative responses to expectations were extensive enough to demand a discussion of their own.

Career-interests are closely related to and would appear to form a large part of the decision-making foundation for an individual's definition of career success and sense of career-related competence. A desire for career development, motivation to learn, career-related satisfaction and contentment individually and jointly are related to career

interests. Demonstrating these interconnections was Anne's story about her decision to tackle a unique new learning venture:

> **Anne:** Right now with what I'm doing, this animation tutorial voice over, I am now becoming more of a training guru. Where up until a couple months ago . . . I was the Excel guru. So . . . if I had continued on the Excel path, if I had turned down this opportunity to do animation and voice-overs, if I had turned that down, I would have ended up in the IT Department programming. By taking on this project with animation and voice-over tutorials, I can get into a completely new career path, which is actually more interesting to me. [Laugh.]

During her story, Anne actually touched upon three separate but often related points of career-related interest: a sense of worth to another person, a sense of monetary worth, and a sense of intrinsic worth. The same triad of interests showed up in most of the participants' stories. Being expressed were other social and personal goals and values: expectations, success, and autonomy. Even though these goals and values were tightly intertwined the emphasis shifted as to which of the three garnered the greatest narrative focus within each participant's story. In fact, so important was this set of three socially legitimate goals that, on occasion, a narrator became confused as to which of the three was actually driving his or her career interest, emphasizing whichever was most appropriate to the context of the story at that moment in time.

Belle, for example, initially provided a socially appropriate response to what constitutes success in describing her decision to start an eBay store:

> **RDP:** So your way of judging it is money in the bank, the bottom line.
>
> **Belle:** Right. That's the way you judge everything in business right? [Laugh]

However, later in her story, as she shifted her discussion to selling her artwork on-line, as noted earlier in the discussion about career satisfaction, Belle's goals became associated with a more intrinsic value of personal autonomy and she reported that "I am not doing it

for money . . . So I must be doing it for satisfaction." Anne, Dirk, Earl, Ian, Jake, Link, and especially Mary told similarly structured stories, changing the focus of their interest to reflect either the social or personal context of their story.

Doing something useful or helpful for others was another goal displayed in several narratives. The perception of success for most narrators was closely aligned with helping others. For example, Anne's interest in career-related learning was heightened by her belief that she was helping clients:

> **Anne:** Oh, why I need to know is, of course, the business need comes up. Somebody needs to have something in a certain format showing them something specific and you got to find a way to get it done. And like I said, it's significant because everybody is depending on it—tools of this nature and reports of this nature—these days.

Belle described how she helped others within her eBay community; Halle narrated several instances of learning inspired by her desire to help the instructors she worked with; Dirk defined the marketing of his products as efforts to help clients achieve their own goals; Earl, Fred, Gabe, Ian, and Link told some variation of a career-related story in which their learning enabled them to help others.

An interesting finding associated with helping others was the surfacing of an internal dialog, a sort of intellectual quizzing, that several of the participants employed to verbally evaluate their success in terms of goal expectations. Cassy, Fred, Halle, Ian, Dirk, and Link narrated multiple-item lists of evaluation points similar to that provided by Anne:

> **Anne:** Whether I have to do more voice manipulation on the voice file? Whether I need to do more manipulation on the web animated side of it? Whether I need to do more integration in the two integrating themselves together? Am I going to come up with burps and hiccups with the voice over the animation? Is there going to be pauses in the animation while voice catches up? How am I going to handle those? On top of all of that, this is also a brand new concept for us so how am I

> going to integrate keeping the target of the tutorial without going off on tangents on everything else that may be quasi related to that topic but keeping it on topic and as well reaching out to all the various types of adult learners that there are out there? So those are going to be the overall goals.

The capacity to anticipate and plan through one's meta-analysis of career-related goals is an important element of learner "expectations" as discussed below.

While helping others was a goal many participants aspired to, it was not always an altruistic goal. Helping others was a means to a better economic end. Fred's prioritization of the three elements of career described what others also alluded to:

> **Fred:** No, they're not all equal. I would say, number one with any business is bottom line. What's going to make you more profitable? You want as much money to end up in your pocket as possible. I mean that's the reason for business.

One of the most significant findings associated with understanding the agentive behavior of the participants dealt with the relationships between personal interests and career development. The most intriguing narrative expressing a relationship between economic and intrinsic rewards was provided by Link. He related his career development exclusively to an interest in economic gain; however, the purpose of his desire for economic gain was to provide a comfortable life for his family:

> **RDP:** Back to music.
>
> **Link:** That's my love. That's my passion. My career is not my passion. Not at all! It's what I have to do, because again priority one is family. I do this so I can take care of my family.
>
> **RDP:** Priority one is family, but what drives your learning is your career.
>
> **Link:** Absolutely what drives my learning is my career.

In other words, Link made a clear distinction between personal interests (music), personal values (family), and the career goals that inspired career-related learning. Importantly, as Link laid it out, personal interests and values can be diametrically

opposed to yet fundamentally important to career development. For Link, values underpinning his career development were family-related not work-related values. Additionally, the logic of music paralleled the logic of computers, a personal interest making career-related learning tolerable.

While Link represented a relatively extreme example of a negative connection between personal values and interests with career development, most personal interest-to-career development associations were weak at best: Cassy's personal "dream" to become a photographer was marginally related to her sales and marketing career trajectory; Dirk's fascination with custom video games was more a pipe dream than a business goal; Gabe's interests in burning corn and horse manure was of little use to his career as an engineer or a vocational instructor; and even Ian saw no practical relationship between his longing to learn more about "complex algorithms" and his career as a programmer. Still, each narrator found some way to logically connect personal interests with current career aspirations, thereby maintaining coherence invisible to the uniformed listener. Each offered similar stories, but none was more poignant than Earl's episode of how his enthrallment with jet planes changed his life:

> **Earl:** And when I got stationed at my first jet trainer outfit, I mean, here's multi-million dollar pieces of aircraft that I get to crawl around, play on and stuff like that. And when, I think the first that I was really at awe was when I was actually sitting in the cockpit of this airplane . . . I'm sitting out on the tarmac. We have the big giant chain holding this aircraft down and I'm sitting in the front cockpit and the throttle of this airplane is full forward. Seeing all the electronics and all this stuff, I think that was probably the turning point in my life, where I really wanted to get into electronics. And it was just amazing that I actually went from a boy that was milking cows and chasing goats and chickens on a farm, to three years later, I was sitting in the front seat of a jet airplane with throttles full forward and loving it. I think from that point there…I got more into the electronics stuff.

While Earl's story detailed the relationship of a specific personal interest to his career development, it also acknowledged something less than a self-directed selection of goals initiating a career-related learning trajectory. In fact, it was common for narrators to tell a story suggesting their career development was not a conscious goal-inspired effort driven by career-related interests, but rather the confluence of events. Belle, for example, accepted new career-related learning somewhat dutifully. Asked how problem-solving and learning to use new digital tools influenced or shaped her career goals, she replied:

> **Belle:** When I'm working on those things, I don't really think about how they are related to my career goals. I just do them because they have to be done. I don't really think about that being related to career even though it is.

Cassy and Kari responded similarly. Cassy's narrative about resolving a software program, much like Kari's story about learning data management for an auto dealer, acknowledged her responsibility to her employer for motivating her learning:

> **Cassy:** I couldn't completely get the information I needed and so then I turned to tech support…because my boss had encouraged me to call tech support because he was paying for those services . . . He wanted me to get answers, and you know, that was my job!

Dirk told a similar story; however, it was his clients to whom he remained dutifully bound for his learning goals:

> **Dirk:** I think every single one of my people have always said this to me at some point, "It just can't be done. Can't figure it out." And I will look at them and I'll say, "OK. Do you want to go tell the client that?" . . . We've made a pledge to the client that we are going to do a certain thing. You can't say, "I can't do it."

Halle, too, demonstrated in her story an ability to recall but not predict important career-related goals. Halle's narrative, as presented back in the section on detecting inter-relationships, acknowledged that her goals were inherent to her career trajectory but

triggered by other learning events. Finally, Kari admitted in her narrative that she was "so new" to her career as an investment advisor that setting learning goals was difficult:

> **Kari:** Because I'm also so new. I mean, I'm learning it and . . . I'm thinking, well, I don't have instances where I can say I really need this or I really need that.

With narrators often detailing how events rather than personal interests or goal-based planning pushed their need to learn, it would be easy to assume that the agentive desire for career autonomy would be weakly supported in their stories. This was not the case. The fact of the matter was, as Anne pointed out, it was not how learning came about that was important, but rather, that she had a sense of outcome ownership:

> **Anne**: And for me personally, I'm going to learn a new application. I'll end up learning some new computer codes and it'll all just be great for my career portfolio.

Ownership also drove Belle's learning:

> **Belle:** Well, people already steal my images; that's why I watermark them. People were stealing my images to use in their auctions . . . So, I had to learn how to watermark to somewhat stop that, but I still have found images that I've done that I watermarked that somebody . . . took the watermark out of. But I don't want them to do that with my original artwork so I want to figure out how to stop them from being able to do that.

As previously mentioned, Cassy responded aggressively when superiors entrusted her with problematic tasks, that is gave her ownership. Kari expressed her ownership of her bachelor's degree and her desire to put it to work making some money for her.

Learning was thwarted, often appearing to be out of reach, not worth the effort, or too nebulous to pursue when ownership of the learning outcomes was improbable or impossible. Dirk was very successful using Internet search engines to quickly locate snippets of code for building unique programs; however, when he attempted to dictate (to own) how his fellow workers should learn, his learning abruptly hit a wall. Fred's

learning produced creative alterations to several Microsoft applications, yet frustration set in when he wished to impose his own values on (to own) how Microsoft makes and markets its products. Jake and Mary, unfortunately, desired to own something they could not have, leading inevitably to their feelings of disenfranchisement. Jake wanted to own the present and make it the past; Mary tried to own relationships and interpersonal negotiations.

The findings of the study related to personal interests, the desire for an personal sphere of influence, and one's striving for career-related success suggest that while interests influence career learning, ownership of learning outcomes sustains individual career development. Halle expressed this relationship well:

> **Halle:** I guess as I'm thinking about this, it probably has to do with "How significant will this be in my job and in my life?" Now, that's really what's going to determine at what level I need to learn it.

Strives for own expectations.

Striving to meet one's own expectations, as opposed to exclusively meeting the expectations of others, was strongly related to each individual's sense of outcome ownership and motivation to learn. Expectations, however, added another dimension to ownership in that they were key elements of each narrator's learning plan for developing the outcome ownership they experienced. The importance of striving for one's own expectations was evident with that category code representing the largest number of narrative incidents. Expectations derive from one's "own capability and self-sufficiency based on previous experiences," stated Thorén-Jönsson and Möller (1999, p. 75). As such, expectations would appear to be an important expression of one's perceived agency. The current data support that assumption.

"This project was coming onto our plate and I knew I wanted to do something unique with it," stated Dirk, demonstrating a truly agentive sense of outcome ownership. He then launched into a 2,500-word story of imagined outcomes, learning goals, and probable learning steps that would have to be pursued to achieve success in the project. Dirk's story was one of creativity launched by the power of outcome ownership and enhanced by the freedom to set and strive for personally established expectations for achieving that outcome. All participants provided similarly structured stories, but not all scenarios led to new outcomes, new learning goals, or a workable plan of action. This subsection examines the data related to this set of findings.

Similar to Dirk's episode above, Kari, Ian, Cassy, and Anne told stories packed with expectations; moreover, each translated an externally assigned task into an internally motivated set of expectations through task and learning ownership. Anne and Ian narrated almost identical examples in responding to how each determined career development goals:

> **Anne**: So it's pretty 50/50. You know, there are goals that are given to me by superiors or co-workers but then I basically decide how to fulfill those goals.

Or, as Ian put it:

> **Ian:** But I know it's doable and it's just a part of my job, you know. It's just like I've got to research certain things. I've got to flesh out the nitty-gritty.

Ian, in another episode, took ownership of and expanded upon the knowledge he acquired from a computer course he failed. Kari recalled a very similar scenario based upon the demands of a college course. Her narrative showed that she learned best when she was able to assume ownership of the assignment and her own learning.

Another element common to many narrators was the passion for career-related learning each expressed as they assumed ownership for outcomes and began creating expectations. Kari was representative in her remarks:

> **Kari:** [JH] knows I'm so passionate about making sure that, I'm not going to say I've never failed anything but that's not something that I like to even have in my vocabulary. And for me, I need to, I tell him also, "I need to make sure I know everything that I need to know, the tools I need to get where I need to go."

The passionate language of agentive ownership and accomplishment dominated many episodes told by Anne, Dirk, Ian, and Kari. On the other hand, Jake and Mary, although passionate in describing what they found to be dysfunctional within their respective career environments, rarely expressed the same enthusiasm toward their career development. Jake, even though stating he wanted to spend "all my time creating content," had few expectations for himself and demonstrated little enthusiasm or imagination for what he could do:

> **Jake:** You know the production stuff again was pretty straightforward for me . . . I don't do any multi-track recording where I'm recording on top of other things in real time and listening to the beat and trying to stay in time and everything. You know, I don't do that. I usually just do a voice over and then I go find some music and put it underneath and make it work . . . People are way too sophisticated with a lot of stuff. You know, they want to make it harder than it is.

Mary, too, lacked enthusiasm and fell short of expectations. Her narrative presented no future outcomes she could lay claim to. She was clear on what she did not want, but was never able to verbalize what she did want in terms of a new career trajectory.

Link represented the most interesting anomaly. On the one hand, Link stated and demonstrated that he was a "goal directed" personal who "set high standards" for himself. Moreover, as previously noted, Link's learning was career-driven, and the expectations, the demands, associated with his career were substantial:

> **Link:** But there's a lot of reading . . . It's awful. It's awful. I don't read for fun. We go on vacation and I bring technical magazines. I don't read for fun. There's no.

In other words, Link was demonstrating that high expectations for career learning could be set and achieved without being passionately engulfed by one's career trajectory. However, Link was not dispassionate about owning his learning and applying it in the manner he thought best:

> **Link:** Unfortunately, I seem to have to serve the administrators more only because of that whole written thing . . . And that's the unfortunate part of my job. The most frustrating part of my job is that one of the things that I try to keep focused on is: Is it good for the kids? I mean, that's kind of my mantra: What's best for the kids? What's good for the kids? That's what I use for my focus.

Presented in Tables 4, 6, and 8 are the findings and key observation arising from the analysis of data related to uncovering how one's perception of agentive control over learning affects his or her perception of career-related informal learning. Working through the analysis individual by individual, it has become clear that there is a relationship. Missing is what that relationship is and how it might tend to generalize across the study sample. Those topics are addressed in the holistic analysis that concludes this chapter.

Table 8

Agentive Goals and Values Findings and Observations

How does one's perception of agentive control over learning affect one's perception of career-related learning?	
Competence	**Findings/Observations**
Interests	Participant interests drove career learning; however, it was not always career-related interests that drove career development.
Interests	Participants rarely showed discrimination between interests because they appeared satisfied with a situation that made apparent only one viable option.
Interests	Participants often changed focus reflecting their interests as situationally bound
Success	Participant perception of success was closely aligned with doing something useful.
Success	Participants demonstrated a capacity to anticipate and plan necessary learning through a reflective self-quizzing type of task and goal analysis
Independence	Participants made a clear distinction between interests, values, and career goals inspiring career-related learning resulting in personal interests and values diametrically opposed to, yet fundamentally important to, career development
Independence	While interests influence career learning, ownership of learning outcomes sustains individual career development.
Expectations	Successful career-related learning appeared to be connected to participants' ability to translate an externally assigned task into an internally motivated set of expectations through task and learning ownership
Expectations	High expectations for career learning can be set and achieved without being passionate about one's career trajectory; however, the greater the passion toward learning and autonomy, the greater the career-related learning and development

The Effects of Career-Related Context

A Category-Content Perspective

Once again the category-content perspective (Lieblich et al., 1998) was employed for analyzing the data related to the second question of this study: How does the career-related context in which informal learning occurs affect the agentive nature of self-directedness? Drawing largely upon the works of Moore (1986), Wenger (1998), Merriam and Caffarella (1999), Thorén-Jönsson and Möller's (1999), Robertson and Merriam (2005), and Plunkett (2001), four categories important to communal support of career-related learning were explored (see Appendix G, Category-Content Literature

References): group identification, a sense of serendipity, the social distribution of resources, and communal values and goals.

As previously described, the software program HyperRESEARCH™ 2.6, was used to locate and code specific reference points within each participant's narrative (see Appendix J, Sample HyperRESEARCH™ 2.6 Coding). The coded occurrences for each narrative were tabulated and graphed based upon raw count, the number of times each coded element occurred in a given narrative (see Appendix I, Sample Cohort Line Graph) and by percentage of narrative responses, which weighted each coded element according to all of the major categorical responses provided by that participant (see Appendix H: Category-Content Pie Charts). The management of the data in this manner was not meant for quantitative evaluation, but rather to make more visual possible participant response patterns for qualitative comparison.

Group Identification

The term "group identification" is a somewhat generic derivative of what Lave and Wenger (1991) referred to as participation in a community of practice. That is, group identification refers to the manner in which one goes about recognizing or associating him or herself as a member of a specific "activity system about which participants share understandings concerning what they are doing and what that means in their lives and for their communities" (p. 98). The communal characteristics of group identification, as they related to career development, were explored in terms of nine theory-based, pre-determined subcategories and one more that arose during analysis and coding. Narrative references to these coded subcategories are presented in Table 9 below.

Table 9

Group Identification Raw Coded Count

COMMUNITY ANALYSIS										
Narrator	**Group Identification**									
	Certs	Respect	Role	Comm/Lang	Peers	Practice	Feeling	Progress	Percept	Criteria
Anne	1	5	17	3	4	11	8	3	2	3
Belle	0	1	1	3	3	3	7	0	1	4
Cassy	1	5	15	5	11	3	9	2	0	5
Dirk	1	8	8	6	4	8	7	1	4	4
Earl	0	5	2	3	2	3	4	0	2	3
Fred	0	1	1	11	0	5	1	0	8	0
Gabe	4	0	2	6	8	11	3	0	8	14
Halle	0	0	16	8	4	10	7	0	0	3
Ian	6	4	11	8	7	10	17	0	0	3
Jake	0	4	12	12	7	11	6	4	10	3
Kari	5	7	15	3	3	17	13	1	0	3
Link	2	1	15	10	13	10	11	0	12	1
Mary	7	3	24	5	1	2	1	0	0	6

The 10 communal elements shown in Table 9 tended to fall into conveniently related clusters for analysis. The first cluster, most easily characterized as aspirations toward assuming the appearances of community, includes the sub-categories certifications, external respect, socially determined career role, career-perception driven, and group-defined judging criteria. The second cluster represents characteristics associated with participation in a community of practice including using peers as resources, practice acting as a member, maintaining a feeling of community, keeping up with social progress, and employing social communication skills.

Appearances of community.

Manifestations of the appearance of community of practice involvement appeared in participant stories about attaining, attempting to attain, or desiring to attain various college degrees or other certifications associated with socially legitimate career learning

accomplishment. Kari was unquestioning in her pursuit of the appropriate certifications for assuming her position as a licensed financial advisor. Similarly, Gabe narrated several examples of a strong social connectedness through his career track. He associated with many highly degreed individuals:

> **Gabe:** Ok. Now that's as a millwright welder . . . I have about four different certifications in that . . . Under ISO TS16949, ISO 9000, ISO 14001 which is the environmental . . . I'm doing, I set up, I write all the programs for calibrating all torque tooling in [the] plant . . . I'm certified to do that nationally or worldwide.

Gabe was not as unquestioning as Kari regarding the relationship between learning and certification, however. Discussing the way he learned, Gabe acknowledged that certifications are a social mechanism and are often acquired by formal means removed from practice as opposed to arising from self-directed learning in the workplace.

Ian echoed Gabe's understanding. In his story about a talented staff member, Ian had to personally certify to the researcher the young fellow's capabilities because they were not legitimately endorsed by conventional means:

> **Ian:** Yeah. [BB] is not just a graphic artist. He knows how to program and…I think you should interview him because he is the epitome of self-directed learning. Because the kid, he's only got a high school degree.

Several participants told stories in which they acknowledged that they understood the social rules of obtaining appropriate certification, but demonstrated in their story-telling a distain for following those rules. Link's story was representative:

> **Link:** I wanted to go into education." I mean I always said, "I want to be a teacher, I want to be a teacher, I want to be a teacher." The first summer we were here I took eighteen courses . . . to get my math certification. You know because all the cores were done. All I had to do was to introduce myself to calculus and all those other crap courses. Math certified, couldn't get a math job.

The socially legitimate aspiration to achieve a degree or certification can be internalized and drive learning even when the legitimate formal learning that confers such

certifications merits little respect or understanding. Ian, who earlier claimed to have learned a lot even from a course in which the instructor gave him a failing grade, also acknowledged the social and economic importance of being properly credentialed:

> **Ian:** I had pressure to finish up my degree because we needed that credibility. We need at least one guy on the staff who's got a Bachelor's Degree.

Dirk, aspiring to enter a new career path in marketing demonstrated his unfamiliarity with just how the relationship between learning and certification worked. He struggled in his narrative with how he could acquire the proper certification to open doors for him:

> **Dirk:** I'd like to wrap up my education because I haven't, just for the sake of wrapping it up more than anything else, so I have that under my belt . . . And also because I want to move into another area now in my career. I want to go back to school after I finish up my BS degree, which I have not done yet . . . But I want to go back towards a Master's, but I want to jump into like a marketing Master's and I'm not sure how you do that, how you go from computer science BS to a Master's in some totally other related field.

No participants dwelled more upon the desire to pursue career legitimacy through certified learning avenues than Mary:

> **RDP:** OK. So you're formal education in college was geared toward web design and marketing, or what was that focused on?
>
> **Mary:** First of all, [Laugh] I've gone to eight colleges, so. [Laugh] For various things. That just happens to be one of the certificates I went to, that I earned in like 2003 because it was something of interest to me.
>
> **RDP:** Why eight colleges, you were doing things that were interesting or what was your?
>
> **Mary:** Uhm. Let me see. When I first went to college, well I, you know, I graduated from, I guess [business college] first with a secretarial degree . . . I was an accounting major at [SUNY], and I dropped out. It was not what I wanted to do . . . Uhm, went back to [community college], finished up an Associates Degree in Business Administration . . . Then to . . . Gannon University for marketing . . . So I had friends at Mercyhurst College and they have a dance degree . . . And I went there….I went back and finished my Bachelor's in Business Administration through Empire, because that was pretty much home study . . . I asked the Chief if

> [the department] could afford to send me for some web design courses, and UB had the best deal for me, it worked out. They paid for it, and I went.

Thus, what became apparent from this subsection was that participants aspired to career legitimacy through appropriate certification even though they were often uncertain of its applicable value or how to proceed with a useful certification process.

As Ian pointed out above, an important reason for becoming properly certified in one's career domain is the respect from others that it engenders. Desiring, soliciting, or responding to expressions of respect from one's peers was a visible social component motivating career development in several narratives. Anne provided a representative scenario defining the significance of perceived peer respect to future career growth. In a story reminiscent of Earl's account of his feeling the equal of doctors, lawyers, and prominent business people when it came to working on their computers, Anne was able to use her peers to locate and then define herself in the social hierarchy of the business she worked for:

> **Anne**: Ah, other people that I work with now, they're generally administrative staff. They oversee various aspects of our business. Executive levels from the president, I work directly with the president of our company, the vice presidents of all the departments of our company, directly supporting them. They all tend to be highly intelligent, highly driven people, very global thinkers, not quite linear thinkers.

Working and succeeding at the tasks assigned by these people who, by their titles represent a high level of legitimate social respect, provided Anne with a significant sense of self-worth, demonstrated in her perception that these titled personnel "definitely take me seriously."

Kari and, especially, Cassy dwelled upon the positive aspects of "feeling appreciated and feeling valuable to the company you're working for." Mary, in contrast,

populated her stories with the lack of respect she faced from her superiors, often narrating a sense that they thought of her as irrelevant, "as lower, not as intelligent." As a result, where Mary often felt defeated and voiced no desire to continue her career trajectory, Anne addressed the value of such respect as being a driving force in her desire to develop herself and her career:

> **Anne**: It allows me to interact with a wider variety of people. The more knowledge I have, the more people I can have intelligent conversations with . . . And the more in depth conversations you can have with people, the more intimate your experience can be with people is something that I tend to believe. Ah, politically, of course, the brighter you shine**,** the more rewards are going to come your way in Corporate America. So the more you can please all of these different people, the better my interim with this company.

Ian complemented Anne's thoughts. Even though he found a degree of intrinsic self-respect in knowing that he had learned a lot from a course he had received a failing grade for, he confessed that dealing with the social aspect of failing grades is difficult:

> **Ian:** Because I don't want to get an F anymore . . . It's always hard to explain to somebody why you got an F. "Oh, well." You know, there's always a stigma attached to getting an F.

Some participants elaborated on other ways that peer respect played an important role in their desire to develop. Belle found that her knowledge of antiques and collectibles led to preferential treatment as a showing of respect auctioneers afforded her. Earl, Fred, Halle, and Link had to stay abreast of breaking developments in computer technology. For Earl and Fred, it was so they would not lose the respect of demanding customers. For Halle and Link, it was in order to maintain the respect of staff members:

> **Link:** But I still need to know, because people are going to ask questions and say, "What do you think about that? What do you think about this? And I heard about this and what about that?" And my guys will come to me thinking I know something and I need to know at least enough to converse in it. You know to be able to say, "Ok, this is what I know. What do you think?"

No participant's narrative was filled with more stories about different types of peer respect than Dirk's. He told stories about the necessity of winning the respect of clients and of competitors. He told stories about moving his company's product development into the educational realm in order to revel in "the prestige of being in the education realm." Most interesting, however, was Dirk's story of intrinsic respect that detailed why, even though he "borrows" other programmer's code, he should not be tagged with the negative nickname "script kiddie":

> **Dirk:** There's actually a nickname . . . "script kiddie." . . . Now what a script kitty is, is someone who doesn't know how to program, who goes into . . . script programs that you can borrow for free. You're allowed to take these, put them on your website and they do different functions . . . We have a lot of people out there who claim to be programmers but don't know crap . . . about programming . . . because they're using the script kiddie approach . . . I'm not a script kiddie in the sense that I'm going to take his code . . . and I have to understand his code thoroughly enough to then glean parts out of it . . . I'm able to create what I want to create . . . I wasn't a script kiddie just because of my formal education in computer science and being in the computer field for so many years.

Not every participant addressed the concept of external respect and only a few dwelled on it at length. However, for those stories that broached the topic, the narrators demonstrated that their perception of the respect of their community of practice peers was a significant behavioral motivator—positively or negatively.

A person's success or failure in achieving career legitimacy through certification or the respect of peers obviously can affect his or her decisions related to career role. There are more blatant influences, as well. Story episodes related to participants' acknowledgement of their career roles being significantly influenced, determined, or directed by others were the most commonly recalled communal characteristics.

The first manifestation of career role awareness was occupational title. Table 1 showed that nine of the 13 participants identified themselves in terms of their location

within a social network: “key account manager” (Anne), “engineering manager and maintenance superintendent” (Gabe), “director of distance learning” (Halle), “lead programmer” (Ian), “instructional technology coordinator” (Link), “general manager” (Jake), and “administrative assistant” (Mary) are a few examples. Beyond the titles, much of each narrative was given to stories that explained and demonstrated the role or roles each participant played in their respective communities of practice. Differences in the stories became most pronounced when social roles came into conflict.

For Anne, Earl, Fred, Halle, and Kari there was little role conflict. Belle and Cassy narrated stories of building their respective roles as they built their careers. Dirk and Ian were looking for role stability, while Jake, Link, and Mary told stories of tremendous inner turmoil derived from role conflicts. Each situation had its unique effect on the participants’ desire or ability to learn new career-related skills.

Belle’s narrative was largely an oral history of her growth as an on-line (eBay) entrepreneur. She dwelled on describing and evaluating her experiences related to the role change from hobbyist to earnest businessperson. Practically, she had to learn to deal with other eBayers stealing her work (carefully worded descriptions and digital images). Socially, she had to learn how the eBay community of chat rooms and bulletin boards worked. And politically, she had to learn how to survive as a small dealer in an electronic domain dominated by high-volume dealers. She saw the multiple roles as substantially related. Cassy told a similar story. In attempting to narrate the sorting out of the various roles she was expected to play, she compared career role demands between the small business environment of a mom-and-pop car dealership and a regional newspaper chain.

Dirk's narrative often delved into his attempts to handle multiple, often conflicting roles associated with starting, managing, and growing a small digital marketing business within a very competitive global environment. Dirk told of his efforts to balance these roles socially and politically. He had done what many small city small business people do: he started by hiring his friends and relatives. The conflict that arose was how best to make his business competitive:

> **Dirk:** I tell them, "Look for it in Google." I'll notice that that only lasts like ten minutes and then they're like, "Well, I couldn't find it." And I think to myself, "Well, you didn't <u>try</u> hard enough." You know, I don't want to say it in a condescending manner to them or, you know, in a negative sense but it's like, I think that I realized that when your back is up against the wall, my impetus was, "This is my company!"

Finally, Dirk told of the political conflict that arose from his dual roles as local businessperson and local business representative:

> **Dirk:** Because of my company . . . I'm on the Board of Directors of the [local Chamber of Commerce] . . . There was one incident that had nothing to do with what we're talking about right now, but some things, but some black eyes that I took last year that knocked me down a few notches. Prior to those problems, I was actually hitting a certain level of status in the city that was kind of unusual. You know, where people sought me out that I find highly much more successful than I am, especially monetarily they're way beyond where I am. But they notice certain things about me and would seek me out. That would have continued had I not stepped out on a limb with the whole [Board of Public Utilities controversy]. That knocked me way down, because I got seen, I was a troublemaker.

His response to dealing with these conflicts, which Dirk acknowledged had cost his business tens of thousands of dollars, was to claim that he had had to learn "more patience or tenacity." He was not sure which.

Others had more serious role-related issues. Link, Jake, and Mary told stories of significant conflict between their career and family roles. Where Link was able to use the conflict positively to drive his learning and his career in order to make a good living to

support his family, Jake and, especially, Mary found the conflict had limited their career development:

> **Mary:** And, I became a mother with him. I went back and finished my bachelors in Business Administration through Empire, because that was pretty much home study . . . I went back to Empire and was beginning work on my graduate studies. And then decided I couldn't take the [City Police Force] any longer and when I left to go to [the Center], I cut my salary in half. In so doing, I could no longer afford the graduate studies program. I have to support him and I had to sell my house. So we live here courtesy of my cousin.

Paralleling the obvious inconsistency in her story regarding whether she finished her bachelor's degree or not, Mary used the same conflict to explain why she wanted to improve her career prospects in Web design but was unable to work at home evenings to learn computer applications.

Anne, Earl, Fred, Gabe, Halle, and Kari appeared to have a clear understanding of how they and others perceived their career role. As a result, these narrators were extremely comfortable and exceptionally coherent in describing where they were within their respective career trajectories. This is the point where the discussion of career role becomes one of perception-driven career role; that is, how much the individual identifies with or is defined by his or her career role.

Where the stories of these six participants differed substantively was in regards to where they were going with their career trajectories. Anne and Kari told stories of continuing to prepare for future growth within their respective communities of practice. Anne was constantly building her portfolio in anticipation of an opportunity to move upward. Kari described herself as her boss's "retirement plan," as she envisioned owning the company one day. Gabe had already experienced an economically successful but personally devastating career role as a supervising engineer at an auto axel plant and a

successful role as a vocational instructor. He was ready to let his noncareer interests in farming identify what would remain of his career role for the near future.

Earl, Fred, and Halle were able to project into the future to anticipate future trends that might require additional learning within their career trajectories; however, significant in their difference from the others, none of the three ever described a potentially different career role for him or herself. In a sense, each narrated a future self that was indistinguishable from his or her present career self. When asked about selling his business, Fred responded:

> **Fred:** For us it's, it's just like this is the bread and butter. This is how we make our living and you've got to keep making a living. Uhm, as far as, you know, like you say, "You could sell the business," a lot of people do that. I can't imagine selling this business because our business is actually what we do.

Jake and Mary appeared to fit into this last group of participants. Mary's career role perception was even more constrained. Not only did she identify herself as belonging to a role that commanded "low respect" from her peers, she considered her role to be socially and economically inadequate. As much as she desired to change her career role, she could come up with no alternatives that she found interesting enough to pursue. Jake, too, appeared to be severely constrained in his effort to develop his career path. The problem was not that he was locked unchangingly into his present role but rather he appeared to be tied too tightly to his past role as an entertainer. Clearly, each participant's prioritization of the various social roles he or she played, the shelf-life of those roles, and the perceived flexibility of the roles were important influences on his or her career development.

The final subsection related to communal appearances deals with the degree to which participants responded to the criteria for evaluating successful career performance

and growth as defined or predetermined by the community of practice. Most participants told stories in which important evaluation criteria were strongly influenced by tradition, organizational agencies, competitors, superiors, and peers. In almost every recalled instance, evaluative criteria were defined or filtered through participant perceptions as opposed to being based upon written rules or specific directives. Moreover, the manner in which the perceptions of the evaluation criteria were typically acquired was through modeling or continual verbal negotiation.

The successful performance necessary for Ian to receive his bachelor's degree was institutionally dictated: he had to have a pre-determined number of credits in a foreign language. Gabe also had to meet governmental and agency-determined criteria in order to receive his ISO designations as an engineer. Additionally, Gabe found his practice as an engineer strongly dependent upon outside agency or third-party evaluation criteria, as his story of conforming to General Motors' manufacturing tolerances showed:

> **Gabe:** Well what would happen is, we got into a warranty issue and all the dealerships, they would have never been able to break the bolts loose. So that could have been a major hit against us just from the torque, you know, warranty issues. And if you get a warranty issue with General Motors it's a million dollar fine right off the get go.

Link referred to it and Halle narrated in some detail a response to the criteria she perceived as generated by the educational organization she work with:

> **Halle:** We have a quality initiative going here and we have certain quality standards that meet the highest priority right now because it matches our priorities with our college of where we need to go.

The corporate Anne and the entrepreneurial Belle both pointed to competitors as viable sources of evaluative criteria. Anne, working with a marketing firm, introduced the lengthy story of her career tasks by first pointing out:

> **Anne:** That way the manufacturers, and now retailers as well are starting to get on board, to cross comparison with their key competitors, the other retailers, what they're doing in the ad market, what their ad share is, verifying sales deductions, making sure that the ad placements are what they expected it to be, and also they're starting to trend into monitoring their key competitors to see what their competitors are doing for advertising so they can beat the gun on that as well.

Demonstrating exactly what Anne was describing, Belle recalled that she was building her own sales acumen by "looking at other sellers" on eBay, observing both product and process. In other words, Anne and Belle told stories about modeling their own product and process on the work of peer competitors they deemed successful.

The most commonly considered source for external peer evaluation was clients or customers. Every participant that provided a product or a service spoke to some extent about the importance of anticipating (Fred) or meeting (Anne, Dirk, Earl, Ian, Cassy) the expectations of their client or customer. Dirk was eloquent in tying client expectations to career development:

> **Dirk:** My career is . . . quickly approaching a point where the level of clientele is increasing. Where they have certain expectations. I'm working with clients now that hire . . . marketing firms to do stuff like I do, for, you know, a hundred thousand dollars for a project. You know, sometimes I feel like I'm not quite there yet but that's the point we're getting to where these companies are spending tens of thousands of dollars with us. Uhm, and so I'm trying to drag the learning up to, you know, I want to as a businessman; I want to chase that level.

Even though they were not in retail, Halle, Gabe, and Link made references to providing services to others whom they used as evaluative sources of their effectiveness. For example, Halle described the criteria building process she used for evaluation:

> **Halle:** It's to some extent building other peoples' inquiry into new things and new technology and keeping them abreast of things that are going on outside of our college . . . Until I could actually incorporate it into something that I do and demo it with, you know, things that I may roll out to the faculty as training first before it ever actually ends up in a student's course. You know, I might let other faculty play with it.

For Link, helping the students was one reason he kept going in his career. The students were the ultimate customers benefiting from the services he provided. However, similar to Halle, it was his peers in the teaching profession that Link turned to, in this case sort of as proxy clients:

> **Link:** Because our initial . . . approach to the whole thing was, "Leave it up to the teachers. Teachers know where the kids should be going and they should be monitoring them and monitoring the classroom as they would with any other tool."

Where all other participants relied upon perceptions of the actions of others and interpretation of observations to glean socially determined evaluative criteria, Gabe went right to the source. Paralleling the precision he described for testing the close tolerances while making automotive parts, Gabe sought perfection in education through constantly soliciting input from others, particularly his students:

> **Gabe:** And I would hand out my own sheet and say, "Ok. Here. Rate me. Don't put your name on it. What's good about me? What's bad about me? If there's something wrong or I'm talking to fast, or I'm not teaching you, or not answering your questions? Let me know." And I would do this twice a semester.

The participants used competitor peers and client peers as criteria-building resources for self and career evaluation. The final peer resource for evaluation was other people in the workplace. Cassy evaluated each of her work environments by the quality and quantity of the "feedback" she received from coworkers. Anne used great detail to describe how she relied on her peers to help her perform better:

> **Anne:** So those are going to be the overall goals. Those are going to need to be the things that I play with and some of the things that I'll end up doing . . . and then show it to somebody that I know primarily reads. See what they get out of it. Show it to somebody who primarily likes to listen to lectures. What do they get out of it? Show it to somebody who basically doesn't read anything or listen to anybody and just bangs away something and do they get anything out of it…. Those are also some of the worries that I have and some of the objectives I'm going to have to overcome.

The final social contributor to the criteria used for career-related evaluation was, of course, one's superiors. The evaluative role of superiors did not go unnoticed in the narratives. Superiors were identified second only to clients as a source for feedback. Earl referred often and positively to the importance of the direction he received from his military superiors. Anne, Cassy, and Kari were also complimentary of their respective superiors as trusted and useful evaluators. Kari dwelled on the topic. She related episodes in which she worked to exceed the demands of her college instructors, she recalled multiple times of responding to the expectations of her mentor and superior in the financial agency, and she brought up twice the importance to her career of meeting the learning expectations of the sponsoring company her agency subscribed to.

Although all participants made some reference to the importance of others influencing their career tasks, outcomes, and ultimately their career development, not every instance was positive. Both Dirk and Ian conceded that the client might not have the best perception of what makes a quality product. Ian was not as complimentary as Earl regarding the criteria offered by the military. Belle admitted that some of her peers were poor models to follow. Although Link felt forced to capitulate to the demands of his school administrators, he often disagreed with them when the benefits of students were involved. Still, all participants remained generally positive regarding these socially evaluative influences; all except two: Jake and Mary.

Jake made only a few references to the social criteria he used for evaluative purposes and those were taken from his past:

> **Jake:** And I'm not dealing with you know, four other real professionals who are very good at their job. I deal with a lot of people who are terrible on the job. So, it's a management thing . . . you've got to take from soup to nuts, man . . . I

> learned from sports: If you're the pitcher, you pitch, and the catcher catches. And if you're in a band, the piano player plays piano and the drummer drums. I don't tell him how to drum all the time. We discuss it, but I don't tell him how to drum all the time. Everybody is good at what they do and they do what they do.

What Jake appeared to be saying was: There is no need for social criteria of evaluation beyond the conditions inherent to the task, which any competent performer should know.

Where Jake did not look for or pay attention to feedback from others, Mary's narrative showed her to perceive any feedback as negative and dwelled upon it to distraction. Even though Mary commented many times that she wanted to do Web design, she found only criticism in that suggestion when it came from a superior:

> **Mary:** Yeah, I think people who have no IT background . . . never worked in any of these software programs have the expectation that if somebody has worked in something similar, like me having worked in Access, that I would just automatically know how to do that. And because I had worked in FrontPage that I would just automatically know how to do Dreamweaver and what not. [Laugh] And that it would be a simple thing [multiple finger snaps] and it should happen overnight.

Mary told of wanting someone to help her learn, but she did not want criticism from her peers:

> **Mary:** But everybody, everything I've created, like I created a rate card in Photoshop. And when, all of the people that I know that are into graphic design and whatever, they, "You used Photoshop for that? Are you nuts? You should have used Illustrator or," I forget what the other design software is that Adobe creates now.

Ian provided the words to summarize best what the findings of this subsection:

> **Ian:** Yeah, ultimately you're forced to see it the other person's way, you know. And then, even if you don't agree with it, it's definitely a perspective that you probably didn't see before, you know. And especially, not in the way that you know.

Participation in community.

Narrated expressions of participation in one's community of practice included respondent stories about acknowledging one's peers as valuable learning resources, working on perfecting group practices, maintaining a feeling of community, keeping up with social progress, and understanding the communal need for communication. With the single exception of acknowledging one's career role as being socially determined, a majority of unaided participant responses recalling contextual criteria fell within these five subcategories.

Early in his narrative Gabe stated what most people will generally acknowledge: **"**Well, I'm constantly talking to the other people I'm working with." Thus, it is not surprising that most participants told stories about how or what they learned from their peers. Ian made a statement similar to Gabe's, but the difference is important:

> **Ian:** [BB] is really my right hand guy when it comes to discussion . . . Because… he's a really good guy to talk to. He gets my brain going. And Dirk, too. We're really good, I love working here because . . . we compliment each other so well.

Ian had evaluated the context of speaking with other people in the workplace and that evaluation had affected his resource selection. The action of evaluating and purposefully selecting peers as resources was a common topic among participants. Most participants, like Anne, had developed a strategy for selecting peer contributions:

> **Anne:** Now I do brain storm with and collaborate with various people whose opinions I respect and who I know have a certain level of intellect where they can logically put together different scenarios that could work such as our Vice President of Information Technology.

There were differences in whom people sought out as learning resources. Anne and Kari narrated episodes of looking upward, to immediate superiors who they described as peers learning together:

> **Kari:** Actually, it's almost like we're learning together because like everyday there's so much to offer . . . That every day it's, "Look what I found," or, "Look at what this is."

Ian, like Halle, looked upward as well when he spoke about working with professors in a formal educational setting:

> **Ian:** Like, because it's an opportunity for me to, ah, interact with somebody who's twenty years in the field and knows it, I mean, through and through. You know, it's a really unique experience because they'll show you things that, you know, a lot of times you're not even thinking about or you know, just—I've always benefited from that one way or the other.

Anne also spoke at length about seeking advice laterally in her office. Ian and Dirk looked horizontally, too. Gabe, in one of his several stories about peer resources, told of looking down the hierarchical chain of command for feedback:

> **Gabe:** In my past life before I was at American Axle, I was an engineering manager and a maintenance superintendent and I always, if I ever had a problem, I went to the production floor. I went to the operators. "What's going on? Tell me, talk to me."

Earl, too, was quick to point out the value of an employee as a learning resource:

> **RDP:** So by taking in an intern and training her, she actually became a resource to you.
>
> **Earl:** A major resource . . . I mean, next thing you know she's bringing in these, you know, four-inch size manuals, ah, she'd add the program. I mean, she started doing some amazing things and she actually did our web page.

Link used discretion looking vertically and horizontally. But it was with obvious excitement that he told about the free interaction among his equals, the technology directors from the regional school systems:

> **Link:** Great sharing. Great sharing goes on. Uhm, we frequently won't admit when we screwed up, or have done something wrong, not in front of our constituents, but definitely among our peers. Well go like, "Ok here's what I did. Help me out." Or, "Here's where I'm having a problem and I don't know how to get through it. Have you ever." Yeah, there's a lot of good sharing that goes on there.

The topic of receiving direction or feedback from peers “on the performance and perhaps an opportunity to reflect on and redefine the task or reconstruct a strategy for getting it done” (Moore, 1986, p. 169) was regularly mentioned by participants. They often recalled episodes in which they relied on peers less for new learning than for suggestions related to applications of previous learning.

In addition to seeking out peers as benevolent critics of their work or ideas, participants used peers in a variety of other learning-related capacities. Cassy told of using peer resources during a job-seeking endeavor; Link recalled contacting a friend or colleague when he could not remember an important networking software command; Ian spoke of the threaded discussion problem-solving interaction of students in an on-line course; and, as mentioned earlier, Dirk waxed eloquently on the topic of the proper way to use peer resources in his “script kiddie” story. Dirk’s moral was that the learner should be seeking to add to prior learning as opposed to relying on peers to do your work for you. That sums up what most of the narratives seemed to state.

Not all narratives took a positive position on peer learning resources. Fred, somewhat isolated by working from his home, made almost no mention of relying on his peers other than as subjects for testing out how to simplify his computer programs. Jake and Mary also had issues with peer resources. Mary narrated multiple episodes in which she constantly found herself in conflict with her peers. As a result, she had little use for them as learning resources.

Jake, too, made numerous comments suggesting that he had nothing to learn from others in his work environment because they were “terrible on the job.” In that manner, he was no different from other participants who evaluated peer resources before using

them. Jake differed from other participants in making clear that he had little interest in his career path, resulting in his having little interest in learning anything new about that career. Jake's philosophy of career learning was unique among participants in the study; however, it appeared to serve his purposes for getting career tasks accomplished:

> **Jake:** But yeah, I don't, you know, technology has never been my focus. I always see it just as a tool, and I always learn, maybe I'm lazy, but only learned as much as I need to get it done and always relied on, you know, other people that maybe were more interested in it to learn more about it.

Cassy provided a good summary of the findings associated with this subsection in which most respondents acknowledged the importance of having peer and near-peer learning resources as critics and models:

> **Cassy:** I would just continue to say . . . that I've . . . learned by learning from other people and . . . researching the internet, and doing all those things . . . Most of my life I've been learning from other people and learning on my own.

Ian included comments similar to Cassy's. In another story about shared learning between two people, Ian related an episode about Nard (not his real name), a student from Kenya, who Ian had been teaching computer programming. According to Ian, the learning was not all one way:

> **Ian:** You always do learn something. With him it's more, I guess I'm learning communication skills a little bit better because a lot of times I have a hard time communicating what I know to somebody who knows nothing about what I know. So . . . a lot of times I find that to be the biggest challenge . . . I've got to slow down enough for him and explain things in much more detail. And you know, especially when it comes to like the logic, program logic. I actually have to sometimes slow down and explain…the rules of syntax when we're programming. So, you know, I think more than anything I've been learning more about communicating.

In relating his story, Ian touched upon several communications-related topics the other participant narratives also ventured into: interpersonal communications, the context of language, and technology. Gabe verbalized what many participants told stories about:

"constantly talking to the other people" within one's career environment. Gabe elaborated his remarks into his own theory of learning:

> **Gabe:** I can't know everything and I learned things about my own trade area that women, I had them go after with precision metal to find out for me and to find more information for me. So I learned by other people teaching me even though I was teaching them. And I think it's all communication.

Much is made today of "people skills." The study participants were no different. Each narrator recalled several episodes linked to the process or importance of interpersonal communications. Moreover, discussion on that process did not stop with person-to-person communications, although, as Kari demonstrated, that was a topic most included:

> **Kari:** I'm very good with people. So if I need to say, "Listen, I'm new at this. Give me five minutes. I'll figure this out, I promise." I mean, I have the people skills to talk to someone.

Similarly, Halle directly tied her career direction to her ability to communicate:

> **Halle:** So when they created this position here, that's what they were looking for was somebody who could speak to all of the various . . . Oh yes. No, I'm probably, that's probably why I'm in this position. I'm sure it's why I'm in this position, because I can get things across without ticking people off too bad.

Fred was another narrator who appeared to pick up on the idea that there are various career-related audiences thus requiring the successful communicator to pick the right one to communicate with at the right time in the right way:

> **Fred:** If you're selling retail to the general public, you have to have a way to reach the public but our customers are not the public. The public is the customer of our customer. Sometimes they're the customer of our customer's customer. So we're . . . up the food chain a ways.

Cassy revealed her understanding of this idea in recalling her story about dealing with Tech Support during her efforts to get a car inventory program working:

> **Cassy:** I was coming from a different perspective than them. These are people that are experienced in the field. I am a person who knows, you know ah, generally about computers and technical stuff but I'm not a programmer so the way they were explaining something was different from the way I perceived it.

The conception of homogeneous versus heterogeneous communicative relationships that Halle, Fred, and Cassy alluded to was picked up by Gabe and Dirk also. Addressing this question to Gabe produced the following insight:

> **RDP:** How good is the end user at articulating or communicating the problem?
>
> **Gabe:** In the facility I work for, they're excellent. Because we're all communication. In other companies I've worked for people were afraid to talk. I mean, you know, and it's probably more […] could be a demographic thing, could be just educational level. The people I'm working with, a lot of them are degreed. There's master's people, ex-teachers that went there for the money.

In responding to what he felt regarding his own perceived failures at communicating, Dirk provided additional insight into Gabe's remarks:

> **Dirk:** [Laugh] Sometimes frustration. I learn, maybe I make logical leaps. I know we do that as humans. We make logical leaps whereas when you program, you learn not to make those logical leaps.

"Logical leaps" are what Ian had to learn to avoid in his communications with Nard and what Cassy had to learn to deal with in her talks with Tech Support. "Logical leaps" appear to be barriers mainly between those who do not share a common background, as Cassy and Gabe implied in their narrative segments and Dirk related in continuing his previous story:

> **Dirk:** Now Ian, I can work a little bit better with at times because he does have a formal education in programming where as [BB] doesn't. So sometimes I start talking programming stuff that [BB] just doesn't seem to get. Whereas Ian catches my drift even though sometimes, he was taught computer science just the past few years. I was taught computer science in the early 90s. So some of my terms are old school and I know that when I'm talking to him.

Certainly, the language—the terminology, the syntax—of technology-related careers change, as Dirk noted. Kari and Jake recalled stories in which "the lingo" of their career endeavors played a key role in career development. Jake suggested that the problem for him was one of early environment:

> **Jake:** I don't have any, patience. I could deal with an interest in finding things but, it's a lot of time because a lot of this technical stuff doesn't come really natural to me. I didn't grow up with it maybe like kids today do . . . I didn't even know what, you know, they used certain words and phrases and I just never really spent the time to catch a lot of the lingo.

Kari's narrative took a different direction as she recalled her excitement about learning the language that would allow her to more fully communicate with her chosen community of practice:

> **Kari:** There's a lot of day-to-day lingo and stuff I need to pick up on and like really get myself into the culture, is what I'm look for, the word I'm looking for. And so that's a learning process. I think that's going to take a while. But I'm excited for it.

The participant most subdued by a perceived lack of the language skills necessary to participate in a chosen community of practice was Mary. On multiple occasions Mary used her narrative to describe how her career trajectory had become stalled because "the terminology was difficult" or because "the terminology was gone." She was not always referring to terminology associated exclusively with the language of speech:

> **Mary:** I had been asked to codirect the [City Civic Ballet] during that time, and it had been years since I had been a dancer and, like, the terminology was gone.

Similar to Mary's allusion to the language of dance, others included in their stories incidents in which they had to deal with different languages. Jake, in one of his longest and most cogent narrative passages, waxed eloquently about the various forms of communication he had engaged in and how they may have affected his life choices:

> **Jake:** You know, with pop music, it's not like you're a composer like Copeland or Bernstein or something. You know, your pop music. So it's folk music, really. It's pretty straightforward idioms, so you're really just trying to figure out how to communicate with people, what moves them, what they like, what makes sense, what kind of stuff they like to talk about, what they want to hear . . . You know, another thing, I went to Catholic school, so always a lot of spiritual talk, always a lot of current events talk. You know, a lot of talk about moral situations, what's right and wrong and why is it right and wrong. Also, a lot of history that we learned a lot about. You know the history of the Church, of the Saints, and all this crazy stuff that's all probably made up anyway, but it's pretty interesting. So I had a lot of, you know, historical information, it seemed like, that I was just aware of. And I just gravitated toward other people that liked to talk about history and politics and so. The stuff we did musically with, you know, like, Woody Guthrie or Bob Dylan, it was topical and it was about social issues, social concerns because that's what we were concerned about . . . So I was never a guy that sat around in his room learning how to play you know, really hot riffs or something like that.

Jake continued this story by introducing the language of the theater. He concluded that there are too many languages to learn and that confuses people; he wanted communications to be more like a band in which each member was responsible for a single task, did one thing well, and shared a common language:

> **Jake:** I mean technology guys are technology guys and they're not necessarily content guys . . . You know, just like staging. I want the lights to . . . And they'll say, "Do you want the Leko on that?" I don't know if it's a Leko. I don't know what the hell kind of light it is. "Well, do you want this kind of a beam?" "No, I like that beam." "OK, then you want the Leko." "Ok, all right, I want the Leko. Put the Leko on this guy in the back." You know . . . that's just the way we communicate, you know? Drummers drum.

Other participants did not reveal Jake's sense of constraint but rather were challenged by solving their communications problems. On several occasions Ian made references to the language of mathematics and how it differed from the language and syntax of computing; yet in his stories he always appeared to find a way to translate between the two. The same was true of Belle's stories about communicating with people speaking different languages from around the world. Never stymied by the language

barriers, Belle was motivated to discover, learn about, and use a variety of on-line translation Web sites in order to conduct her eBay sales and communicate via e-mail.

Dirk, in his reflections on how he learned by using the Internet, concluded that the critically important communication today is not only between people, it is between people and technology. Fred also picked up on this concept and went a step further making the observation that modern communication is not a simple task but rather part of a system of social and technological activities:

> **Fred:** Our business, for example, in the tour business, most of our actual work is done from the office using various technologies, especially technologies of computer information, computerized information systems and, ah, communications systems are extremely important in that business.

Every participant narrated one or more episodes describing their uses of and interaction with electronic and digital communications tools: e-mail, cell phones, informational Web sites, fax machines, and on-line college courses. Mary even acknowledged that within her small office environment the common mode of communications was not the telephone but rather instant messaging. Ian and Fred recalled the changes they observed taking place as they and others learned to communicate with and through technology. Fred, on the one hand, enjoyed the sense of control that communicating through technology made available:

> **Fred:** Ah, dealing directly with our customer, we, I know I like to sit here at the computer when I'm talking to customers and I can instantly access whatever I need to on the computer.

Ian, on the other hand, described his apprehension at using either a threaded discussion or a chat room for learning because he disliked in himself the aggressiveness that Cassy, for example, discovered she needed in order to communicate effectively by phone or on-line:

> **Ian:** See . . . I think that's the kind of aggression that I'm talking about, too. I have a tendency to do that. Because you have time to sit there and really digest what the other person says a lot more than in a conversation when you're just sitting down. So . . . you start noticing about what they said like, "Yeah. That is not right." I don't know. It's just so much more easy to pick apart what they say . . . That's how I write my responses and if somebody gives me a really quick response and it wasn't very thought out, my response will be pitiful about what they said. Like, "Well this doesn't make sense . . . I have no idea what you meant by that." Then I'll go into what I think and . . . I think it comes across as aggressive.

Link acknowledged a perspective on communicating with and through technology similar to Fred and Ian's. Asked how he communicated with disgruntled people, Link related how he addressed his uneasiness without giving up his control:

> **Link:** Every person is different, so it all depends on where they're coming from. Over the years I think I've developed this means of . . . I normally, the first step is diffusion. Let's diffuse, if we need to change the topic, change the topic. Otherwise we aren't going to get anywhere. Because it's going to be you against me and I need to fix it right away for you. That's the first step. And then normally as I am stepping them through I will try to, I have to close my eyes and try to visualize where they are and what they're doing . . . "Ninety percent of what you do is people." It really usually isn't the computer that's messed up.

Jake offered a singularly comprehensive recollection bringing together the concepts of types of language, the context of the communications activity, and the implementation of technology as a tool for enhancing communications:

> **Jake:** You know, we came from that school . . . you grew up at a certain period of time so you're a product of that time. And you know that thing about you've got to have something to say? Pop music isn't just about celebrating yourself. It's about communicating, talking about stuff. So I always thought it was really important to have something to say, and I wanted to be in a band that had something to say. And, they, we'd figure out how to say it and what methods to use to get that point across . . . Music was a tool. A piano was just a tool, for me . . . to say something . . . it was never an end in itself.

All participants told stories that revealed an identity as a member in one or more communities of practice. These revelations were not simple acknowledgements of belonging to one particular group or another, but rather all participants narrated episodes

in which they negotiated the experience of community membership. As might be expected, the ability to communicate with community of practice members is of great importance to the negotiation of the experience of belonging. Gabe demonstrated the importance of communications to practice in a story about his experiences as an automotive engineer at an axel plant:

> **Gabe:** In . . . everything in the automotive industry is in Newton meters rather than foot pounds because that's the international torque range.

Link understood the connection between communication and practice in the episodes of community building he recalled within his staff. One episode was about catching up an absent technician "on what I had seen, what I knew was going on in that building, and in his responsibilities" and making arrangements for a staff training on a new Novell server. Link saw his role as a manager as "being a facilitator" for building and maintaining competence within his community of practice. Halle, a manager like Gabe and Link, narrated episodes in which she, too, reinforced practices important to her own community.

In each narrative, Gabe, Link, and Halle took pains to point out the importance of negotiation during the process of community building through practice:

> **Halle:** I work with all the different departments, I keep in tune to, "Gee, this department is using the calendar feature this way. Why don't we come over and let's have so-and-so show you how they use it in their department and why it's really helpful, because you might want to use this because it may help you do your job. It might make things easier for your job.

Similarly, Gabe told the story of helping his students negotiate an understanding of each other's chosen vocational fields exploring unfamiliar career paths:

> **Gabe:** What we did is we brought the students in and these kids all had to come in and do an interactive display and we taught them all [career] standards . . . I would assign them all a different trade. In fact, if you were in my class and you're

> into computers or graphics, alright, I would probably have you take nursing. I'd say, "OK, here's the format. You're going to teach me all about nursing."

An interesting reflection present in the narratives of these managers was that they each made reference to specific practice-related responsibilities distributed among community members. Recalling an episode about a problem with a network filter, Link identified a specific staff member as the community agent for dealing with that specific problem:

> **Link:** That's his responsibility. Well . . . it's something I've learned . . . as a manager, that especially in the computer world: it doesn't work to have two people, two chefs with their hands in the broth. Give them one, because then if the soup is bad I know who to talk to about it. If the soup is good, I know who did it . . . So I decided, I will designate one person for each task. You'll have a back up, but you will be the primary person that takes care of this. You're responsible for this.

Similarly, Halle identified the responsibility to her community through the words of her boss, who she quoted as saying: "I don't need you to know this. I need you to know who knows it and that they are doing what they are supposed to do."

Halle's narrative also revealed another observation that appeared to endorse the assumption that individual specialization within one's community of practice was a more productive means to pursue. She suggested that a more global view of one's community of practice may be more beneficial in a technology-driven world:

> **Halle:** We don't make those connections a lot in different areas so that's been kind of one of my goals for my job is, OK, you know, it's time to think broader. It's not just your little area anymore and what you do affects everybody else and you need to learn the technology that is affecting everybody else and be able to apply those skills from one piece to the next piece.

This view of the individual member's responsibility for creating or sustaining the practices of the community was of interest to others in the study as well. Cassy, on the one hand, found such specialization a negative and demeaning characteristic associated

with larger corporate communities. Jake, on the other hand, saw more advantage to brining into the community a knowledgeable employee who would be more motivated than himself to learn about emerging new practices. Anne, however, a member of a corporate community of practice, took a position on responsibility for practice within the community that echoed the remarks of Link and Halle:

> **Anne**: Well, the problem that it creates is somebody calls up because they know that I understand more [laugh] about Excel and, ah, "I need to be able to do this . . . Is it possible? Is there a way to do that? Can you merge these two columns together? Can you take them apart? Can you?" Yep, do this do that. What? Alright, send me the file . . . sometimes it's just easier to do it for them. Like my co-workers. Uhm, clients however, if they want me to do the work, they can pay me $500, pay my company $500 an hour to do the work or ah they can sit through me showing them which buttons to press and what to type in and save a template.

In her story, Anne broached another topic. She showed herself as a cog perpetuating the practices of the community, but also she suggested her particular knowledge regarding practices of the community had different negotiable values for different members of the community of practice. The topic of the values and costs related to the sharing of knowledge within a community was addressed by other participants as well. Fred and Jake shared much of Anne's perspective. However, they perceived a more functional community of practice based upon members sharing the knowledge Fred and Jake had available for them. Fred explained:

> **Fred:** Hmm. I think that sometimes I will deal with people and try to get them to use some of the technologies that I am trying to use with them and since they're not technologically adept they may feel a little miffed at that . . . So we're trying to do things electronically and we're trying to drag some of our customers into the twenty-first century here, you know . . . I look at it as trying to help them out as well . . . And, you know the people who respond favorably realize that.

In other words, Fred placed less value on the knowledge itself and more value on, in Jake's words, "educating people to the possibilities of" what they can do with it.

On the flip side of the coin from Fred and Jake were stories from Ian and Dirk. Ian relished explaining his successes acquiring knowledge about application servers and server operating systems at little or no cost by using open source software. Dirk also narrated his pleasure at discovering how to locate and use "snippets of code" posted freely onto the Internet by other programmers. Earl's narrative reflected similar situations. He went further in that he explained how he acquired information from others and then made it his own to share with his employees:

> **Earl:** And what we started doing, too, is, I made this little database . . . Just like tech docs and stuff like that. Something that has popped up and there's a fix out there or there's some information out there . . . especially when it's something that we ran into before . . . I'm tired of going, "Oh, I remember that. What was that?" So if we find something on the Internet that's, uhm, gives us information on how to repair this or what it's all about and all this stuff, I stick it in this stupid little tech doc thing. A perfect example of something like that was…

What Earl left out of his stories, most of the others carefully included and even, in some cases, dwelled on at length: the importance of prior knowledge. For Dirk, prior knowledge made the difference between his being a "script kiddie" or a resourceful programmer. For Link and Halle, prior knowledge meant being a competent manager capable of facilitating the learning of others within the community. For Anne, Ian, and Kari prior knowledge was presented as the foundation for imaginative and successful application. In each narrated scenario from these individuals, prior knowledge was the key to their being able to perform at a level that allowed them to create, sustain, and pass along the practices of their respective communities.

At the same time, several narrators acknowledged the importance of the rules set forth by the community of practice for shaping the assembly and distribution of practices. Several times Kari recalled what she believed she could or could not do in the heavily

regulated area of financial management where "everything has to be compliance approved." Halle often recited the guidance she found in the goals of the college, the goals of the State University of New York (SUNY) Learning Network, and her need for diplomacy in working with those who were "very resistant to change." Belle and Link reflected on the rules associated with diplomacy, politics, and power as it affected the distribution of practice within his community:

> **Link:** People just have to wait and that's the hardest part because you have to prioritize. You know, who's an emergency and who isn't . . . It's usually predicated by the level of administrative . . . Administrators usually get RIP, you know, rank has its privilege.

Jake depicted what he saw as trouble in attempting to encourage participation in the practices of a community when there were no rules associated with the knowledge being acquired by the young people he was working with:

> **Jake:** [The] kids . . . don't seem to understand what deadlines are about or things get to slide. They don't understand that the sixty-second commercial should be sixty seconds not a minute twenty-three . . . You know there's no real rules on anything, which is just amazing. But it seems like that.

Several stories depicted problems suggesting that not all practices of a community are positive or productive. Ian recollected learning "that you probably should have a firewall whenever you have a Web server . . . Because . . . there's always hackers out there looking for ways of like compromising." Similarly, Link spoke at length about the need for and use of filtering student access to the Internet:

> **Link:** Children's Internet Protection Act. For our E-rate funding we had to do that . . . we should not be allowing the kids to get to places they shouldn't be getting. I mean if we know it's a pornography site . . . Janie shouldn't actually be able to go there, type Playboy.com and get there. So we need to filter that.

Finally, Anne addressed the issue of peer competition within her community of practice:

> **Anne**: Yes, and there are people who want to shine a little bit brighter and it's important not to go out there with the goal of shining brighter than them but just to make sure that they are not going to yank the cord out on your spotlight. No negative criticism, no destructive interactions going on if you can learn what you need to do, that you can get it tight enough and the way that I, this is all about learning, the way that I learn things, I make sure that I'm learning enough so that it is tight enough and I do double check with people to find the loop holes.

Sometimes, as Belle described in her discussion of eBay, the community of practice makes an internal effort to police practices. However, she recognized the limitations of such group actions and concluded with a personal reaction:

> **Belle:** Like in a regular classroom, there's always kids that misbehave…get belligerent . . . ask stupid questions . . . And usually if somebody does that a whole bunch of other users will come on, blast them and I guess they just get intimidated and leave . . . It is nice to be able to block people that you don't want to deal with again. And another thing that's different than real life is there's not face to face antagonism. Usually if you get an email and they're belligerent, you just ignore it or what I like to do is kill them with kindness. I'm so nice when I email back that they don't really have any room to be belligerent anymore.

Other times, members might make individual efforts. Link spoke of his need for the same type of focus mentioned by Anne. Using the metaphor of the network filter, he narrated his belief that people need to learn to filter their interactions with the community in order to focus on what is best for the community:

> **Link:** But you learn integrity, and that's very political . . . I've also learned to filter what I hear because we're frequently in locations where people think it's OK to talk about stuff when we're there . . . It's the weirdest thing. If they will say a computer related word, I will hear it. If it's other stuff somehow my brain just works to say, "Shut that out!" That's something I've learned. Is it a social or political thing? I think it's more political.

Arguably, the ultimate expression of participant emersion in their respective communities of practice involved narrative episodes striking in their use of the actions and language of positive communal relationships. Earl illustrated the degree of his emersion into the practices related to the small business community to which he belonged

as he interrupted his interview to address the questions of a customer who entered the shop, interrupted it again to respond to a customer on the telephone, interrupted once again to look over the shoulder of an employee and make a suggestion, and interrupted it again to pass the time of day with the mailman. Additionally, Earl's narrative, that included telling most of his task-related stories using the third person plural, "we," also showed an expanded conception of community including the global network of computer parts manufacturers:

> **Earl:** There are actually websites out there now-a-days that have a lot of information on them as far as what is compatible and what is not. Memory. If you look now-a-days, motherboard manufacturers, they'll even tell you what type of memory will function correctly with their systems and not just the type but also the manufacturers . . . We're seeing a lot of manufacturers pretty much work with each other to make sure their individual components will work back and forth between their systems.

No narrative was more occupied with a sense of belonging than Ian's. A brief slip is as close as he came to focusing a task-oriented story on himself, favoring instead an emphasis on the workplace group:

> **Ian:** A lot of things that we're doing, like this particular content management system, it's pretty innovative . . . because the way I've, we're, the way that we're designing this content management system is that this website will translate to other mediums.

Not only did Ian speak communally about his practice within his localized community, he revealed aspirations to become involved in yet a more exclusive yet simultaneously expansive community of practice:

> **Ian:** But this guy who created Open Edit . . . you know, he got back to me right away when I expressed an interest in Open Edit. And so, it was a unique opportunity where I can actually talk to the people who created it and he's going to give me a whole technical orientation . . . It's on the J2E platform . . . It's an open source project so . . . I can join the whole development community, potentially.

Anne narrated a similar progression in which she enthusiastically identified herself as belonging simultaneously to several concentric spheres of a single community of practice. At the first level, Anne located and defined her company as part of a community of practice that included several very prestigious members:

> **Anne**: Our clients are [sigh] domestic and international consumer package goods companies, manufacturers, and retailers. Ah, they tend to be Procter and Gamble, Unilever, they make your health care and beauty care items for the most part. And the retailers that sell them such as Wal-Mart, Albertson's, and CVS.

Then, Anne identified herself as not only belonging to but also being a stakeholder in the company she worked for:

Anne: And I help our, my company, develop what our clients are going to need.

Finally, as discussed in the section on community of practice appearance, Anne located herself within and then defined a community of practice that included her among management personnel.

Anne maintained her strong sense of identity with each concentric level of her community of practice in her use of industry-specific jargon, the extensiveness of her narrated episodes, and the profusion of positive adjectives embellishing her descriptions. Dirk and Kari employed a very similar narrative technique to show their own strong sense of feeling a part of their respective communities of practice. Kari's story demonstrated that it was maintaining the feeling of community that was important to her and not titles or arbitrary positions within the community:

> **Kari:** There were three of us that worked in the store. We were all managers… and the way it worked is, if one person was out, I would take the management positions in the front and in the back. So not only did I act as Sales Manager and go out and try to close a deal, I'd also be the Finance Manager inputting all my information in the computer so that's how I learned everything about it.

Halle, too, appeared to filter many of her learning decisions through the prism of what "could definitely be a benefit to our college."

There were narrated instances in which respondents told a story of disconnectedness, of not feeling a part. Ian recalled an episode in which his inability to socialize with other college students led to his missing out on valuable learning experiences. Similarly, he told of retreating to a formal educational environment because he felt out of place in a less structured environment:

> **Ian:** Like, because it's an opportunity for me to interact with somebody who's twenty years in the field and knows it, I mean, through and through . . . In ways that I don't think I could have benefited on my own because a lot of times it's hard for me to . . . I haven't had much luck, you know, with networking and finding really experienced people who are willing to give me the time, you know?

Jake did not feel as much out of place as he felt there was no sense of community within the organization to belong to:

> **Jake:** And so, you know, I'm not part of, I mean, I am the radio station. I'm part of this organization but this organization, it doesn't have anything to do with the radio, really. I mean, they're all doing their own thing.

Cassy described a similar sense of contextless in her environment while working for the city newspaper. Mary had the same sense of not belonging in almost every career role she filled. What the stories of this subsection appear clear about is without understanding the context of one's environment there is no basis for developing a feeling of belonging. This condition can lead to a vicious cycle of missed learning opportunities and further alienation. Table 10 captures the key findings and observations from this section.

Table 10

Group Identification Findings and Observations

How does the career-related context in which informal learning occurs affect the agentive nature of self-directedness?	
Group ID	**Findings/Observations**
Appearance	Participants aspired to career legitimacy via certification despite understanding its applicable value or how to proceed with the appropriate certification process
Appearance	Participants used peers to locate and define the social hierarchy of their career environment; the higher placed the support, the greater the desire for career learning
Appearance	Participants perceived peer respect and evaluation within the community of practice to be a significant behavioral motivator, both positively and negatively
Appearance	Conflicting social roles often confused or negatively impacted participant desire or ability to learn new career-related skills
Appearance	Participant's prioritization of the various social roles played, the "shelf-life" of those roles, and the perceived flexibility of each role were important influences motivating his or her career development
Appearance	Socially legitimate evaluative criteria were important to career-related learning, however, social criteria for evaluation were filtered through participant perceptions as opposed to being based upon written rules or specific directives
Appearance	The manner in which the terms for social evaluation criteria were typically acquired was through modeling or continual verbal negotiation.
Participation	Strategies were employed for evaluating and selecting peers as learning resources
Participation	Peer feedback is valuable; however, participants relied on peers less for new learning than for suggestions related to applications of previous learning
Participation	Interpersonal communication is important and includes the ability to select from multiple audiences, communication methods, and times to communicate effectively
Participation	"Logical leaps," terminology, and syntax could be communication barriers between those who do not share the same community of practice, but also among those who do not share the same means of entry into or trajectory through a community
Participation	The "languages" used within a community of practice can be many and varied, including speech, dance, music, and so forth; competence within such a community may require familiarity with multiple means of communication
Participation	Modern communication is not a simple task but rather part of a system of social and technological activities
Participation	There are practice gatekeepers of certain specialized languages or communication tools; although knowing their skill is not important, knowing who they are is
Participation	The value associated with knowledge may or may not be the same value associated with the application of that knowledge
Participation	Prior knowledge was key to one's ability to perform at a level that allowed them to create, sustain, and pass along the practices of their respective communities
Participation	The rules set forth by the community of practice were most useful for shaping the assembly and distribution of practices
Participation	Without understanding the context of one's environment there is no basis for developing a feeling of belonging, leading to a vicious cycle of missed learning opportunities and further alienation

Sense of Serendipity

The word serendipity often conjures up memories of fairy tales or recollections of fortuitous unanticipated events. That understanding is only partially operational here. In the context of the current data analysis, a more useful interpretation might be Chen's (2003) notion of serendipity as the "environmental conditions and events" (p. 211) that often appear to be beyond the person's control yet exert a strong influence on career-related decisions. In other words, as Plunkett (2001) suggested, participants "may choose and construct serendipity as an inner narrative because it helps to explain as well as to tolerate and contain the doubt, uncertainty, and disappointment inherent in the flux . . . at the same time as it opens up the possibility of flexibility and experimentation" (p. 160).

The data were coded for eight different serendipitous influences perceived by participants to have arisen from uncontrollable human nature, fate or luck, unforeseen change, the demandedness of a situation, randomness, time, money, and play. Human nature and environmental randomness were rarely evoked as important causes influencing career development. The perceived demandedness of one's career environment was, next to the near universal perception of the social nature of one's career role, the greatest influence on career-related decision making. This subsection discusses the entire range of serendipitous influences as a group of communal elements. Special emphasis is given to the perceived influences of change, time, money, and demandedness. Table 11 below provides a general overview of how often participants acknowledge the various serendipitous influences upon their career development. As noted above, these results are not meant for quantitative analysis, but rather merely highlight patterns in participants' narrative recall.

Table 11

Sense of Serendipity Raw Coded Count

COMMUNITY ANALYSIS								
	Sense of Serendipity							
Narrator	Chance	Human	Change	Demand	Random	Time	Money	Play
Anne	4	1	1	9	0	6	2	4
Belle	0	0	6	3	0	1	1	1
Cassy	2	0	1	14	0	0	0	0
Dirk	2	1	5	10	0	11	8	2
Earl	0	0	9	1	3	0	0	4
Fred	1	0	3	2	3	6	0	0
Gabe	1	0	4	1	0	0	0	0
Halle	4	0	3	6	0	5	2	1
Ian	4	0	8	9	0	3	6	2
Jake	4	0	1	15	2	2	17	0
Kari	6	1	6	8	0	1	2	2
Link	3	0	6	14	1	4	6	2
Mary	11	1	8	27	0	9	9	1

Interestingly, all participants acknowledged serendipity as a factor in their career development decision making. In fact, serendipity accounted for a substantially noticeable amount of the communally-related characteristics influencing career development. Each respondent recalled multiple serendipitous influences; however, each gravitated in his or her storytelling toward at least one type of serendipitous influence as a predominant actor in multiple narrative episodes. Often times, when more than one serendipitous influence was recalled, the two were somehow connected, such as time and money or change and demandedness.

In several episodes, Earl reflected an uneasiness that changes in the technology of computer repair were getting ahead of his ability to keep up with them. The result was that Earl perceived his career-related learning to be erratically and randomly acquired:

> **Earl:** You see; that's just it. I mean, sometimes, I get into a lot of Microsoft's tech stuff. And usually . . . I'll stumble across something that had something to do

> with, that related to a prior issue or a problem and stuff. And then it's kind of funny, like I said, there's so much information out there now-a-days. I mean, the World Wide Web is just a big portal to the unknown, untamed frontier.

Table 11 tends to give the impression that Earl was less likely than other respondents to be influenced by serendipitous events or situations in his environment. That is a fallacy associated with using quantitative tools to depict qualitative experiences. Earl had fewer serendipitous incidents in his stories in part because he provided the shortest narrative for analysis. Although Earl made only a few references to the influences of change that led to perceptions of randomness in his career-related learning, the number of his responses was much less important than his understanding that learning is substantially influenced by events perceived to be beyond one's control. The same explanation can be applied to Gabe.

Gabe's narrative provided a smallest number of serendipitous influences. Yet, if any participant were said to be the most significantly influenced by unforeseeable events it was Gabe, as revealed in his story of career change arising out of the tragic death of an auto plant worker under his supervision. Additionally, once he became a teacher, recalled Gabe, his method of instruction was largely the result of responding to technology-driven change:

> **Gabe:** Because somebody always comes up with a different study and it tells you, you should change the way you're teaching . . . I think technology is always changing so I don't think you're ever going to catch up to technology . . . So I think you're always grabbing. I'm always grabbing . . . So I'm always reaching.

Although the quantity of Gabe's unaided references to serendipity was infrequent, Gabe's responses to serendipitous events were qualitatively substantial.

In addition to Earl and Gabe, outcomes perceived to be causally related to unforeseen events, accident, and technology-driven change were important serendipitous

occurrences recalled by all participants. Technology-associated change in particular was believed by all participants to be largely beyond their immediate control. Mary appeared to be profoundly affected by technological change. As much as she wanted to alter her career trajectory toward a more creative role, she was overwhelmed by changes in her community of practice:

> **Mary:** Especially where web design, anywhere that software packages are concerned, I feel like I'm not, you can't possibly be fast enough. I feel you can't learn it quick enough, because they've got new versions out every other day and new things happening. Everybody's trying this new trick, and I just feel completely behind the eight ball that I'm never going to catch up.

Jake told a very different story yet ended by offering a similar complaint. He was hard pressed to feel optimistic about his future success with his small radio station when large entertainment enterprises such as MTV appeared besieged by change:

> **Jake:** I feel a little bit anxious that I'm not as knowledgeable as I should be about fund raising and marketing and getting this on the Internet and making that work to our advantage. Anybody that can read the paper or watch TV knows that it's all digital and it's all the, it's the new world and you have to be a part of it. And, you may not be successful at it right away but . . . I just had a long conversation with a friend who works for MTV networks, and they're changing big time. You know, and they fired hundreds of people and it's all changing for them.

More than half the participants told quixotic stories of jousting against the windmills of change. Each echoed Mary's lament, with both Link and Kari using almost identical wording. Kari discussed the volatility of the stock market and the problem of keeping up as an investment counselor. Of note was that neither Link nor Kari depicted themselves as victims of technological change:

> **Kari:** But you can have enough knowledge of it that . . . if someone asks you a question, you should know not only just the basics but beyond . . . I mean for me to know every fund, it's impossible, but I should have an idea of them…so it's kind of like learning every day . . . I mean everything is . . . unpredictable but at the same time as long as you have the right things, the tools at your fingertips to

> go look and find everything out, do the research and you have the time to do the research. Then I think, ultimately, my goal will be reached.

Kari was not the only participant to turn their storytelling toward a discussion of "tools" necessary for dealing with change. Interestingly, the tool that each narrator identified as indispensable in dealing with technological change was the computer. Dirk identified what was not going to work:

> **Dirk:** Because we're trying to chase, you know, trying to grow into a certain vision but each project is so unique to itself and we're always being so innovative and creative, we're never going to be able to make a pure cookie cutter.

Fred identified what could work:

> **Fred:** Ah, one of the strengths of computers is that things are easily modifiable and I've come up with a whole system of templates and things like that specifically designed for our business that with very small changes can be modified for many different uses.

Finally, Ian explained how the process of using technology to deal with technological change might work:

> **Ian:** There's some experimentation. Well, I mean any time that we develop something we're always keeping in mind that this has to be reusable for any other client and the more that we create that is reusable, the more valuable it is . . . We just want to create, design a program that will allow for us to change . . . It's just, try to come up with some sort of formula that's useful for a lot of different things . . . So you can easily, like, pull parts out of a program and stick it into other programs. So that, you know, those functions will work with many different situations . . . And in doing that, you end up with something that's pretty reusable.

Kari, in summarizing her response to technological change, captured the responses of several participants:

> **RDP:** Now some people would be completely daunted by the fact that things are changing every day and they have to keep relearning . . . That doesn't bother you?
>
> **Kari:** Everyday, I know . . . Exciting. It's why I like it. Keep me on my toes. That's what I like.

One very interesting anomaly was exposed. Although many of the respondents

told stories of dealing more or less successfully with technological change within the career environment, most were like Belle, who was not equally successful in coping with personally disruptive events:

> **RDP:** Now in your environment . . . you work at home so there's disruptions in the home . . . How do any of these influence your learning and therefore shape your career goals?
>
> **Belle:** Disruption and interruptions, they definitely affect me negatively. [Laugh] And I have too many of them. That I do know . . . Telephone calls, people knocking on the door . . . Uhm, animals. Anything that happens around the house that needs to be fixed right now.

Only Anne aggressively addressed what others tolerated as routinely annoying environmental disruptions to their career-related learning:

> **Anne:** Time of course is always of the essence. You need to have, I need to have a certain amount of time each day where I can turn off the phone and not worry about the phone calling or I just ignore email and not worry about what's coming in via email and just really focus on what it is that I'm trying to accomplish in that tiny bit of time.

Ironically, in appearing to take charge of one type of serendipitous interruption, Anne exposed herself to another: time.

Time significantly influenced the career-related decisions of most of the study participants. Halle, Jake, and Link were marginally concerned with the effect of time on their career tracks. Anne, Fred, and Ian were equally motivated and constrained by their perceptions of time. Mary and especially Dirk were consumed by the role the passage of time played in their careers.

Ian's perception of time as quantitative ("that of course, took a ton of time") and finite ("there's only so much time in a day") were representative of most participants. Rarely was time portrayed qualitatively. As a result, time was often depicted as a "luxury" (Dirk and Mary), the "essence" of activity (Mary and Jake), and the critical

point or “crunch time” influencing the outcome of an activity (Dirk and Link). Jake’s story about the difficulty he experienced making the transition from his music career to his radio management career captured the quantification of time. He felt he no longer had time to be creative. Previously, as a musician, time was something that Jake was oblivious too or absorbed and lost in. Creativity was all important. That was no longer the situation in running a radio station:

> **Jake:** A lot less than I used to . . . I don’t have time. Uhm . . . it goes in cycles. You know, I mean this is a whole new thing for me now. I mean really doing radio . . . I was absorbed in the music for twenty some years . . . I did it all the time. Got lost in it and just played lots of songs that never saw the light of day and had my own recording studio in the basement. So, yeah, I did do that all the time for hours and hours on end. So it’s been a big change for me now to be in this position.

Mary, too, equated her lack of creativity with a lack of time.

Anne, Dirk, Halle, Link, and Mary each narrated story episodes in which time was characterized as a culprit standing between them and further learning. This characterization of time as an impediment to learning was particularly evident in stories about keeping up with technological innovation. In describing why she could not keep up with learning about the software she was using, Mary’s comments were representative:

> **Mary:** They don’t have, uhm, they do have workbooks or something that came with it but they’re very technical and again if I don’t know the terminology, you can’t look it up [Laugh], without reading the entire handbook, and I don’t have time for that.

Addressing a similar perspective, Ian and Halle used the problem of needing time to learn about technology to slip into their narratives a personal justification for desiring more formal education. Ian, too, yearned out loud:

> **Ian:** Well, a lot of times it’s like, “Boy that would have been hard to figure out on my own. That would have taken forever for me to figure out on my own.” If I had a really good teacher who was able to get me through it in maybe a week or so.

Halle, possibly a bit more realistic because she was enrolled in a formal education class, understood that learning about technological change was not always the same as being able to use that learning immediately:

> **Halle:** Finding the time for me right now because I am in a formal program in addition to this so, you know. It's squeezing out the time to spend a hunk of time to actually do that and get the technology to work.

Additionally, Anne, Fred, Kari, and Belle described the paradox of technological change: Technological change takes time to learn but technology can decrease the time it takes to learn. Halle captured the paradox in her story in which she argued for a workshop on technology to be conducted on-line as opposed to taking the time to travel to a site for face-to-face training:

> **Halle:** I love webinars. I mean they're getting way more popular here only because for us to go to anything, to travel all the time . . . In fact . . . there is specific training that we go through with SUNY Learning Network . . . But the training is in Niagara Community College or Rochester. Well, you know, that means we all have travel, all four instructors have to drive to Niagara for a day. They are now doing a webinar on the training.

Fred employed the term "efficiency" to describe using technology to reshape technology:

> **Fred:** I guess the key word is "efficiently," because technology is not always efficient, especially when it's new technology. You're always told the wonderful things that you can do with this product or that product, and when you actually get the product, you find out, yeah, well you can do that and it only takes three times as long as it used to in the old way. So it's not necessarily an improvement, but if you work at it and you experiment with things and you see what works, what doesn't work. You toss out the things that don't work. You look for ways to implement new processes, new software packages, whatever until you find something that actually does work, something that does reduce time, something that is easier and reliable. So that's the kind of things that I look for and try to do.

Anne, Link, and Halle narrated similar episodes about managing time. Link described time being closely associated with space, and that time and space could be

compressed through the use of technology. Halle spoke of prioritizing new technological learning based upon "how significant" it will be "in my job and my life." Finally, Anne wrapped up one of her episodes describing how she could "make time" by eliminating distractions. Moreover, according to Anne, in business there is a great economic need to manage time:

> **Anne:** So there's a definite, definite need for it because it's taking up so much of our time. It's wasting so much of our financial resources in terms of taking us off the availability clock . . . Time and money are valuable!

For several participants, time equaled money.

Money—actually the lack of money—as a decision-making influence, showed up in the narratives more often than the mention of time. In fact, only serendipitous events associated with unforeseen change and the demandedness of the career environment were more prominent in the participants' stories than references to money. Asked what in his environment most influenced his career-related learning, Dirk was quick and emphatic in pointing out his financial dilemma:

> **Dirk:** In honesty, something that is related to all careers and that's really what drove everything that I've been talking about is money. As in I have none.

As a result of his lack of funds, related Dirk, "I am forced by my career to learn." According to Dirk, without additional external investment, his career development, "has been build on the backs of his clients." This manner of learning has limited Dirk to self-directed rather than formal learning, a secondary alternative that was not disagreeable.

Ian described money as "that luxury" he did not possess for taking additional formal courses, paying for a mentor, or hiring a personal consultant. A lack of personal finances entered Ian's story as he saw his lack of capital constraining his position within his community of practice. He felt he was unable to interact with the people who run a

major software corporation “because they’re your fifty million dollar corporation. The guy who created it, the people who created it, they just, you know, they want $10,000 a year just to talk to them.” Instead, Ian was consoling himself with coming up with $500 in order to visit and receive a technical orientation from the creator of an open source software product. Thus, Ian narrated an interesting linear causal sequence in which lack of money led to a product selection decision that created a demand for a particular type of learning that precipitated a particular direction for his career development.

Jake told an almost identical story. Hindered by a lack of financial resources, the not-for-profit radio station that he manages was obligated to use open source software in order to place content on the Internet. The type of software purchased influenced the type and quality of the content the radio station could carry. These, in turn, limited the audience appeal and, therefore, the amount of donations the radio station received. Jake perceived a vicious cycle arising out of the not-for-profit environment in which he was obligated to run the radio station:

> **Jake**: This method is the whole independent method where, you know, let’s just start doing this and hope the money comes. And it’s hard to plan ahead. It’s hard to set up timelines or benchmarks, because the only thing that matters—getting the money to go to the next level . . . I mean, so that’s the hard part. And the hard part is learning how to raise money.

Jake concluded his story about the money problems of his radio station with a philosophical summary of the business world based upon what he had observed in the music business:

> **Jake:** The whole system is about having a lot of money and it’s people with money that, that’s why they buy up good ideas . . . You can have all the good ideas you want, [if] there’s money involved. People with bad ideas . . . with a lot of money get richer than people with good ideas and no money.

Mary, another participant strongly influenced by a perceived lack of money,

provided multiple renditions of the same story applied to a variety of circumstances: not enough money for school, not enough money for software, not enough money for software training, not enough money to buy a house, and not enough money to properly raise her son. In the manner of Dirk, Mary compared herself to others based upon what she believed their respective salaries to be. Unlike Dirk, however, she was not motivated to earn more, but instead complained that she was betrayed by a system that was penalizing her for seeking out "the opportunity to do what I like to do."

Jake and Mary gave the impression their career development was severely limited by a lack of financial resources. Dirk and Ian were as much motivated as hindered by their perceptions of money. Kari and Link revealed only motivation in their stories about money. Although one would expect Kari, a financial investment trainee, to talk of nothing but money, she rarely mentioned the topic. She used her lack of financial resources during her early college years as motivation to take a position with an auto retailer, even though it meant taking leave from her university. Kari later spoke about comparing job offers based upon salary offers; however, it was occupational prestige rather than money that motivated her career direction.

Link told of being motivated to learn about electronics despite a lack of money to purchase components to build devices:

> **Link:** OK. I got [my start in electronics] primarily because as musician growing up, I had amplifiers and stuff that needed to be fixed and I couldn't afford to hire somebody to fix them so I would pull them apart. It was all solid state stuff and replace, you know, transistors, capacitors, and do the testing on them. So I kind of taught myself how to do that.

Beyond his Horatio Alger style introduction, Link provided a unique view on the relationship of money to career development. Link had built his career on a desire to

make a sufficiently large income to maintain a comfortable lifestyle for his family and a comfortable retirement for himself. His main reason to do what he does is money:

> **Link:** Unless I can make a lot of money somewhere else. If I could walk out and make six figures, I'd probably walk, and make that six figures right now . . . And with a family, I've got to worry about, you know . . . an education [for my daughter] and my pension as well. I'm getting closer to that and I have to look at, "Ok, if I leave now, here's my pension. If I leave in nine years when [my daughter] is all done with college, guess what? I've got a pretty nice pension." So that's what's driving my career. I'll stay in education. I have to.

By any definition, serendipity associated with the demandedness of one's career environment might seem to imply an abdication of agentive control to environmental events or conditions. That is most commonly how it was perceived by the participants of the current study. Every participant acknowledged what they thought to be some lack of personal control over the "rules about the distribution of responsibilities, materials, and information" (Moore, 1986, p. 169). In part this was true because demandedness appeared to arise from or foster other serendipitous factors.

In many participant stories a perceived lack of financial resources was manifested in the acquisition and use of substandard tools. These less than perfect tools demanded more from the participants in the way of time, training, or attention. Dirk narrated a long episode in which he described the demands placed on him as a developer because he was "stuck with" a version of Adobe Director that he had "pushed too far" with the result that "the program just shut down and gave . . . some strange error." Jake and Mary recalled episodes in which they had to deal with faulty software, hardware, or both.

Anne and Kari noted a similar but different demand upon their time and abilities: software programs that seemed too comprehensive. Where Anne tended to generalize

about requiring "the time and the tools to actually be able to track down resources," Kari graphically expressed her dealings with "monstrous" software programs:

> **Kari:** You can go there . . . there's 20,000 pages. I mean, you could never . . . in a lifetime look through everything they have to offer there . . . there were so many screens to get into and so many different areas. I mean it was by far the biggest program I've ever seen . . . And when I left there were still screens that I didn't even know how to get into. I was just, "Where am I?"

Some participants were reflective about the equipment-related demandedness they encountered. Ian included in his narrative an awareness that using open source and less costly equipment and software was going to become an issue in the future for his growing company. Much of Cassy's narrative was consumed by her story of a demanding software program she had been hired to sort out for a used car dealership. Moreover, the software problem she experienced was compounded by a hardware connectivity issue; however, Cassy recognized that the demandedness of the situation was compounded by her own lack of training and her newness to the position and the equipment:

> **Cassy:** When I came into this Auto Marketers job, ah, and found that the systems weren't working correctly, I had to start from scratch and learn these programs and find out how to fix them.

Kari and Mary joined Cassy in recalling instances in which they believed their novice level of experience aggravated the situation so that the tasks became more demanding when there was no one available (for Kari and Cassy) or willing (for Mary) to help them learn to deal with the problems. A vicious circle was described by each in that their efforts to defuse the demandedness misfired as the tools (manuals) they turned to were missing (Kari), outdated (Cassy), too expansive (Kari), or too advanced (Cassy, Mary) for their use.

Improperly trained staff and ineffective support were reported by several as

causally linked to the demandedness of their career environment. Dirk, Jake, and Mary envisioned a decrease in situational demandedness if only they could "get [others] to look at how I do things," as Dirk expressed it. Halle, Cassy, and Anne were more guarded in their suggested solutions for colleague whose lack of knowledge created problems. Link did not mention the lack of knowledge of colleagues as a problem, but described circumventing such problems with continuous staff learning opportunities.

Task-driven traditions, especially those requiring monotonous or repetitive actions were identified by most respondents as increasing the demandedness of their respective career environments. Halle described in humorous slapstick style her frustrations with the demands of a traditional, land-based registration system unable to keep pace with students enrolled in distance learning classes. Also resorting to stories presented with an amused air, several participants narrated tales of antiquated and monotonous "little peon tasks," as Mary called them, arising from career environment traditions or fossilized practices. Anne, in an episode much like one narrated by Ian, described recognizing such fossilized practices in responding to client needs as an important part of her career role:

> **Anne:** And honestly, it's dragging on us to do the same thing over and over again that many times [Laugh] so we want to stop doing it. So, that was a key indication that we needed something new.

Situational demandedness, ironically, appeared to arise out of some participant's overzealous agentive intervention in their endeavors. Dirk narrated at some length that he would "get fragmented" because he would "have so many things on [his] plate," or he would "wear too many hats" in running his business—all conditions he took responsibility for. Similarly, Jake felt he was "stretch[ed] a little bit thin" by trying to

figure out the “five or six things you need” from a computer capable of doing “a thousand things that you don’t need it to do.” Link, described himself as once anxious to learn everything he could that was related to his career path. As his story unfolded, his attitude about how much to learn and what to learn showed it had changed:

> **Link:** It is, it’s tough. It is hard and that’s why, I am reaching almost fifty, so I’m starting to think, “Man, I’ve got to get off that.” I think that’s one of the reasons I’m starting to manage more now than to dig into it and know everything.

Mary’s narrative showed her to be overwhelmed by a perception of demandedness manifested in the many tasks she believed had “just been thrown at me.” Mary’s stories also revealed that, unlike the others who understood that they had created their own problems by taking on too many tasks at once, she believed others had “cluttered” her workspace, her career, and her life:

> **Mary:** I don’t know . . . how to verbalize this. Let me see if I can try. But it’s the absence of having clutter. As in, if there’s too many requests going on at once. My boss is expecting . . . me to do a bulk mailing and respond to emails and customer requests and to take notes, you know, dictation at a board meeting and at the same time create stuff for the web. It’s too much clutter. If I have the time and the clear schedule and people leave me alone, if I don’t have those added responsibilities, then I can be very creative, I feel, and I can really get a lot done in that creative process.

According to Link, the single greatest demand placed upon him by his career environment was the unceasing growth of technology manifested for him in the constant need to update the network systems for the schools he was responsible to. Originally in charge of only a few computers, Link related how he and his staff had come to be responsible for all electronic networking systems, mostly because they were all computer related. Additionally, recalled Link, it was not only the technology that was changing, but also “people are getting more sophisticated and require more for their communications and for their computers.” Finally, Link, responding to where he will be in his career path

in ten years concluded his episode about the demandedness of technology with the sad acknowledgement that he felt he was losing his will to compete with his environment:

> **Link:** Where will I be in it? I don't know. Where will I fit? I haven't got a clue . . . when will I wear down? When will I finally say, "I just can't keep up with it. You've got to find something for me where I just," you know, "just can survive, but I can't keep up with this pace." Because this is an incredible pace that we keep now, the hours we put in!

Three other participants told unique stories of situational demandedness. Jake found his situation demanding because he could not identify with the not-for-profit concept of doing business. Halle directed her focus during several episodes to a situational demandedness created by improper information management. This issue was addressed in her previous scenario about the paper-bound registrar. She elaborated on the topic of improperly trained staff by complaining about those who group all institutional uses for the Internet under one category: hers. As Halle saw it, there was a need for training people to be able to distinguish between the different tasks performed by different departments that utilize technology.

Finally, several of the participants included elements of their family life in their career stories. Jake's family played a role in his career development. Jake punctuated the dissatisfaction with his career role by mentioning the time the radio station took away from his family life. Mary, however, was the only participant to invoke parenthood as an element of demandedness that negatively affected her career development:

> **Mary:** And, I mean, the thing that was on top of that, being a single mother and a full time and a part time employee, because I worked concurrent jobs on top of that. The time pressures and the stress of knowing that I was missing out on, you know, either work was piling up or my son wasn't being taken care of. You know, I was missing out on time with him, in order to drive to Buffalo and spend all day there and drive all the way back. That took away from the experience.

What this subsection reemphasizes, and Table 12 depicts, is that narrated elements of serendipity were frequent and many-faceted. The types of serendipitous events encountered and the often unique participant responses to them were varied enough to preclude grouping all serendipitous events together as a single element influencing career development, Still, the high degree of interrelatedness among serendipitous events required a holistic treatment to make sense of the concept.

Table 12

Sense of Serendipity Findings and Observations

How does the career-related context in which informal learning occurs affect the agentive nature of self-directedness?	
Serendipity	**Findings/Observations**
General	Although participants recalled multiple serendipitous influences each gravitated toward one type of serendipitous influence as predominant; when more than one serendipitous influence was recalled, the two were closely connected
General	Participants identified technology-associated change as largely beyond their immediate control
General	Paradoxically, participants identified the computer as the tool that best enabled them to deal with computer-drive technological change
General	Ironically, while participants appeared intolerant of unforeseen serendipitous change, they were very tolerant of routinely annoying environmental disruptions to their career-related learning
General	Time was almost always perceived quantitatively and rarely qualitatively
General	Paradoxically, participants acknowledged that technological change takes time to learn but technology can decrease the time it takes to learn
General	Ironically, money was identified as a career-related influence only when participants perceived there was not enough money
General	Serendipity is rarely an isolated event for participants, but rather occurs as one element within a linear statement of causality
General	Perceived task or environmental demandedness appeared to arise from or fostered other serendipitous factors
General	The demandedness of a situation was compounded by the participant's own lack of training, newness to the position, and the lack of training for others
General	The situational demandedness related to technological change is manifested not only in the evolving sophistication of devices but also in the evolving sophistication of members of the community of practice using those devices

Distribution of Cognition

The commonly accepted definition of community of practice includes the assumption that member learning is distributed across one's career environment (Lave & Wenger, 1991). That is, cognition, rather than residing merely within the head of each member, is distributed across the people, tools, artifacts, and events that make up the community of practice. The unaided story recall of study participants supported the idea of distributed cognition. In order of their frequency of response, participants alluded to their learning or responsibility for their ability to know residing in information resources such as forums or workshops, tools such as search engines, personal mentors who were experts in a topical area, knowledge embedded in and arising from doing a task, and observing the actions or finished work of others. Table 13 shows that all participants acknowledged learning as distributed to some degree.

Table 13

Distributed Cognition Raw Coded Count

COMMUNITY ANALYSIS					
Narrator	**Distributed Cognition**				
	Tools	Inform	Expert	Others	Embed
Anne	3	2	1	11	3
Belle	1	3	1	5	7
Cassy	0	0	7	7	1
Dirk	9	1	2	11	1
Earl	0	4	1	3	9
Fred	1	3	4	4	3
Gabe	0	0	2	6	13
Halle	0	0	7	11	6
Ian	1	0	6	7	4
Jake	2	0	5	8	12
Kari	3	0	2	7	4
Link	0	2	0	5	5
Mary	1	2	3	5	2

Many of the information resources mentioned in the narratives were virtually indistinguishable from the learning tools they employed to acquire knowledge from those resources. Additionally, most knowledge acquisition tools and information resources were Internet related. Finally, there was very little learning tool variety displayed in the stories of the participants: Most mentioned the Google search engine by name as an important learning tool. Anne, Kari, and Fred made a point of including software help menus as useful learning tools.

There was a bit more variety in the references to the use of information sources. Anne, Earl, Fred, and Link each told about using Microsoft TechNet or similar Microsoft technical bulletin materials. Fred and Link described forays into forums and other advanced technical Web sites. While Mary recalled attending traditional land-based workshops for Web design, Belle and Earl offered different responses. Belle "attended" on-line workshops, posted for information in chat rooms, and sought out information from others via instant messaging.

Earl revealed that he had reverted to using "crib notes" as information sources:

> **Earl:** Well, you still use it. I mean we even got these different things written down because, I hate to say it, we forget them. WinIPconfig and, gee, I hate to say it, because it's like, "Ah, what was that, ah, ah?" Yeah, we always have our reference material for DOS still laying around no matter what . . . Yeah, little stickers on our foreheads.

Although the community of practice connection to learning tools and information resources might be hidden to most observers, the use of experts, teachers, and mentors as cognitive resources is obviously communal. The use of an expert knowledge resource was a common event in the stories of the participants. Moreover, the type of expert aid most often recalled was a previous teacher. In detecting the interrelationships between

various sources of career-related knowledge, Halle, Kari, Dirk, Ian, and Jake recalled one or more episodes during which those relationships included, or would probably benefit from the inclusion of, a knowledgeable instructor. Described above, Halle, Ian, and Mary valued the expertise of an instructor to such a degree that each narrated the desire to have one available in an on-call, one-on-one capacity.

Access to specialists, especially tech support personnel, was beneficial to learning in Cassy's and Fred's stories. Other specialists cropping up in the narratives included local network technicians for Halle, visiting service personnel for Mary, a radio engineer for Jake, the creator of the Open Edit program for Ian, eBay experts monitoring the chat room bulletin boards for Belle, and his brother (a high school administrator) for Gabe. Kari appreciated being able to "get a hold of someone if [she] really needed help." Halle, summarizing what the others revealed, concurred:

> **Halle:** Uhm, you know, my continued involvement with the organization has been because of that value of learning resources that I have available to me. When I don't know something I can say, "Hmm, you know, so-and-so does this. I can probably contact them." You know, has certainly been valuable.

Mary's stories presented an interesting anomaly. While Mary desired access to experts who could help her with specific tasks, she unable to use that expertise. In the instance of the visiting service personnel, Mary generalized that people who knew more than she did about one aspect of computers knew more about everything to do with computers:

> **Mary:** Well . . . we have like computing consulting services, they come in twice a week and they do our computer stuff, you know, like the hardware usually. And if I have a question [Laugh], I seize the opportunity to say, "Ok, how do you do this?" But they're not creative people. They don't work a lot in Photoshop, so a lot of the questions are even over their heads that I have.

Additionally, she told of seeking expert help on using Adobe Photoshop to make Web page buttons; however, she was unprepared to learn or to follow up:

> **Mary:** I do have a friend who has a friend who is a professional graphics person, actually. He does the graphics for [the Center]. So I cornered him in a bar one night . . . I said, "Why is this button, why is this heart button not going the way I want to?" You know, I was creating a GIF out of a heart. He said, "Well, you can't do that with a heart without the shape [Unintelligible]. You have to do a JPEG or I don't know. I was drinking at the time so [Laugh].

Thus, merely having an expert handy does not always produce useful results.

All participants remembered instances in which they discovered "the means for learning [was] contained within the situation and available to them" (Spear & Mocker, 1984, p. 5). Learning embedded within the context of a career-related endeavor was the second most recalled form of distributed cognition. For Belle, Earl, Gabe, and Jake, embedded learning constituted the most important means for career-related learning; for Mary, it was the only means she described.

Kari, telling the story about how she learned to use the financial management software program at a car dealership, recalled:

> **Kari:** When I first started, they actually threw me right in and I had to just do it and the more I did it, the better I got at.

Earl told a similar story, responding to a question about how he cultivated the interest of a young female employee he had trained in his computer repair shop:

> **Earl:** Cultivate it? No, I just pretty much kind of threw her right into it . . . Uhm, and I think in a lot of ways that's some of the best ways to learn something. I mean, you're not going to learn unless you get your fingers dirty, bottom line.

In a similar manner, Ian learned about server operating systems, Jake learned to mix audio "on the fly," Gabe learned to "put on career fairs," Link learned "my wiring because we did low voltage wiring everywhere," and Cassy was learning photography.

As Halle captured in her narrative, these career learners were "to some extent building other peoples' inquiry into new things and new technology." Gabe demonstrated this in his scenario about testing a new torque tool:

> **Gabe:** We had just developed a new torque tool that I worked on from the executive review end of it all the way up until installation . . . putting caliper bolts together for one of our axles on the Silverado truck. And when we worked with the developers on the software, we needed to get certain torque ranges. So what we wanted to do was, we wanted to bring the bolt in real slow and then at the very last 20mm of torque, we wanted to drive it in fast because we had to overcome, there was a pre-amount of Locktite put on the bolt. And what we found was just, when we were in school for it, we were learning how to program it and all these good things. Well then what we found out was that after we got it into the plant, we set all the tooling up and the guns and we tested it, that the Locktite actually set up at a lot higher torque range than what it was supposed to. So we had to go back in and reprogram everything because within twenty minutes our, we were supposed to be at 200mm of torque, we were actually locking up at 275mm of torque.

Kari encapsulated what Gabe described: It is everyday practice that enabled her to understand and prepare for change. In words similar to Kari's, Fred underscored the value of everyday practice with the tasks of one's community because "luckily, in technology, especially in computers, there is a lot of overlap . . . So, the more you learn, the easier it is to learn from one program to another." Coxing out the knowledge embedded in career-related endeavors, according to Anne and Earl, was greatly enhanced when one can serendipitously "play with stuff," as Earl phrased it.

Earl concluded his comment about getting one's fingers dirty explaining that his young intern was learning but "changing a modem in Grandma's computer doesn't make you a computer tech." In other words, embedded learning has its limitations. Gabe described this caveat at length. First, he evaluated what transpired during the career fairs:

> **Gabe:** There were people that didn't like what they heard about, because they thought because they had a kid beating a nail into a hunk of wood, they thought they were teaching them something and they weren't teaching them anything

> because there were no skills there. It was just like, Ok, how fast can you drive a nail in. Ok, if you want to do that then let's teach pounds of force, let's teach them something that can integrate that back to their math skills, English skills, science skills. Integrate those, then we've doing something with that.

Second, and more poignantly, Gabe recalled that some things are too precious to trust to retrieving the knowledge embedded in a situation:

> **Gabe:** The man couldn't read and he died because of that. We could have saved a life if we had known that.

Models and exemplars manifested as the task performances and artifacts made available by others provided the most commonly acknowledged form of distributed knowledge used for career-related learning by participants. Each recalled multiple occasions during which he or she had used the work modeled by another person to enhance their own understanding, and, thus, their own career-related learning. Dirk, it will be recalled, elaborated at length as to why he was not a "script kiddie" even though he turned regularly to Web sites where programmers had placed "snippets of code" for others to observe and use. Anne acknowledged going on-line to "look up what other people who have run into similar situations have tried or not tried." Belle recalled browsing through and learning from the eBay stores of other on-line retailers to see which were successful and which were not. Cassy narrated her desire to become a better photographer by "looking at other photographs; mostly looking at what other people do." Fred captured the benefits of this process in his observation about using another's evaluations of new software products:

> **Fred:** It's good if you can run across somebody who actually has been using that product and can say, "Yeah, this product really works." You know, then you have a leg up. You have some unbiased opinion.

Where Belle used the works of others to speed up her learning, Link attributed his

use of others' work to his own conservatism:

> **Link:** I move slowly, yeah . . . let someone else test it and make sure it's OK and then once I know it's going to be OK and be a benefit to us, then I'll move with that.

Anne took her personal reflection on the modeling process further, providing in one of her stories her own theory of "kinesthetic learning" (described earlier) by which she would "read things . . . watch things . . . and play with things." As a result, she was attempting to develop a Web-based version of "those CD tutorials" she had seen.

Gabe's understanding of the modeling process was a large part of a couple of his stories. His focus was often upon interactive teams of people learning from each other. His justification was simply "I can't know everything." Gabe was just as simplistic in describing the modeling process as one in which "I learned by other people teaching me even though I was teaching them." Using an example from his engineering career, Gabe referred to the modeling process as one of "communication" in which "everyone puts in their input and you . . . learn from that."

Ian narrated a similar experience. He acknowledged his mistake in not realizing earlier the benefits of negotiating understandings with other students in one of his math classes. As a result, Ian was able to tell a story in which he credited a workplace colleague with being the one who "gets my brain going." Moreover, Ian recognized in relating this episode that his colleague's strong periodical-based knowledge complemented Ian's own book-based understanding.

Link's description of the regional network administrators' meetings revealed the same types of modeled learning that Gabe and Ian described. Link elaborated the situation in which "28 of us [got] together at the same time" to share successes and

failures. However, Link provided an opposing perspective as well, one in which he perceived that participation in one's community of practice can become inefficient and ineffective when there are "two chefs with their hands in the broth." In other words, Link spoke of a need for personal responsibility that results from action:

team discussion→individual action→personal responsibility.

Halle's narrative showed that she applied something similar to Link's hypothesis to one of her situations. She was the person of responsibility for instructional technology at her college campus. However, Halle took a position identical to Gabe's in acknowledging that she cannot know everything. In fact, her job was not to know each of the facets of networked learning, but rather "to know who knows it." Thus, even as the responsible individual, Halle continued to describe herself as a participating member of a shared community of practice.

Halle used this scenario of knowing who to go to for needed information to support her belief that she was "a collaborative learner" and people were her greatest learning resource. According to Halle's story, which was much like Ian's at this point, "bouncing ideas off of people helps me process information better." Reminiscent of Fred's discussion, Halle contended that using the process of tapping into knowledge distributed across her community of practice made acquiring new knowledge easier:

> **Halle:** I don't know if transfer learning is the right term or not . . . but if I'm doing this, this and this here, "Gee I bet it works like this in this program too."

It is, said Halle, the sharing of knowledge that enabled her to keep pace with technology by allowing her "to think broader."

Jake, too, acknowledged that he was not going to attempt to learn everything about running a radio station. However, he had a totally different take on what it meant to use the work of others. He took it literally:

> **Jake:** I'm not a Renaissance man and I'm not going to come and learn everything. I'm going to hire, I'm going to get people to do what they can do, do it and work with me on it. Because I'm not a drummer and I'm not going to be the drummer. I just want a good drummer.

Finally, Mary's stories showed a strong desire to learn. Unfortunately, she never provided a single episode in which she found the work of others suitable for her needs.

Table 14

Distributed Cognition Findings and Observations

How does the career-related context in which informal learning occurs affect the agentive nature of self-directedness?	
Cognition	**Findings/Observations**
Tools	Most knowledge acquisition tools and information resources were Internet related with very little learning tool variety displayed by participants
Sources	Participants appeared prejudiced against or guilt-ridden by physically storing information for later retrieval as opposed to memorizing it
Expert	Merely having an expert handy did not always produce useful results if the participant was not prepared to learn
Embedded	It was everyday practice that enabled participants to understand and prepare for change; however, this type of knowledge resource is often situationally limited
Embedded	Closely related to expressing a sense of serendipity, participants acknowledged the value of "play" for teasing out the knowledge embedded in new technological tasks
Others	Models and exemplars were the most commonly used types of distributed learning
Others	It is the sharing of knowledge that enabled participants to keep pace with technology by allowing them "to think broader"

Values and Goals Related to Community

In addition to a personal identity made up of appearances associated with and participation in multiple communities of practice, a sense of serendipitous environmental

influences, and an awareness that some aspects of knowing are distributed across one's community of practice, there was also a general consensus regarding certain career goals linked to shared communal values. The data for the study were coded for the presence of seven separate career goals arising from values the literature connected to communities rather than individuals. These six coded values, shown in Table 15, included a sense of social appropriateness, concern with one's social place, efforts to fulfill the expectations of others, endeavors to meet the needs of others, applications of a predetermined scale of social worth, and seeking out a social-historical structure to explain behaviors (added after the coding began).

Table 15

Communal Values Raw Coded Count

COMMUNITY ANALYSIS						
Narrator	**Values/Goals**					
	Appropriate	Place	Expectation	Needs	Structure	Worth
Anne	3	1	15	10	5	6
Belle	2	0	1	2	0	5
Cassy	3	2	3	3	5	0
Dirk	3	2	3	9	0	2
Earl	5	1	5	5	2	5
Fred	0	0	3	10	0	15
Gabe	4	1	1	11	0	5
Halle	1	1	3	11	0	0
Ian	4	1	16	3	5	4
Jake	5	6	8	3	18	5
Kari	2	3	16	3	3	1
Link	5	1	7	10	2	2
Mary	1	3	2	3	0	8

Although a sense of social place appeared in several of the narratives, it was so closely linked to meeting the expectations of others that it is discussed in that context. The participants' sense of social appropriateness was also expressed in other contexts,

especially as meeting the needs of other people. Still, there were some interesting perceptions displayed in the various stories. For example, there was concern about what was inappropriate. Dirk found it necessary to tell a long story about why he was not a "script kiddie," which is an inappropriate designation for a serious programmer. Apparently recalling what was not appropriate during his unsuccessful school days, Earl verged on the edge of embarrassment in acknowledging the use of a "cheat book" to keep his notes on various older DOS commands. Jake, recalling his past as a rock musician, was keenly aware of the inappropriateness of using copyrighted music for creating radio commercials. Anne acknowledged that there were those colleagues who might sabotage another person's work in order to make their own light shine brighter. Ian was concerned with his inappropriately aggressive behavior during on-line threaded discussions. Finally, Belle remarked on how, in a virtual world, those who behave inappropriately can be "blocked" or "blasted," although her methodology was "to kill them with kindness."

Link and Kari dwelled on the importance of demonstrating integrity during the building of one's career. Link, it will be recalled, related his belief that there is a political correctness to participating within a community of practice, that there are things community members should not share and do not need to know. He used as one example his knowledge of network system passwords:

> **Link:** We know everybody's password. I could get into anybody's anything, read it and share it with anybody I wanted to. But you learn integrity, and that's very political . . . I know the District Superintendent's password. I'm not going to share that with anybody.

It was while working for a US Mint paper manufacturing plant that Link "learned integrity . . . learned responsibility . . . learned to keep [his] mouth shut." Kari also referenced financial confidentiality in her discussion of integrity. For her, being "a good

person" was critically important and directly related to learning how "to grow" a client's investment and "not to lose it." Economics was important but not the only common denominator for socially appropriate interaction with one's clients. Anticipation of and responding to client needs (another value to be discussed shortly) motivated participant learning in the stories of Anne, Belle, Dirk, Earl, Fred, Ian, and Halle.

Among the manifestations of appropriateness conveyed in participant stories were those related to the use of e-mail. Mary included in the list of her daily tasks the use of e-mail to interact with students, staff, and the general population. Link similarly reported the appropriate use of e-mail to be equally demanding and instrumental to his success within his community of practice:

> **Link:** I get a lot of email . . . and the emails are not easy to answer. They're usually, you know, they aren't simple yes or no answers. They're usually rather difficult as far as . . . wording them correctly and appropriately and making sure all the correct parties are involved and then respond.

The link discovered between appropriateness and the sociopolitical structure that influenced events and motives within various communities of practice was important. Already mentioned was Jake's conflict with his perceived incongruity between a not-for-profit ideal and the economic reality of running a radio station:

> **Jake:** It's a non-profit organization, so everybody is really mostly about being nice about stuff rather than getting stuff done. So everybody is really nice, but half the stuff doesn't get done, and that's just the way it goes.

Link found a similar type of conflict in his school system where the appropriateness of an action was relative:

> **Link:** At not only [at South Center], but also up at [North Center] where we have some issues as well. And we just have two philosophies . . . because any decisions we make at our level are going to have to be discussed at a higher level, directors, or etcetera. I've got to go into the directors meeting on Thursday and bring to

> them the information because technically we can do it but curricularly we want to make sure that it's the correct thing to do.

Kari narrated an episode in which she referred to herself as "a structured person." She acknowledged her liking for a clear beginning, an organized process, and a definitive ending point. Several narrators offered similar stories recalling with fondness or admiration a socially imposed structure that influenced their career-related learning behavior. Earl recalled the significance of the guiding, even deterministic, structure of the military to his life and his learning:

> **Earl:** The biggest thing is for me, which gave me a combination of both informal and formal training, when I was a young kid and out of school and all this stuff, and not knowing which direction to go in life . . . definitely the best thing that ever happened to me in my life was getting out of [my little town], joining the military, and moving forward.

Cassy and Jake provided similar scenarios. Cassy revealed her fondness for a structured learning environment in which her learning was enabled by "knowing which steps to follow and what order." Jake spoke with longing that bordered on passion about the structured learning he experienced as a youth in the Catholic schools of his hometown. Additionally, almost every episode Jake recalled about the learning that he "thought was most beneficial to [him]"as a youth was highly structured: Shakespearian plays, debate club, and team sports. Even during his successful period with the rock and roll band, for Jake, "the drummer drums." As a result, his acknowledged discomfort with the radio station where he believed there were no rules and everyone did his or her own thing was understandable.

Link found structure in music as well; however, he found within music a distinct structuring logic that Jake never mentioned. The logical organization of music that Link found enticing lent itself easily to other areas of career development including computers

and networking. Of possible significance was Link's connecting the logic of music to that of mathematics. In addition to Link, Ian and Kari recalled several episodes each in which the structural logic of mathematics was credited with helping each better understand computer-related technologies:

> **Ian:** I found it a really easy transition from mathematics . . . after a few years of mathematics, when I started programming, it just came naturally . . . The language of mathematics is a lot different than the language of computers. But the logic is the same. It's still logic. That's the way I look at it.

Finally, Ian concluded one of his math and programming discussions by explaining how he applied the logic. Interestingly, his use of the logical structure of mathematics was serendipitous play associated with learning-by doing:

> **Ian:** So you know you sort of flesh out, start fleshing out details of what we need to like, some specific things we need to learn . . . Yeah, that and, just some experimenting, you know, playing around with it. Something to get me a nice clear overview of what all the parts are. You know, how it's put together.

Once again, the raw score instances indicating the quantity of respondent mentions attributed to a given value were rarely as important as the qualitative effect of those values in each narrative. Multiple participants talked about the social value of worth, but it was a dominant issue only in Fred's stories. Episodic mentions of social structure appeared almost ten time more in the stories of Jake, but structure played a much more significant role in the stories of Earl and Ian. The same was true about the values of social place and appropriateness. Quantity and quality became more closely aligned when others, especially those considered as clients, were the focus of the stories. The needs of others were points of interest in numerous narratives. Moreover, episodes about others' needs were more uniformly spread across the narratives than any of the other communal values.

Meeting client or customer needs was a source of motivation and pride in most narratives. Gabe described his efforts to mentor would-be vocational teachers who "didn't have any writing skills at all." Anne built into her narrative stories about her learning being connected to anticipating and "develop[ing] what our clients are going to need." Dirk spoke extensively about wanting "to go for" creating "awesome" features that make the software products he develops "so much better . . . easier to use" for his clients. Earl described his enjoyment for socializing with his customers as he was "helping them out." Fred recalled the competitive edge he developed by being able to "come up with new things that you can do for your customers." Halle discussed her learning in terms of "the . . . important needs our faculty have identified." Although not acknowledging that she subscribed wholeheartedly to it, Mary reported that the "theory" for her not-for-profit workplace was "whatever it takes to make the customer happy, that's what we attempt to do."

While Jake found inconvenience in being "nice to everyone" just because he was associated with a not-for-profit agency, Kari was of the opinion that "helping people . . . giving them a service" was a "respectable" career goal worth striving for. Moreover, many of the participants' stories showed a strong relationship between meeting the needs of customers and economic success. Anne's goal was to meet client needs to the degree that they became "dependent on" her company. While the motive might be agentive, the learning was communally driven. Finally, Gabe introduced in his story about career fairs another more intrinsic motive for addressing the needs of others: reciprocal learning. That is, in teaching others he learned anew from observing what they where able to do with his instruction.

Second only to customer and client needs were participant stories related to anticipating and satisfying coworker needs. Link told how he managed employee training using the philosophy that "I make sure that if they need it, they get it." His acknowledged goal was to make each staff member "a better employee." Fred explained that he created every office application thinking "about other people using it . . . how easy is this going to be?" Earl took great pride in telling the story of the college girl he hired who had little practical knowledge about servicing computers but "she pretty much got a two-year degree out of this store." Halle captured her learning goals from enabling colleagues to become better users of technology in the classroom by "keeping them abreast of things that are going on" with educational technology. Gabe used a gripping story to drive home his point that "Safety is always number one" when it comes to new learning related to coworker needs. Whether career-related learning is driven by one's perception of client need or employee need, Fred summarized the link between career development and the needs of others within the community of practice:

> **Fred:** Like I said, generally speaking, my technological learning is driven by a need, primarily. The other way around is like I look at the new technology and say, "Gee, I kind of like the looks of that thing. I wonder what I could do with that."

Cassy's response to the researcher at the close of her narrative provided the fitting conclusion to this subsection on addressing the needs of others. Reassuring Cassy that her narrative was going to be of value to the study, she responded in a truly communal manner: "Well, hopefully I'm being helpful."

The single most important caveat that could be taken away from the stories related to meeting others' needs was Link's reiteration of the familiar observation that "some learn in different ways." Such a common consideration was recalled in no other

narratives. However, Jake narrated at length about what can happen when this instructional precaution is ignored. Fossilized in the fond memories of camaraderie among rock band members who "depended on how good a job everyone else did," Jake often recalled his difficulties employing that expectation in working with people at the not-for-profit radio station. Asked why he was not more demanding, Jake ironically resorted to his favorite criticism of the not-for-profit agency: "I'm too nice a guy!"

Jake's narrative is the perfect segue into the final values and goals subcategory, fulfilling the expectations of others. Jake's story about the mutual dependencies of the band members demonstrated a decisively communal relationship that drove each to fulfill the expectations of the group as a whole. In fact, the expectations of coworkers were common to several narratives. Anne not only used the expectations of coworkers to explain why she needed to learn Microsoft Excel, she made the expectation universal:

> **Anne:** Oh, why I need to know is, of course, the business need comes up. Somebody needs to have something in a certain format showing them something specific and you got to find a way to get it done. And like I said, it's significant because everybody is depending on tools of this nature and reports of this nature these days.

Similarly, Kari recalled that as 25-years old, she took on "a lot to learn" in becoming the finance manager for an auto dealership. Even though the task "was tough," she was responding to the expectations of coworkers who "knew I could do it." Ian introduced one story of extensive personal learning about Linux servers with the belief that the others in his company were looking up to him and his knowledge "to get us going in the right direction."

Participant descriptions of their efforts to fulfill the expectations of clients or customers paralleled the stories of satisfying coworker expectations. Whether the

customer expectations grew out of their own carelessness (Link's story about network viruses), their perceptions of technological need (Earl's story about those wanting the latest components), their despair over malfunctioning equipment (Ian's story about the server going down), their demand for cost-effective and easier to use products (Fred's story about making better itineraries and contracts), or promises made by participants for delivery of service (Dirk), the narrators' reactions were pretty much the same. Halle referred to it as "building other people's inquiry into new things." Anne described it in layman's terms: "Now what's going to be the best way to accomplish that, the quickest way to accomplish that, and a way in which more people are going to be able to access that?" Mary simplified it more: "I'm always trying to think of how I'm coming across to them."

What was interesting in these episodes was that the expectations of others were largely reactions to situational demandedness. In fact, most of the expectations associated with other people were actually the culmination of most other communal elements: perceptions of career role and feeling as part of the community associated with group identification; taking the lead in responding to serendipitous events such as demandedness, time, and the need for financial gain; maintaining the values of what is appropriate to the success of the community; aspiring to meet the needs of others; and becoming the distributed resource and the expert that others rely on. Finally, each participant's ability to recognize in themselves their role in meeting the expectations of others was strongly motivational in directing their career trajectory. Even Mary, when asked by a college to become a dance instructor, exclaimed at one point in her narrative: "They actually wanted me to teach [there]."

A third group that created expectations for participants was their workplace supervisors. Cassy recalled multiple times that she engaged tasks because “my boss had encouraged me” and “I had to . . . please my boss.” Link told the story of working long hours at the paper plant because it was expected of him. Kari explained in her narrative the importance of several levels of “compliance.” Halle described her position, in large part, as responding to the “priorities and goals” of her college. Finally, Anne identified the supervisory “suggestions” and expectations that were influencing her career as the “big directive.”

Ian pointed out that expectations arising from one’s community of practice must be taken seriously: Unlike school days, “there’s no partial credit [because the solution has] got to work.” As a result, reflected Anne, actions directed toward meeting the expectations of others **“**actually . . . are the solution and the problem for the same reasons . . . because everybody has different expectations.” Several participants addressed the potential for conflicts to arise from attempting to fulfill the expectations of others. However, before there can be conflict, there must be ownership of one of more of the expectations. Kari, for example, pointed out, “I didn’t truly learn it and understand it until I took the time on my own to take time with it.” Following a similar point in her own story, Anne added that “then I basically decide how to fulfill those goals.” As a result, Ian’s narrative demonstrated his conflict between meeting the expectations of coworkers and clients who needed a server up and running and an instructor who had expectations for a college-level data base course. Similarly, Link told of his conflict that arose when he had to choose between the desires of an administrator and what Link thought was “best for the kids.” In most cases, the expectations associated with the participant’s

source of income won.

Presented in Tables 10, 12, 14, and 16 are the findings and key observations arising from the analyses of data related to uncovering how one's perception of community participation during career practice affects his or her perception of the self-directed informal learning that leads to career development. Working through the analysis individual by individual, it has become clear that there is a relationship. Much more elusive to identification here is what that relationship is and how it might tend to generalize across the study sample. Those topics are addressed in the holistic analysis that concludes this chapter.

Table 16

Communal Goals and Values Findings and Observations

How does the career-related context in which informal learning occurs affect the agentive nature of self-directedness?	
Values	**Findings/Observations**
Appropriateness	Participant perceptions of appropriateness are often relative to both one's community of practice and to one's immediate situation
Structure	Participants sought a socio-politically legitimate strategy that enabled them to structure the learning outcomes derived from experimentation and play
Needs	While motives for meeting the needs of others might be economic, career learning is still driven by aspiring to meet the needs of others within the community of practice
Needs	Perceptions of others' needs were most often expressed as an attempt to make some task being done by another easier to do and occasional expressed as an attempt to make another better in some socially legitimate way
Needs	Although multiple differences in customer or co-worker needs were portrayed, few participants acknowledge differences among those in the group who had needs; in other words, whatever means the participant was engaging was presented as the best or only means to be used in meeting the needs of others
Expectations	Responding to expectations were often the participant's desire to become a valued member of the community by addressing other's inability to respond successfully to situational demandedness
Expectations	Participants who responded favorably to the expectations of others were generally prone to become highly motivated to further their career related knowledge
Expectations	Meeting the expectations of others can lead to conflict which requires participant choice based upon totally different criteria than those associated with the situational expectations

The Relationship of Self-Directed Informal Learning to Career Development

A Holistic-Content Perspective

Introduction to Entrepreneurial Learning

The first part of chapter 4 applied categorical-content analysis to individual narratives to describe participant career-related activities. This endeavor resulted in a participant-by-participant exploration of the how one's perception of agentive control over learning affected his or her perception of career-related informal learning and how the career-related context in which informal learning occurred affected the agentive nature of one's self-directedness. First, participant responses recorded in tables as raw count responses, demonstrated similarities suggesting a possible balance between respondent perceptions of the career-related influences of agency and social context. Second, the tables of findings and observations presented evidence of a connection between perceptions of agency and social context. In brief, the results of the categorical content analysis might be simplistically visualized as the image in Figure 1 below.

The diagram suggests the study participants narrated stories depicting a reciprocal relationship between agency and community. Such a claim, even though it was based upon the use of an identical interview protocol across multiple participants, required additional internal confirmation to reinforce its validity. The expansion of this "methodological triangulation" (Yin, 2003, p. 99) into a more holistic interpretation of the narrative content created additional opportunities to surface converging lines of inquiry across the multiple data resources while remaining focused on only a few key concepts or themes. Additionally, a holistic-content perspective toward data analysis (Lieblich et al, 1998) provided the benefit of "theory triangulation" (p. 99) by allowing

for the integration of respected theories related to the use of story narrative to inquire into and explain self-directed informal learning during career development.

Figure 1. The commonly perceived relationship between agency and community context.

HyperRESEARCH™ 2.6 was used this time to create a series of different reports to aid in checking emerging global patterns and general themes. Once again the categorical-content analysis coding counts were charted; however, this time individual counts were placed on a line graph in order to seek relative response patterns among members of study-specific cohorts (see Appendix I: Sample Cohort Line Graph). The management of the data in this manner was not meant for quantitative evaluation, but rather to make more visual the participant response patterns for qualitative comparison.

Although the categorical-content analysis provided data for comparing individual accounts related to each coded categorical element, the methodology remained bound to singular “snapshots” for each participant. The thematic richness of the narratives is best unleashed through “animating” the snapshots into a moving picture of constantly

compared thematic elements achieved through the holistic-content methodology of data analysis. Through the application of the holistic-content perspective a thick, rich narrative evolved related to the two main underpinning research questions:

1. How are the self-narrated career identities of self-direct learners thematically similar and thematically different?
2. How is self-directedness related to informal learning within the context of career development?

While the second underpinning research question draws strongly on the constant comparison of results arising from the categorical-content analysis, the first research question finds its meaning within the various elements that comprise each narrated story: action, protagonist, plot, setting, disruption, balance, and theme. Just as form has no meaning without content (Franzosi, 1998; Schank, 1990), attempting to analyze the participants' stories by separating content (research question 2) from story elements (research question 1) would be fruitless; therefore, the two research questions are addressed simultaneously.

By comparing the narratives it became apparent that, taken as a whole, they quickly dispelled, as Merriam and Caffarella (1999) pointed out, "the fundamental notion that learning is something that occurs within the individual. Rather, learning encompasses the interaction of learners and the social environments in which they function" (p.242). However, the narratives also substantiated Brown and Duguid's (2000) observation that "whatever the strengths of communities of practice, people learn on their own, picking up information from numerous sources about numerous topics" (p. 128). In other words, the holistic analysis highlighted Merriam and Caffarella's claim that the individual's learning

behavior during career development “is a function of the interaction of the person with the environment” (p. 260). Figure 1 above depicts this.

A holistic examination of the narrative data collected during the study revealed significantly more depth than captured in the Figure 1 diagram. The Entrepreneurial Nature of Career Development matrix, shown in Table 17 summarizes the findings of the constant comparison of the narrative structures against story content. The remainder of the data analysis describes the contents of the matrix and explains their relationships.

Table 17

Entrepreneurial Nature of Career Development

		Activity	
		Entrepreneurial	**Passive**
Learning	**Entrepreneurial**	**Catalytic Learner (E^2)** Highly agentive • Self-directed • Autonomous • Risk-taker • Self-reflective • Innovative	**Social Learner (EP)** Negotiation-oriented • Self-directed • Late adopter • Conservative • Self-reflective • Imaginative
	Passive	**Reactive Learner (PE)** Stimulus driven • Other-directed • Catalytic events • Early adopter • Norm-reflective • Maintenance	**Reactionary Learner (P^2)** Highly contextual • Other-directed • Serendipitous • Single task-oriented • False agency • Maintenance

The title of the Table 17 matrix points out the entrepreneurial nature of career-related learning occurring for the study participants in their respective workplaces. According to *Webster's Ninth New Collegiate Dictionary* (1986), an entrepreneur is "one who organizes, manages, and assumes the risks of a business or enterprise" (p. 416). In keeping with the main analytic task for the study, which was to "generalize [the] findings to 'theory'" (Yin, 2003, p. 38), drawing upon the work of Thorén-Jönsson and Möller (1999) showed that a "core category" emerging from their study of career development among disabled individuals

> was *conception of occupational self*. Since the concept was derived from the individuals' reports of the thoughts, feelings and reasoning that lay behind their choices of strategies in daily occupations, the word "occupational" was used to emphasize that the concept comprised just a part of the wider or whole self. (p. 73, emphasis in original)

Continuing to build upon the foundation provided by Thorén-Jönsson and Möller, the current study shows the term entrepreneurial to be a near perfect label for describing the enterprise of personal career development.

When one asks how or why questions "about people and their behavior" (Landman, 2001, p. 63) , as this study does, "the answers tend to fall into two generic categories: internal (personal) or external (situational)" (p. 63). These remarks help to explain the two main categorical labels for the matrix: Learning and Activity represent the two critical components arising from participation within an activity system (Lave & Wenger, 1991). In other words, the matrix depicts as Lave and Wenger instructed: "Learning itself is an improvised practice" (p. 93) that implies "participation in an activity system about which participants share understandings concerning what they are doing" (p. 98).

Learning and Activity are consistent with the conception of knowledge as being, respectively, declarative (factual) knowledge and procedural (performance) knowledge (Merriam & Caffarella, 1999), as well as being personal and public(Rawson, 2000). However, as Lave and Wenger stated, the two are not mutually exclusive. Additionally, argued Hansman (2001), the self-directed learning associated with career development "takes place as learners practice doing the real thing, adapting what is necessary from models and working on their own" (p. 47). Indeed, the preceding categorical-content analysis made it clear that learning cannot be separated from action; both aspects define the learner because, as Bloom has shown us, knowledge implies the use of information (Driscoll, 2000). With rare, and often whimsically narrated exceptions (e.g., Ian and Halle), few of the participants wanted merely to engage in what Bruner called "learning about" (Brown & Duguid, 2000, p. 128), but rather each desired to do something with his or her learning, what Bruner referred to as "learning to be" (p. 128).

The descriptors Entrepreneurial and Passive represent the two conceptual poles idealizing career-related learning and their career-related activity. A fully Entrepreneurial approach is as rare as a totally Passive one; and, as is often the case with polarized values, observation and analysis showed all participants falling at various points between the two in either their career-related learning or their career-related activity. For example, a participant might have demonstrated, like Jake, instances marked by a strong entrepreneurial propensity for activity in acknowledging his limitations, assessing resources, and visualizing desired outcomes in order to hire another individual who would then actually do the entrepreneurial learning required to achieve the outcome goals. Conversely, Halle's nature as an entrepreneurial learner occasionally propelled her

desire to learn to exceed the entrepreneurial activity necessary for efficiently and effectively meeting the demands of her community of practice.

Understanding the dynamic relationship between Entrepreneurial and Passive as participant descriptors "requires understanding humans as more than simple 'goal pursuing agents.' For humans, rules and goals bear a complicated relationship to the social fabric. Both may shift dynamically in practice depending on the social conditions that prevail" (Brown & Duguid, 2002, p. 50). Consequently, individual stories within each participant's narrative moved back and forth across the scale, sometimes showing the participant to be more entrepreneurial, other times showing him or her to be more passive in either their learning or their activity.

Finally, the matrix provides a means for capturing the universal meanings associated with the 114 coded "traits or motives of the individual" (Lieblich et al., 1998, p. 14) as they were depicted in the categorical-content analysis. Describing the four holistic matrix categories as they were comparatively demonstrated across the 13 participants' narratives is the purpose of the rest of this data analysis.

The Catalytic Learner (E^2)

A number of findings related to individual agency and the career development process grew out of the categorical-content analysis of individual narratives. For example, many of the participants described a meta-cognitive link between their perceived learning needs, learning style, and resource assessment. Some participants used artifacts as the primary trigger for precipitating the agentive activity of assessing learning materials while others relied more on people. Several narrators described situations of reflective persistence in which they purposefully forced task solutions to fail in order to

better understand an underlying process. Ironically, what one might think to be the essence of agentive behavior—a strong desire for independence and aspiration toward one's own sphere of influence—were rarely included in the participants' narratives. Agency was an expression of action: no action, no agency. Finally, one's sense of agency could be either positive or negative in its influence on learning and learning outcomes related to career development.

Most participants provided unaided recall of events related to their sense of agency and their perceptions of contextual influence in almost equal proportions. Each participant described one or more scenes in which he or she acquired new knowledge in order to address a given task. As a result, although rarely sustained through multiple narrative episodes, the entrepreneurial learner engaging in an entrepreneurial activity was not an uncommon event depicted in the narratives. Moreover, analyzing each narrative from a story perspective painted an interesting picture of emerging agency.

One might expect that consistently higher than average raw response count for all elements of Confidence in Learning, Sense of Career Competence, and Agentive Values and Goals should signal a more agentive learner. Certainly, the highest scoring participants (Anne, Dirk, Fred, Ian, and Kari) told multiple stories of personal agency related to their respective career development. However, a purely quantitative approach not only lost sight of the important contributions of Belle, Cassy, Earl, Gabe, Halle, and Link, it missed the significance of Jake and Mary's apparent lack of personal agency.

Schank (1990) pointed out the critical importance to one's learning associated with personally examining and then explaining the world. Moreover, he asserted that "everything people say regarding their . . . experiences [with the world] is a story of some

sort" (p. 29). Relevant to the current study, it is not the number of stories told that made one an entrepreneurial learner, but rather it was the "sort" of story told. The more agentive the individual learner typically the more his or her stories tended to be "first-hand experiential stories" (p. 36) of personal growth. These were often "invented stories" (pp.32-33) created to capture a new experience. The less agentive learner relied more upon "official stories" (p. 30), "second-hand stories" (p. 36), and "culturally common stories" (p. 38).

Consequently, participant reflection on their actions through the story protagonist carrying out the plot of an episode proved illuminating. For example, much of Anne's narrative represented variations of the official corporate story. The protagonist of her stories nearly always spoke the appropriate corporate jargon in following a logical causal plot in which she strove "to solve issues for our clients [making them] more dependent on us." Dirk and Fred were often caught up in their renditions of the culturally common story of the quixotic hero jousting against the inefficiencies of time and the inadequacies of the tools at their disposal. Earl's stories showed him as the mediator between a battle of old and new computer technologies. And, many of Kari's stories depicted her agentive aspirations through the second-hand stories of others she admired and aspired to emulate. All of these participants did, indeed, narrate authentically agentive episodes; other less prolific narrators did also.

In her first-hand experiential story about getting the auto dealer's software running, Cassy demonstrated her meta-cognitive ability to assess her inventory of skills in terms of her task needs. In doing so, she acknowledged that she was part of the problem. Because she was "not a tech person," she could not just dive into the program

and make it work. Cassy took responsibility for the disruption as opposed to merely attributing it to bad luck or the fault of a prior employee. By integrating herself with the problem, Cassy became an interactive element of the problem situation. She had positioned herself to become "aggressive" in stimulating others to help her solve the problem as well as in the evaluation of the usefulness of their technical responses. She had become a catalyst, triggering new learning for herself that provoked both personal and task environment change. In framing, organizing, and managing the problem with herself integrated into it, by assuming the risks associated with becoming aggressive in demanding information, Cassy represented herself as a truly agentive protagonist in her story. The results of Cassy's career-learning endeavors were multiplicative (E^2) as she went on to describe what it meant to her to become a more aggressive learner:

> **Cassy:** Well, [Laugh] I had to be patient with myself and patient with the other people, tech support, uhm, because I was coming from a different perspective than them. These are people that are experienced in the field. I am a person who knows, you know ah, generally about computers and technical stuff but I'm not a programmer so the way they were explaining something was different from the way I perceived it. And so I had to, uhm you know, always clarify with them and you know, question what they were saying so I go through the right steps. But, I guess, ah, [. . .] I had to adjust to and what it took to adjust to that. I guess just, yeah, being patient with myself and being willing to learn new things that I had never learned before.

Important to Cassy's experiential story of personal agency was her discovery of herself as the disrupting element in her ability to complete the task of getting the auto dealership software operational. Her realization ultimately became the trigger for her learning and career-related development. Action, especially action as a disruption of the status quo, was an important part of the stories of entrepreneurial learning.

Roberson and Merriam (2005) observed that "motivation and intensity to learn are often enhanced" by the injection of "a catalyst" into the learning activity (p. 275-276).

The entrepreneurial learner taking action within an entrepreneurial context is such a catalyst. In spite of her propensity for placing her protagonist within an official corporate story script, Anne was far from passive in describing her protagonist's actions. Anne's protagonist, explaining her self-directed learning of Microsoft Excel, was ensconced in the language of action and doing:

> **Anne:** Where I learned it has been just over the course of using computers for the past ten years. Uhm, everything from when I first started doing management with retail and kitchens where that was, you know, how we tracked time sheets and inventory. You know just a simple calculation into things much more complex such as using macros to do complex divisionaries and summaries and analytics, pivot tables and so on and so forth. And as each new business need arises there's got to be a way to get it done and it's just finding out how to get it done. And I tend to play with Excel and any other application that can be integrated with Excel to find out a, you know, how to make it work. And if I can't make it work, I'll go to the Microsoft.com website and see what they have to say and if that doesn't work I'll ask people who also use Excel on a daily basis, who have more knowledge than I do, what kinds of types and tricks they may be able to point me towards. And honestly, just the help files alone usually point me in the right direction with some trial and error. Oh, why I need to know is, of course, the business need comes up.

Then, when describing her learning goals related to her Excel mastery, Anne's protagonist took the disruptive path of the catalytic agentive learner:

> **Anne**: Well, actually, that's an ongoing goal. There are some things that I do still want to learn about Excel and be able to integrate with Excel but I haven't had as much time to be able to go to that recently as I have in the past just because of the nature of the last couple months, what I've been doing has been veering off in a different path.

The protagonists in both Link's and Jake's stories were faced with the necessity of dealing with often overwhelming perceptions associated with technological change. Link's protagonist triggered a new career-related learning trajectory by acknowledging his limitations and then establishing new goals and new courses of action:

> **Link:** It is, it's tough. It is hard and that's why, I am reaching almost fifty, so I'm starting to think, "Man, I've got to get off that." I think that's one of the reasons I'm starting to manage more now than to dig into it and know everything.

Moreover, Link's story proceeded with his protagonist continuing to learn in order to be a model to the employees he managed.

"Thus," stated Schank (1990), "in order to find out how we learn, we must find out how we know that we need to learn. In other words, we need to know how we discover anomalies. How do we know that something did not fit?" (p. 60). Clearly, protagonists' evaluations of their environment and reflection on their actions played an important story role regarding agency in career development. However, evaluation and reflection required a field of opportunity where protagonists could, in Earl's words, "play with stuff," play with strategies and experiment with meanings. Whereas unstructured and unreflective play can be perceived as serendipitous in nature, the structured play in which the knowledge embedded in a learning activity is strategically coxed out was a hallmark of entrepreneurial agency. Anne, Cassy, Earl, Gabe, and Halle made specific references to it; Dirk, Ian, and Link longed for it.

Making time for play was an entrepreneurial gesture. As Anne's protagonist demonstrated, the agent in control of her own learning, "can turn off the phone . . . or . . . just ignore email . . . and just really focus." Link's protagonist covered his ears to eliminate extraneous influences. Fred's protagonist isolated himself from the extraneous in order to find our what was important to his career learning trajectory:

> **Fred:** It gets tiring weeding out the information from the vast amount of information available out there. You get worn down. You do! You get information overload. So you have to somehow isolate yourself from some of that stuff and not even pay attention to all the stuff that doesn't directly effect you or is of little use to you. You've got to learn to weed things out. Uhm, being bombarded all the time, junk mail, junk email, junk faxes, all this stuff. You've

> got to learn to file that stuff up. Quickly make a decision and get rid of it and not waste your time on that stuff. Avoid distractions. In actual work environment, things that bother me are interruptions and, because I lose the train of thought, especially if you're doing something like programming. Ah, programming takes 100% concentration. It really does.

Mary's protagonist represented herself very much like Link's and Fred's. She, too, was tire of dealing with the information overflow:

> **Mary:** Yeah, because I, well I enjoy the marketing, the creative process of the marketing end of it. And I'm tired. You know, I've been working in the secretarial clerical positions since the late seventies. So I'm tired of that. You know, I don't want to do budgeting anymore. I don't want anything to do with that stuff. I'd like to work on the creative flow for awhile and […]

The difference between Link's, Fred's and Mary's story character, however, was that Mary's was unable to evaluate her actions against a desired future outcome. Mary rarely represented her protagonist as being able to visualize outcomes. She rarely revealed a plan or expectations that could be used to evaluate present actions.

Dirk's protagonist harbored the same desire for creativity as Mary's. Dirk's character, like Mary's, was overwhelmed by issues of time and money. Yet, in spite of Dirk's main character falling regularly into a narrative of cultural scripts in which he played the role of the mythic hero, his protagonist held great expectations. "A script," according to Schank, "is a set of expectations about what will happen next in a well-understood situation" (p. 7). Therefore, while the entrepreneurial Dirk's stories often began as a script, they frequent evolved through plot shifts based upon his first-hand experiences and concluded as invented stories with unique expectations that set the stage for new directions in career-related learning. The result was that Dirk, arguably, was one of the consistently best examples of a catalytic learning agent.

In one early story, Dirk related the sequence of events leading to the founding of his technology business:

> **Dirk:** But I didn't go to college until I was twenty-two, because . . . from eighteen to twenty-two I kept trying to have a business. I failed . . . but then at twenty-two, woke up one day and my, actually, my good friend at the time, we woke up probably after a three day binge, partying for three days straight, hung over, and he looked over at me . . . actually, he . . . works with troubled kids, 'cuz that's what we were when we grew up . . . he looked over at me in this hung over state and said, "Dirk, what are we doing?" I remember looking at him and thinking like, "Duh, we're hung over. What do you mean what are we doing?" And then he said these words that always stay in my mind. "I mean with our lives." Which was so deep at that point because we're hung over after a three day binge and we actually got up, within an hour we were at the community college and signed up for college.

In a perfect example of what McAdams and Bowman (2001) called a "redemption sequence," Dirk told how he took charge of his life and turned a "bad scene to . . . a positive or good outcome" (p. 5). More importantly, Dirk used the same redemption sequence script multiple times, each time making it less the story of the hero's redemption and more the story of an applied strategy for dealing with adversity. Near the end of his narrative Dirk told a similar story of redemption but that time the script was much more a story of first-hand experience in which his protagonist's acknowledgement that he was the point of disruption triggered an understanding that furthered his career-development:

> **Dirk:** I was actually hitting a certain level of status in the city that was kind of unusual. You know, where people . . . noticed certain things about me and would seek me out. That would have continued had I not stepped out on a limb with the whole [board of public utilities] situation. That knocked me way down because I got seen, I was a trouble maker. So, but now I'm climbing back up, I guess. Not that I do that on a, it's not like a conscious thing, but I'm just seeing how the political structures in our town and the social structures work. And uhm, I see that, now, that's kind of behind me and I'm being elevated again, I guess, in some senses.

Additionally, Dirk went on to describe local social and political causalities in relation to what he did with his business and used his understanding to predict outcomes for his business, his career, and himself: “I definitely would not be where I am right now. And all of that came about through self-directed learning.”

How self-directed informal learning is related to the career development process is through the self-directed and self-reflective actions of a catalytic agent: one who dares to take it upon him or herself to try something different, reflect upon his or her actions, and use what was learned to make changes in a previous learning strategy. Fundamental characteristics associated with a successful catalytic learning agent include at least several aspects of a perceived confidence to learn: imagining multiple outcomes related to the task; acknowledging one’s own limitations for handling the task as perceived; selecting an appropriate initial strategy for addressing the task; locating, assessing, and accessing potential resources; and seeking a sense of socially legitimate autonomy for dealing with the task.

Moreover, socially legitimate autonomy appears to originate from perceptions of the agent’s career competency. While an awareness of career-related interests and a personally acknowledged desire for success may prove advantageous (although are not necessary), establishing a sense of learning and outcome ownership coupled with clear personal expectations are critically important to career-related learning and, ultimately, to one’s career development. Although age, level of education, occupational level, and career path may alter the relative influence each individual associates with the various characteristics of catalytic agentive learning, each is generally present in the stories of successful self-directed learners.

Although many instances of agentive behavior were displayed through the respondents' narratives, none of the participants can be identified only as a catalytic learning agent. Individually and as a group elements critical to defining catalytic agentive behavior were shown to be compromised in the content and form of the stories told. For example, as important a resource identification and evaluation appeared to be, none of the story protagonists was presented as examining more than two resources before making a selection. Most protagonists were described assessing and making their resource selection from a limited, often pre-filtered, set of alternatives. Thus, rather than exploring a mix, resource selection was often relegated to one type of resource: texts, artifacts, or human. A similar phenomenon arose as protagonists rarely responded to multiple interests in pursuing a career-related learning option. For the most part, participants told stories of protagonists who were engage by a single interest, which he or she then pursued.

Another interesting phenomenon disassociating protagonists from the agentive nature the participants would have liked to convey was the negative definitions most protagonists employed to describe themselves. Almost every protagonist described him or herself as *not* being something: *not* being a Web designer, *not* being a programmer, *not* being a musician, and so forth.

Finally, a good entrepreneurial learner must know when enough is enough, when the expenditure of personal resources has become too great in relationship to the career outcomes anticipated. That is, the truly entrepreneurial career-related learner understands when learning has become sufficient to achieving the analysis, synthesis, and evaluation necessary to make knowledge useful to successfully developing one's career. Thus, Schank (1999) was more than rhetorical in asking: "Where does our tendency just to

repeat what we already know end and at what point do we create something new?" (p. xxxv). No protagonist demonstrated this level of cognitive control, although several respondents acknowledged it as a worthy goal.

The Social Learner (EP)

Less catalytic in his or her actions, the entrepreneurial learner emerged from the analysis of the current data as also a social learner. That is, still agentively self-directed, the social learner depended less on him or herself as the source for determining outcomes and driving goal-oriented activity. The negotiated input of others became a critical element of the determination for learning action. As a result, the social learner was more conservative in his or her decision making, leading to being a later adopter of career related learning actions; however, he or she remained self-reflective and imaginative in evaluating the appropriateness of the direction to be taken.

All participants told stories in which their respective protagonists were presented as a member of one or more communities of practice: rock band, workplace, family, and so forth. These revelations were not merely settings for the protagonists to act upon or within, but rather all participants narrated episodes in which their story protagonist negotiated the one or more roles related to being or becoming community members. As might be expected, the ability to communicate with community of practice members was of great importance to negotiating the experience of belonging. The communications tool of the protagonists was manifested as language use and fell into two main areas: language of community and language of relationships.

Schank (1999) stated that, in addition to being story-based, people's perceptions of their interesting and important experiences are the foundation for reasoning. As a

result, “our knowledge of the world is more of less equivalent to the set of experiences that we have had, but our communication is limited by the number of stories we know to tell” (p. 12). Comparing stories and individually unique perceptions of experiences, then, constitute the negotiation of communally shared meanings. Participation in the negotiation of meaning, therefore, “is no more than searching for [the story] one has already thought up” (p. 12) about an experience and transforming it into a language that can be shard with others. Each of the study participants, following Schank’s simple formula, filled their respective narratives with the language particular to their own communities of practice.

The language of community revealed itself in several ways in participant stories. The most common uses employed community-specific terminology, jargon, metaphor, and idioms. Nearly every story protagonist was portrayed in one or more episodes negotiating with others. One classic scene involved Dirk’s description of his character’s varying success communicating the technical aspects of object-oriented programming with two different staff members. Dirk’s story of successful communication between his protagonist and Ian, with whom he shared a common language of a formal educational experience in programming, was not duplicated in his communications with [BB] who apparently lacked the common language of experience Dirk relied upon to talk shop. However, Dirk’s protagonist, in an important expression of agentive self-evaluation, acknowledged that his terminology may no longer be formally central to the community of practice:

> **Dirk:** Now Ian, I can work a little bit better with at times because he does have a formal education in programming where as [BB] doesn’t. So sometimes I start talking programming stuff that [BB] just doesn’t seem to get . . . Whereas Ian

> catches my drift even though…he was taught computer science just the past few years. I was taught computer science in the early 90s. So some of my terms are old school and I know that when I'm talking to him . . . He'll say, "Oh, that's this," and he'll say some other much more complicated sounding term, in my opinion, which means what I'm talking about from the old school programming.

Any personal agency associated with Dirk's self-reflective observation was potentially lost as his protagonist lacked an entrepreneurial response to both agency and community. On the one hand, there was no expression of agentive learning as he revealed no plans, expectations, or course of action for taking charge of improving staff negotiations. To the contrary, as opposed to putting himself at risk for additional learning, Dirk's protagonist espoused the more parochial path of criticizing the shortcomings of others: he was critical of [BB]'s lack of formal training and of Ian's over-reliance on books. On the other hand, and equally important, there was no expression of social learning as Dirk's protagonist used communications, the tool of social negotiation, to segregate and isolate the knowledge distributed across his community of practice.

Dirk's own agentive nature was discussed in the previous section. The episode in which Dirk's protagonist worked with technical terms and phrases to successfully locate needed information through Google demonstrated an imaginative approach to learning:

> **Dirk:** I had to keep honing the terminology until finally, I saw, "Oh, that makes sense for what I'm . . . " You know, eventually I would come upon a search and then the more I did it, the better I got at it.

Shortly after this narrated experience, Dirk's character was revealed confronting other staff members to change their learning styles to be more like his own. On several occasions, Dirk attempted to apply his strong sense of agency to social situations resulting in his protagonist being left trying to find the forest for the tree: He recognized a

problem but, when the problem was socially related, he could not always identify that he was part of the cause.

Belle, Halle, Cassy, and Ian were most typical of the social learner type. Belle's protagonist was regularly found to be negotiating the processes associated with online sales. Halle's main character was constantly negotiating the processes of digital administration for web-based education. In fact, knowledge sharing with her college community was Halle's overall narrative theme: "People . . . I'm very much of a collaborative learner."

Cassy, too, demonstrated that negotiating with others was the theme of her narrative. Thus, it was no surprise that her protagonist proclaimed that "the most important skill you can take from . . . high school, college, or any experience is just improving your communication. I think just always learning how to communicate better with people is the most important skill that could happen to a person." Ian, not the autonomous agent of his own learning in this story episode, did use his protagonist to reflect imaginatively upon the link between a college course he failed and his growing knowledge of relational databases:

> **Ian:** I just knew some basics, database tables and I had the key. But that sort of introduced me to the whole topic of relational databases, you know. And it sort of gave me, I guess, it just sort of introduced, it did introduce me to a lot of concepts that I've never heard of before that I was very unfamiliar, it gave me a very, uhm . . . How should I put it? . . . It gave me some concepts that I could use in my thinking about databases. Like what a relational database is.

Each of the four participants above generated a narrative protagonist that had proved to be quite self-directed in creating a unique means for negotiating meaning and learning from his or her respective communities of practice: Belle by observing others' work, Cassy by becoming aggressive in demanding answers, Halle in her collaborative

relationships, and Ian through his use of the artifacts of his community (i.e., books and formal courses). Each protagonist was represented as more of a patient learner, taking risks only when absolutely necessary. Finally, through careful self-reflection, each was able to demonstrate resourcefulness in creating imaginative solutions for their specific career-related tasks. For each, a substantial amount of protagonist activity was inspired or influenced through the negotiation of tool, task, or situational meaning with others in the community of practice.

Moreover, the outcomes of negotiated knowledge were generally shared by story protagonists. Each of the participants narrating episodes of social learning did so for largely the same reason: to do something useful for others, typically a co-worker or client. Outcome legitimacy, personal competence, and career satisfaction—motivating elements for the agentive learner—thus became directly connected with the negotiated expectations of others in the community of practice. Although narrators acknowledged the importance of communications in anticipating and serving the needs or others, even as they depicted a protagonist's struggle with various communicative limitations, few narrators gave voice to their protagonist for presenting a plan for remedying those communicative shortcomings.

One other narrative read as though it could be that of a social learner; however, Mary's protagonist dispelled that notion unquestionably. She clearly recognized the importance of a language of community:

> **Mary:** Because the terminology was difficult. I mean, it's easy to look stuff up online or in a book but you've got to know the terminology first, otherwise you can't look it up, if you don't know what it's called.

Missing, though, was any agentive action of self-reflection regarding the lack of

terminology acquisition or self-direction in setting expectations and anticipating outcomes. Even a passive approach to entrepreneurial learning required some elements of agency.

Several other story elements were fascinating in their representation of the narrators as socially embedded learners. These story elements included the frequent use of jargon, metaphors, and idioms. Anne's and Karri's protagonists, often immersed in an official corporate script, were left with little that was original beyond their application of the jargon of the workplace. Gabe's protagonist, as he moved in and out of the engineering stories moved in and out of the jargon of his automotive engineering environment. Like Anne's and Karri's narratives, the engineering portions of Gabe's narrative were more the rehearsed script, less the inventive story-telling. As both Anne's, Karri's, and Gabe's protagonists became agentively involved with new learning situations, their stories dropped the jargon and the actions were generally more imaginatively described in everyday terms. While the use of jargon may have been employed to reflect well upon the narrator, it reflected poorly on the narrated actions of the story protagonist. Jargon appeared to be associated with old, well-rehearsed scripts that represented a reactive protagonist with little material from which to learn and develop further.

On the other hand, the incomplete use of jargon in describing one's career environment was indicative of an undeveloped or missing story of career-related social participation and learning activity. Jake, for example, provided his protagonist with many of the more visible terms associated with radio equipment: Simian, Adobe Audition, Pro-Tools, CDs, and so forth. However, when it came to the terminology necessary to

describe the uses of that technology, Jake's protagonist was left wanting, showing he actually participated little in the practices of the community.

> **Earl:** I'm not going to even charge you anything because it's not even worth the ninety dollars. Uhm. I mean, I feel sad that you're just taking home an empty box but you know but, I hate to say it, it's time to put them down sometimes. Electronics is moving fast and there is just nothing I would consider doing to this.

Earl was but one of several narrators who included metaphors in their stories. None, however, was as prolific in the use of colorful figures of speech as Earl. "People need context," stated Schank (1999), "to help them relate [current experiences] to what they already know" (p. 15). Certainly, one's use of the figures of speech associated with one's cultural community are a positive indicator of participation at the most common social level (Schank, 1999). Even as Earl acknowledged his penchant for socializing, his protagonist reveled in the commonality of that participation:

> **Earl:** Today's technology, there's still some old tricks that you've learned in the past that you can use on this new stuff. But I mean, bottom line, if you don't keep some of your knowledge of the new stuff coming down the pipeline up-to-date, you're going to miss the boat.

Characteristically, Ian's protagonist spoke occasionally using literary metaphors, both Jake's and Link's main characters resorted to musical metaphors, while Gabe's engineering-oriented protagonist included a metaphorical reference to the construction of a house. The more sedentary Belle described her protagonist's learning as a mushroom, and the quick-witted and dazzling dialogue of Anne's protagonist referred to her light burning brightly. Also, as might be expected with their focus on time and efficiency, the infrequently used metaphors of Dirk and Fred were related to racing.

Most interesting, while the female participants might be considered to be the more likely of the two genders to be social learners, as a group, they rarely used figures of

speech in their narratives, the more agentive Anne was the major exception. Just the opposite, male participants who used figures of speech infrequently, such as Dirk and Fred, tended to be the most agentive learners. Clearly, there is a relationship between one's use of figures of speech and one's sense of agency. One possible connection arose between the use of figures of speech and the apparent inventiveness of one's story: figures of speech rarely appeared in well-rehearse official scripts.

The language of relationships was evident in many of the narratives; and, it was expressed in a number of ways. The range of personal limitations associated with inter-personal communication was broader than just the communal language of the work environment; it included what Cassy referred to as "that kind of vibe [that] comes off of other people." Halle's protagonist had to formulate the right set of questions for interacting with instructors and their needs for technology, Earl's main character dealt with establishing a database for communicating past problems to future employees, Ian described his protagonist acknowledging the importance of learning through collaborating with other students in his class, and Dirk's character was stymied by the learning required to become effective as a teacher for his partners and clients.

The language of relationships was important to participants for demonstrating the sociopolitical or hegemonic location of their protagonist within the structure of the career workplace. Dirk's character never referred to himself as the boss, but often addressed others on the staff as "my guys." As a result, although he often resorted to the collective pronoun "we" during descriptions of company projects, Dirk's protagonist rarely came off as authentic in his attempts at appearing communal. On the other hand, Dirk's compatriot, Ian, presented a much more communally believable protagonist. His many

uses of the collective “we” were sustained by descriptions of his interactions with [BB], his “right-hand guy when it comes to discussion,” and Nard, the African fellow he was sharing cultural knowledge with. Ian’s protagonist could be taken at his word when he expressed his communal excitement in being part of “the team environment that I love.”

Link’s protagonist, although more managerial than Ian’s, shared many of the communal characteristics of Ian’s character. He was very believable in his portrayal of a community of practice in which members were “always feeding off each other,” because he often conversed about relationships with his community and enthused about the “great sharing” that occurred among his peers. Additionally, Link placed his protagonist in one scenario only to use the story to moralize about the importance of “diffusing” potentially combative situations by encouraging others to talk about people instead of things.

As might be expected for someone often caught up in the corporate script, Anne’s protagonist, as described above, was located within the “administrative” staff of the “executive levels” in her company. Anne’s protagonist never articulated the position exactly, but rather described it by its relationship to the other people she worked with and answered to. Jake and Mary provided stories with protagonists who often appeared obsessed with their respective position title; however, both rarely provided the supporting scenes for sustaining their protagonist’s claim. As a result, both Jake and Mary found great difficulty in integrating and locating their respective protagonist into the surrounding community of practice.

Gabe’s story about being a vocational instructor presented the most interesting use of the language of relationships. Gabe’s protagonist was narrated into the situation of being constantly reinvented by learning anew from his students and from his own

constant demand for evaluation. This, in fact, became a common theme in Gabe's narrative. If taken at face value, Gabe's protagonist was a truly communal entity.

Schank (1999) pointed out that the learning agent uses the community to remind him or her of what they already know about. In other words, distributed learning is a manifestation of social negotiation. Link used his protagonist to demonstrate this. Link narrated a story in which his protagonist-self acknowledged not being able to remember everything he had learned about early versions of networking software, even though that knowledge might still be useful. Unable to recall it on his own, Link's protagonist relied upon his community of practice:

> **Link:** You know, you draw into stuff that you just, I don't know. It takes awhile sometimes, or you call one of your friends, or one of my colleagues or someone I work with and just say, "OK. Help me out here. This is the situation I'm in." And then we all try to pool together on how to.

In unknowingly demonstrating Schank's point, narrators often told stories in which the distinction between the setting and the tools their protagonists used within the setting became indistinguishable. Belle identified a problem with a payment tool as the setting and described her working through the problem by working with the pooled knowledge of her community. Ian similarly looked to formal education not so much for the factual content he might acquire, but rather for the social interaction and the intellectual stimulation provided by the instructor. Ian's protagonist expressed several judgmental statements suggesting it was not the content of education but rather the delivery he relished. The structure of the content was the key as he sought a model for organizing the thoughts he already had and would continue to accumulate.

Fred's story about Microsoft finally getting useful information out to users concluded with his protagonist suggesting that it was not productive to disassociate the

technological tools completely from the environmental context they were to be used in; they were often too seamlessly integrated with the user's own knowledge:

> **Fred:** Again, finding that particular piece of information sometimes is a challenge, but it's . . . there somewhere . . . You have your owner's manual and you have, now, you get software with most hardware. You get on-line, say on a CD, a manual and reference material on a CD that comes with the hardware. Plus they have a website by the hardware manufacturer and other people as well. So the same three types of information sources unfold through all of the technology fields.

Link's protagonist, explained his interaction with the many problems that arose in maintaining a network for multiple connected school districts:

> **Link:** There's usually somebody else that's had the problem before you where, you can find the answer. We also have a, we do our service requests online, and in that database our resolution. We're supposed to put in what in we did to fix the problem, so that we can go into our own services database and say, "When's the last time I worked on Ron's computer and what did I have to do with it? What was the problem? What was the resolution?" We can go in and look at that similar problem, similar computers and those types of things.

In the same way, Earl's protagonist used his "cheat sheets," Jake's the camaraderie of musicians in the band, Belle's the eBay chat rooms, and Dirk's his "script kiddie" approach to programming. In each situation, a participant's peers, rather than instructing the protagonist, were much more involved in reminding the participant of something he or she already had prior knowledge about.

What one knows to say, what one says, and how one says it are each important in helping to define one's identity within the community of practice and for preparing one to negotiated with others in that community. These concepts were not lost on the study participants, several of whom went to great lengths to give their protagonist the appearance of belonging to and participating in a community of practice by way of certifications and other socially legitimate manifestations of social appropriateness.

However, with the possible exception of Gabe, most participants seemed to accept participation as some type of unconsciously acquired skill or condition, not unlike learning to talk. As a result, protagonists occasionally felt left out due to the costs associated with the sharing of knowledge, as evident in the stories of Dirk, Ian, Jake, and Mary.

Additionally, negotiation was revealed to involve a high degree of socialpolitical segregation. Negotiation, left to the agents within a setting, was often a discriminatory process. Story protagonists were most likely to negotiate with those they considered to be their peer equivalents or those they aspired to be like. Every narrator alluded to this in discussing their communicative interactions with others. Anne's protagonist, for example, learned from administrative guidance, Dirk's felt he learned best from other formally trained programmers, Gabe's from college educated engineers, Jake's from competent professionals, and Fred's from the experts who wrote the books and manuals. Ian epitomized this notion by evaluating almost everything in terms of the language of academic achievement.

The Reactive Learner (PE)

For the reactive learner, entrepreneurial activity remained but it was precipitated more by the setting than by the protagonist who was the agent of the activity. That is, the event or events were the catalyst that the narrator's protagonist responded to in the most socially appropriate manner. Any reflection upon the protagonist's role in the activity was prone to be norm-based and the learning that resulted was maintenance learning related to addressing a specific problem, group of tasks, or individual task.

Among the revelations of particular interest was the apparently weak overall

response of story protagonists to the perceived importance of their respective career and to their sense of career development. As a whole, the narratives demonstrated a dearth of responses related to career respect, satisfaction, and contentment, arguably the cornerstones of building and sustaining career interest. Also interesting was that protagonists spoke boldly and aggressively about how they had taken charge of their own career development in response to their desire to develop, but expressed much less confidence in the learning that might enable such competence. In other words, they were suggesting that there was a stronger sense of career competence among participants than confidence that they could get there. Consistent with the observations of Locke and Latham (Pintrich & Schunk, 1996), what appeared to be missing was not the ability to set goals or even the personal belief that the goal could be achieved, but rather the "volitional element of goal commitment" (p. 211) that marks the learning endeavors of the catalytic entrepreneurial learner.

For example, as the future of the learning process unfolded for Anne's protagonist, the action of the protagonist hit a snag:

> **Anne:** So I've learned that there are various types of file formats for viewing as well as listening to the voice over and watching the animation part and marrying those together into one file. So, now I lost where I was going with this.

While Anne's protagonist was being portrayed as a catalytic character, Anne's deviation from the corporate script resulted in her inability to sustain the plot, thereby calling into question her own agency. Similar conflicts between story form and protagonist actions revealed the study participants' narratives were spread across a range of agentive action consistent with the continuum suggested by the matrix in Table 17. Anne, Cassy, and Ian narrated methodical and less inventive stories. Earl's and Gabe's

stories appeared inventive but had almost no form and their protagonists vocalized few goals. Each of these were to some extent symptomatic of reactive learning.

Gabe regularly represented himself as a protagonist in search of reinvention. Unlike the strong logically causal plots that dominated the stories of Anne, Dirk, Fred, and Jake, the stories that Ian and Gabe told were difficult to follow, often because they did not fit a typical pattern. Regularly, the learning-related action of Gabe's protagonist was shown to be a direct outcome of the story's plot. Moreover, goals were rarely mentioned and the protagonist rarely triggered the disruptions that generated the learning experiences. Carefully constructed settings within which their protagonist interacted with others to learn were the hallmark of their stories. Events more than interests drove protagonist activity. However, to say that Gabe, for instance, was not an entrepreneurial learner would be inaccurate, because he remained agentively involved with his setting:

> **Gabe:** What we did was, and this taught me a lot, first of all it taught me learning styles and teaching styles. Because I learned from my students because they were all different types of careers and technologies. And it also taught me how I had to change things in the way I taught to teach my students so they could teach their students.

Ian's protagonist was not so much an element of Ian's desire for reinvention as he was the norm-based invention of a narrator driven by formal education as his stimulus. In a manner similar to Gabe, Ian's protagonist remained a sort of inert catalyst responding to a logically rationalized career development process. In spite of the admissions that he "didn't make much money last year," that he must always "come up with something that works" to keep clients happy, that he failed a college course "because we had a server go down," that he could not make a "long term commitment" to getting the degree he

coveted, Ian's protagonist maintained entrepreneurially engaged in finding and narrating the links to career growth for each situation he felt compelled to address.

Dirk's narration often integrated his own agency with the setting of his story—a setting his protagonist then came into conflict with. Dirk had chosen many of the elements of the scene that made up the context of his workplace environment. He elected to start his own business, hired the people of his choice, and he took on the specific tasks of his clients. Thus, the context itself was strongly influenced by the application of Dirk's agency, even as the environment constrained his protagonist and set the events-biased stage for Dirk's new learning. Moreover, with his protagonist almost obsessed with time and money, Dirk's narrative demonstrated a strongly norm-reflective direction:

> **Dirk:** In honesty, something that is related to all careers and that's really what drove everything that I've been talking about is money. As in I have none.

Much like the examples provided, most narratives suggested that interactions between a protagonist and a narrator-created setting triggered a substantial amount of learning that was reactive in nature. In fact, the vast majority of narrative themes fell within the defining parameters of reactive learning: other-directed (Link's protagonist saw the future of his career development through the critical lens of his family's needs), catalytic events (the learning of Mary's protagonist constantly being sabotaged by the demands of others), early adopter (the efforts of Belle's protagonist to be ahead of other virtual retailers in setting up an eBay store), norm-reflective (the striving of Anne's protagonist to become part of the successful corporate structure), and maintenance learning (the tasks undertaken by Halle's protagonist requiring learning skills primarily to meet the demands of her colleagues).

Disruption within the status quo of one's environment was often the trigger to new learning. The catalytic agent precipitated such disruptions in order to learn. The reactive learner responded to disruption arising from his or her environment. Typically, participant learning was associated with acquiring the skill or means to restore balance within his or her environment. Belle narrated a story in which her protagonist encountered a disruption, which was followed by a learning episode, which created new affordances for perceiving her on-line retail environment in a more entrepreneurial manner:

> **Belle:** I really don't. I'm pretty confident that it's going to work. I wasn't in the past. In the past, I never thought that it would work.
>
> **RDP:** What changed your mind?
>
> **Belle:** In the last year, I've noticed that artwork is selling online. I've been watching it like I said, for a long time. And also I've seen that eBay is creating a whole new . . . art venue that's . . . miniatures. And people want to buy them because they're inexpensive and it's art that they can afford. Uhm, anywhere from seven dollars to two or three hundred dollars for a tiny miniature artwork . And people are buying them like crazy just so they can have their little piece of original art.

Restoring balance might not always be through the application of new learning, which, as Schank (1999) pointed out, results in the generation of a new story. Jake revived an old story for his protagonist to use in order to restore balance. In a type of backwards justification, Jake's protagonist described the radio station as pieced together so it was satisfactory to piece together everything associated with it:

> **Jake:** And . . . so you know, it's all editing. We're just piecing stuff together. I mean that's what the whole radio station is really. It's not live. It's not a live radio station very much. So we're constantly . . . chopping stuff up and reconfiguring it.

Schank called these "standard stories of our culture" that can be moved from context to context, "skeleton stories" (p. 149). In Jake's case, when his protagonist

wanted to justify his response to how he balanced the routine disruptions of his career workplace, he resorted to a well-know scenario that had worked before: piecing stuff together. As opposed to becoming a learner and a new story generator, Jake resorted to using old learning "as a story fitter" (p. 169).

Disruption was key to entrepreneurial activity because without disruption there was no rebalancing of the environment, no entrepreneurialism, only routine. Most interestingly, routine—even disruptive routine—rarely triggered new learning. Dirk's protagonist struggled with the daily desire of wanting his colleagues to learn faster, Belle's with the petty domestic interruptions of working at home, and Halle's with ubiquitous unnecessary meetings. In each case, the story protagonist was left constrained by everyday routine interruptions that were never addressed as triggers for new learning. The protagonists complained about them, yet accepted them as necessary evils of daily routine. For some unspoken reason they do not or cannot use their agency to address these particular contextual disruptions, thereby remaining bound reactively to their environment through of them. They have found no need to generate a new script for how they should deal with routine disruptions.

An overreliance upon scripts, especially "skeleton stories," for dealing with routine disruptions often led not to new learning but rather to protagonists becoming bound up in narrative contradictions. Anne, for example, placed her protagonist in a world in which technology was so crucial, she proclaimed that "we would not have a service if it weren't for computer technologies." Yet by the end of the very same statement, she was acknowledging that "in the old days, before computer technology" the service did exist. Even though Anne apparently knew the history of her company, having

no prior experience with that history provided her with the skeleton of a corporate story that actually began in the near present. Similarly, Dirk's protagonist was able to recognize multiple causalities while inventing the stories necessary to serving clients in unique ways, yet he was captive to a script that failed to make similar connections for working with colleagues on new and faster learning techniques.

No protagonist's learning was so constrained by poorly defined and contradictory scripts as Mary's. On one occasion she complained about the demands her colleagues had placed upon her to learn Adobe PhotoShop for making Web page buttons. She then took the position, in a discussion about creativity, that PhotoShop was the single most important task she wished to master. She wanted to get a position with more creative responsibility yet went back to school to take the business courses she disliked. She wanted to learn but had no time for it. Additionally, Mary, who derogatively framed her story protagonist as an "administrative assistant," was similar to most of the other participants whose protagonists were either empowered or constrained by the narrator's interpretation of the occupational title used to locate his or her protagonist within the structural network of the community of practice.

For the social learner, if not actual participation, then the appearance of participation in one's community of practice was important. When appearance prevailed over practice, the outward symbols of participation became important. The use of one's peers was more to locate oneself within the community network than to acquire new knowledge. Although social learning based upon the criteria of maintaining appearances relied on the negotiation of meaning with other members of the community of practice, the social criteria for the evaluation of meaning was typically filtered through participant

perceptions of his or her role in the community. When participation prevailed, the acknowledged rules of the community became helpful for shaping the assembly and distribution of practices through legitimate strategies that enabled the structuring of learning outcomes. Gatekeepers became important models and were actively sought out not so much for their skills as for their ability to grant access to resources, tasks, and the community itself. Participation, however, could also lead to conflict which required participant choices based upon totally different criteria than those associated with the situational objectives one anticipated.

The Reactionary Learner (P^2)

The reactionary learner quadrant of the matrix has no entrepreneurial component at all. In other words, any learning that occurs originates from outside of the learner. The reactionary learner, as portrayed by several of the study participants, was substantially driven by serendipitous events as well as being immediate and single-task oriented. This set of characteristics often led, as exemplified by Mary's ego-centric protagonist, to a sense of false agency: that the protagonist was in control of his or her activity when, in fact, he or she was actually being swept along in the torrent of surrounding external daily events. Ironically, by being so far out of touch with the causal relationships related to career-related activities, the reactionary learner became the unbalancing disruption triggering actions by others, thus giving the false appearance of being an event catalyst. Schank (1999) suggested that a reactionary learner had no stories to tell, or worse yet, had selected the wrong stories to build career learning upon.

Even the most agentive learners from the study were reactionary in some respects. Dirk represented his protagonist as occasionally laboring under a false sense of agency

driven by a serendipitously motivated desire to become a wealthy and socially accepted business person. Fred devised plots for his protagonist in which the setting was often as conspiratorial as descriptive. Halle's main character rarely appeared to initiate the activity in the scenes she was a part. Fortunately, for the benefit of their career development, many of the scenarios mentioned above were ultimately responded to by the story protagonists in an agentive manner that led to new learning. Typically, the single event task that precipitated the activity became the tip of a problem-solving iceberg. Often these protagonists were described not as responding to serendipity as much as embracing and engaging it, as Gabe did with the death of a co-worker; or playing with it, as Belle did with her eBay store and Halle did with her iPod.

Such was not always the outcome for Jake and Mary, whose protagonists most typically expressed the characteristics of reactionary learning. Jake and Mary were generally other-directed in their career-related choices. Even when Mary's protagonist was cast agentively as a trial-and-error learner, she described the process not as the effective application of patient research (as Belle did), but rather as a technique of randomly responding to serendipitously inspired actions. Moreover, because Mary's protagonist was not motivated by the potential for failure associated with trial-and-error learning, she uses her learning to address single, simple tasks. Her perceived successes thus engender what she called "little successes" leading to a false sense of agency in which she critically evaluated not her own personal limitations but rather the perceived shortcomings of her environment. By refusing to negotiate the terms of her learning and responding in other ways negatively to her environment, Mary's protagonist thereby became the disruption—the unintentional catalyst—to the balanced flow of knowledge

distributed within her community of practice. The result was that the self-directed learning her protagonist engaged in was incomplete, episodic, and constantly interrupted by what she recognized as the unrealistic demands of events and others in her environment. The learning activity, and thus her career development, was defined almost exclusively in terms of the demands of others she referred to conspiratorially as “they.”

Where Mary’s narrative demonstrated more a lack of being able to create a coherent and relevant story related to career development, Jake’s narrative often represented the consequences of making the wrong selections from old skeleton stories. For example, even as Jake himself was having difficulty demonstrating software for the interviewer, Jake’s protagonist explained how “easy” to use and “intuitive” the software was because he had been involved with a start-up radio station 30 years ago in college and because he had participated in a rock-and-roll band. For Jake’s protagonist, the inappropriate assessment of prior resources led to a false sense of agency during learning by doing resulting in his devaluing the trial-and-error component. Moreover, Jake’s protagonist revealed that dealing with failure was not a matter of self-efficacy, but rather his inability to respond to goal commitments. Unlike Mary’s protagonist, Jake’s frequently acknowledged his personal limitations. Among those limitations was his protagonist’s acknowledgement that he “hated technology.” This admission was not inconsistent with Jake’s skeleton stories, because time and again his stories demeaned technology, recalled problems with technology, demonstrated the ill-effects of technology, and generally characterized technology as “a pain in the butt.”

Jake’s main character recalled a story from the past in which he described liking his music but not his keyboard. He used the story to condone his dislike for computers.

As a result, it became Jake's fate to hate technology and only a quirk of fate put him in charge of a computer-equipped radio station, serendipitously exclaiming "Here I am!" To be narratively consistent, Jake's story attributed any successes with technology to fate rather than to any new learning or skill of his protagonist. Or, when he did acknowledge using technology, there was no growth perceived and usually a reversion to the old way:

> **Jake:** It was just a lot of crap. Uhm, so, you know, that was my experience with it. And then, after that . . . I mean after doing all those different experiments . . . Just kind of got sick of it and went back to basics and recorded everything else pretty normally.

Additionally, like Mary, Jake is totally task-oriented. Jake's narrative depicted the radio station position less as a career and more as a succession of on-going tasks, a setting which his protagonist agreed: "That's what it really is!" As a result Jake's sense of agency was expressed through his protagonist more as job task competence rather than career competence. There was no problem-solving, no exploration of tools for future use. Decisions were approached by Jake's protagonist in a job-task manner: Rather than evaluating software based upon features versus studio needs, Jake's protagonist made and justified the decision based solely upon price. Additionally, his protagonist found legitimacy not in career development but rather in getting the task done, even if he was not the one who accomplished it. Moreover, potentially complex problems were handled by Jake's protagonist as a series of linear tasks that he internalized as personal learning:

> **Jake:** When we did the application, we had to have an engineering study done. So I called [MR]. I had to call these people and say, "Who's an engineer?" Got a couple different names. Settled on a guy named [RP] . . . So he did the study, the engineering study that proved to the FCC that we could put a station on this frequency and not interfere . . . So that was my introduction to radio engineering.

Jake's protagonist recasts each potential problem as a task, addressing as many tasks as possible as simply as possible:

> **Jake:** And I understood royalties and licensing before being in a band. So I understood that there would be issues with that, and we have to do everything legally . . . So it's a little more complicated than it sounds . . . you know, another few hundred bucks a year. And, ah, so that makes it very doable.

Jake missed the irony inherent in his protagonist's complaint that the high school students he was working with were not "as interested in radio as I am." In fact, he went on, "you've got to watch them every step of the way and tell them exactly what to do most of the time." As often as Jake's protagonist lamented the students' inability to tackle complicated problems, Jake himself missed the fact that he was the model for these students. As explained by Jake's protagonist in referring to the way in which the rock band behaved, there was a definite structure to how a community of practice worked: each member of the community has a specific job task, there are specific expectations for each job, each is good at that job, and thus meets the expectations of the others. In the perfect skeleton story words of Jake's protagonist: "The drummer drums!"

The theme for Jake's narrative appeared to be concerned over his battle with technology. A couple of critical inconsistencies point out a potentially deeper theme more related to self-directed informal learning. The contrast between his high school, college, and early band era protagonist's interactions with technology was decidedly different from that of the late band and current radio station era protagonist's interactions. On the one hand, the question might arise as to whether Jake was merely reinventing the past to substantiate his current views on technology, projecting his distaste for technology backwards in time to look coherent in the present. On the other hand, the more important observation appeared to be that Jake had no new stories of his own in which his protagonist had a successful encounter with technology beyond its limited use as a tool for delivering entertainment, which Jake's narrative referred to as "content." Equally

problematic was that Jake had no new stories in which his protagonist was a problem-solver with the result that his protagonist described task accomplishments as though they were stories of problem solving. For each condition Jake was forced to rely upon old skeleton stories, situationally useless prior knowledge, which no longer worked. The misapplication of these skeleton stories led to his protagonist being endowed with a false sense of agency; and, much like Mary's, Jake's protagonist became the unintended catalyst of events which took control of the direction of his career development.

The reactionary learner is so contextually bound that he or she is able to make sense only of the singular tasks presented by events occurring within their immediate environment. However, because the learner must typically fulfill multiple roles in that environment, he or she quickly is thrust outside their comfort zone into a story they do not know. Life goals, including career development goals, become tasks requiring immediate and often simplistic resolution. Serendipitous circumstances appear to conspiratorially gain control separating the learner from others in the community of practice and leaving the learner to fend for him or herself. Self-directed informal learning, improperly fueled by a sense of false agency, becomes the only recognized means to force upon the environment one's own sphere of influence. Learning becomes attuned to a perception of "actual needs," as Mary called them.

Without any sense of community and the knowledge potentially distributed across it, there is little ability to learn through doing, little ability to learn by trial and error. Reactionary learners do not know what a legitimate or socially appropriate outcome looks like. There is no career competence being generated because there is no criteria being generated for making value-based individual judgments; there is no awareness of

sociopolitical causalities; and, ultimately, there is little satisfaction that arises out of shared practice. With no true sense of agency, there is no true commitment to goals, learning, or development. The unfortunate result is that self-direct informal learning, while typically useful, can take learning activity in the wrong direction. In the scenario of the reactionary learner it becomes an infection that feeds upon itself compounding the illness of its host.

Summing Up the Entrepreneurial Learner

Agency and context, as well as the individual perceptions of them, are inextricably interwoven and interdependent; neither can be identified as the single unit of analysis for understanding how people learn to learn in a career context. Through the collection and analysis of self-narrated career stories, the relationship between agency and context emerged as a two-dimensional cross-section of four thematic and interrelated groupings of characteristics. The result was self-directed informal learning has been shown to be related to the career development process of formative technology users as a process of entrepreneurial learning.

The learning that underpins career development is varied and one's ability to self-direct it will vary as well. The goal of the career-related learner is not one of determining to become a catalytic learner. In fact the matrix quadrants are based upon abstractions, "conceptualizations based on observations of reality that are designed to make comparisons possible" (Rogers, 1995, p. 263). Moreover, there are strengths associated with the less agentive yet still entrepreneurial social learning, and reactive learning, as well. One should make an effort, however, to avoid becoming a victim of on-going reactionary learning. Additionally, self-directed learning has many potential outcomes,

not all of which are beneficial to the learner. Self-directedness in learning can be efficient or inefficient, effective or ineffective. Self-directed informal learning can also precipitate an outcome that relates negatively to one's career development.

CHAPTER 5: CONCLUSIONS AND RECOMMENDATIONS

Overview

Theories related to the workplace and career development abound. Likewise, there is no shortage of theories about learning. However, conspicuously missing from the literature is a single plausible theory depicting the relationship between individual career-related decision making and the various forms of individual learning. Little is known about how an individual directs the continued learning necessary to develop his or her career trajectory. While there is some agreement that the majority of career-related learning in the workplace is acquired informally, attempts at understanding the connection between self-directedness and informal learning during career development have been exacerbated by competition for attention between two well-documented yet apparently conflicting theoretical views: Bandura's (1977, 2001) agent-oriented social cognitive theory and Lave and Wenger's (1991) social context-oriented theory of social practice. Therefore, the purpose of this narrative case study was to interpret and explain the relationship between self-directed informal learning and the career development process.

Predicated upon uncovering "the meaning people have constructed" (Merriam, 1998, p. 6) while engaging in self-directed informal learning during career development, this study was conducted within the qualitative paradigm for scholarly research. With a preponderance of "how" research questions and a focus on individual informal learning in the career development in the rapidly changing field of computer technology, the current study was organized as a case. Data were collected through self-narrated life stories solicited from thirteen purposefully selected participants.

The purpose of the data analysis was to seek out meaningful relationships between personal agency and the influences of one's career community of practice as these connections were depicted in the content of the participants' narratives. The collected data were analyzed and interpreted using two proven narrative analysis techniques: the category-content perspective and the holistic-content perspective. The literature related to several well-documented quantitative studies in the area of career development was employed to determine many of the categories used for coding data. As a result this study has been able to supplement the research tradition by adding a sorely needed qualitative perspective to the existing literature.

Additionally, the two data analyses were employed in order to reinforce study validity by compounding the "methodological triangulation" (Yin, 2003, p. 99) of the category-content perspective with the "theory triangulation" (p. 99) of the holistic-content approach. The categorical-content analysis, tabulated as seven tables (Tables 4, 6, 8, 10, 12, 14, and 16), provided detailed findings in response to the research questions:

1. How is self-directedness related to informal learning within the context of career development?

2. How does one's perception of agentive control over learning affect one's perception of career-related informal learning?

3. How does the career-related context in which informal learning occurs affect the agentive nature of self-directedness?

The holistic-content analysis introduced a matrix of learner characteristics associated with self-directed informal learning activity during career development. The narrative explanation of the matrix quadrants and terminology provided for a rich

description in response to the research questions:

1. How are the self-narrated career identities of self-direct learners thematically similar and thematically different?

2. How is self-directed informal learning related to the career development process of formative technology users?

What remains is tying this study to the existing research and making reasonable suggestions for social change based upon the reported findings.

Conclusions Related to Theories of Career Development

Two theories depicting learning as the interaction between the individual and his or her environment provided the initial grounding for this study. Bandura's social cognitive theory (1986) and Lave and Wenger's theory of situated cognition (1991) share a similar constructivist view of the learner acting upon and being acted upon by his or her environment. The two theories differ in the unit of analysis for studying learning. For Bandura learning is created by the individual and is "dependent on the individual's previous and current knowledge structure. Learning is thus an internal cognitive activity" (Merriam & Caffarella, 1999, p. 262). Lave and Wenger insisted upon the environment as the appropriate unit of analysis, a view positing that personal development "involves learning the culturally shared ways of understanding and talking about the world and reality" (Merriam & Caffarella, 1999, p. 262).

The conclusions drawn from the current study endorse neither claim yet sustain both. Instead, as Livingstone and Sawchuk (2000) suggested, learning involves "the process of participation in the creation and reproduction of systems of activity in the sense first developed by Leont'ev (1978) in the cultural historical school tradition" (p.

141). Theirs is a position agreeing with Engeström's (2001) that the learner can not be understood without the context of cultural resources to create meaning and express knowing, while the learner's environment cannot be understood without the agency to interpret and regenerate the resources of the culture (p. 134). In other words, the appropriate unit of analysis for studying learning is the activity system comprising the activity of the agentive learner within his or her learning environment.

"These processes of participation," observed Livingstone and Sawchuk, "are subject to limits and pressures which shape but do not determine actual learning and its outcomes" (p. 141). As a result, stated Engeström, "motivation for risky expansive learning processes associated with major transformations in activity systems is not well explained by mere participation and gradual acquisition of mastery" (p. 140). The current study picked up the debate at this point and demonstrated several of the possible relationships between individual agency and the context of one's career environment as they are expressed in the learning activity that drives career development.

In Figure 1, the relationship between self-directed informal learning, self-narrative, agency, and community of practice can be more completely imagined as depicted in Figure 2 below. The remainder of this chapter will tie Bandura's conception of agency to Lave and Wenger's thoughts on community of practice through the views and theories of numerous others involved in the study of learning and career development. The intended result is that through an examination of the many, a singular integrated conception of career development will emerge.

Figure 2 shows entrepreneurial learning as it is expressed during the career development process. The arrows are depicted using the symbol for infinity, suggesting,

as Rawson (2000) stated, that “knowledge forms part of the human response to the environment. When the environment changes, then not only the response but also the process of generating that response needs to change” (p. 233). The action/reaction between agent and community then is, indeed, theoretically perpetual and infinite.

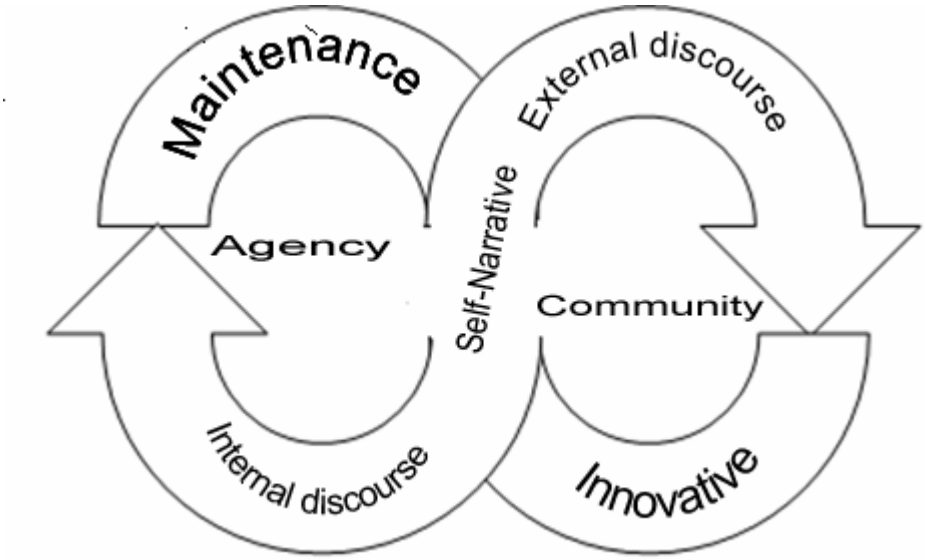

Figure 2. The entrepreneurial perception of the relationship between agency and community context

The two nodes of the symbol indicate the two major components of contemporary learning theory: individual agency and the context of one’s community of practice. Aspects of both agency and community were interwoven, often inextricably, into the narratives of the study participants.

“There is far more to human cognition than what goes on in the brain,” observed Norman (1993); “we are social, interacting creatures” (p. 117). The current study clearly substantiated Norman’s position. Participants narrated multiple episodes revealing their desire for identification with and legitimate endorsement from their career environment.

Participants perceived peer respect and peer evaluation within the community of practice to be a significant behavioral motivator affecting learning decisions. However, other factor were obviously present because peer-induced motivation could positively or negatively influence learning decisions. For example, conflicting peer evaluative information often confused or negatively influenced participant desire or ability to learn new career-related skills. This led, in part, to participants developing strategies for evaluating and selecting peers as learning resources. Also, while peer feedback was important to participants, they relied on their peers less for new learning and more for suggestions related to improved applications for prior learning. Moreover, the analysis of community participation strongly suggested that without understanding the context of one's environment there was no basis for developing a feeling of belonging, leading to a vicious cycle of missed learning opportunities and further alienation.

As reported by Thorén-Jönsson and Möller (1999), "The participants' sense of competence was influenced by their environments, and varied with the seasons" (p. 75). In other words, participants were continually reinterpreting the descriptions of what they were doing as they performed in various situational activities. Similarly, the current study demonstrated that participants prioritized and reprioritized the various social roles they played in response to the perceived shelf-life of those roles, with the result that the perceived flexibility of each role was an important influence motivating career development learning decisions. Additionally, as much as socially legitimate evaluative criteria were important to career-related learning, it was evident those criteria were filtered through and interpreted in accordance with participants' perceptions as opposed to being rote adherence to standardized social rules or directives.

Such interpretation and prioritization might tend to favor older perceptions. Brown and Duguid (2000) believed that "power struggles between old ideas and new inevitably favor the old and established, which have a proven track record, over the new, which by definition has none" (p. 154). With a few notable exceptions, the personal evaluations of resources, goals, and learning styles were rarely tacitly or explicitly challenged by the study participants, thus substantially sustaining Brown and Duguid's observation. When the terms for social evaluation criteria used by participants were altered, the new defining terms were often the product of peer modeling and continual verbal negotiation with others in the community of practice.

Among the most important influences arising from the career environment were serendipitous events, elements of the community the participants believed they had no control over. Plunkett (2001) reported that, on the one hand, she found little to support the idea of "any objective characterization of serendipity dominating the lives of [her study participants] in this developmental period" (p. 164). The influence of serendipity varied greatly among the participants of the current study. Additionally, although participants recalled multiple influential serendipitous events, each participant gravitated toward one type of serendipitous influence as predominant; and, when more than one serendipitous event was recalled, the two were closely connected. This suggests a possible cultural influence. While, no participant could be characterized as dominated by serendipitous events, this study found the influence of serendipity to be greater than Plunkett's observation that "[o]n the other hand, our findings do suggest that many women did experience within themselves a sense of serendipity in the midst of apparent agency" (p. 164).

Current findings, for both male and female participants, were more aligned with the reported outcomes of Roberts and Rosenwald (2001), who found that "a lack of financial, social, and cultural resources often left participants with a sense of injustice; in jockeying for position within the social structure, they knew the race was, in a sense, rigged" (p. 116). Moreover, although "lack of time and lack of money" were important serendipitous elements influencing study participants, these were not "the two most cited reasons for nonparticipation" in learning endeavors, as reported by Merriam and Caffarella (1999, p. 56). By far, situational demandedness was observed here to be the greatest negative serendipitous influence upon learning activity and career development.

Situational demandedness served as a catch-all for unrecognizable impediments to participation within one's community of practice and also as a label for combinations of multiple serendipitous events appearing to occur simultaneously. In fact, serendipity was rarely an isolated event for participants, but rather occurred as an active element within a linear perception of causality. As a result, one serendipitous event appeared to arise from and foster other serendipitous influences. Ironically, while participants appeared intolerant or stymied by unforeseen serendipitous events associated with situational demandedness, they were uncommonly tolerant of routinely annoying environmental disruptions to their career-related learning. It would appear that routine not only fails to precipitate new learning (Botkin et al., 1979; Brown & Duguid, 2000; Bruner, 1986, 1990; Norman, 1993; Pink, 2005), it fails to trigger *any* responsive agentive reaction.

Serendipity related to technology use was of special interest for this study. With all participants being formative users of technology, it was surprising to discover that most participants identified technology-associated change as the major component of

situational demandedness and something beyond their immediate control. Additionally, participants perceived the situational demandedness related to technology as manifested not only in the evolving sophistication of devices but also in the evolving sophistication of members of the community of practice using those devices. Thus, the threat of demandedness was two-fold: from devices and from personnel in the workplace. Paradoxically, participants acknowledged that technological change takes time to learn but technology can decrease the time it takes to learn, and the computer was identified as the tool that best enabled them to deal with technological change.

Rarely addressed in other studies, the current study found multiple instances in which one's sense of community was not always positively—or at least not democratically—associated with one's sense of community. Kilgore (2001) also observed the social oppression associated with group homogeneity:

> Critical theorists argue that structures of privilege and oppression based on categories like race or ethnicity, gender, class, sexual orientation, physical or mental capabilities, and age . . . are reinforced because the logic that maintains those structures becomes a common-sense lens through which people view and interpret their everyday experiences. Critical theories often refer to this reinforcing logic as *hegemony*. (p. 55, emphasis in original)

Hegemony was evident and related to career development learning in the current study. Participants used peers to locate and then define themselves within the social hierarchy of their career environment; the higher placed the support, the greater the desire for career-related learning. Somewhat more insidious, "logical leaps," terminology, and syntax arose as communication barriers among those who did not share the same community of practice, but also represented hegemonic barriers among segregated elements of practitioners within a single community of practice. This took on increased significance in light of the fact espoused by participants that modern communication is

not a simple task but rather part of a system of social, political, and technological activities. Many participants identified interpersonal communication skills as important to career development, including the ability to select data from multiple audiences and multiple "languages" associated with learning activities, to practice a variety of communication methods, and to understand the times that communication is most effective.

While the research of Linde (1993) and Kilgore generally supported Livingstone's (2001) position that social categories such as gender, ethnicity, social class, occupational level, and age are not considered relevant to career pathway election or to self-directed informal learning, the results of the current study suggest other types of segregation are at work within a community. Additionally, it appears that such hegemonic segregation could both motivate some career-related learning even as it suppressed the learning of others. This aspect of community, thus, could tend to overemphasize community at the expense of individual agency. For example, participants recalled that there exist within hegemonic communities of practice gatekeepers of certain specialized languages or communication tools; although knowing their skill was not important, knowing who these gatekeepers were was important to career development within that respective career environment. Among other things, these gatekeepers often controlled access to the artifacts of the community.

"The power of the unaided mind is highly overrated," contended Norman (1993). "Without external aids, memory, thought, and reasoning are all constrained. But human intelligence is highly flexible and adaptive, superb at inventing procedures and objects that overcome its own limits" (p. 43). As a result, he concluded, it is not mere agentive

thought, as Bandura (1986) and his followers believed, that makes us knowledgeable, but rather "it is things that make us smart" (Norman, p. 44). Specifically, what Norman referred to are artifacts: books, experts, and other cultural repositories of cultural knowledge. Although supportive of Norman's position, the current study leans toward Brown and Duguid's (2000) interpretation of the importance of artifacts, an understanding that "the resources for learning lie not simply in information, but in the practice that allows people to make sense of and use that information" (p. 133). It is "the insertion of cultural artifacts into human actions," stated Engeström (2001, p. 134) that requires the relocation of the unit of analysis away from personal agency or the contextual environment and places it within the activity system:

> The individual could no longer be understood without his or her cultural means; and the society could no longer be understood without the agency of individuals who use and produce artifacts . . . Objects became cultural artifacts and the object-orientedness of action became the key to understanding human psyche. (p. 134)

Artifacts distribute knowledge across the community of practice. The results of the current study support this idea. Contrary to the findings of Danis and Tremblay, as reported in Merriam and Caffarella (1999), participants in the current study did not regularly use multiple knowledge resources available within their respective communities; instead, most artifactual knowledge acquisition was focused on only one or two resources. Moreover, the Internet was the most commonly used informational artifact used by study participants.

Interestingly, while the Internet was the most utilized medium of shared community knowledge, the most desired source was other people, especially expert instructors: models providing outcome exemplars similar to those being sought by the

participants. However, the experiences narrated by the participants showed that merely having an expert handy did not always produce useful results if the participant was unprepared to learn. Prior knowledge, also strongly associated with the distributed knowledge of a community of practice, was an important prerequisite in many situations. So was everyday practice. It was the everyday application of current knowledge to evolving situations that enabled participants to understand and prepare for change. Unfortunately, the self-imposed constraints of limited resource use and task-oriented knowledge application made everyday practice itself a situationally limited knowledge resource. Still, it remained the main avenue used by participants for acquiring and sharing technology-related information and learning.

Finally, as Thorén-Jönsson and Möller (1999) pointed out, it is not the tool and conditions of situationally distributed knowledge "per se but their influences on the participant's conception of self as an occupational being that seemed to be important in the development and choices of strategies" (p. 72). As a result, the use of distributed knowledge resources by the study participants appeared to be more useful to participants for shaping the assembly and distribution of practices than for learning new skills and concepts. One's community of practice, it appears, is a critical component of the foundation for the learning essential to career development; however, by itself it is not the means by which effective conceptual learning regularly occurs. Moreover, even as one's community of practice supports learning, it also harbors many impediments to successful self-directed informal learning.

"Of course," argued Brown and Duguid (2000), "whatever the strengths of communities of practice, people learn on their own, picking up information from

numerous sources about numerous topics" (p. 128). Knowles (1984), the foundational resource for the study of adult learning (Merriam & Caffarella, 1999; Roberson & Merriam, 2005), spoke of the adult learner's capacity to accumulate an increasing reservoir of experiences that becomes an increasingly rich resource for on-going learning. Mezirow (as cited in Merriam & Caffarella, 1999), theorized about how adult learners interpret their life experiences in order to create the meaning necessary to underpin new learning. In other words, summarized Rawson (2000), through the conscious application of agentive activity:

> The learner becomes conscious of his or her conceptions of the world in general, how they were formed, and how they might be changed. This requires the ability to question and to challenge one's existing world-views and their origins: to surface and examine those "tacit mental processes" used to construct "mental models of the world (Johnson-Laird, 1983). The learner becomes involved in a self-reflective learning process. (p. 226)

Participants of the current study offered narratives clearly depicting a strong sense of personal agency applied to career development. Readily depicting themselves as hands-on learners, participants said that knowledge was embedded in their tasks. Simultaneously, the descriptions of their actions demonstrated a sense of agentive understanding of the causalities related to learning that enabled them to take advantage of that embedded knowledge.

Agency, the second node of the model shown in Figure 2, represents the other half of successful entrepreneurial learning during career development. Agency appears to provide the "self-directed" aspect of learning-to-learn that compliments the community's "informal" learning component. Where one's community of practice provides the context for making career-related learning decisions, agency provides the interpretation necessary for taking action (Marsick & Watkins, 2002):

> If the solution calls for new skills, the person needs to acquire these . . . These include, but may not be limited to, the availability of appropriate resources (time, money, people from whom to learn, available knowledge about an unknown or ambiguous phenomena), willingness and motivation to learn, and the emotional capacity to take on new capabilities in the middle of what could be a stressful challenge. (p. 28)

Agency has often been associated with the needs of the individual (Pintrich & Schunk, 1996). Murray, for example, created an extensive taxonomy of human needs which could be summarized as having two key aspects: "a directional or qualitative aspect that specifies the objects that will satisfy the need and an energetic or quantitative aspect that influences the frequency, intensity, and duration of behavior" (Pintrich & Schunk, 1996, p. 202). While the context of the community provides the "directional or qualitative" aspect to entrepreneurial learning, the individual agent is the source for the energetic or quantitative aspect. The focus of the current study on agentive confidence in learning ability and on the individual's sense of career competence, appear to support Murray's understanding of career-related learning behavior. However, the findings of the study support a conclusion that while agency provides "an energetic" and "qualitative aspect" to career-related learning behavior, the "frequency, intensity, and duration" associated with agentive behavior during career development were very weak.

For example, participants demonstrative their agency through their awareness of a self-reflective foundation for resource selection. However, they significantly limited their own agency in assessing the resources necessary for efficient and effective career-related learning by making resource selections and assessments from a limited, often pre-filtered, set of alternatives, typically choosing between only two alternatives. Although human artifacts (e.g., mentors, co-workers, etc.) were always readily available, they were often the least used resource. Additionally, once a resource type was settled upon, that became

the dominate, if not exclusive, resources type for most later information quests. This applied to both the use of human and non-human artifacts. The irony of this condition was that agency, even well-intended agency, could as easily become a negative as well as a positive influence on self-directed learning.

Following the theoretical tail blazed by Bandura (1986), Hofer and Yu (2001) reported from their study on learning in the workplace that "the correlation between self-efficacy and cognition . . . support[s] the importance of self-efficacy in cognitive engagement and its possible mediational role in performance" (p. 33). Such a central role for self-efficacy, the cornerstone of agentive behavior in Bandura's theory, was not evident in the current study. Supportive of the social cognitive view on the importance of self-efficacy, the study participants were quick to point out what they perceived to be their learning limitations. Additionally, participants often expressed those limitations by depicting themselves as *not* being something. Moreover, participant references to personal limitations associated with personal actions were rarely single event-oriented, cutting instead across multiple perceived instances for possible agentive outcomes.

However, for several participants, the depictions of their limitations, as opposed to constraining their learning, were used as motivation for getting where they wanted to be. Even more contradictory to Hofer and Yu's description of self-efficacy, participants in the current study, for the most part, were cognizant of personal or emotional quirks as limitations to learning but often had strategies in place for attempting to deal with these constraints. Most significantly, the majority of study participants felt confident participating in trial-and-error learning endeavors during which failed attempts at doing a task motivated additional learning. In fact, several participants purposefully precipitated

failure in order to better conceptualize the parameters of the task. Each of these instances appeared to demonstrate a sense of personal agency that superseded the negative influence on learning associated with weak self-efficacy.

The goal-orientation element of Bandura's social cognitive theory on learning may have been a bigger factor influencing the agentive learning practiced by the participants in the current study. Participants freely drew attention to their weak communications skills for negotiating with others within the community of practice as a potential limitation to acquiring new learning. Often their perceived inability to communicate was linked to a lack of task-related experience or prior knowledge. Even though participants generally had strategies in place for dealing with other personal limitations, they rare had a similar plan for addressing their communicative limitations. This observation begs the question whether the ubiquity of communications in everyday practice ran under the radar of agency in the same way that routine disruptions went undetected as a type of situational demandedness. If so, both conditions would support Bruner's (1986, 1990) interpretation of environmental disruption being a trigger for an agentive learning response.

Finally, in regards to self-efficacy, there appears to be nothing in Hofer and Yu's description of self-efficacy as a learning constraint to account for the opposite and potentially equally negative constraint on useful new learning that is associated with over-learning. Participants in the current study were generally unaware of when they had reached the point that they should consider limiting their agentive response to a perceived learning need. In an activity system predicated upon entrepreneurial learning, efficiency must play a role as well as quantity.

Brown and Duguid (1999) argued that "focusing on knowledge . . . turns attention toward knowers" (p. 121) as they attempt "to make sense of what they do" (p. 96). That idea was evident in the results of the current study. Although participants did not dwell on the topic of their personal learning style, they demonstrated an ability to imagine themselves part of socially legitimate outcomes for varying contexts across their career environment. Although the quantity of outcomes depicted by each participant for any given learning-related condition was severely limited (often one or two), participants imagined themselves exercising the legitimate autonomy necessary to acquire the skills necessary to achieve their task-related goals. Particularly important to meaning-making was the acknowledged need to be able to "play" with the situational elements. The value of play appeared to be directly related to the participant's ability to observe and utilize a previously acquired structure or strategy for connecting past and present learning. The most effective learners, the most entrepreneurial learners, were those who were able to step back and reflect on the applied strategies of their learning process during period of structure play.

If one's perceptions of confidence in learning is the engine driving career development learning, then one's sense of career competence must be the fuel. While Bandura's (1986) theory of goals, outcomes, and self-efficacy can be used to help explain goal-setting behavior, it is less useful in addressing one's perception of his or her career trajectory. Goals, interests, and desires, each related to self-efficacy by Bandura, play a part in fueling career competence. However, as the current study demonstrated, participant desire to develop by itself appeared to be insufficient means for triggering sustained career learning.

Paradoxically, the activities of agency within the community of practice appeared to create the impression that participants wanted to use the distributed knowledge of the community to gain independence from the community. This was not the case. Personal autonomy, expressed by participants as the creation of their own sphere of influence, occurred rarely. However, the perception of legitimate autonomy appeared often, suggesting that participants might be seeking independence *within* their community. Often participant satisfaction arose not merely from task completion, but rather from doing something useful for others. Career contentment was manifested in participants believing they were an asset to their organization or to other people. Moreover, a sense of career contentment did not require the cumulative effects of career respect, career interest, and career satisfaction; any one of the three was often sufficient as a foundation for building a personal sense of career competence.

Reflective evaluation of personal task-related efforts is a key component of Bandura's (1986) social cognition theory. Reflective evaluation by participants was a critical element of entrepreneurial learning during career development as well; however, it was not as much a function of self-efficacy as of ineffective meta-cognition. Participants acknowledged that key learning triggers were present within their respective career trajectories and that these motivated them to want to learn and develop. What became apparent was that the learning triggers were often inappropriately selected. For example, rather than learning being associated with concepts, simple task completion tended to trigger participants' learning decisions. Additionally, only some of the participants were able to take from their past what would work in the present; others built ineffective causal relationships by attempting to let understandings from the past shape

present learning behavior. As a result, it became apparent that, while the exploration of contextual relationships with an outcome in mind can lead to an understanding of the foundational causalities from which a repeatable structure or strategy for useful knowledge acquisition can be created, it rarely occurred as the exclusive result of personal agency.

Botkin et al. (1979) summarized the importance of agentive learning to the community in pointing out the importance of individual perceptions as the foundation for negotiated meaning: “To avoid the dangers of misleading or parochial understanding, it is essential to develop the capacity to compare different contexts and to reconcile their conflicts” (p. 24). In other words, one’s sense of personal agency, it appears, is a critical component of the foundation for the learning essential to career development; however, by itself it is not the means by which effective conceptual learning regularly occurs. Agency may be admirable and it may be what many people believe they rely on for learning, but, as this study demonstrated, agency by itself can be an inefficient, ineffective, and even destructive means for learning.

Before moving onto the theories and observations related to the integration of agency and community as entrepreneurial learning, the discourse component of Figure 2 needs to be addressed. Although the topic of narrative discourse has been covered in great detail in every chapter of this paper, relating story to entrepreneurial learning as it is depicted in Figure 2 demands a brief explanation.

Linde (1993) was among the first to point out the important role of one’s stories to learning. Linde (and later Josselson, 2004) explained stories as belonging to two dimensions: the tacit world of agent identity and the explicit world of negotiation within

the community of practice:

> Knowledge about identity, who one is and what one's history has been, is a very important part of an individual's tacit knowledge [expressed in story] . . . Knowledge about one's identity as a group member, and the practice of acting as a member of the groups one belongs to is also easily expressed in narrative (Linde, 2001, p. 3).

The external discourse associated with entrepreneurial learning is the type of story-telling that has been described and discussed in depth throughout chapter 4. This is the story-telling of negotiated meanings between individual agents and between the agent and his or her cultural artifacts within a community of practice. "When we interact with one another," pointed out Norman (1993), "we have to transform our thoughts into surface representations so that others can have access to them" (p. 82). The value of these types of shared stories, according to Brown and Duguid (1999), "lies not in their telling, but in their retelling. Stories pass on to newcomers what old-timers already know. Stories are thus central to learning and education" (p. 107). The many stories contained in the narratives of the study participants fall into this category of external discourse.

The internal discourse one experiences is more commonly described in the literature as "self-talk" (Betz, 2004; Brown & Brooks, 1996; Cornford, 2002; Mitchell & Krumboltz, 1996). It is through one's tacit internal discourse, or self-talk, stated Cornford (2002) that the learning agent integrates the knowledge of experience into his or her knowledge of self. Whereas external discourse represents the negotiation of meaning with others, internal discourse represents the negotiation of meaning with oneself, similar to the story analysis tactic of comparing the narrator's stated story meaning to that implied by the protagonist of his or her stories.

Self-talk “doesn’t replace analytical thinking,” stated Pink (2005, p. 106). “It supplements it by enabling us to imagine new perspectives and new world” (p. 106). As has been suggested by the results of the current study, especially those results that contradict some of the tenets of self-efficacy, self-talk is not the result of routine but rather the result of disturbances in the status quo that the agent must interact with. Self-talk, then becomes a component of agentive reflection somewhat akin to an internal debate over the consequences of the observed activity (Mitchell & Krumboltz, 1996). Self-efficacy, therefore, appears to be negatively or positively influenced based upon whether the agent trains his or her reflective self-talk on evaluating the self rather than on evaluating the outcome associated with the task (Betz, 2004). The current study appears to support that position.

The current study clearly supports Roberson and Merriam’s (2005) contention that the “process of learning originates with an incentive to learn that can be internal or external” (p. 276). Where learning originates can be of interest, however, the relationship of internally and externally inspired learning is of greater interest. Norman (1993) best explained how the two types of self-narrative relate to the two nodes of Figure 2. In describing the result of agentive story-telling as reflective artifact and the culmination of communal story-telling as experiential artifact, Norman tied agency and community together in what this study calls entrepreneurial learning:

> There are many kinds of artifacts. Experiential artifacts have different functions from reflective ones. Experiential artifacts provide ways to experience and act upon the world, whereas reflective artifacts provide ways to modify and act upon representations . . . Experiential artifacts thus mediate between the mind and the world. (p. 52)

Norman concluded that attempts at separating or hierarchically ranking the two modes of

cognition are fruitless because entrepreneurial learning, the integration of meaning and activity, results only when “both modes are needed” (p. 25) and employed.

Figure 2 shows two types of activity associated with entrepreneurial learning: maintenance (adaptive) learning and innovative (anticipatory) learning (Botkin et al., 1979). Maintenance learning, similar to Bruner’s (1986) learning about, refers to individually acquired, identifiable, reasonably well-defined literacies or skills typically identified with personal agency. Innovative learning, somewhat like Bruner’s learning to be, refers to imaginative, evolving forms of learning activity typically arising out of the distributed knowledge of the community of practice and continually negotiated among its members. While maintenance learning can be enforced short-term, both types of learning exist as compliments in an entrepreneurial learning situation: innovative learning motivating maintenance learning which in turn underpins innovative learning. Learning associated exclusively with one side of the flow or the other can become detrimental: over-reliance upon the community precipitates segregated communities of parochial knowledge, while too great an investment in agency results in isolated and disassociated knowledge. Entrepreneurial learning is, therefore, a symbiotic relationship between one’s personal sense of agency and one’s ability to share the accumulated knowledge of a community of practice.

The current study demonstrated that participants were unaware of the two modes of learning and they often confused their learning needs with regards to the appropriate learning mode, typically recasting a problem as a task that could be addressed through maintenance learning as opposed to conceptualizing a task in order to better understand its contextual relationship to other elements in the career environment. However,

participants did share through their narratives varied stories about their agentive and communal values. This is significant because, according to Botkin et al. (1979), “the role of values distinguished maintenance from innovative learning” (p. 40).

Adaptive or maintenance learning is most often associated with learning decisions driven by agentive reaction to the socio-political values of the community of practice (Botkin et al., 1979). Anticipatory of innovative learning is characterized by making learning decisions based upon “relativistic” (Merriam& Caffarella, 1999, p. 142) evaluations in which “the context of the knowledge is as important as the knowledge itself” (p. 142; also see Botkin et al., p. 40).

Maintenance learning, while not dominating agentive activity in this study, was particularly obvious. Moreover, participant learning modes were often ambiguously presented because their “relativistic” evaluations were based upon personal interests more than on a functional set of personal values. Participants rarely showed discrimination among interests driving learning decisions because they appeared satisfied with a situation that made apparent only one viable learning option. Additionally, as their career environment changed, participants were prone to change their learning focus to reflect on new contextual interests. This condition was closely associated with participants’ perceptions of appropriateness often being relative to both their community of practice and to their immediate situation. Finally, participants recalled multiple examples of others’ needs; however, few participants acknowledged differences among those in the group who had needs. In other words, whatever means the participant was engaging was presented as the best or only means to be used for meeting the needs of other.

All participants were maintenance learners some of the time; none of them was a

maintenance learner all of the time. The same can be said for innovative learning: Although some participants were much more strongly adaptive learning-oriented than others, all demonstrated some of the characteristics of the anticipatory learning mode. Participant interests did indeed drive career learning; however, it was not always purely personal interests that motivated them to learn and develop their career. For example, some were driven by altruistic motives related to preservation of the family. Commonly expressed were perceptions of career success being aligned with doing something useful for others. As a result, responding to others' expectations often reflected participants' desire to become a valued member of the community. Ironically, in responding to the perceived needs of others, participants revealed they could help others respond successfully to similar situational demandedness that the participant was unable to cope with previously. Possibly this contradiction is explained by the observation that successful career-related learning appeared to be connected to participants' ability to translate an externally assigned task into an internally motivated set of expectations through task and learning ownership. Quoting Lamdin, Roberson and Merriam (2005) agreed: "The important thing is that these projects are 'owned' by the learner who is in control of what is learned, when the learning starts, where it goes, and when it is complete" (p. 270).

Danis and Tremblay provided a reasonable explanation for that apparent contradiction. They contended that learners are able to specify learning goals only after mastering certain knowledge or skills associated with a situation, not before. That is, after successfully addressing a situation, learners adjust their learning goals (as cited in Merriam & Caffarella, 1999). The current study suggests that another element must be

added to Danis and Tremblay's explanation. While interests and goals influence self-directed career-related learning, ownership of learning outcomes sustains the motivation for individual career development learning.

Most theorists agree that the greater the passion toward learning and autonomy, the greater the career-related learning and development (Merriam & Caffarella, 1999; Pintrich & Schunk, 1996). The current study suggests that high expectations for career learning can be set and achieved without being passionate about one's career trajectory. This apparent anomaly may not be an irregularity at all. In fact, it appears to be related to Spear and Mocker's (1984) observation that

> Although self-directed learners apparently did not do detailed preplanning regarding the use of human and nonhuman resources, sequencing of content, or location of learning, their efforts could not be characterized as random or nonrational. Indeed, there was evidence of definite order, deliberateness and logic in the process. (p. 3)

Certainly, as Marsick and Watkins (2002) suggested, informal and incidental learning are often the result of a significant unplanned or unexpected event" (p. 27); "informal learning activities . . . begin in an ad hoc, incidental manner and are only consciously recognized after the fact" (Livingstone, 2001, p. 24). Still, unknown to participants but evident through their respective narratives, several demonstrated a capacity to anticipate and plan necessary learning through the use of a reflective self-quizzing type of task and goal analysis. This was but one example of participants employing (knowing or unknowingly) what they believed to be a legitimate strategy that enabled them to structure their learning endeavors. The great majority of participants identified the source of such structuring strategies as their prior formal education. Brown and Duguid (2000) appeared to agree:

> Yet while it's clear that self-organization is extraordinarily productive, so too is formal organization. Indeed, the two perform an intricate (and dynamic) balancing act, each compensating for the other's failings. Self-organization overcomes formal organizing's rigidity. Formal organization keeps at bay self-organization's tendency to self-destruct. (p. 170)

Rogers (1996) explained the process in layman's terms. He defines "*structure* as the patterned arrangement of the units in a system. This structure gives regularity and stability to human behavior in a system" (p. 24, emphasis in original).

The community provides the structure; the agent provides the activity; the link between the two is the strategy, or as Rogers (1996) put it, "the network link, rather than the individual [or the community] becomes the unit of analysis" (p. 121). Combining the adaptive and anticipatory learning modes as entrepreneurial learning implies on the part of the learner the understanding and use of a particular strategy for initiating expectation-based goals and achieving expectation-based outcomes:

> A *strategy* involves putting skills together with a conscious purpose, not just on instruction or demand. A strategy is more modifiable and flexible in nature than a skill. In order to apply a strategy a range of skills must be available, there must be awareness of a range of possible strategies, and an appropriate selection from the range. This implies the capacity to transfer skills and strategies to fit new situations….the strategies should be integrated to cultivate an *approach to learning* which involves self-regulation of learning, self-monitoring selection of strategies and insight through reflection. (Kirkwood, 2000, p. 512, emphasis in original)

Such a "conscious examination of his or her learning process" (Rawson, 2000, p. 227) is not a purely agentive endeavor, as the current study has demonstrated. Rawson (2000), too, acknowledged that "in a world of change and unpredictability, continued personal viability cannot be based upon skills alone . . . even the skill of learning to learn" (p. 228). Strategies are socioculturally organized structures for meaning-making and the understanding for how to use strategies is distributed across the community or

practice. Without appropriate strategies for "problem-perceiving, defining, and formulating" (Botkin et al., 1979, p. 47), self-directed learning can easily become ineffectively, inefficient, fossilized, and even destructive to the learner, as the current study showed. An effective strategy for self-directing one's learning is analogous to a pathway. "When you have a pathway," concluded Friedman (2005), "you tend to focus on the path and on achieving your dreams. When you have no pathway, you tend to focus on your wrath and on nursing your memories" (p. 459).

Much ado was made by the participants of this study regarding language and communications, in particular the need for a common and useful terminology. Therefore, it is important to look for the appropriate terminology to summarize the findings of this study. Possibly the best term for summarizing the strategic importance of agency and the negotiated understanding of community is "play." The current study confirms Rogers (1996) belief that "most individuals will not adopt [a learning strategy] without trying it first on a probationary basis in order to determine its usefulness in their own situation" (p. 171). In other words, learners need to play with a strategy. Play, one of "six specific high-concept and high-touch aptitudes that have become essential in this new era" (Pink, 2005, p. 61) represents the integration of agentive reflection with communal experience:

> The player has to use both experiential and reflective cognition to be effective: reflective mode to learn the secrets and develop the best strategy, experiential mode to enjoy the situation and also to be at the most appropriate skill level of responding (Norman, 1993, p. 22)

In other words, if the agentive learner is to create a strategically useful story describing his or her activity in practice, he or she must "sample its uses in a variety of contexts, culturally specifiable contexts" (Bruner, 1990, p. 119).

There are multiple means for fueling the activity that generates the flow of learning activity through Figure 2; self-directed informal learning is but one of those. What the current study has demonstrated is that self-directing one's learning activity toward career development relies on becoming aware of the range of characteristics comprising entrepreneurial learning, then looking for and reflecting upon those characteristics in the career-related stories one tells.

Implications for Social Change

The current study sought a better understanding of the theoretical underpinnings driving social change related to learning and the workplace. Generally a discussion about social change is a discussion about the diffusion of innovation. Thus, Rogers's (1996) insights related to understanding the tasks at hand are appropriate. "System-level variables, especially if they involve changing the social structure of a system, may indeed be difficult to alter. But a first step toward system change might be . . . to define (or redefine) [the] social problem more accurately" (p. 119). Helping redefine the problem relating learning and workplace is where the significance of this study lives.

One key to redefining the problem is redefining the role of self-directed learning. Botkin et al. (1979) argued that "the link between individual and societal learning is not well established" (p. 21). On the one hand, socially institutionalized learning systems typically ignore individually directed learning, while on the other hand, individuals, in the course of self-directing their own learning, fail to "consciously involve themselves in the broader, and more difficult, process of societal learning" (p. 21). Indeed, participants in the current study, while recognizing a link between formal and informal learning, perceived their own self-directed learning to be an inferior type of learning effort.

Moreover, although participants employed learning strategies linked to their formal education, they were unable or unwilling to employ those strategies beyond a minimal task-related level.

Underpinning the problem of integrating socially-directed formal and self-directed informal learning is the misconception of where the appropriate unit of analysis for evaluating learning lies. Contemporary educational policy places the focus for learning assessment upon the individual learning agent as the unit for analyzing educational success. Contemporary social research tends to emphasize the individual's environment as the unit for analysis. The current study demonstrated that either of these views can lead to devastatingly incorrect perceptions for self-directed, career-related learning. A conceptual shift must be made to appreciate the activity system comprised of environment, agent, and learning activity as the proper unit of analysis for effectively and efficiently assessing the learning process.

The study participants were formative technology users. That is, by most common occupational definitions, they were good at using technology, especially computers. Still, almost all of them acknowledged technology to be beyond their control. In other words, they maintained a technologically deterministic "belief that technology causes changes in society . . . that technology was somehow autonomous" (Rogers, p. 139). As a result, it is fair to assume, as Pink (2005) argued, that

> we are moving from an economy and society built on the logical, linear, computer-like capabilities of the Information Age to an economy and a society built on the inventive, empathic, big-picture capabilities of what's rising in its place, the Conceptual Age. (p. 2)

However, as these participants demonstrated, we must begin "to question the manner in which our cognitive abilities are . . . manipulated by the tools cognition has

helped create" (Norman, 1993, p. 4). How well are we doing as teachers and trainers "at adapting technology to the minds of its users?" (p. 11). This report has determined that we are not doing as well as we would like.

There is an economic significance associated with the position taken by Livingstone (2001), Merriam and Caffarella (1999), and many others that most adult learning is both self-directed and informal. Ignoring self-directed learning or attempting to subvert it through mandated corporate training, as the participants of this study clearly demonstrated, is a substantial waste of recourses and productivity. In large part this problem is precipitated by relying too much upon a training strategy that accentuates individual agency at the expense of a truly entrepreneurial learning strategy:

> Standard theories of learning are focused on processes where a subject (traditionally an individual, more recently possibly also an organization) acquires some identifiable knowledge or skills in such a way that a corresponding, relatively lasting change in the behavior of the subject may be observed. It is a self-evident presupposition that the knowledge or skill to be acquired is itself stable and reasonably well defined . . . The problem is that much of the most intriguing kinds of learning in work organizations violates this presupposition. People and organizations are all the time learning something that is not stable, not even defined or understood ahead of time. In important transformations of our personal lives and organizational practices, we must learn new forms of activity which are not yet there. They are literally learned as they are being created. There is no competent teacher. Standard learning theories have little to offer if one wants to understand these processes. (Engeström, 2001, p. 138)

In other words, most corporate training efforts are focused on adaptive maintenance learning.

It is not only that "skills learned in preparation for a job or career cannot keep pace with the demands of the world of work" (Merriam & Caffarella, 1999, p. 13), but also the fact, as reported by Friedman (2005), Pink (2005), and others that much maintenance learning will soon become irrelevant:

> Any job that depends on routines—that can be reduced to a set of rules, or broken down into a set of repeatable steps—is at risk. If a $500-a-month Indian chartered accountant doesn't swipe your comfortable accounting job, Turbo-Tax will. (Pink, 2005, p. 44)

With corporate training focused on adaptive learning and a prevailing perception that the job market rewards only a more mechanistic or maintenance type of self-directed informal learning, we are reinforcing ways of learning that are transportable to lower wage locations.

According to the result of the current study, Friedman (2005) may be correct:

> There has never been a time in history when the character of human imagination wasn't important . . . it has never been *more* important than now, because in a flat world so many of the inputs and tools of collaboration are becoming commodities available to everyone. (p. 443, emphasis in original)

More technology and more training to use that technology is not enough said Friedman (2005). As important to agency-endorsed learning is learning (or relearning) to become attuned to the oral traditions of one's community of practice (Zuboff, 1988). It is no fluke that the first "thesis" of the futuristic book on business, *The Cluetrain Manifesto,* (Levine, Locke, Searls, & Weinberger, 2000) stated, "Markets are conversations" (p. xii). "Few technologies can exist in isolation from a rich, supporting infrastructure," posited Norman (1993, p. 194). Enhancements to productivity arise, said Friedman, when strategies are developed to integrate the richness of the community with the individual's capacity to use the technology, thereby creating "new *ways* of doing business" (p. 177, italics in original). The findings on self-directed learning from this study strongly support Friedman's view emphasizing the need to make learning more entrepreneurial.

The pervasiveness of self-directed informal learning by itself should be an indication of its importance to formal education. With new technology implementation

precipitating an ever-changing school and workplace environment and more of the burden for staying current falling upon the individual learner (Brown & Duguid, 2000), learning to learn should command an important place in current educational policy. This implied mandate becomes more immediate when taken in conjunction with the findings here that self-directed informal learning, particularly when it is employed for transferring knowledge, is, by itself, a risky undertaking without the appropriate strategies being made available to guide learning activity.

"Each generation has its own fight against images of learners as wax to be molded, pitchers to be filled, and slates to be written on," observed Brown and Duguid (2000, p. 135). For the current generation of learners the analogy might well be one of computers to be programmed. Certainly, the current study dispels that image of learning. Another, potentially more insidious problem has arisen in formal schooling policy. As Merriam and Caffarella (1999) described it,

> Global economics has led to changing work practices, which require different kinds of preparation and training. This has resulted in the control of education shifting to business. Business is "almost unintentionally evolving new meanings for learning and new methods of delivering education. (p. 11)

In other words, as business has found a perceived need to become more global, so has formal education.

The new problem, as this study demonstrated and Brown and Duguid warned, is the perception of a global approach to formal learning "overlooks the significance of place and the location of knowledge. If we consider the bulk of what we learn, it is remarkably local" (p. 228). This was what caused the breakdown in communications between one participant (Jake) and his students: he (with his *New York Times* newspaper) and his students (who had no desire to watch their own local production) were overly

absorbed in the global environment to understand the local context of their learning situation. When learning is embedded in practice and practice occurs locally, then it behooves formal educators to provide students the strategies to become more attuned to the affordances of local practices within global communities. The consequence of ignoring this finding, as Schank (1990) has detailed, is dire. Because many of these practices remain hidden due to their routine familiarity, learning becomes scripted to a global story determined by unknown others rather than to a local one created by reflexively thinking individuals. A better formal educational understanding of self-directed informal learning, and especially of its relation to entrepreneurial learning, is long overdue.

Formal education is consumed with its conceptions of "literacy." Currently, the literacy of the 20th century, reading literacy, has been replaced by a hue and cry for the literacy of the 21st century, computer literacy. The current study suggests yet a different strategy: self literacy. Almost 30 years ago, Botkin et al. (1979) raised the same questions and issued the still unmet challenge in stating that

> the impetus to create especially the type of literacy that could spark social participation and change is lacking in all but a few cases . . . Is "literacy" to be understood purely and simply as the ability to read and write? Again the distinction between maintenance and innovative learning is marked. Whereas maintenance learning, with its stress on language, equates literacy with reading and writing, innovative learning encompasses a basic competence in all the elements of learning within the framework of literacy…literacy that focus on raising consciousness and increasing the capacity to participate effectively and productively in society. (p. 75)

What is missing from this analysis, Friedman (2005), supported by the results of the current study, has added:

> Does your society have more memories than dreams or more dreams than memories? . . . In societies that have more memories than dreams, too many

> people are spending too many days looking backward . . . The answer for us lies not in what has changed, but in recognizing what has not changed. (p. 451)

As Schank (1990) instructed, the human experience is story-based. Explaining one's experiences in the world is an important part of sharing the knowledge of one's community of practice. Creating new stories to tell—to oneself and to others—is an important part of learning as well. Looking backward through formal learning experiences and telling only the stories we learn from others causes "us to see our own lives in terms of pre-established, well-known stories that can obscure the ways in which our actual situation differs from the standard story" (p. 147). We need also to look forward through properly structured, self-directed, informal learning in order to anticipate the stories that turn dreams into outcomes.

Understanding the theoretical underpinnings driving social change related to learning and the workplace through conceptual propositions such as entrepreneurial learning is especially important as technology continues to play a more central role in education, the workplace, and people's lives. But, as Norman (1993) astutely pointed out,

> the easy part of prediction is the technology. The hard part is the social impact, the effect upon the lives, living patterns, and work habits of people, the impact upon society and culture . . . It is the social impact of technology that is least well understood, least well predicted. (p. 186)

Recommendations for Social Change

By virtually ignoring self-directed informal learning, he basic skills conception of human resource development, the foundational for the relationship between formal schooling and contemporary career development, is fundamentally flawed. It is only by acknowledging the importance of and altering policy to include and enhance self-directed

informal learning that we establish for ourselves a condition in which there are “virtually no limits to learning” (Botkin et al., 1979, p. 9).

The participants in the current study described not only what they thought they were learning, but how they believed they were self-directing their own learning. In other words, they were demonstrating the distinct probability, as reported by Grow (1991), that “just as dependency and helplessness can be learned, self-direction can be learned” (p. 127). Grow believed self-directed learning can be taught, as well. If that is true, and this study strongly suggests that it is, the challenge facing educators and trainers “is to shift from a mode of *unconscious adaptation* to one of *conscious anticipation*” (Botkin et al., 1979, p. 17, emphasis in original). This section offers some direction on how to initiate such a social transformation in formal instruction.

A first step in redefining the learning experience is for educators and trainers to appreciate that there are multiple types of learning (e.g., formal, informal) and that each plays an important role in the cumulative learning of an individual. A second step is understanding that there are at least two modes of learning (i.e., adaptive, anticipatory), both of which are important. A third step is to acknowledge and impress upon learners “that learning can take place in many settings” (Hansman, 2001, p. 49). Finally, educational policy makers must stop paying lip service to and truly embrace the belief that “you can’t design process effectively if you don’t understand practice” (Brown & Duguid, 2000, p. 99).

Solving the problems as laid out above is manageable. The process is mostly one of finding “a balance between the formal and the informal, the spontaneity of practice and the structure of organization” (Brown & Duguid, 2000, p. 172). In fact, the process

may be easier than one might anticipate, because, if Spear and Mocker (1984) were correct, and the current study suggests they are, based on the enormous amount of self-directed activity that goes on, motivating self-directed informal learning is not a problem. Moreover, self-directed learning can then be used to encourage the requisite formal learning necessary to build the appropriate strategies to support it.

Spear and Mocker (1984) provided some suggestions for enabling this process:

1. Learners should be guided in investigating "the effects of the setting or circumstances on the structure of the learning project" as it relates to them and those involved (p. 9)

2. Learners should be guided in identifying "what abilities are needed by [themselves and others involved] to extract or identify learning opportunities and resources" within the learning environment (p. 9)

3. Learners should be guided in identifying "if there are elements or conditions in the structure of self-directed learning that might be incorporated into the organizing of [their] formal learning that would increase its effectiveness (pp. 9-10)

4. Learners should be guided in examining "the decisions [regarding] how [they] perceive the organizing of their projects (p. 10).

Brown and Duguid added to Spear and Mocker's list of enabling activities in reporting that they believed learners need "access to authentic communities of learning, interpretation, exploration . . . knowledge creation [and] resources to help them work with both distal and local communities" (p. 232). Brown and Duguid (2000), in addition to endorsing the use of local examples of excellence for learning, added another

important element substantiated by the current study. They endorsed the use of story-telling:

> Stories are good at presenting things sequentially (this happened, the that). They are also good for presenting them causally (this happened because of that). Thus stories are a powerful means to understand what happened (the sequence of events) and why (the causes and effects of those events). And so storytelling is indispensable for [leaning]. (p. 106)

Additionally, the current study suggests a need to guide learners to tell their stories through multiple media as opposed to a single medium venue.

Pink (2005), while agreeing to the importance of stories to the learning process, reminded us that "narrative competence cannot replace technical expertise" (p. 12). The skill learning associated with maintenance or adaptive learning is clearly part of the total learning process. However, as Rawson (2000) pointed out, educators and trainers must be cognizant that "skills are about learning to do things better, not about learning to do better things" (p. 236). Therefore, skill learning cannot be the end-all of the learning situation, for formal or self-direct informal learning. Rawson concluded, "This calls for something beyond a society of self-managed learners" (p. 236).

Marsick and Watkins (2002) offer sage advice to compliment the learning scenario being developed. They emphasized three conditions for enhancing the entrepreneurial type of learning being described:

> Critical reflection to surface tacit knowledge and beliefs, stimulation of proactivity on the part of the learner to actively identify options and to learn new skills to implement those options or solutions, and creativity to encourage a wider range of options. (p. 30)

Hansman (2001) interpreted and expanded upon the concept of creativity. As was shown throughout the current study, modeling was an important part of each participant's learning process. "Modeling occurs in two parts," stated Hansman, "behavioral modeling

[and] cognitive modeling" (p. 47). Both require individual examination and ultimate integration. Therefore, explained Hansman, with all conceptualized learning,

> approximation [i.e., structured creative play] allows learners to try out the activity while articulating their thoughts about what they plan to do and why, and after the activity, reflecting about what they did and how it is different from the expert's performance. (p. 47)

While the evolving scenario narrated above depicts elements for the integration of formal and informal learning into a singular approach to learning, at least two theorists expressed a plan for teaching this type of learning. Schank introduced the uses of story-telling in education by positing that "a good teacher is not one who explains things correctly but one who couches explanations in a memorable . . . . format" (p. 15). Grow (1991) introduced an extensive theory of teaching suggesting that

> Teaching style should be governed not by subject matter but by the balance between teacher directiveness and student control, usually set by the student's ability to participate as a self-directed, self-motivated, responsible learner (p. 136).

Although educational change of this magnitude cannot be immediate, the findings of this study strongly support both teaching models.

Finally, as educators and trainers, it is time to turn the process of entrepreneurial learning on ourselves. We must reexplore learning as learners, seeking not merely to maintain ourselves within the comfortable norms of an institutionalized community of practice, but rather to anticipate new outcomes for education as a self-reflexive process of turning community-guided play into personally useful practice. Merriam and Caffarella (1999) correctly reported that "only a few authors have addressed implementing informal or self-directed learning approaches in nonformal settings" (pp. 34-35). As a result, a few recommendations for further study are presented.

First, it was not apparent until well into the analysis of the study data that most of the participants did not have children. The three who did introduced them into their respective narratives as varying influences on career development. Therefore, additional research needs to be conducted to determine how the parenting role is related to self-directed learning during career development.

Second, the two participants who might be considered the least effective self-directed career-related learners worked for nonprofit organizations. The results of the current study beg the question: Is their plight a common condition for career development in nonprofit organizations? Considering the large number of nonprofit organizations nationally, additional research exclusive to this career environment is warranted.

Third, the current study was conducted with adult learners acting out their respective career roles in the workplace. Entrepreneurial learning appears to effectively describe the career-related learning they were experiencing. However, it is unknown whether entrepreneurial learning is descriptive of the self-directed learning that occurs in other environments, especially other communities of practice. Further study with communities such as churches, unions, and community colleges may be worthwhile.

Fourth, the categorical-content analysis used in the current study suggested an interesting possibility for conducting a future qualitative-quantitative analysis of self-directed informal learning. This promise should not be ignored.

Fifth, while the thirteen participants of the current study were sufficient to create a deeper understanding of self-directed informal learning, much more qualitative research is necessary. The current study raised several questions regarding results of previous quantitative research and its supporting theories. A more conceptual understanding of

self-directed learning is needed prior to additional quantitative reexamination.

Finally, the current study found many potentially negative outcomes associated with self-directed informal learning. This raises the question: What are the negative outcomes of formal educational learning? For example, how guilty is formal education of perpetrating detrimental or useless scripts for learning to learn? From its beginning, education has been perceived as having only a single positive outcome. Research should be conducted to explore the negative aspects of formal education on our culture.

Researcher's Reflections on the Study

When I first thought about researching self-directed informal learning, I was excited enough by the novelty of the idea to call my good friend, Russ, with the news. His response was not what I expected. "I'm not surprised," he said with little emotion. "That's all you've ever talked about ever since I've known you." Russ and I go back over 30 years! Of course, his remark started my reflection on what he found so obvious.

I began my undergraduate studies as a pre-med major. That lasted until I volunteered to work one summer in a hospital, an experience that caused me to question why I was required to take a bunch of courses that, for me, had no relevance to learning about becoming a doctor. The two semesters of German and advanced calculus stand out in my memory today. I started my professional life as a high school English teacher. That lasted until, in my tenth year, I volunteered to work with a class of senior high at-risk students with low reading scores. After two years of remarkable successes, I lost the class because I was not certified as a reading teacher. The fact that I had published a very successful reading workbook and was teaching a college class for reading instructors was irrelevant. I felt I had to get out of education.

With no formal business training, I started my own business. With a self-researched business plan that could have been the envy of a Fortune 500 startup, I solicited a loan from every bank in our city. None cared about my well-documented plan. An astute venture capitalist did however, and the business became one of the most successful retail enterprises in the county. Working with the local Small Business Development Center, I discovered my plight was a common one: both institutionalized education and institutionalized business functioned only with artifacts symbolizing traditional social legitimacy. What I had learned on my own was, to them, worthless. I carried that understanding with me when I returned to education.

Armed with a dozen years in education and another dozen in business, I took a position as curriculum developer for an educational cooperative providing services to 27 school districts. It was my job to help vocational education instructors make their courses more rigorously academic. What I found was that the academic rigor inherent in the existing vocational programs exceeded the requirements of the state. Unfortunately, the "rigor" the state had in mind had little to do with the content of the vocational courses and almost everything to do with state-mandated tests specific to the various academic disciplines. Everywhere I turned during the first 30 years of my professional career, I found myself hemmed in by artificial indications of formally acquired knowledge. No wonder I complained. Russ was right!

As I embarked on this study, I was not surprised to find little prior research available. There is a huge body of literature on making a career choices, but almost none on how people sustain their career trajectory. I was already aware that informal learning was the Rodney Dangerfield of education: It got no respect. People do not seem to care

about any learning that is not formally sanctioned. What did surprised me was that almost all research on the subject was done in Canada and Australia. Possibly their educational institutions are not as encumbered by useless traditions. Then, what research I did find related to adult learning was divided into two opposing theoretical camps. Rather than seeking reconciliation, the literature only took sides.

My third surprise was that every bit of research done on the topic of self-directed informal learning—a most personal and intrinsic endeavor—was quantitative in nature. As a result, I had no idea how to proceed with addressing the topic qualitatively. Serendipity, one of the elements I addressed in the study, intervened. A Google search led me to the book *Turns in the Road: Narrative Studies of Lives in Transition* (McAdams, Josselson, & Lieblich, 2001) and to an understanding of how self-narrative influences life decisions such as those associated with career development. After reading the book, I understood my career development as a manifestation of my own life-story narrative.

I had found the key to appreciating self-directed informal learning qualitatively. In fact, my first desire was to use myself as the focus of a grounded theory study. Some scholarly direction from my dissertation committee awoke me to the need for a more valid approach to researching the topic. Fighting the committee all the way, I ultimately agreed to a multiple case study approach in which I sought open-ended stories about career development from purposefully selected individuals. I had no idea at all what I would discover.

This was not a quantitative study. However, I had to find a way to tie my research, and the volumes of transcribed narrative data, to similar studies that had been

completed in the quantitative tradition. Thus, I felt compelled to employ a few quantitative techniques for qualitative purposes. As a result, I did a categorical analysis (category-content analysis) in which I created the category codes from the quantitative research literature. I counted the number of coded instances of narrative events and used them, not to measure participant responses quantitatively, but rather to surface response patterns among the narratives. These patterns became strikingly apparent when I applied yet another quantitative technique: I charted the responses as pie charts for each individual and line graphs for various cohorts. Again, the quantitative magnitude of the charted values was not important; it was the emergent patterns that made sense for me.

The magnitude of what I was uncovering began to hit me only during the writing of chapter 4. It was just prior to writing the chapter that I discovered (after much searching) an obscure book about narrative, *Tell Me a Story: Narrative and Intelligence* (Roger Schank 1990). Suddenly, the patterns began to tell me their story. Most interestingly, through the use of narrative, my story merged with the stories the data were giving up. My own experiences in education and business became the context for appreciating the self-directed informal learning of others. As a result, the concept of entrepreneurial learning was born and the entrepreneurial learner matrix emerged.

So many stories began to reveal themselves that, had I tried to incorporate all of them into my dissertation I would be writing still. I forced myself to stick to answering my research questions even though there was so much more that had eluded the quantitative studies. Where the quantitative studies had done a masterful job pointing out the ubiquity of self-directed informal learning, my qualitative approach gave the quantitative numbers context. Rather than merely stating that gender, educational level,

age, job type, and ethnicity (Livingstone, 2001) had no influence on whether a person engaged in self-directed informal learning, the qualitative look at those cohorts gave the research picture color. Moreover, to continue the metaphor, the colors were not all the same. People of different ages and different job types, for example, self-directed their learning differently because the context of their learning environment was different. What this study was saying is, Knowing that self-directed informal learning exists is not enough. We need to know how and why it exists for each individual. Only then will we be able to appreciate its importance to learning and education.

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APPENDIX

Appendix A: Initial Telephone Contact Script

- Introduction:
  - Hello, Mr./Ms. _____
  - My name is Ron Paige, a friend of _____, who suggested that I call you for help on an important but very rewarding study about career development. I need about 5 minutes to explain. Is this is a good time? [If NO, ask for a preferred call back time. If not interested, ask for other potential participant names]
- Project overview:
  - I am working with other career professionals, who, like you use current technology. Our purpose is to find out more about how people learn "on the job" so to speak. The project is important because there is very little known about how we "learn to learn" in actual practice. With your help, we can potentially help a lot of people develop their career more fully and get more credit for doing it.
  - Does this project make sense to you? [If YES, continue, if NO, ask what he or she would like explained better]
- Demands and rewards:
  - What do you want first: your potential role in the project or the rewards you get for participating?
  - Demands:

- I'll need to meet with you in person for about 30-40 minutes to go over a very brief demographic survey that I will leave with you (who you are, what your career role is, that sort of stuff, but nothing very personal at all).
- I'll need you to complete the demographic survey and mail it back to me (I will leave you a postage-paid envelop) as soon as possible. This should take you about 30 minutes to do.
- The big item is an interview with you about your career. In fact, I'll be asking you to, essentially, tell me the story of how you came to learn to do what you do. This will take about 1½ to 2 hours.
- I'll need you to read over the transcript of your interview for accuracy. That will take you about 30-45 minutes.
- That's it!

o Rewards:

- You will have the right to withdraw from the project at any time for any reason.
- Your name will never be used in the interview materials unless you specifically request it (A pseudonym will be selected).
- You will receive a copy of your interview transcript, which, if the research on this is correct, you will find very rewarding.
- And, as a special Thank You for your help, I'll give you a gift certificate of $30 that you can use at the Ironstone Restaurant in Jamestown or the Watermark in Mayville. Are you still interested?

[If YES, continue to next section; if NO ask for other potential participant names]

- Conclusion:
    - Great! I need to set up a time that I can meet with you to get acquainted and to drop off the demographic survey materials. This should take only about 30-40 minutes of your time. What is convenient for you? OK, then, that's [calendar day] the [calendar date] at [specific time].
    - I need to exchange contact information with you, just to be on the safe side. Is this the best phone number to reach you at? [Make note] What's the best time? [Make note] Do you have an email address I can use to reach you? [Make note]
    - Do you have any final questions at this time? [If YES, address each, if NO, close]
    - Thanks again for agreeing to help. I'll see you [as recorded from above].

Appendix B: Initial Face-to-Face Meeting Protocol

- Name:
- Meeting time:
- Meeting address:
- Procedure:
    - Formal introduction
    - If location is busy, ask to move to a less hectic location for about 30-40 minutes
    - Review project: about how we “learn to learn” in actual practice, data derived from at least 10 interviews with formative technology users, data will be analyzed for common themes and patterns related to how people “learn on the job,” this is not a psychological study but rather an educational study
    - Review participant demands: current meeting, survey, interview, authenticate transcript
    - Review participant rewards: helping others, copy of transcript, dining gift certificate
    - Review study ethics: withdraw at any time, pseudonym, transcript review, use of data, data retention
- Formal consent
    - Reaffirmation of interest
    - Answer any remaining questions to this point
    - Explain the necessity of the consent form, review contents of consent

form, obtain participant's signature on consent form

- Explain interview procedure:
  - Requires 1½ – 2 hours
  - Location should be comfortable and pose few or no interruptions
  - The interview will be tape recorded
  - The interview will not be a typical question/answer process, but rather a storied response to about 4 scenarios related to the perception of his or her career development process
  - No participant records, notes, or materials are necessary
  - Determine and confirm date, time, and place for interview
  - Conduct a sample narrative interview session based on the scenario:

    Tell me the pivotal story that launched you on a career trajectory as a substantive technology user.
- Deliver demographic survey
  - First copy is completed by researcher to provide a model for the participant's responses and further acquaint the interviewee with the researcher, placing both on an equal footing prior to the interview
  - Second copy is to be completed by participant and mailed to researcher (stamped envelop provided) within 10 days
- Closing
  - Reconfirm contact information
  - Reconfirm due date for demographic survey
  - Reconfirm interview date, time, and location

Appendix C: Demographic Survey Form

Demographic Survey **[Not original size]**
Project: Learning and Career Development

•Name:

•Age (select one): □ 25-34 □ 35-44 □ 45-54

•Formal education (select the highest level of attendance):

□ associate's degree □ bachelor's degree/above □ master's degree/above

•Occupational classification (select one):

□ staff/worker □ manager □ self-employed

•Primary occupational title:

•Brief description of your career-related daily routine, including the main tools or devices you use, software used, document types you work with, records you deal with, observations\ or evaluations you make, products you create, and procedures. (100-200 words):

_____
_____
_____
_____
_____
_____
_____
_____
_____

•Select <u>each</u> occupation-related learning activity you have participated in over the last 12 months:

□ keeping up with new general knowledge in career

□ new job/career tasks

□ problem solving/communications skills

□ career-related computer skills

□ occupational health and safety

□ new career-related technologies or equipment (not computers)

□ employee rights and benefits

□ supervisory or management skills

□ career-related literacy and/or mathematics skills

□ career-related second language skills

There are many ways we can learn career-related things. Select <u>each</u> of the following you have participated in during the last 12 months:

- □ visit trade fair
- □ attend short informal lecture
- □ attend a workshop
- □ read equipment manuals
- □ take a formal college level course
- □ take a guided tour
- □ search the Internet for career-related materials
- □ use a self-instruction CD-ROM
- □ watch another person perform a task
- □ other _____
- □ other _____

As the list above demonstrates, people may improve their knowledge of a subject or upgrade their skills on their own instead of taking a course. For any one or more of the learning media you selected immediately above, please provide the following information:

1. What were you attempting to learn about? _____
   _____
   _____
2. How many hours do you estimate you spent trying to learn about this topic over the last year? _____
   _____

The chart below shows four very general ways that we learn during the course of building our career. Place an X in the box that best describes the manner of learning most important to your career development.

Non-formal education: adult education course or workshop in which you voluntarily work with a teacher or instructor who uses an organized curriculum	**Formal education:** formally structured and sequentially organized program of study planned and directed by a teacher or trainer and leading to a recognized certificate
Self-directed learning: unplanned, unstructured intentional learning acquired individually or collectively while performing regular daily tasks or observing someone else performing them	**Informal education:** unstructured, incidental, or spontaneous learning situations, guided by a teacher, trainer, mentor or expert within the career environment

In a typical workweek, how many hours do you estimate you put into all types of learning related to your occupation/career? Hours: _____

Demographic Survey Page -3
Project: Learning and Career Development

A person's life can be envisioned as a book, a play, or a movie. I would like you to think back to the point that you believe marks the beginning of the developing career path that has brought you to your current position. Envision each significant stage of your unfolding career development as a chapter or act in the story. On the lines below, make a list of each of those chapters or acts along with a title you think best depicts each one. Use only as many lines as you need.

Chapter (Act)	**Title**
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____

Comments you care to make (optional):
_____
_____
_____
_____
_____
_____
_____
_____
_____
_____
_____

Thanks for your participation,

Ron Paige

Appendix D: Narrative Interview Protocol

- **Arrival:**
  - 15 minutes early
  - Appraise site: If significant disruption probable explain situation and seek alternative time and/or place
  - Check availability of restrooms, water or soft drinks
  - Set up and test the tape recorders
  - Take seat across from the participant (at a comfortable distance for natural conversation or across a table)
  - Place microphones in a prominent but not obtrusive position; test again
  - Reconfirm confidentiality and choice of pseudonym
  - Address any lingering questions or concerns
- **Interview:**
  - **Summarize project:** I am interested in the many ways people acquire *on their own* the skills and knowledge they need to expand their career path. This is important because I think that I can eventually help people become more efficient and effective in developing their career and in getting more credit for that effort. This is not going to be a typical interview where I ask you a lot of yes-or-no questions. In fact, I'm going to provide you with scenarios and have you tell me stories about how you have or will respond to them. Ready? [*From this point until the end of the interview, interviewer will interact with the interviewee as necessary to show interest,*

acknowledge points, clarify points, probe for more depth or detail, and answer procedural questions]

- **"Break the ice"** by asking for a brief description of the participant's career role (i.e., job or occupation): In your survey, you state that you are _____. Describe a typical day during which you use technology as part of your career role.
    - Potential probing questions include:
        - Are other people around you as you do these things? What are they doing? How do you interact with them? (Lieblich et al., 1998, p. 43)
        - How did the classes you took in high school or college help you prepare to be successful in the scenario you have described? (Based on Thorén-Jönsson & Möller, 1999, p. 78)
- **Scenario 1.** I am interested in better understanding the many ways that people take charge of informally acquiring skills and knowledge related to advancing their career. The demographic survey you completed listed several types of these self-directed informal learning activities. What I would like you to do now is tell me a story about how you went about acquiring a currently *significant* [pause] *career related* skill (or knowledge) associated with using technology [pause] that you have learned *informally* [pause]. (Based on Linde, 1993; Livingstone, 2001, pp. 24-27)
    - Potential probing questions include:

- What adjustments or changes, if any, did you have to make as you were learning this skill, topic, or knowledge? (Based on Roberson & Merriam, 2003, p. 279)
- How would you describe or characterize the method you used to learn this skill? (Based on Thorén-Jönsson & Möller, 1999, p. 74)
- Why did you employ that particular method for learning this skill over other methods? (Based on Thorén-Jönsson & Möller, 1999, p. 74)
- How can you demonstrate during your daily career-related tasks that learning this skill has enabled you to conduct your career role better? (Based on Merriam & Caffarella, 1999, p. 223)
- Regarding what you have learned, do you visualize or anticipate some specific level of proficiency you want to achieve? How will you judge or evaluate whether or not you have reached that level? (Based on Livingstone, 2001, p. 22)

▪ Example (only if requested): For example, about 14 years ago I wanted to learn to be a magazine publisher. I wanted to do something that used my many talents and desires, would make money, and would be an asset to the community. After discussing with several good local writers the need for a good, cultural

magazine for our county, I began buying and reading similar magazines from many regions. I bought a copy of Adobe PageMaker and practiced with it until I could do a professional looking layout…

- **Scenario 2.** Expand the story you just told me by telling about how your career-related environment *influences* your career-related learning and *shapes* your career goals? (Based on Linde, 1993; Livingstone, 2001, pp. 24-25; Livingstone & Sawchuk, 2000, p. 136; Madill et al., 2000, p. 18; McAdams et al. 1996, p. 352; Plunkett, 2001, p. 162)
    - Potential probing questions include:
        - What in your environment most influences your ability to learn and develop your career? (Based on Thorén-Jönsson & Möller, 1999, p. 75)
        - How did you discover and how did you use the *most important* resources your career-related environment made available to you for learning that skill? (Based on Moore, 1986, p. 171)
        - In your opinion, are you more in control of your learning and career development or is your career-related environment more in control? Can you provide a story that demonstrates that belief? (Based on Thorén-Jönsson & Möller, 1999, p. 75)

        - Example (only if requested): For me, it is my students who drive my learning about technology. In my efforts to provide them with the most useful contemporary knowledge about how computers work, I spend hours seeking out informative websites, reading how-to books about computers, and playing with the labs in class to discover ways to more effectively troubleshoot problems. At the same time that I am driven by my perceived needs of my students, I am compelled to look for other types of teaching that are less demanding on my personal time.

- **Scenario 3.** Now it is time to create a story about the future. Based upon your *current* understanding of your career trajectory (where you think you are going with this career), tell me a story about how you will go about acquiring a *significant* technology-related career skill or knowledge that you would like to learn? (Based on Josselson, 2004, p. 21; Linde, 1993; Markus & Nurius, 1986, p. 962; McAdams & Bowman, 2001, p. 12)
    - Potential probing questions include:
        - What are the criteria you use for judging or determining the value of what you want to learn as it relates to your career growth? (Based on Moore, 1986, p. 173)
        - Is this the same way you went about learning new things when you were in high school? (Based on Thorén-Jönsson & Möller, 1999, p. 77)

- In what way are those you work with part of your learning solution or part of your learning problem? (Based on Thorén-Jönsson & Möller, 1999, p. 78)

- Example (only if requested): I want to learn to be an exceptional webmaster. I have already built several adequate educational websites, but now I want to move to the next level. What I need is time to practice with the software. I will certainly look up a friend of mine who is a tremendously good webpage designer, and see what I can learn from him….

- **Scenario 4:** Finally, I am interested to learn what you believe you are gaining from the self-directed informal learning you do or have done. Place into story form, how this type of learning has enhanced or diminished your career development either technically, politically, socially, practically, or personally. (Based on Bandura, 2002, p. 280; Kush & Cochran, 1993, p. 438; Linde, 1993; Livingstone & Sawchuk, 2000, pp. 138-140)

  - Potential probing questions include:

    - How would you say your career development growth looks in relation to your growth in learning related to your career? Are they in-phase or out-of-phase? (Based on Moore, 1986, p. 181)

    - Are you directing your learning so that technology is serving you, or is technology directing your learning so that you serve technology? (Based on Norman, 1993, p. 11)

        - Example (only if requested): For me, I have gained a huge amount of technical expertise related to computers construction and use especially and networking a little less. In fact, I have built from scratch over a dozen computers and I have built and maintain my own website. Not only does that raise my value as an instructor, it has enormous practical value because I have saved myself a lot of money. Socially, I have entered a whole new realm of friendships and acquaintances locally and on-line. Of course, I get called a bit too often with home computer problems from friends. Of course, computers are my livelihood as a teacher, and that, too, has created its own social connections. Politically, my learning related to technology has frustrated me. I must have additional certifications to expand my career within the current public school framework, even though I believe I am more qualified than many who outrank me.

- **Close:**
    - Is there anything you want to add for the record? [YES, let him or her make a statement; NO, continue]
    - Reconfirm confidentiality
    - Review next steps:
        - Possibility that I will call or email one or more times regarding clarification of content in transcript [*Reconfirm contact information*]

- Timeframe for getting transcript back for approval [*Approximately 10 days*]
- Timeframe for receipt of approval [*Approximately 7 days*]
- Distribution of dining certificate [*Approximately 7 days following receipt of approved transcript*]

- Thank you

Appendix E: Sample Transcription

Gabe: In…everything in the automotive industry is in Newton meters rather than foot pounds because that's the international torque range. So we have to say, basically, say you're supposed to be at 32 meters of torque and you have a range of 20 to 40. Well we always target the torque to be at 30 so if we get a hard bolt, depending on the type of joint, we'll call that a hard joint because we're running the bolt in as hard as we can. All there is is a gasket around, underneath it to cover the pans of the axle. So you're running into a cast iron aluminum housing. So you're trying to drive the bolt in as tight as you can without stretching the bolt or do it so we get the guarantee that that bolt is as safe as it can be, you know, to the torque range. So we go in with an external torque transducer and put that on in between the tool and the bolt, or in the fixture and we drive that in and see what the range of the tool is. Now we use a lot of [Unintelligible?] torque tooling and they have their own language and programming and we set the programs up for specific…

RDP: These are computer programs?

Gabe: Yes. And so we set the programs up and then we test to, with third party equipment. And then we take a strategy of either torque or angle, or an angle and torque. So sometimes we, depending if we're building a steering linkage, it has a ball joint in there, we want to, a way to test the ball joint to make sure that first of all it's free own spin. We do angle control and torque monitor. So we put a strategy together, if we had say over five Newton meters of torque, it will shut the tool off and reject the part. Or we'll run it up to 1700 RPMs or degrees of angle and then we'll hit torque. There's all different types of strategies. //**RDP:** Right.// So we have all different types of systems to set up that one.

RDP: Now where did this background come from?

Gabe: Where did that come from? Uhm, probably twenty some years of working in the industry, going to seminars, and you know, being trained, hands on training. //**RDP:** Ok.// And then I've gone to Eastern Michigan University. I've done some other, you know.

RDP: So there's a lot of formal training along with the hands on training.

Gabe: Yes.

RDP: Right. And that's what you used to do, is that kind of work.

Gabe: I still do it. //**RDP:** [Laugh] [Unintelligible?] Ok.

RDP: So what work were you doing that got you into that? You were working at the axle plant […] or?

Gabe: Yes.

RDP: Alright, that makes sense. Uhm, I just needed to know a little bit about what I was getting into here. //Gabe: Alright.// Uhm. Now what I'll do is, this is Scenario 1 and it looks longer than it really is and I'm going to make it

Appendix F: Sample HyperRESEARCH™ Report

Case	Code	Frequency
Anne	CareerDev_Agency_Competence_Causalities	9
	Source Annotation:	
Anne	CareerDev_Agency_Competence_Causalities	9
	Source Annotation:	
Anne	CareerDev_Agency_Competence_Causalities	9
	Source Annotation:	
Anne	CareerDev_Agency_Competence_Causalities	9
	Source Annotation:	
Anne	CareerDev_Agency_Competence_Causalities	9
	Source Annotation:	
Anne	CareerDev_Agency_Competence_Causalities	9
	Source Annotation:	
Anne	CareerDev_Agency_Competence_Causalities	9
	Source Annotation:	
Anne	CareerDev_Agency_Competence_Causalities	9
	Source Annotation:	
Anne	CareerDev_Agency_Competence_Causalities	9
	Source Annotation:	
Cassy	CareerDev_Agency_Competence_Causalities	3
	Source Annotation:	
Cassy	CareerDev_Agency_Competence_Causalities	3
	Source Annotation:	
Cassy	CareerDev_Agency_Competence_Causalities	3
	Source Annotation: Cassy is making a distinction between self-directed learning that she does to meet her epectations for personally satisfying learning as opposed to meeting expectations for others. She apparently can distinguish between the two and finds different ways to motivate each separately. Mary, for one, is unable to do this as efficiently. This is yet one more of those META-COGNITIVE aspects of learning that are instrumental to learning-to-learn.	
Ian	CareerDev_Agency_Competence_Causalities	5
	Source Annotation:	
Ian	CareerDev_Agency_Competence_Causalities	5
	Source Annotation: This is a GREAT observation on Ian's part, one few people will make: he is aware that he LIKES mathematics more than he is academically GODD at mathematics. What is it he LIKES about mathematics? Eventually, he reveals that it is the structure, the logic of math that he likes.	
Ian	CareerDev_Agency_Competence_Causalities	5
	Source Annotation:	
Ian	CareerDev_Agency_Competence_Causalities	5
	Source Annotation:	
Ian	CareerDev_Agency_Competence_Causalities	5

Appendix G: Category-Content Literature References

I. Career development, agency-related:
A person's sense of agency related to career development may be a product of three "mutually influential" categories: the person's confidence in their ability to learn, "sense of competence, and values and goals" (Thorén-Jönsson & Möller, 1999, p. 73)

A. Confidence in ability to learn

1. Identifies and assess learning resources:
With a multitude of learning resources available, being able to identify, assess, and prioritize resources—the skill to "judge worthwhile from worthless" (Brown & Duguid, 2000, p. 219)—may be an important part of self-directed informal learning (Linde, 2001; Merriam & Caffarella, 1999; Robertson & Merriam, 2005).
2. Knows how to learn:
Believing in one's capabilities to learn may affect the "thought patterns and emotional reactions" underpinning the confidence needed to make critical learning decisions (Thorén-Jönsson & Möller, 1999, p. 75). Learning in today's data-rich environments may require "a deeper understanding by the learner of their learning process" (Rawson, 2000, p. 228; see also, Lieblich et al., 1998; Linde, 2001).
3. Is comfortable with own learning style:
Often "participant's own conceptions of their capabilities and limitations were most important" (Thorén-Jönsson & Möller, 1999, p. 73; see also, Rawson, 2000).
4. Learns through doing:
"Observation, learning through doing, experimentation and making mistakes were mentioned by participants as critical" to self-directing one's own learning (Merriam et al., 2003, p. 178).
5. Learns through trial-and-error:
"Observation, learning through doing, experimentation and making mistakes were mentioned by participants as critical" to self-directing one's own learning (Merriam et al., 2003, p. 178).
6. Uses failure as a learning motivator:
"Successfully intelligent people motivate themselves…and are not afraid of failure" (Merriam & Caffarella, 1999, p. 180).
7. Acknowledges limitations:
Often "participant's own conceptions of their capabilities and limitations were most important" (Thorén-Jönsson & Möller, 1999, p. 73).

B. Sense of career competence:
Competence suggests that one believes he or she is sufficiently or adequately prepared or able to become prepared for meeting the demands of career-related tasks (Thorén-Jönsson & Möller, 1999, p. 75).

1. Career-related respect is generated internally:
"The process [related to self-directed] learning originates with an

incentive to learn that can be internal or external" (Robertson & Merriam, 2005, p. 276).

2. Career satisfaction is evident:
   "Having one's own niche gave a sense of competence and satisfaction, confirmation of being good at something" (Thorén-Jönsson & Möller, 1999, p. 76). "Numerous crucial incidents identified the satisfaction the nurses felt in their own ingenuity in inventing tools or techniques" (Marsick & Watkins, 2002, p. 27).
3. Demonstrates a feeling of career contentment:
   Successful participation in a career-related occupation can create great pleasure and a sense of personal contentment (Thorén-Jönsson & Möller, 1999).
4. Uses language of doing:
   The participant is "used to the language of doing, evaluating, and achieving" (Lieblich et al., 1998, p. 79).
5. Is creative, a risk-taker, motivated by novelty:
   "Successfully intelligent people motivate themselves… and are not afraid to risk failure" (Merriam & Caffarella, 1999, p. 180). "This includes taking initiatives in creating and responding to opportunities, risk-taking, persistence, and ability to assess and modify plans to achieve a better fir between goals and choices" (Plunkett, 2001, p. 153).
6. Demonstrates a desire for development:
   The participant possesses a "sense of purpose and a desire to learn and know" what others in that career path know (Hansman, 2001, p. 48). "Among the goals in life was a *desire for development* and directions for the future" (Thorén-Jönsson & Möller, 1999, p. 76; see also, Kilgore, 2001, pp. 54-55).
7. Uses personal criteria for judging tasks:
   The participant "discovers the criteria by which that performance will be judged" and take responsibility for applying it (Moore, 1986, p. 169).
8. Detects inter-relationships:
   "The motivation and intensity to learn are often enhanced…through a catalyst…there are multiple projects occurring at the same time" (Robertson & Merriam, 2005, pp. 275-276). Rather than accepting a series of events as merely linear in nature, the person is aware that "one project contained within it the seeds required for the next" (Spear & Mocker, 1984, pp. 6-7).
9. Is aware of multiple causalities:
   "The motivation and intensity to learn are often enhanced…through a catalyst…there are multiple projects occurring at the same time" (Robertson & Merriam, 2005, pp. 275-276). The person is aware that circumstance influencing learning events may be "assembled over a

longer period of time and from a number of separate and unrelated settings" (Spear & Mocker, 1984, p. 7).

C. Agentive values and goals: "A person's sense of agency related to career development may be a product of three "mutually influential" categories: the person's confidence in their ability to learn, "sense of competence, and values and goals" (Thorén-Jönsson & Möller, 1999, p. 73). "It is in the conscious emphasis on the role and place of values and their evolution that the borderline between innovative and maintenance learning is most clearly demarcated" (Botkin et al., 1979, p. 14).
   1. Clear, career-related interests:
      "If the person has an interest in the topic or activity, then he or she will pursue it" (Robertson & Merriam, 2005, p. 275).
   2. Directed to career success:
      "Expectancy consists of the anticipation of being successful….Valence relates to the value a person puts on being successful" (Merriam & Caffarella, 1999, p. 62; see also, Lieblich et al., 1998, p. 77).
   3. Strives for own expectations:
      Decisions may be made based upon the "participants' knowledge, emotions and expectations of their own capability and self-sufficiency based on previous experiences in daily occupations… there were expectations which the participants strove to fulfill, if the role was important to them" (Thorén-Jönsson & Möller, 1999, p. 75, 76; see also, Roberson & Merriam, 2005, p. 270).
   4. Strong desire for independence:
      "A strong desire for independence and to help oneself in occupations was evident….Independence meant greater *autonomy* in occupations ….To be autonomous is to be a self-governing person" (Thorén-Jönsson & Möller, 1999, p. 79, italics original).
   5. Own sphere of influence:
      "Having…one's own sphere of authority was a goal in life. Having one's own niche gave a sense of competence and satisfaction, confirmation of being good at something and being respected by others because of one's qualifications" (Thorén-Jönsson & Möller, 1999, p. 76).
   6. Career is not one's whole life*

II. Career development, community-related

A. Group identification:
   "'Passion, commitment, and identification with the group's expertise' (Wenger & Snyder, 2000b, p. 142) is the glue that holds these groups together" (Hansman, 2001, p. 48).
   1. Certification*
   2. Career-related respect is generated externally:
      "The process [related to self-directed] learning originates with an

incentive to learn that can be internal or external" (Robertson & Merriam, 2005, p. 276).

3. Career role is socially determined:
   "Individuals…are required to deal with a number of competing life-spheres or…life-career roles, each one demanding a slightly different 'presentation of self'" (O'Doherty, 2000, p. 151).
4. Practices acting as a member:
   According to Wenger (1998), "Building an identity consists of negotiating the meanings of our experience of membership in social communities" (p. 145). "Knowledge about one's identity as a group member, and the practice of acting as a member of the groups one belongs to is also easily expressed in narrative" (Linde, 2001, p. 3).
5. Language of relationships:
   Participants describe the "positive and relational nature" of their relationships with others in the career environment (Lieblich et al., 1998, p. 65).
6. Communication within the group is important*
7. Peers are an important learning resource:
   "Through observation and contact with the repeated behaviors of those around them, adults accumulate an acute awareness of the knowledge and skills associated with some new competence" (Spear & Mocker, 1984, p. 5). "One of the dominant resources SDL is other people" (Robertson & Merriam, 2005, p. 278).
8. Works to maintain a feeling of community:
   "Participants made efforts to *maintain a feeling of community* and to devote their time to doing meaningful things for other people" (Thorén-Jönsson & Möller, 1999, p. 76, italics original).
9. Keeps up with social progress:
   The participant's desire for development can accrue through agentive means such as "looking ahead" or social means such as "keeping up with social progress" (Thorén-Jönsson & Möller, 1999, p. 76).
10. Learning decisions are career-perception driven:
    "The fact that collective images exist—and that perceptions can be shared—links societal to individual learning" (Botkin et al., 1979, p. 42). One's "career ideology" may influence the way he or she thinks about career learning, operating "as the lens that shapes perceptions and experience related to [career development]" (Richardson, 2000, pp. 197-198).
11. The community defines criteria for judging tasks:
    The participant acknowledges he or she "receives monitoring or feedback [from others in the career workplace] on the performance and perhaps an opportunity to reflect on and redefine the task or reconstruct a strategy for getting it done" (Moore, 1986, p. 169; see also, Brown & Duguid, 2000, p. 219).

B. Sense of serendipity:
Participants "may choose and construct serendipity as an inner narrative because it helps to explain as well as to tolerate and contain the doubt, uncertainty, and disappointment inherent in the flux…at the same time as it opens up the possibility of flexibility and experimentation" (Plunkett, 2001, p. 160).
    1. Chance, luck, fate, politics are important:
    "Task difficulty and luck…are external or environmental determinants of outcomes" (Albert & Luzzo, 1999, p. 433). Some of us are lucky enough to find places where our abilities are valued and nurtured ("luck factor"), while others, no matter what the individual effort, are never recognized or are blocked by circumstances beyond their control. (Merriam & Caffarella, 1999, p. 188).
    2. Unforeseen events, accident, change are important:
    The participant appears to experience "a particular outcome as accidental or unintentional" (Plunkett, 2001, p. 155).
    3. Influenced by the demandedness of tasks:
    Participants appear influenced by what they perceive to be the uncontrollable "rules about the distribution of responsibilities, materials, and information; about the level of "demandedness" of given tasks" (Moore, 1986, p. 169).
    4. Affected by the randomness actions of others:
    The participant may suggest that learning is affected by the randomness of their actions or others (Spear & Mocker, 1984, p. 3; see also, Plunkett, 2001).
    5. Time is perceived as a major player in decisions:
    The participant describes "the impact of some event that often speeds" or retards learning related to career development (Robertson & Merriam, 2005, p. 280).
    6. Play is perceived as important to learning and career: "Play is becoming an important part of work, business, and personal well-being" (Pink, 2005, p. 180).
    7. Money is perceived as a major player in decisions*

C. Distributed cognition
    1. Uses resource tools (e.g., search engines):
    "Simultaneous with the development of technologically sophisticated delivery systems is the development of new roles for [learners]. Having access to unlimited information is not the same as being able to search efficiently for the most significant information" (Merriam & Caffarella, 1999, p. 17).
    2. Uses available information sources (e.g., forums):
    The participant "gets information about the definition and meaning of the task…[relating] to how tasks get "accomplished"; that is, the worker uses things, information, and other people to carry out the job" (Moore, 1986, p. 169).

3. Uses personal help (e.g., expert):
   The participant "gets information about the definition and meaning of the task…[relating] to how tasks get "accomplished"; that is, the worker uses things, information, and other people to carry out the job" (Moore, 1986, p. 169). Participants may seek contact with "the best in the field" (Brown & Duguid, 2000, p. 221) with the result that new concepts may be "based on information provided by others" (Thorén-Jönsson & Möller, 1999, p. 74).
4. Perceives learning to be embedded in practice:
   Participant "expect that the means for learning will be contained within the situation and available to them…the environment contains the resources for learning and governs the process to a large degree" (Spear & Mocker, 1984, p. 5).
5. Uses work of others (e.g., exemplars)*

D. Communal values and goals
1. Demonstrates a sense of appropriateness:
   "When we talk to one another with the aim of understanding, we assume that each of us acts rationally (making claims of truth, sincerity and social appropriateness), or else we would not bother talking. (Conle, 2001, p. 23).
2. Is concerned with social place:
   The context within which one uses his or her learning is "always a social place" (Falk, 2001, p. 570); some participants may pay be more concerned than others with his or her place in that social structure (Lieblich et al., 1998, p. 77).
3. Attempts to fulfill the expectations of others:
   The participant responds in a way suggesting that "every society has a system of social expectations [such that] the study of adult development then becomes a study of life events construed from socially constructed beliefs" (Merriam & Caffarella, 1999, p. 120). The role participants believe they fulfill may have taken shape "in the social and cultural environment [where] there were expectations which the participants strove to fulfill, if the role was important to them" (Thorén-Jönsson & Möller, 1999, p. 76).
4. Attempts to satisfy the needs of others:
   "I would argue that one of the firmest expectation structures that is broken down in the episode is the expectation about absolute collegiality, which includes respect from anyone higher up to the hierarchy and, equally important, responsibility for a colleague who is lower down and in need of support" (Löyttyniemi, 2001, p. 197; see also, Merriam & Caffarella, 1999, pp. 54-55).
5. Applies pre-determined scales of worth:
   The participant "measures and evaluates himself [or herself] on a scale of worth and is concerned with his place on the many scales he [or she] employs for this conceptualization" (Lieblich et al., 1998, p. 77).

6. Seeks structure*

III. Story

A. Elements:

Although numerous narrative research practitioners mention the elements listed below, the list and the definitions of the story elements was created and refined from discussions presented in three specific sources: Bruner (1990, pp. 43-50), Franzosi (1998, pp. 520-533), and Schank (1990, pp. 86-102).

1. Action: What was done?
2. Plot: In what manner was it done?
3. Goal: Why? Purpose?
4. Tool: How was action enabled?
5. Scene: Where or when was it done?
6. Disruption: What trouble, conflict arose?
7. Balance: How was the disruption resolved?
8. Protagonist: References to self.
9. Theme: What is the meaning?

B. Characteristics:

The primary sources for these story elements are Lieblich et al (1998) and, especially, Löyttyniemi (2001), who states: "Narrating is never pure description, but it is colored with evaluation that may be direct or included in linguistic choices—for example the choice of wording….evaluative elements…of evidence of expectations: Repetition…False starts…Backtracks …Hedges…Negatives… Contrastives…Modals…Evaluative language… Evaluative verbs…Intensifiers, including laughter" (pp. 180-181) [as well as] "interruptions, reservations, repetitions, diminutives…that is, evidence of expectations" (pp. 183-184).

1. Evaluative statements
2. Use of technical jargon
3. Use of idioms, metaphors
4. Use of negatives, diminutives
5. Use of intensifiers
6. Apparent contrasts, contradictions
7. Use of modals (expressions of mood)

IV. Learning categories (Except where noted by an asterisk, each of these coding elements appeared on the demographic report prepared by each participant prior to being interviewed.)

A. Activities

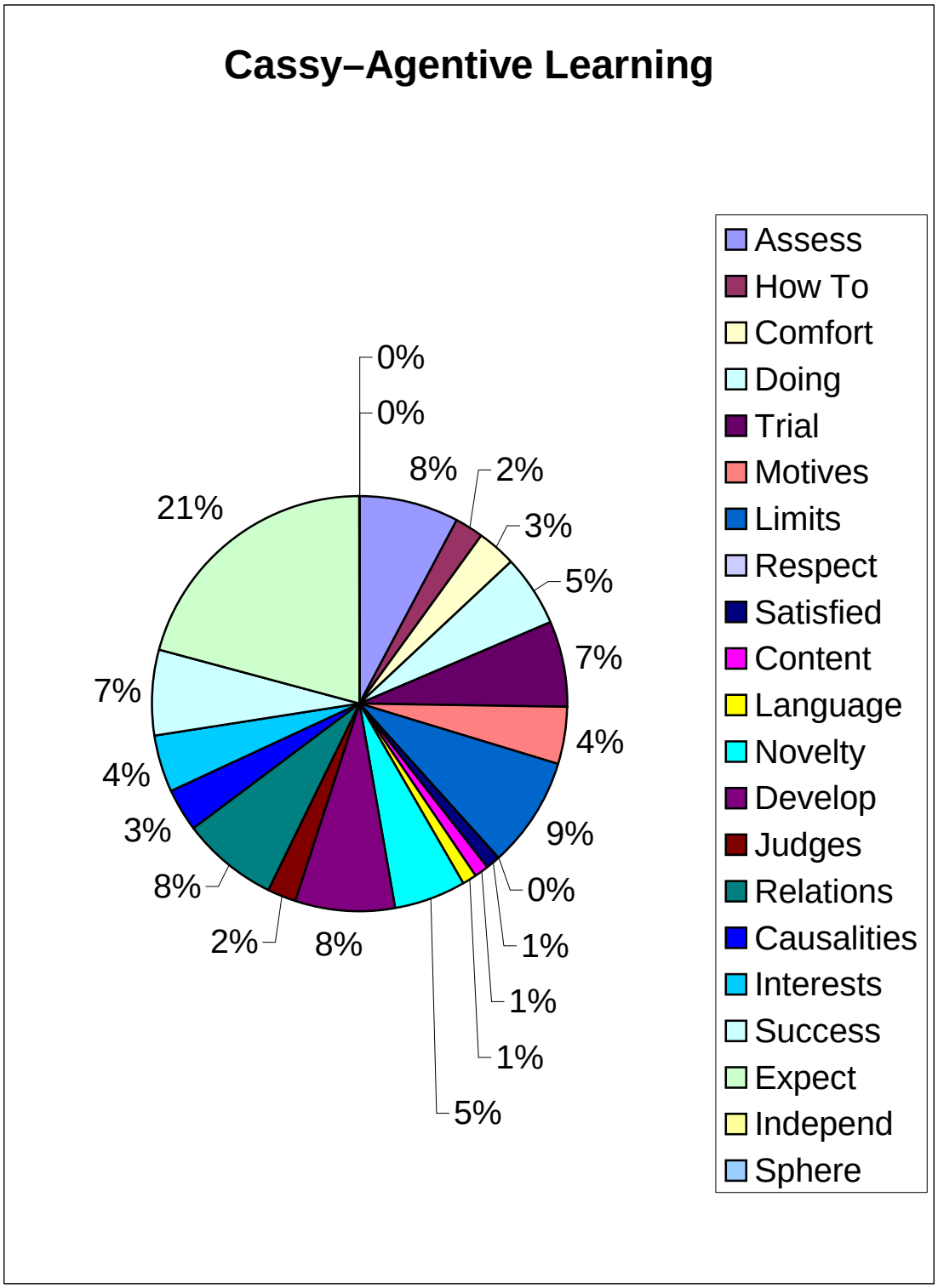
1. General learning
2. Job task
3. Problem solving
4. Computer skills
5. Health/safety
6. Career tools
7. Rights/benefits
8. Management skills

9. Career literacy
10. Second language

B. Method
    1. Trade fair
    2. Informal lecture
    3. Workshop/seminar
    4. Read manuals, books
    5. Read periodicals, bulletins
    6. Read Help, FAQs
    7. Frequent Internet forums, chatrooms
    8. Guided tour
    9. Use Internet search engines, directories
    10. Refer to instructional CDs
    11. Watch another person
    12. Observed the finished results of another
    13. Casual conversation
    14. Seek expert help, tech support
    15. Refer to notes, self-prepared database*
    16. Use a trial product*
C. Manner
    1. Formal
    2. Non-formal
    3. Informal
    4. Self-directed
D. Prior knowledge needed*
    1. Mathematics*
    2. Software*
    3. Sales experience*
    4. How to seek information*
    5. Skill or knowledge transfer*

* indicates category elements added during coding and analysis phase

Appendix H: Category-Content Pie Charts

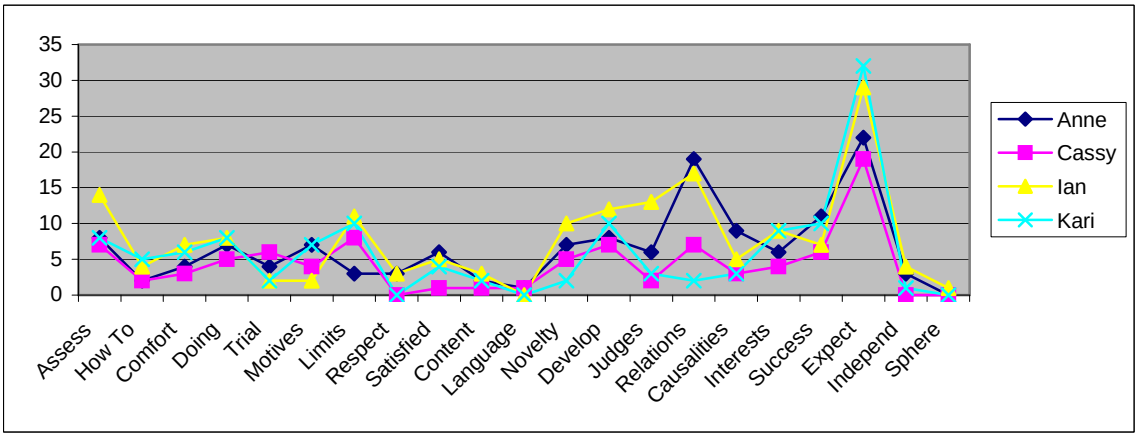


Appendix I: Sample Cohort Line Graph

Study 1A: 25-34

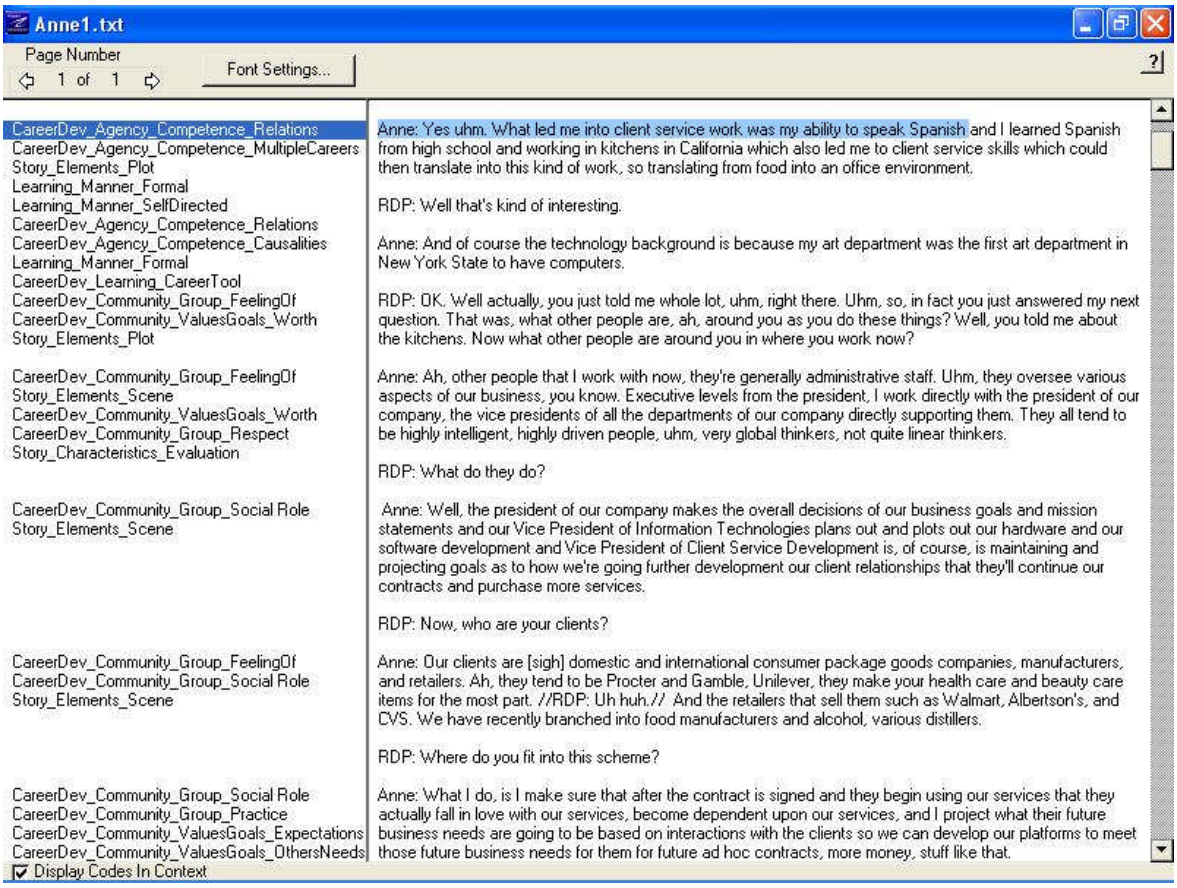
AGENCY ANALYSIS

Narrator	**Confidence in Ability to Learn**						
	Assess	How To	Comfort	Doing	Trial	Motives	Limits
Anne	8	2	4	7	4	7	3
Cassy	7	2	3	5	6	4	8
Ian	14	4	7	8	2	2	11
Kari	8	5	6	8	2	7	10



Appendix J: Sample HyperRESEARCH™ 2.6 Coding

(Notice the blue highlighting that hyperlinks the code o its related portion of the narrative text.)



CURRICULUM VITAE

RONALD D. PAIGE

Objective

Calling upon my varied, yet carefully cultivated, experiences generated from many successes in the domains of education, business, and community, I look forward to continuing an exciting and productive career inspiring and helping others learn, grow, and succeed.

Education

Doctor of Philosophy: Walden University. Minneapolis, MN. Concentration: Education, Technology Specialization. February 2007

Master of Science: SUNY Albany. Albany, NY. Concentration: Educational Media and Communications. Graduated: 1975

Bachelor of Arts: Hartwick College. Oneonta, NY. Concentration: English/Science. Graduated: 1969

Technical Certificate: IKON, Inc. Getzville, NY. Concentration: A+ Computer Hardware/Software Systems. Graduated: 2002

Technical Certificate: University of Buffalo. Buffalo, NY. Concentration: Cisco Networking Academy, Semesters 1 – 4. Graduated: 2003

Other: Jamestown Community College. Jamestown, NY. Concentration: electronics; computer applications.

Employment

2006-present: Director of Instructional Technology, Cleveland State Community College, Cleveland, TN.

1998-2006: Academic Integration Specialist, Erie-2 Chautauqua-Cattaraugus BOCES, Hewes Educational Center, Ashville, NY.

2002-2004: Adjunct instructor for CSC158 Computer Hardware/Software Systems. Jamestown Community College, Jamestown, NY.

1994-1998: Partner, CEO, editor/publisher for Chautauqua-Allegheny Magazine for Bergstue & Paige Marketing, Jamestown, NY.

1991-1994: Account executive, Time Warner Cable, Jamestown, NY.

1979-1991: Owner/operator, Camera Infirmary, Inc. Jamestown, NY.

1975-1980: Junior-senior high school English teacher, Cassadaga Valley Central School, Sinclairville, NY.

Representative achievements

Doctoral dissertation: received The Don E. Ackerman Research Fellowship in Educational Leadership for PhD research.

Multiple permanent NYS teaching certifications: Kindergarten, Grades 1–6; Chemistry, Biology, General Science 7–12; English 7–12; Electro-Electromechanical Trades.

The Telephone Book Book: researched, wrote, and published a multi-discipline, instructional workbook based upon the vast amount of information residing in the common telephone book. (Sold all rights to a California-based publisher)

Camera Infirmary, Inc: I built an initial $1,500 investment into the first one-hour photo-processing business in western New York. Over a 12-year period the business won numerous awards and increased its net worth 500-fold!

Senior Salute: called upon by the mayor of Jamestown, I conceptualized, organized, and managed, for two years, the area's largest trade show for and tribute to local senior citizens. (Resulted in commendations from mayor, State Representative, and State Senator)

Chautauqua-Allegheny Magazine: founder, editor, publisher for one of the premier publications of the Chautauqua region, combining stories of our heritage with contemporary topics featuring the positive aspects of life in Chautauqua County.

The Times of Our Lives: created, produced, and hosted the popular – and longest locally running – Saturday morning radio show; one of two successfully developed local radio shows.

Village Trustee, Village of Celoron, NY: After appointment by the mayor to fill a vacancy on the village board, I continually and successfully stood for re-election until moving out of the village.

Paper presenter: 2006 New York State Conference on Instructional Technology (CIT), SUNY, Fredonia, NY; 2007 League of Innovation CIT, Nashville, TN.