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The Impact of the Digital Divide on First-Year Community College Students

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COLLEGE OF EDUCATION

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Doctoral Study Submitted in Partial Fulfillment

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Some students do not possess the learning management system (LMS) and basic computer skills needed for success in first-year experience (FYE) courses. The purpose of this quantitative study, based on the Integrative Learning Design Framework and theory of transactional distance, was to identify what basic computer skills and LMS skills are needed for first-year students to be successful in FYE courses. A survey was offered to 368 first-year students and 47 first-year instructors at a large Midwestern community college to compare instructors' perceptions of the computer literacy skill levels necessary for FYE student success with FYE students' self-reported current computer skill levels. An independent-samples *t* test was used to compare the means of the 2 groups (FYE instructors and FYE students) to evaluate whether the groups were significantly different from each other regarding needed basic computer skills. Analyses revealed significant differences between the groups in adding borders and highlighting in word processing software, posting initial threads and replies in discussion boards, submitting assignments, locating the online course calendar and syllabus, and forwarding e-mails. The findings of this study prompted a recommendation to change the student entrance policy to include student computer literacy workshops and placement exams. This study impacted positive social change by providing information to educators at the study site as to the computer literacy and LMS skills that are needed in a FYE course, therefore aiding FYE students in the future.

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Section 1: The Problem

Educators must identify what skills are needed for first-year students to be successful in the classroom. These skills include: the learning management system (LMS) and basic computer skills. Nationally, enrollment of nontraditional students is on the rise (Asch et al., 2013). Millennials, who are between the ages of 25 and 36, make up the majority of first-year student enrollment. This generation of students has become the new traditional student population among college undergraduates over the past 20 years (Brown, 2011). Millennials were named because they were born after the introduction of computers (Ng, Schweitzer, & Lyons, 2010). At the 2-year institution under study, approximately 70% of the student body (including a majority of first-year students) consists of Millennials, as defined by Brown. These students expect more diversity in classroom instruction, full of engagement, and innovative technology (Mueller & Miller, 2013). One way of meeting these needs is through the use of LMS.

Typically, a LMS is used to plan, implement, and provide assessment using web-based software within an institution. LMS's like Moodle, Blackboard, and Canvas have been used for over a decade to give students the opportunity to look up the course calendar of assignments, the syllabus, and instructor information (Ko, Liu, & Wachira, 2015). Whether course modality is online or face-to-face, new ways of learning within the LMS have begun where the student is the center of the course and instructors use peer assessment and collaboration tools, thus giving students an experience in education that is unlike any other decade in higher education (Conde et al., 2014). Web-based education modalities, such as discussion boards or wikis, provide ways for students to learn that are different from the traditional classroom setting. Because technology use in primary and secondary school systems is relatively new and is ever-evolving, student skills needed in postsecondary education are fairly unknown. Researchers have found that a correlation

exists between student success and engaged involvement in the LMS (Asch et al., 2013). However, incorporating computer literacy into secondary public school systems did not occur until the late 90s, and only a few states thought it was necessary (Cuban, 1993). Eighteen states, including Indiana, reported that it was not necessary to incorporate technology in the classroom in that era (Coley, Cradler, & Engel, 1997). The National Educational Technology Standards (now known as the International Society for Technology in Education-ISTE) began to contextualize the significance of using technology in the classroom, but the development of standards for primary and secondary schools was not established until 2000 (Roblyer, 2000). Because computer literacy was not widely taught at the secondary level until the year 2000, current students are entering postsecondary education without the necessary skills.

As institutional policy changes to reflect curricula incorporating the LMS and innovative technology into face-to-face classrooms, some students are not receiving the computer literacy training needed to succeed in college or vocational schools before entering a face-to-face college course. Identifying what academic computer literacy skills are lacking was the basis for this study. Once these skills are identified, the institution under study can begin to implement a program that could alleviate this issue. LMS and computer literacy training would give college-bound students the educational technology skills needed to be successful before registering for courses in a postsecondary institution.

An overview of the project study and the institution under review will be included in this section. Additionally, evidence that the problem exists at the local level, a review of the literature, definitions, the significance of the study, and implications will be described in this section.

Definition of the Problem

Some instructors are unable to identify the skills within the LMS and basic computer skills that are needed for first-year students to be successful in face-to-face courses. According to internal institutional reports, Over the last 2 years, the success rates of college readiness courses for the institution under review have averaged 45.5%; while remedial first-year math students with a success score of C or better was at 55% and remedial first-year English students with a success score of C or better was 46% .On a national level, according to the ACT Readiness Report (2014), the institution under review was scoring lower than the national average in English (64%), but slightly higher in the math category (43%).

Scholars have correlated these failure rates, in part, to the lack of computer literacy readiness for first-year students (Tanyel & Griffin, 2014). However, although research has been conducted regarding computer literacy, a majority of the existing literature relates to online learning. There is little discussion regarding the computer literacy skills that first-year students in community college possess before entering their first face-to-face course (student success/college readiness). At the institution under review, educational computer literacy in first-year students is an issue. Even though most courses require students to use Word or Google Docs and their LMS, only 38% of students took the computer literacy readiness assessment offered, and of those who took the assessment, 20% of students scored low on the technical competency and technical knowledge categories (SmarterMeasure, 2015). However, most first-year students consider themselves to be tech savvy, although their perception may not be accurate (Hicks, 2011). Students may think that, because they know how to swipe on their smart phones and engage on

social media, they are tech savvy. These skills do not equate to skills in the LMS or in word processing software, leaving a gap in their actual computer literacy skills regarding education.

Higher educational policies regarding the use of technology vary. Although many institutions incorporate technological tools such as a LMS, students may not understand how to use these tools to their full capacity. Students may need to graduate from performing basic online functions to actively participating in an engaging classroom rich with technology (Beetham & Sharpe, 2013). At the institution under review, a newsletter that was made available to the public from the provost's office stated that institutional policy required students to partake in the LMS training before beginning their online courses, but this policy is not present for students enrolled in face-to-face courses. This policy supports the need for a study that would investigate whether the same training that is required in online courses is needed in face-to-face courses.

At the beginning of 2000, the discussion began regarding new technologies and computer literacy norms in the online learning platform and the inequalities between the information wealthy and impoverished. This concept was known as the *digital divide* (Norris, 2001). There is now a diverse group of students who are digital natives (students who grew up with technology) and digital immigrants (those who did not use or scarcely used technology during childhood) who need computer literacy skills in face-to-face classrooms (Prensky, 2013). Digital natives consist of two groups: Neo-Millennials (students born from 2000-present) and Millennials (students born prior to 2000 but after 1980; Asselin & Doiron, 2008). These groups, although similar, have very different experiences with technology as children, therefore needing further investigation as to how to better serve them in postsecondary learning environments.

Digital natives and digital immigrants are both prevalent at the institution under review, and some first-year students require extra training for basic computer literacy and LMS training.

With a total of 795 students enrolled at the end of the fall term in 2014, 472 students were between the ages of 15-24 (digital natives), and 190 students were between the ages of 25-34 The remaining 16% were digital immigrants (ages 35-60+). As the LMS is being used more often to meet 21st century learning objectives, a more technology, learning-based andragogy will become necessary in the future (Mills, Kenezek, & Wakefield, 2013). However, despite the rise in LMS use, there is a gap in college readiness among students (Motamedi, 2013). More discussion will need to take place to ascertain how students can acquire the necessary technological skills needed for student success (Robertson, Macvean, & Howland, 2012). The institution under study mandates LMS training for online courses but does not for face-to-face classes. Even though LMS training is offered for face-to-face students, participation is low. Within the institution under study, this leaves a wider gap in the digital divide because students lack computer literacy skills in all modalities of learning: online, face-to-face, and hybrid classrooms.

Rationale

Evidence of the Problem at the Local Level

In face-to-face courses at the local study site, instructors upload the course syllabus and calendar of assignments, update the Instructor tab, and add assignments into the LMS infrastructure to get students engaged online. Most of these assignments and course materials require students to have basic computer literacy and word processing skills. However, there is no policy that mandates students to attend LMS training that would help them to understand how to find LMS information before entering a face-to-face classroom. In the current practice, it is assumed that students embark on their first year of courses with the knowledge of how to use the LMS and basic computer literacy skills. These basic skills include the following in regards to

computer literacy: creating and saving assignments using Word or Google Docs, copy/pasting from Word or Google Docs into the LMS assignment area, looking up their grades and feedback from instructors, using e-mail to communicate with instructors, submitting assignments in the LMS, collaborating with classmates in the LMS, watching videos from the LMS, and knowing the differences between web browsers and apps for smart devices. These basic skills are necessary and are what the institution expects for students to be digitally competent (Hilbert, 2015). The purpose of this study was to ascertain whether students are digitally competent with the computer literacy skills needed upon entering their first face-to-face class and if these skills correlate with the expectations from instructors who teach the student success/college readiness courses. Additionally, I offered a new perspective on what computer literacy skills are needed in a face-to-face classroom (including the institutional LMS), thus aiding in closing the gap that community college first-year students have in the digital divide.

Evidence of the Problem from the Professional Literature

Early predictions in research regarding graduation rates are no longer predictions. Nationally, degree completion rates are decreasing and are magnified in the community college setting (Price & Tovar, 2014). Carr and Rockman (2003) predicted that only 50% of 21st century learners would graduate with a college degree. This was partially attributed to students' lack of ability to use technology in the way that is necessary for academic achievement, specifically to find and use information (Owen, 2010). Online student enrollment constitutes up to 33% (and climbing) of college students in the United States (Allen & Seaman, 2011; Grinder, Kelly-Reid, & Mann, 2014), which is typically preceded by a LMS training or computer competency training module. Online learning and face-to-face courses have an equal rate of degree completion and increase in completion for online courses (Allen & Seaman, 2013; Shea & Bidjerano, 2014).

Increased completion rates are prevalent, especially when institutions provide equal instructional best practices and andragogy in the online atmosphere as in face-to-face courses (Driscoll, Jicha, Hunt, Tichavsky, & Thompson, 2012). If the expectations of the institutions are to provide equal amounts of course sections that are face-to-face and online, then equal training may be an important topic of study.

The chalk and talk method of teaching in face-to-face courses is a teaching method of the past. This traditional method of teaching has made way for more engagement, flipped classrooms, and blended learning practices (Murray, Koziniec, & McGill, 2015). Although a significant body of literature exists related to the need for computer literacy in online courses (Andersson, Reimers, & Maxwell, 2013; Coiro, Knobel, Lankshear, & Leu, 2014; Dixon, 2013), research on computer literacy in face-to-face classes is sparse; therefore, the purpose of this study was to explore first year experience (FYE) student computer literacy and learning management system skills that are needed in the first course of a community college setting.

Definitions

Andragogy: The style of teaching practices of adult learners in higher education (Daily & Landis, 2014).

Blended learning: Combining learning modalities of online and face-to-face readings and/or activities inside and outside the classroom (Zurita, Hasbun, Baloian, & Jerez, 2015).

Criterion variables: The outcome being predicted in a research study (Creswell, 2012).

Digital divide: New technologies and computer literacy norms in the online learning platform and the inequalities between the information wealthy and impoverished at the beginning of this century (Norris, 2001).

Digital immigrants: Students who did not use or scarcely used technology during childhood (Prensky, 2013).

Digital natives: Students who grew up with technology (Presnky, 2013).

First-year students: Students who are new to the higher education experience and in their first year of college (Kuh, 2003).

Learning management systems (LMS): Computer-based learning platforms where students can read material; link to websites; participate in group activities; submit essays, projects, and assignments; and have access to plethora of institutional resources.

Millennial students: A generation of students typically between the ages of 25 and 36 who have been brought up with the rise of technology (Brown, 2011).

Predictor variables: The variable used to make a conjecture on any given outcome (Creswell, 2012).

Success rates: Defined in first-year student college-readiness courses as obtaining a D or better.

Significance

Educators were concerned about the success of college-readiness courses among first-year students since the LMS was implemented in many postsecondary institutions over a decade ago. At the institution under study, success rates among first-year students in college-readiness courses in the fall term of 2012 were as low as 40%. Student participation in LMS training, prior to the spring of 2013, was not required or even suggested. Additionally, despite opportunities for professional development, many faculty members opted out of using the LMS to its full capacity, and those who did partake in the workshops used the LMS minimally (posting syllabi, grades, and instructor contact information). The institution under study enrolled a high percentage of

Millennials. These students expect innovative technology inside the face-to-face classroom as well as when completing assignments online (Mueller & Miller, 2013). Whether the instructional modality is face-to-face, blended, hybrid, or distance learning, common complaints regarding the LMS among new students are the ease of use and the availability of technical assistance or training (Dahlstrom, Brooks, & Bichsel, 2014; Green, Inan, & Denton, 2012). Whether students are locating course items (ie., the syllabus, calendar of assignments, and due dates) or submitting assignments, discussion board postings, and completing exams through the online learning platform, students need to obtain knowledge as to how to use the LMS platform (Kuh, Kinzie, Schuh, & Whitt, 2011). Students have a whole society built around technology; yet, higher educational institutions, especially community colleges, have only begun to identify the computer literacy needs for college readiness in a face-to-face classroom (Winke & Goertler, 2013). Extensive research has yet to be done on whether basic computer skills are needed or more advanced skills are needed including those needed to navigate a LMS.

Institutions are heading toward having more assessment and collaborative learning opportunities on the LMS for face-to-face classrooms. First-year students need to have skill sets that match those computer literacy best practices (Hilbert, 2015). Because not all students are successful in first-year college readiness courses, there is a need for intervention for these students who are affecting local community college success rates. Research is needed to determine the computer and learning management-related skills that first-year students in a community college require to be successful before entering their first semester in a face-to-face classroom. Additionally, research is needed to gain an understanding of the FYE instructor expectations regarding computer literacy for student success in their first semester before entering the classroom. If there is a gap in the perceptions of self-reported computer skills and

the expectations of the instructors, some changes would be necessary at the local level to ensure college readiness among FYE students.

Theoretical Framework

This study was based on Bannan-Ritland's (2003) *integrative learning design framework and Moore and Kearsly's (1993) theory of transactional distance*. The theory of transactional distance is the basis for structure, learner autonomy, and dialogue in distance education through student and faculty experiences and the communication process. Bannan-Ritland and Moore and Kearsly's theoretical frameworks address assessment, computer literacy, and the digital divide in e-learning. Computer literacy, in general, among first-year students in face-to-face courses at community colleges is not recognized in the field of academia as a part of the digital divide, regardless of modality (Norris, 2001). To be successful, students need computer literacy skills in both face-to-face and e-learning. There is a gap between the training given to online students and expectations of face-to-face, first-year students.

Research Question

Because students require a certain level of basic computer literacy and LMS knowledge and no training is provided to students on this subject matter, the intention of this study was to investigate the first-year student academic computer literacy and LMS skills and the expectations of instructions in order to lessen the gap. Research on this topic is lacking in terms of face-to-face courses. A majority of the research was based on distance learning; therefore, a study was needed to find a solution to this local problem. The research question for this study was as followed:

RQ1. Is there a significant difference between the self-reported computer literacy proficiency ratings identified by FYE students in their first face-to-face class and the computer

literacy skills identified by FYE faculty members as important for student success in FYE face-to-face classes in a community college?

H_1: There is a significant difference between the perceived self-reported computer literacy skills of first-year students and the computer literacy skills that faculty members have identified that are needed in a student's first face-to-face class.

H_0: There is no significant difference between the perceived self-reported computer literacy skills of first-year students and the computer literacy skills that faculty members have identified that are needed in a student's first face-to-face class.

The independent variables formed one group with two levels: FYE students and FYE faculty members. The dependent variables were the computer skills necessary for success in the one-credit college readiness courses. If there are significant differences found, a policy recommendation based on data would be encouraged.

Review of the Literature

Introduction to the Literature

The following key terms were used to critically review the literature: *first-year college students*, *retention/persistence, college-readiness, college placement exams*, *Millennials/Neo-Millennials, digital natives, blended learning, completion rates, computer literacy*, *learning management systems, hybrid and online learning, traditional classrooms, college completion rates*, and *modalities of learning*. Scholarly literature on the theory of transactional distance, and computer literacy theories in relation to FYE course success were reviewed. My search included Walden University, ERIC, government, Google Scholar, and ProQuest databases. Additionally, I reviewed many theses and dissertations through ProQuest and Walden in my research. Over a parameter of 9 months, I reviewed over 500 conference papers, institutional newsletters, peer-

reviewed articles, theses, dissertations, and books. A majority of said articles were published within the last 5 years of the beginning of my search.

First-year college students are typically considered as college ready when they have attained a high school diploma or general education development (GED) and passed a college placement exam such as Compass or Accuplacer. The skills tested in those college placement exams are generally academic based: basic math, reading, and composition skills. Some scholars claim that these types of college placement exams are predictors for college student success, while other researchers show high skepticism (Burdman, 2012; Scott-Clayton, 2012). College placement tests do not test the basic computer skills that are becoming more necessary in face-to-face learning atmospheres, thus threatening the student's ability to succeed in a college before courses begin.

Theoretical Structure

The theory of transactional distance is the basis for structure, learner autonomy, and dialogue in distance education through student and faculty experiences and the communication process (Moore & Kearsly, 1993). The design, instructional methods (using innovative technology), and a student's sense of self-awareness are all components of the three key variables in the theory of transactional distance. These key variables are only implemented in online learning specifically instead of face-to-face courses which uses online assignment submission, online resources, and online assessment. Falloon (2011) tested Moore and Kearsly's theory within a postgraduate distance learning teacher education program. Falloon suggested that dialogue creation within the online learning atmosphere can have a positive impact on student success but a negative impact on learner autonomy. Furthermore, Falloon discussed revisiting this theory with innovative technologies in mind, such as synchronous communication tools.

In the theoretical *integrative learning design framework*, Bannan-Ritland (2003) discussed the importance of exploration, enactment, evaluation (formative assessment), and reflection in a distance learning classroom. Dix (2007) suggested that adopting complex interventions, as suggested in Bannan-Ritland's framework of online learning tools, should be a part of mainstream traditional classrooms. Garrison (2000) discussed that theoretical frameworks like these are the guiding practice for pedagogy and successful student learning in online courses, supporting the idea that online learning had less to do with structural issues and more to do with transactional issues. Conversely, Martindale (2002) suggested that there is not one method for distance learning pedagogy, communications, and reasons for success as the theory of transactional distance displays. Furthermore, the basic structure for this theory applies to the more evolved classrooms with different modalities of learning; face-to-face, hybrid, or blended learning (Falloon, 2011). Each modality requires different transactions or communication methods. The theory of transactional distance was used in the 1990s for distance learning because of the evolution in innovative technology in the classroom, and it can be used in all modalities of learning (Benson & Samarawickrema, 2009). Since technology is ever evolving, continued research on this topic is necessary.

With more colleges using the LMS to communicate, collect assignments, and use other course resources, efficiencies in pertinent technological skills for college educational success can be a determiner in whether a student will persist to the second semester. Some administrators and instructors believe that Millennial and Neo-Millennial first-year students have proficient levels of computer literacy skills upon entering college stemming from an increased personal use of smart phones, tablets, and home computers. However, the presumption that students are ready to be successful in a college experience rich with the use of technology is not accurate (Gross &

Latham, 2012; Hill, Macheak, & Siegel, 2013). Wallace and Clarianna (2005) determined that 64% of business student test scores dropped below 60% regarding preinstruction technology assessment, therefore concluding that the institution's first-year students lacked the necessary computer skills to persist to the next semester without some type of computer literacy training. There is a gap in the literature on whether online learning requires a certain level of computer literacy; yet, face-to-face students may need the same skills set to reach their academic goals. Research regarding the computer literacy skills in face-to-face classrooms is needed.

Completion Rates in Community Colleges

When entering into college, it is important to have goals. Two long-term goals in a young person's life are often graduating high school and then graduating from college to obtain financial security (Barnes & Slate, 2010). Even with the support that high schools give to students to help them achieve their dreams, many students do not succeed with their long-term goals. Many of the reasons for first-year students dropping out or not attending college remain the same, and some have evolved due to changing factors in society and technology (Symonds, Schwartz, & Ferguson, 2011). The Great Recession (December, 2007- June, 2009) affected many students who were in the pursuit of their dreams. Lay-offs (which accounted for the 10.1% unemployment rate), debt accumulation, and other changes in the economy across the United States caused more students to enroll in college than in previous recessions; however, the increase in student loan debt and college-readiness have played a role in completion rates (Long, 2014).

Studying student completion rates is generally associated with retention, stemming from the primary models of retention by Tinto (1975, 1987, 1993) and Dewey (1997). Constructing educational success models typically consists of best practices in the classroom that encourage

engagement grounded from Bloom's (1956) taxonomy of the hierarchy of critical thinking. This model spans the three basic and three higher levels of thinking: knowledge, comprehension, and application (lower levels of thinking) and analysis, synthesis, and evaluation (higher levels of thinking). Understanding academic integrity and incorporating soft skills in face-to-face classroom settings were also a basis for quality educational practices (Tinto, Russo, & Kadel, 1994). When examining college placement exams, there is a gap between the typical educational success model and what is assessed in order to be a good indicator of student success in college. Many educational success models discuss soft skills and the ability to affectively use a computer; yet, placement exams lack these types of assessment questions.

Gardner discussed the importance of FYE programs that were rich in action to improve dropout rates within their first year. Gardner discussed curriculum redevelopment, pairing students with peer mentors, ongoing academic advising, and an increase in full-time faculty (Gardner, 1986; Gardner & Siegel, 2001). When researchers looked at completion rates as a whole in the 1990s, rates were much higher than current completion rates (Johnson, 2012; Walpole, 2003). Tinto's educational models were the foundation of some higher educational institutions in the 1990s. Johnson (2012) suggested that this trend of decreasing completion rates since the 1990s was due to the socioeconomic status of working parents in the 90s. When a student's socioeconomic status is within the wealthy range, educational resources, including computers and other technology that help students achieve their goals, are more accessible. Students who typically had low socioeconomic status studied less, prioritized a paycheck over studies, participated in fewer extracurricular experiences, and succeeded at an inferior rate to students with an elevated socioeconomic status (Walpole, 2003). Providing some of the resources to underrepresented students free of charge may increase success rates.

In addition to the impact of economic factors, the education models of completion, retention, and persistence rates have transformed as society and technology have changed, thus affecting institutional policy and student learning (Jacob, 2015; Kaiser et al., 2014; Psacharopoulos, 2014). Lack of institutional policy changes regarding technology has affected completion rates across the nation. The Lumina Foundation and the College Board declared support for Obama's American Graduation Initiative to increase graduation of 25- to 34-year-old students to 60% by 2025 (Adelman, Ewell, Gaston, & Schneider, 2013; Mellow & Heelan, 2014). Education has evolved from focusing on Tinto, Bloom, and Dewey's educational models to integrating collaborative learning, engaging students through a LMS, and using Bloom's digital taxonomy (Barkley, Cross, & Major, 2014; Churches, 2009; Dixson, 2012). Success rates of students who are unprepared for academic classroom technology may decrease by as much as 25% in a face-to-face classroom and as much as 45% in a distance learning classroom, which is a result of not teaching to more visual and kinesthetic learners (Andersson et al., 2013). Institutions often have a very diverse population of learners that cannot all be taught in one modality.

Nationally, degree completion rates are decreasing and are magnified in the community college setting (Price & Tovar, 2014). These decreasing graduation rates mirror early predictions in research. Carr and Rockman (2003) predicted that only 50% of 21st century learners would graduate with a college degree. This was partially attributed to students' lack of ability to use technology in the way that is necessary for academic achievement, specifically to find and use information (Owen, 2010; Venezia, Kirst, & Antonio, 2003). Cohodes and Goodman (2012) found that despite the low quality of a community college and their completion rates (40% lower than surrounding universities), students were persuaded to enroll in community colleges for

financial reasons. State legislation has increased high school credit requirements, which was thought to aid in college readiness; however, Bailey (2009) reported that despite these efforts, students were still unprepared. Other interventions may need to be investigated in order to remedy the unpreparedness of new students.

In the late 1990s, there was discussion of the impact of the change in technology and the correlation with completion rates. In the early 2000s, researchers realized that issues with completion rates were due, in part, to the degree of computer literacy held by both instructors and students. This influence on completion rates begins in elementary education (Wild & Ebbers, 2002). Despite the positive impact that incorporating technology into the elementary classrooms has, instructors' attitudes and skills have yet to catch up with technological trends, thus having a deleterious effect on secondary and higher education (Kulik, 2003; Kusano et al., 2013). Over 30% of college students in the United States are partaking in distance learning courses (Allen & Seaman, 2011; Grinder et al., 2014). There has been debate as to the correlation between graduation rates and online learning. Online learning has an equal rate of degree completion, and some studies show an increase in completion as opposed to face-to-face traditional courses (Allen & Seaman, 2013; Shea & Bidjerano, 2014). When institutions provide best practices and andragogy in the online atmosphere, as done in the traditional face-to-face courses, student completion rates can increase (Driscoll et al., 2012).

Neo-Millennial and Millennial First-Year Students

Because community colleges are typically public institutions, a large portion of revenue is obtained from governmental support and student tuition. Grants and other donations often apply to the technology needs of institutions. With technology being the second fastest growing expense in community colleges, it is becoming more difficult to keep up with the demands of the

needs of current students (Goldstein, 2012). Many higher educational 2-year and 4-year institutions are faced assessing the impact that the evolution of technology has in the traditional classroom. Using PowerPoint presentations, video cameras, scanners, and Smart boards seems ancient in comparison to the use of current technology including blogging and massive open-online courses (MOOCs; Ertmer et al., 2012; Norton, Sonnemann, & McGannon, 2013). Technology often outstrips the financial means of institutions to provide hardware and software for instructors and students (Hwang & Choung, 2014; Johnson et al., 2013). This inability to provide students and faculty members with the most up-to-date technology creates a disconnect or gap in expectations versus fulfillment for students and faculty members who can keep up with the most current technology at home.

Students who have grown up around technology have varied access throughout their high school experiences. Since 2000, the accessibility of computers and computer literacy instruction has increased by 56%, with an increase in Internet accessibility of 77% since 2008 (U.S. Department of Education, 2013). Asselin and Doiron (2008) stated that Millennial students (also recognized as Generation Y) and Neo-Millennial students (also known as the Net Generation) are students who need a different teaching style when entering a classroom. However, Prensky (2001) discussed that the students beginning in the Millennial time period are no longer the students to which the current community colleges and other institutions were designed to teach, nor are their professors and instructors prepared to teach them. The greater the age difference is between instructors and students; the greater disconnection students have engaging in the classroom in an effective manner.

Millennial students are students born between 1986 and 1995. Millennials have been raised with the introduction and evolution of technology and make up over 36% of the U.S.

population (Brown, 2011). Within the community college setting, a majority of student enrollment consists of Pell Grant recipients who are nontraditional students, who can also be labeled as Millennials, Neo-Millennials, or Generation Xers (Cho, Jacobs, & Zhang, 2013). Some researchers have indicated differences between the nontraditional groups in regards to using innovative technology (discussion boards, wikis, social networking, blogging, and video mashups; Singh, 2014). Some of these groups feel that their level of computer literacy is high based on the amount of technological activity within social networks and generalized web browsing as opposed to the technology used inside of the classroom or for homework purposes (Bartholomew, Johnson, Ormond, & Mulbery, 2003). Because most teachers come from the Baby Boomer era (who have been well-versed in one-on-one teaching methods or chalk and talk methods), there is a disconnect between instructors and students, which causes anxiety among those who are used to a different way of learning post-Baby Boomer era (Brown, 2011). Female students show more anxiety than male students toward using educational-based technology (Huang, Hood, & Yoo, 2012). More resources and reminders of said resources may need to be offered to the female student population

Computer Literacy among First-Year Students and the LMS

The effect of technology in a global capacity has influenced policy in K-12 and college education (Kalantzis, Varnava-Skoura, & Cope, 2002). Prompted by the innovative developments and the rise of the networked society (Castells, 2000) in digital communication, information technology, and Web 2.0, teachers must change the ways or manner of how they teach their students (Gilbert, 2005; Lankshear & Knoebel, 2003; Lonsdale & McCurry, 2004). Similar to the institution under review, Buckenmeyer, Barczyk, Hixon, Zamojski, and Tomory (2015) showed that 94% of seasoned student participants believed that the use of innovative

technology had a positive impact on their learning process. However, with an average dropout rate of 46% for first-year students, researchers are questioning why such a perceived important aspect of college success does not correlate with the dropout rates (ACT National Collegiate Retention and Persistence to Degree Rates, 2014). Perhaps data collected reflecting these perceptions were not from all students, but just the students who did not drop out.

First-year students are known for being raised in a technological atmosphere, even though the exposure of the type of computer literacy (social media and texting) has caused students to develop a language that is not appropriate for college-level work: using proper grammar, formatting, formal writing, and mechanics of writing (Ratliff, 2009). Access and usability on campus is a challenge among some community public institutions even though policy dictates that communication and feedback on assessment is being implemented through the LMS. Junco, Merson, and Salter (2010) showed that there were differences in the use of smart phones as opposed to LMS communications leading to predictors of digital inequality: income, gender, and ethnicity. Furthermore, Junco et al. showed that European American and female students in a higher socioeconomic bracket were more likely to use a smart phone to communicate with instructors than African American and male students.

Computer literacy seems to be a term in which the definition is based on perception. Nixon (2013) indicated that students who thought they were computer literate were unsuccessful when it came to office/desktop software skills but were able to increase their skills with e-mailing and other online tutorials with support. Using i Operating System (iOS, also known as Apple) and Android smart phones has also been considered as innovative technology in the classroom.

Having basic computer skills and navigating social media are two very different entities. In a study involving Malaysian students, 16- to 19-years-old, Chan, Walker, and Gleaves (2014) suggested that, depending on the cultural background, self-identity, and value of this modality of learning, students may be more influenced by social media in regards to learning. However, to be competent at the postsecondary college level, students must be capable of acquiring basic computer skills. Although some students perceive themselves to be tech savvy, their abilities to work on a spreadsheet, copy/cut/paste and format a Word or Google Doc, copy/save/upload files, use the e-mail system, or navigate a college online infrastructure (LMS) are lacking, thus displaying a digital usage gap (Robinson & Gilliam, 2014). As technology has evolved, it is difficult to determine what it means to be tech savvy.

Tech-savvy is a phrase that has been used, in general terms, to describe an individual's experience with technology. Computer literacy in college is not only defined as having basic computer skills, but it also requires that students understand the LMS in the institution in which they are enrolled (Jerald, 2009). The LMS can be beneficial not only to meet student's technology needs, but to track important information such as instructional quality and student assessment which can be used to inform evaluators of student needs (Mandernach & Palese-Sanderson, 2015). Assessment data through LMS generated quizzes and other assessments are generally met with positivity as a form of formative assessment among students and can be a tool for the instructor who can analyze critical areas of low performance in certain topics (Patil, Mulimani, & Desai, 2015). In a recent, Finnish, four-year university study on Moodle (the LMS used at the institution) and student's ease of use perceptions, Islam and Azad (2015) suggested that accessibility and ease was of little concern to students as students seem to pick up on tools needed for academic success.

In a similar study conducted at the Spanish National University, Cano & Garcia (2015) suggested that although students felt that using the technology was important, students had a high degree of fear of making mistakes within the LMS and a general feeling of isolation from teachers. Adversely, in a recent U.S. study, Parkes, Stein, & Reading (2014) suggested that while students understand the importance of technology, first-year students are not prepared for what academic technologies, including the LMS, would entail. There must be a resource available to students that will help raise their understanding of the technology that is prevalent in the postsecondary atmosphere. Students will undoubtedly acquire these uses of academic technology to develop those skills needed in college with some sense of comfort and confidence.

While retention in the community college is more focused on specific areas, researchers have found that redeveloping and making new student orientation and new student seminar classes mandatory were necessary to increase success rates; yet, these interventions only seem to aid the quest to increase retention in a minor way (Mansfield & Bakerson, 2012; Mansfield, Webb, & O'Leary, 2011). Park (2013) and Shih (2011) show that in certain subjects within that first year, such as college composition and reading courses, students have a better success rate when implementing Web 2.0 tools, especially when using Facebook and other social media platforms for peer assessment and classroom instruction. Eastman, Iyer, & Eastman (2011) and Huffman & Huffman (2012) show that, in subjects such as psychology and business, when the LMS is being used to accept assignments and encourage collaboration, classroom performance and learning is increased. Researchers across the board indicate that engaging students not only means having open discussions and application activities in the classroom but implementing technology, which plays a significant role in student success (Bakerson & Rodriguez-Campos, 2006). These technologies include the LMS tools.

The idea of interdependence and study groups has also been proven to increase success rates because of the engagement that students have with their peers in the learning process (Astin, 1993; Chickering & Gamson, 1987; Pascarella, 2001). Social networking and other innovative interactive digital technologies are gaining formal acceptance by institutional policy makers, faculty, administration, and students. Researchers now understand interaction to be imperative in the virtual arena for a sense of community to occur so students can avoid the cost and inconvenience of meeting in person to join study groups or work on group projects (Aviles & Eastman, 2012; Tess, 2013; Voorn & Kommers, 2013). The continuous evolution of communicating in an online modality will need to be evaluated each year in institutions who offer distance learning.

Latham and Gross (2013) discussed a first-year college student focus group who tested to have low computer literacy skills and the andragogy that was preferred. Within this study, researchers indicated that a high preference was placed on the relevance of the course, a combination of both traditional and tactile teaching methods, collaboration with both the instructor and classmates, and having tangible resources. Community colleges often presume that Millennial or Neo-Millennial students are computer literate, simply based on the time frame in which they were born; however, Millennials need the skills and knowledge to explore their college infrastructure and implement basic Microsoft Office skills which are varied based on not only their age, but their academic experience, career goals, and social interactions (Goode, 2010).

College Readiness

Examining whether students are college ready in today's educational environment begins at the high school level. Not only are the college discussions beginning at this level, but there are

several placement exams that have been developed over the years that have been used by colleges across the U.S. On average, 66% of students were reported in 2013 as enrolled in at least one college course after graduating high school (U.S. Department of Education, 2013). The 66% of postsecondary school students who enrolled in college were tested to see if they had the ability to succeed in college. Previous knowledge attained by a student determines the level of college readiness (Conley, 2007).

Placement exams were originally designed to determine whether a student was indeed college ready. Scott-Clayton (2012) found that placement exams only predicted the student's success rates in core subjects, such as math and English, disregarding the other skills required to be prosperous in college, such as soft skills and computer literacy skills. Barnett, Fay, Bork, and Trimble (2013) discussed a successful approach to college readiness through an assessment that can enlighten students of skills that may be lacking before entering the college atmosphere. Beginning as early as a student's junior year in high school, this assessment was implemented in an attempt to reduce the need for participation in college remedial courses.

Placement exams can be based on an array of skills needed in college to be successful. College readiness researchers; Scott-Clayton (2012), Conley (2010), Kahlenberg (2010), Leohardt (2011), and Ravitch (2010); reported that despite completing high school, skills such as critical thinking, problem-solving, and academic technology readiness were lacking. According to a recent study, college placement assessment scores were directly correlated with higher credits acquired, but not necessarily grade point average (GPA) (which is typically 0.6 below a student's high school GPA). Students with higher college placement assessment scores acquired an average of nine more credits than students with low college placement assessment scores (Belfield & Crosta, 2012). Furthermore, Belfield and Crosta (2012) found that within the college

placement assessments, there was a significant rate of error for the English portion, and an average of 30% of students are not correctly assigned to first-year college courses based on those writing composition and reading results. These errors can become critical in assessing whether a student is ready for his/her first year in college, and because a majority of English placement exams require a certain level of word processing skills, further research is needed to assess whether it is the actual writing skill level or a development in basic computer literacy skills needed to be successful on the English portion of the college placement exams.

Some states are taking active measures to correct the deficiencies within the placement exams. After assessment, they provide structured interventions consisting of several self-enrolled modules and web-based tutorials (Kannapel, 2012). One intervention is to partner with local high schools in dual credit or early college courses (courses that students can enroll in to earn both high school and college credit). These dual credit courses have been prevalent in high schools for years and have been proven to improve higher educational success rates; however, eligibility has only been for students who meet the standard requirements for college enrollment (An, 2013, 2015; Struhl & Vargas, 2012). The early college concept was designed to focus on underrepresented students in high schools who may potentially be at risk of failing college, many of whom would be first-generation college students (Barnett, Bucceri, Hindo, & Kim, 2011).

At-risk ninth grade students can begin their college/high school academic plan through the Early College program and potentially graduate high school earning up to 30 college credits at no cost to the parents, thus creating a smooth transition into college after high school (Barnett et al., 2015). Some students who are enrolled in college courses through high school benefit not only academically but also through increasing soft skills like interdependence, communication, and learning their preferred learning style (Kanny, 2015).

Interdependence, communication, and self-management are important for first-year college students to be successful. Learning these skills at an earlier age prepares them for college life after their high school diploma has been earned. Students whose success rates are below proficient in computer literacy skills often are misconstrued on their abilities; self-efficacy is higher than the reality of their skill level (Gross & Latham, 2011). The Ohio State University discussed students who self-reported as computer literate and college ready; nine percent actually passed the college placement tests (which consisted of using the Internet as a resource, searching skills, and academics) at a 70% or higher (O'Hanlon, 2002). There seems to be a clear gap in what the students' actual skill levels are and what is considered to be college ready.

Gender also seems to play a part in computer literacy readiness. Hargittai, Connell and Klawitter (2014) and Huang et al. (2012) reported that males seemed more comfortable using their computer literacy skills than females, who seemed to be more anxious when it came to using their computer literacy skills. Researchers indicated that when students' frustration levels are high due to the lack in computer skills at the beginning of a course, feelings of frustration will continue and students will miss out on important aspects of the course, fail, or drop-out (Alherton, 2014; Bakerson, Trottier, & Mansfield, 2015). Whether a student is college ready or not academically, feelings of inadequacy or frustration could present a problem to institutions if they are not addressed early on by providing the tools needed to build on those skills.

McLaughlin's (2013) research indicated that short attention span, which is, in part, a lack of soft skills, is associated with first-year Millennials and Neo-Millennials due to a culture of constant stimulation from their electronic devices which leads to negative influence on their educations: boredom, considerable resistance to lecture, and lack of self-motivation. Results suggested that faculty members need to restructure classroom environments to incorporate more

engagement and innovative technology. Similarly, Fitzgerald (2004) discussed higher education and their faculty who were concerned about the level of soft skills like critical thinking (analyzing, effectively arguing, and synthesizing) among first-year students. Faculty members claimed that students are less resourceful and less able to solve problems than students in the past who have typically had less technology with which to be distracted (Fitzgerald, 2004). As technological advances have only become more prevalent in education since 2004, the acceptance that the instructors have to incorporate problem-solving and other soft skills into their curriculum has become more mainstream, especially with the blended learning modality of teaching.

First-year Student Academic Technology Skills Needed for All Modalities of Learning

Academic based skills are not the only skills needed to learn successfully while students are moving from the high school to the college mindset. Tinto (1993) discussed, what he referred to as the separation, transition, and incorporation stages that students commonly move through when transitioning to college. Moving away from something that they have known until their adult life can be a stressful time for students, and if their home environment did not provide them with soft skills, these students must learn these skills on their own. Transition refers to a sense of community and belongingness between their former home and their new one. When first-year students feel accepted by their peers, and also accept their own weaknesses and strengths in the academic community, Tinto refers to this as the incorporation stage. Tinto's three stages evolved into Barefoot's (2000) objectives: interactions with fellow students, faculty, and active participation in campus events. Within these three stages, students do acquire some soft skills However, nontraditional students, students who still live at home, and first generation students may not fit into Tinto's developmental stages. Since Tinto's research, technology has evolved

and is a key learning modality in colleges. Most students in community colleges are non-traditional and need some type of soft skills and computer literacy skills before entering college (Darling-Hammond, Wilhoit, & Pittenger, 2014; Winke & Goertler, 2013).

Soft skills are often overlooked when discussing skills needed to be successful in college. Schroeder (2003) and Wagner (2010) identified a correlation between student success in their first year and having a solid set of soft skills. The skill set of a first-year student may stem from the high school they attended. The quantitative study written by Conley et al. (2010) on 38 public high schools and their college readiness best practices found seven key approaches that high schools had in common that were deemed effective in training students to be successful in college. These methods include: an overall college-going culture, having a four-year program that is aligned with college objectives, creating self-management/academic behaviors within students, providing college and financial aid application assistance, remaining consistent with the grading and assignment policies of colleges, creating a meaningful yet challenging senior year, and collaborating with colleges. These seven principles later resulted in a comprehensive detailed instrument for other high schools to use to determine whether a student would be ready for college; College Career Ready School Diagnostic (Lombardi, Seburn, & Conley, 2011). The soft skills acquired from these schools seem to have a positive influence on student success.

Researchers suggest that student performance and success are not only a direct result of adequate soft skills, but are also connected to the preferred learning style of the student, thus making students aware of their thinking processes, or metacognition (Ma & Oxford, 2014; Prenskey, 2001). Whether analyzing the basic learning styles of the auditory, visual, or kinesthetic learner or the more complex thinking, doing, innovative, or feeling learner (Downing, 2013), online and face-to-face student success rates seems to be directly related (Venkataraman

& Sivakumar, 2015). For example; if a student has an auditory learning preference, a lecture-style classroom may be a good fit, but if an online course has video or audio lectures, the student could be successful in that environment as well. The same argument could be made for the students with visual and kinesthetic preferences. If a face-to-face classroom uses a collaborative learning project-based classroom, this could be beneficial to visual or kinesthetic learners (Bishouty, Chang, Lima & Taha, 2015; Dascalu, Bodea, & Moldoveanu, 2015). The online learning environment could use tools such as Google docs, wikis, TED-talks, or discussion boards to have a similar experience that would connect with the visual or kinesthetic learner, therefore avoiding the old chalk and talk methods of teaching (Gilbert, 2012; Race, 2014). In any of these scenarios, computer literacy is essential to student success.

Institutions are offering more online courses, with an average annual increase of 18% since 2000. A look into the success of these modalities is imperative (Conchar, Meric, & Wright, 2015). There has been much debate as to whether hybrid or distance-learning modalities are as beneficial as face-to-face learning modalities. Researchers often gather success data regarding this topic from the results and variations of formative, embedded, and summative assessments. The typical assessment tools used to review traditional face-to-face courses may not be as effective as the tools used to assess distance-learning courses (Goldstein & Behuniak, 2012). This opens the door for new assessment tools to be developed by researchers to analyze more accurately whether online or face-to-face formative, embedded, and summative assessments are comparable.

Bajzek et al. (2008) discusses that online courses can offer more opportunity for student engagement as opposed to face-to-face courses, therefore increasing student success. Some researchers argue that, based on student perceptions, face-to-face classes are more successful

because of the personal human connection between the student and the student's instructor as well as fellow classmates, thus providing a sense of community or belonging that is needed in their first year of college (Johnson, Aragon & Shaik, 2000). Since technology continues to evolve and the population of students who are growing up around technology is significantly increasing, it is not a surprise to see researchers indicating that the idea that only face-to-face or blended courses can give a student that unique sense of community, therefore leading to successful learning outcomes, is outdated. A more updated school of thought is that, since 2013, the average success in learning outcomes in online learning modalities has either had no significant difference or has increased by upwards of 20% in comparison to online or blended learning modalities (Allen & Seaman, 2014; Lim, Morris, & Kupritz, 2014).

Figlio, Rush, and Yin (2013) specifically focused on readiness and course success in online classes and found that students who were less prepared (academically and with computer literacy skills) were less likely to succeed than students who were prepared. Other researchers say that, because of technological advances in higher education (which has a tendency to drive policy), both modalities are effective. Additionally, students are not confined to old the chalk and talk methods, but have been introduced to the blended academic environment (using more of the LMS and online sources for face-to-face learning;Bonk & Graham, 2012). Jaggars (2014) found that most students expressed a desire to take easier courses in distance-learning modalities and face-to-face courses that tended to be program focused.

Online learning is not better or worse, it is simply a different experience than face-to-face learning. Learning modality can be more individualistic, determined by the preference of the student (Cho & Cho, 2014). Xu, Jaggars, and Smith (2011) and Jaggars and Xu (2010) showed that first-year students were equally as likely to successfully complete a face-to-face course as

they were to complete a hybrid course. In the same studies, the researchers indicated that failure rates of online courses were higher than traditional face-to-face courses. Furthermore, those students who participated in online courses were less likely to persist in semesters thereafter. The similarity is true of both modalities; computer literacy skills are a necessity as face-to-face courses use technology in daily classroom work as well as assignments outside of the classroom.

Most of the online learning researchers have had a focus on andragogy and best teaching practices. These researchers have proven that a "read this, and take a test" approach focusing on course content and tasks is not the most effective way to produce successful student outcomes, (Boling, Hough, Krinsky, Saleem, & Stevens, 2012; Dixson, 2012; Moore & Kearsley, 2011; Salmon, 2013). Being fully immersed in the college experience; including diversity, a connection to the real-world experience, developing interpersonal relationships, critical thinking, active listening (or responding to postings in online learning), citizenship, and time management skills; is just as important as academics (Fink, 2013; Moore & Kearsley, 2011; Salmon, 2013). Many institutions are paying attention to these trends for online, hybrid, and blended learning. The blended learning modalities are becoming more common and institutions are requiring instructors to teach in this format so that students are introduced to the online learning experience through their LMS and other online resources without the loss of the face-to-face attention that students need in their first year (Harding & Kaczynski, 2012).

In 2010, the US Department of Education found that although each one differed in time spent on assignments, curriculum, and pedagogy, students who attended blended learning classes had distinct benefits over the distance-learning atmosphere or the traditional face-to-face classes (Means, Toyman, Murphy, Bakia, & Jones, 2010). Further investigation into each of the factors (time spent on assignments, curriculum, and pedagogy) was suggested. At the University of

Wisconsin, Vaughn (2007) researched student, instructor, and administration perspectives on blended learning experiences where course content and assignments were administered through online modalities as well as face-to-face modalities of learning. Although overall student perspectives were positive, students noted a concern with the technology component as well as the responsibility of learning outside of the traditional classroom.

Instructors and administrators also found that blended learning atmospheres were more beneficial than just an online or face-to-face course, but they had some concerns similar to student concerns. Instructors voiced a need for professional development due to the lack of use of innovative technology in the traditional face-to-face classroom. Administrators conveyed concern with the lack of experience students, faculty, and administrators have in academic computer literacy. The balanced approach to blended learning will be increasing in higher educational institutions, but the concerns of computer literacy in these classrooms need to be addressed.

As communication is a key component to online learning, providing students with much-needed feedback in a timely manner has proven to be imperative to student motivation, depending upon student participation and instructor experience which can be used and easily implemented through the LMS (Debuse & Lawley, 2014). Although a significant body of literature exists related to the computer literacy needs in online courses (Andersson et al., 2013; Coiro et al., 2014; Dixon, 2013), research on the need for computer literacy in face-to-face classes is sparse. Richland Community College had a difficult time with success rates in online courses. After some research into the issue, Richland came to the realization that students needed extra computer literacy training before students entered an online classroom in 2009. Jones (2013), showed that Richland's implementation of a mandatory online orientation for students

taking online or hybrid courses resulted in a significant increase in preparedness for online courses.

The frustration of first-year students in online learning courses who have not been exposed to college-level computer readiness skills causes students to drop out at an alarming rate (Ratliff, 2013). E-textbooks are becoming a more common component of online innovative learning (Wang, 2015). Students have demonstrated a willingness to use e-textbooks, when devices were provided by the institution, as evidenced by the actual use of digital textbooks in the traditional face-to-face classroom and in distance-learning (Weisberg, 2011). Weisberg (2011) suggested that driving forces behind this increasing acceptance are cost, whether the college provides electronic devices to the students, and whether the students have been assigned to read an electronic version of the textbook. Furthermore, the researcher found that there was no difference in learning through an online textbook modality as opposed to a traditional textbook (Weisberg, 2011).

Many reasons are attributed to the lack of computer literacy among first-year students. Some students lack access to a laptop or desktop computer, a suitable Internet connection, or a local study destination. In many cases, these issues may not be exclusive, but a combined issue of needing both access to adequate Internet and computer access (Cox, 2009). Despite the amount of technological access or the quality of said access educators think students have in their homes, they may be wrong (Brown, Murphy, & Nanny, 2003; Hoffman & Blake, 2003). When discussing access in terms of demographics, race seemed to be a prevalent indicator of a need for access in the late 90s. European Americans were, on average, 15% more likely than African Americans (not exclusive to students) in the United States to have access to a personal computer, and European Americans (also not exclusive to students) were 4% more probable to

have access to sufficient Internet than African Americans. However, African Americans were more resourceful in finding multiple alternatives to accessing a computer than those European American individuals without access (Hoffman & Novak, 1998). More recently,Vigdor and Ladd (2010) found that race does, in fact, play a role in accessibility and discussed that having a personal computer was statistically significant and those students who had access and Internet persisted better in subjects such as math and reading. The institution under review had 8% of students who were African American and 64% of students who were European American. This is a concern as to why there is still a high percentage of students not persisting to the next semester.

As students are becoming more used to a blended learning atmosphere in high schools, colleges have recognized the need to have more technology access and training for students on college campuses (Darling-Hammond, Zielezinski, & Goldman, 2014). Providing access to first-year students is less of an issue in today's college campuses. Students do not always take advantage, or may be unaware, of the availability of campus computers, tablets, software, and Internet resources; therefore, there is still some concern about first-year college students who lack access to a personal laptop or desktop computer and/or adequate Internet service (Van Dusen, 2014). In the past few years, Internet/phone companies have offered discounted Internet service. The Federal Communications Commission has a program called *Connect to Compete*, providing lower socioeconomic students with Internet access (Dragon, 2012; Young, 2015). However, first-year students are struggling with computer literacy skills and need to be trained before students enter the higher learning blended classroom. Grant, Malloy, and Murphy (2009) studied the actual computer literacy capabilities of students and the comparison to their perceptions of computer literacy and showed there is a substantial computer literacy skill gap

when comparing students' actual computer literacy levels of word processing and spreadsheet skills to their perceptions. Results of this research prompted the development and implementation of an online mandatory assessment test. Any student who did not pass this online assessment was then required to take additional training before moving on in his/her program.

Atack (2003) performed a Canadian qualitative study on distance learning in a nursing program and showed that the first few weeks of online course study was very challenging because of the lack of computer literacy and computer access. Student stress levels were very high, but this study did not report the number (if any) who had dropped out. Atack (2003) did, however, report that the nursing student computer literacy skills improved upon finishing the course and conclude that higher education administration and policy makers should evaluate computer access and literacy skills when building distance learning initiatives (Atack, 2003). At Dalton State College in Georgia, researcher Ngo-Ye (2014) studied returning adult learners in a qualitative study through observation and interviewing to better understand the computer literacy needs in order to boost persistence. The researcher indicated that students who did not regularly use Microsoft Office or Windows file operations were less likely to succeed than their classmates and had less web-searching skills than were required for academic success. Ngo-Ye (2014) recommended that a non-credit course be required of those students who were not computer literate before entering a classroom for maximum academic success.

Florida's Broward College has required all first-year students to take the general academic placement exam for years. Beginning in 2013, students were also mandated to take a technology literacy test, which was a modified version of the IC Training and Certification Program exam. This testing took place before advising could advise students in their academic plans. According to Broward College's website, this technology exam assesses the following key

components of student skill levels: computer (not tablet) hardware and software, common operating systems such as Windows or Macintosh, basic program functions, word processing and presentation programs, network fundamentals, web-based electronic e-mail (not from a smart phone or tablet), basic Internet tools, and the impact of computing and the Internet on society (Basic Computer Literacy Test Objectives, 2013).

New students at the State University of New York recognized that lack of computer literacy and took action over a decade ago. Upon enrollment, first-year medical students were asked to participate in a pre-self-assessment questionnaire, which indicated students' current skill levels. Within the first three weeks of the semester, based on results, differentiated groups were formed, and some of the student groups were placed into non-credit classes that focused on medical specialized technology, basic computer skills, e-mailing, and rudimentary Internet and web browser tools. Mandatory new-student workshops consisted of 7-hour, one-on-one, individualized computer literacy training exercises from highly educated instructors. Students were then given a post-assessment at the end of their three-week training period. Students who participated were successful in achieving an acceptable level of computer literacy to begin their face-to-face college course load (Gibson & Silberberg, 2000).

Similarly, the institution under review was in need of a study that would indicate whether students at the community college level would benefit from a computer literacy program like the one being used at the State University of New York or a computer literacy placement exam like the one being used by Florida's Broward College. These institutions have shown significant increases in online or hybrid student success through the use of online orientation or computer literacy training. Because of the increase of the blended learning classroom, institutions now need to look at face-to-face learning environments and whether computer literacy training is

needed to be successful. In this research study, I investigated this gap in the digital divide within the institution under review.

Implications

The community college environment, in part, has policies governed by success rates. Policies may dictate that instructors incorporate use of the LMS as a way to find resources, submit previously saved homework and projects, practice ownership of their grades, and watch/listen to supplemental course materials. Instructors are mandated, at the institution under review, to become LMS certified, proving knowledge and application as to how to incorporate these expectations from students. The institution does provide training sessions on the LMS, but it is on a voluntary basis; therefore, participation is varied. During my study, I anticipated that findings of the data collected would be used to increase the institution's knowledge of the skills first-year students require to be able to successfully use this system and other basic computer skills could improve services such as new student orientation or college placement exam implementation. A computer literacy and/or a LMS placement assessment could provide the institution with insight as to what type of program to create for students to become more college ready. First-year students may have a different perception from faculty and institutional policy makers as to what computer or technology literacy skills are needed to be academically successful in the first year of college. First-year student frustration levels may be alleviated if research identifies these basic computer literacy needs, and the institution can begin a discussion on how to use the information received from this study.

Like Grant et al.'s (2009) study, perceptions of computer literacy proficiency data could be used to suggest a change in policy where basic computer literacy skills and LMS training are needed for FYE students to be successful in their first face-to-face course. Therefore, providing

the institution with information could help policy makers create better support services that may lead to better success rates among first-year students. One particularly promising strategy may be to focus on new student orientation, and upon completing a computer literacy placement assessment, provide students who are in need with a series of workshops on computer literacy and LMS training between registering for classes and the actual first day of class.

Summary

In this study, I first explored the perceptions of FYE faculty members and the expectations in regards to basic computer literacy and LMS proficiencies that are needed before participating in a face-to-face FYE course. I also aimed to explore what computer and technology proficiencies FYE students currently demonstrated upon entering a face-to-face classroom. Because blended learning is becoming the norm for a traditional classroom, usability is critical to the learning process as well as the rate to which students persist (Bonk & Graham, 2012; Graham, 2013). As higher education implements training programs for instructors to use the LMS tools that require students to submit work and engage in the LMS, FYE students are expected to have knowledge of features within the LMS as well as use basic computer literacy skills to read materials, watch videos, obtain information, and create and save assignments before submitting assignments into the LMS. Researchers aim to find out if there is a relationship between current computer literacy skills of FYE students and LMS skills which are expected from FYE instructors due to institutional policy.

Although this study did not have a qualitative analysis to provide student perspectives of factors contributing to success rates in the first year of college or overall student satisfaction, the study did provide quantitative results that will help the institution under study to identify the training and support services needed to aid in student success in the future. In some areas, this

study demonstrated that there is a difference between the perceptions of students and faculty regarding computer literacy skills needed for first-year students at community colleges.

The remaining sections will include an introduction to the methodology, the setting and sample for the institution under review, the instrument that was used for faculty members and students, the materials, and the data collection and analysis. The methodology will explain the research design, the justification, and how the design was derived logically from the problem. An explanation of the institutional setting and the population that was studied is included in the Setting and Sample section as well as an explanation of how the groups were ascertained. Descriptions of the instrumentation and data collection tools and analysis are provided in the Instrumentation and Materials and the Data Collection and Analysis sections.

Section 2: Methodology

Because the topic of computer literacy needs in traditional face-to-face classrooms is underrepresented in the literature, a study was necessary to determine the needs for first-year students entering their first face-to-face classroom. I studied differences between the current computer literacy and LMS skills of FYE students and the skills deemed necessary for student success by FYE faculty. At the institution under review, no computer literacy training is mandatory for first-year students enrolled in face-to-face classrooms because these classes are not considered distance learning. This is problematic, as institutional policy encourages all instructors to incorporate tools available in the LMS in the departmental curriculum across all departments, thus evolving to a more blended learning atmosphere. Furthermore, the LMS training is mandatory for faculty and available to students, but currently not mandatory for students. This kind of training is important for students before stepping into a college classroom.

The research design used was a comparative quantitative study. I used this study because I was seeking to differentiate perceived differences between two variables: faculty views of LMS and basic computer literacy proficiencies that are perceived as necessary in a face-to-face FYE classroom and student perceptions of their current LMS and computer literacy proficiencies in the face-to-face classroom. This design was derived from the local institutional problem, because data obtained from FYE students and faculty make it possible for the institution to assess the strength of the relationship between the expectations of proficiency levels in the classroom and the computer literacy skills that first-year students currently have before entering a FYE classroom. The design was a logical result from the problem, because I intended to see if the null hypothesis could be rejected.

The occurrence of bias in data collection in regards to the research project was a concern as I am an employee of the college under study; however, these biases were limited to assumptions, and I used FYE faculty to administer the surveys to FYE student participants. A consent form from both faculty and students was collected. Faculty members were asked to participate in a survey that was sent to them via a Survey Monkey link and were not required to take the survey sent to them. I remained detached from the administering of the instrument. Upon collection of the consent to participate forms, I then sent the participating faculty members the surveys to administer to their students in the FYE courses that they teach. There was a script that the faculty members followed so that student participants understood that anonymity was protected and participation was on a voluntary basis. Faculty members disclosed that participating or declining to participate had no reflection upon students' grades or otherwise. The surveys were placed into individual manila envelopes and were turned in on the instructor's desk. Then, the instructor turned in the stack of sealed manila envelopes to the department administrative assistant, and all surveys were placed into my mailbox. This aided in keeping the research as objective as possible.

Setting and Sample

The setting was a statewide 2-year Midwestern community college that consists of seven different regions. For the purpose of this comparative quantitative study, surveys were administered to the entire population of FYE students and FYE instructors on three campuses in order to ensure adequate participation. Because the entire population of FYE students was asked to voluntarily participate in this study, the data are more significant than a different type of sampling; therefore, it can depict the general population in a convenience sample (Fraenkel, Wallen, & Hyun, 1993). Descriptive figures such as age, gender, race, and whether students

consider themselves as traditional or nontraditional students also were asked. The target population consisted of two groups: all first-year students who had enrolled in face-to-face FYE courses and faculty members who teach face-to-face FYE courses. Data were collected from the first-year FYE course teachers of three college campuses in the region.

I used a posthoc *t* test power analysis in GPower to determine the power. Given an alpha .05, a medium effect size .5, and the sample size of Group 1 being 94 and Group 2 being 41, the GPower determined a power .84. There is a high probability that the statistical tests will reject the null hypothesis (Faul, Erdfelder, Lang, & Buchner, 2007).

The survey was distributed to all 368 students enrolled in all fall 2015 FYE sections and all 47 faculty members who taught the course in the fall of 2015. When data were collected, the total number of student participants was 94, and the total number of faculty participants was 41. To ensure participation, one introduction was sent out via email to faculty and student participants. FYE faculty verbally reminded students of the upcoming survey as well, but reiterated the voluntary nature. The inclusion criterion for students included the following: registration for the institution's FYE course. Eligibility criterion for willing faculty members included the following: FYE course teaching assignment. Students under the age of 18 were excluded from the research study, therefore making this a convenience sample. I made stipulations clear to students within the informed consent that this survey should be taken after the college placement exam has been taken, which would in no way affect any selection process for remedial courses that they may have to take.

Instrumentation and Materials

I wished to ascertain the difference between the perceived self-reported computer literacy skills of first-year students and the computer literacy skills that faculty members have identified

as necessary in a student's first face-to-face class. An adapted version of Grant et al.'s (2009) pre-established instruments was used to collect data in the form of two 5-point Likert scale surveys (1 indicating *negligible or no skill* and 5 indicating *proficient skill level in seven specific computer application areas*). Permission to use the instrument was granted via e-mail on July 7, 2015. One survey was given to faculty members who had taught or were currently teaching FYE courses and one was given to FYE students to determine if there is a relationship between the general population of FYE students and their current computer literacy proficiencies before entering the FYE classroom and FYE faculty members' expectations of computer literacy proficiencies before beginning the course.

The original Grant et al. (2009) online survey was formulated to gather information regarding student demographics and computer experience/access, usage, and computer literacy skill level prior to enrolling in an introductory business computer program. A pilot test was given to establish validity in this instrument. External validity was established because the sample was an accurate representation of the population being studied. Because I was not studying demographics, all demographic questions except for gender and age were omitted from this study. I added four questions regarding LMS and three questions regarding using the e-mail system, but all other components were identical to the survey for students. The four LMS questions were regarding student skill levels in writing initial threads and replies in discussion boards, submitting assignments, sending and receiving messages in the LMS instant messenger system, and locating course resources. The three additional e-mail questions were regarding composing, sending, forwarding, and attaching files in the campus e-mail system.

Student surveys were distributed in a paper format instead of as an online survey. The faculty members, however, completed the online survey format, and the questions were

minimally modified. Because the participants were faculty members, the directions were modified and worded in such a way to gain their perspective of what computer literacy skills FYE students need in their FYE courses. The first section of the original survey was based on demographics. Because I did not use two questions from this section, the first section was combined with the second section: computer experience. In the computer experience section, questions were slightly modified to indicate student familiarity with skills instead of a skill learned in a basic computer class. Five questions from the original survey were deleted from this section as they did not pertain to my study. The second section of the survey was the same as the last portion of the original survey: perceived degree of proficiency, with the added questions on the LMS. The yes/no questions were changed to the perceived degree of proficiency format, and all questions regarding spreadsheets were deleted.

To establish construct validity, I explored the relevant literature of the domain, and defining the constructs and modifications of the instruments were based on the literature reviewed (Burton & Mazerolle, 2011). Survey questions consisted of general computer literacy skills and questions regarding students' skill level in regards to the LMS and the expectations of the faculty members for students using the LMS. Prior to administering the instrument to the FYE faculty members and students, I ran the survey as a pilot to gain feedback from experts in the field and to clear up any confusing wording or inconsistencies in the survey questions. Because a few minor adaptations were made, I ran a Cronbach's Alpha to test the measure of construct for the adapted and original surveys in addition to requesting expert feedback. This aided in establishing construct validity (Creswell, 2012). The survey was reviewed and modified based on the expert feedback.

Despite the pre-established status of this survey, there was a lack of content validity. Berk (1990) and Beck and Gable (2001) discussed the importance of gathering expert feedback to establish content validity on research involving surveys. A group of four experts were gathered to ensure the measurement of computer literacy proficiency among FYE student participants and the level of proficiency expected from FYE faculty was accurate. One expert was the previous FYE and academic skills advancement dean who had taught and developed curriculum for over 20 years. Two of the experts had previously taught FYE both online and face-to-face and had additional LMS and computer and informatics expertise. The remaining expert was the statewide executive director of institutional research and had over 3 years' experience working with Stanford University's PERTS program, which focuses on FYE students. Feedback included redundancy and making the informed consent more student friendly, modifying age ranges and gender in the demographic section, defining of terms for user understandability, adding a skill level of none, and generalizing instant messenger. Upon review of expert feedback, I made all of the suggested changes except the redundancy that was specific to explaining to students that this survey was not mandatory. I felt that it was imperative that students understand that participation was not mandatory.

A survey link was provided to all faculty members who participated in the study; however, because I explored computer literacy and LMS skills, and student participants may not have been at a computer literacy level that would allow ease in taking an online survey, a paper version of the survey was given to student participants. The faculty member survey was distributed 3 weeks after the beginning of the semester. The student surveys were distributed during the third week of the first 8-week section of this course. A disclaimer within the informed

consent was included to ensure that the surveys would only be taken by faculty members and students one time.

The faculty members received an introduction e-mail 1 week before the deadline. FYE faculty gave students verbal reminders in their classes, and all FYE students received an introduction e-mail informing students of dates, times, and the pick-up area within the college to pick up the survey if choosing to participate. Because of these reminders, there was no confusion about when and where student participation could commence. Because quantitative studies yield more accurate results of the general population when there are greater response rates of 30 or more, the goal was to collect at least this amount of completed surveys for each of the two groups studied (Creswell, 2014). I ran an IBM SPSS power analysis to determine the required number of participants to ensure reliability and validity of the study. There were more than 20 sections of FYE courses running during the time allotted for the study. No incentive was offered. On six different times and dates, manila envelopes were available to student participants for pick up in a private classroom with the informed consent within the envelope to eliminate influence and to provide anonymity. Students were asked to take the envelopes with them, fill them out at their leisure, and return them to the student success office's interoffice mail basket by the end of the week.

Data Collection and Analysis

With the intention of conducting this research study and addressing ethical considerations in regards to this quantitative survey study, I took the Protecting Human Research Participants course from the National Institute of Health on February 17, 2015, and I obtained a certificate of completion. Creswell (2012) discussed, "Ethics should be a primary consideration rather than an afterthought, and it should be at the forefront of the researcher's agenda" (p. 23). Because there

were no physical expectations for this research, ethical considerations included psychological constraints such as embarrassment, humiliation, and self-esteem by assuring anonymity of the participants. Risks to both faculty members and student participants were minimal. The protection of students and faculty members were secured by submitting an institutional review board (IRB) application to Walden University. IRB approval was given on February 18, 2016 (Approval # 02-18-16-0411873). IRB approval was also obtained from the institution under study. The data required to address whether there is a difference in perceptions of computer literacy and LMS skills needed to be successful in the first year of college were the participants' answers to Grant et al.'s (2009) modified survey.

No identifiers were included in the surveys or data analysis. In order to safeguard against coercion, the student surveys were not distributed by their instructors. To address age of consent in this study, I made it clear in the e-mail introduction to the study that the survey will be administered to only participants 18 and over, and I explained this verbally when students picked up their surveys. FYE instructors disclosed this stipulation in their verbal reminder as well. I included a disclosure within the informed consent discussing the need to be 18 and over to those choosing to participate in the study.

During the week of the six pick up times for student participation, FYE instructors reminded students in their classes of the voluntary nature of the study; the age limitations; and the location, times, and dates of the survey participation. E-mails introducing the study to students and faculty were sent out 1 week prior to the participation week. Students could pick up the surveys at any of these six dates and time frames and were instructed via e-mail and through their FYE instructors to pick up the manila envelopes that were self-addressed. Once finished, the students were asked to place them back into the envelopes, seal them, and place them in the

interoffice mail basket within the student success office before the end of the day on that following Friday. I was present for each time and date of pick up so that I could provide students with a verbal reminder of the voluntary nature of the survey, the age of consent, and a definition of what it means to be proficient in a skill (which is also labeled in the survey itself). Upon conclusion of the 4th week of the first 8-week sections, I collected all surveys. Because faculty members were not present during the survey and all surveys were placed into individual manila envelopes once students were finished, anonymity was ensured.

One week prior to the study, FYE faculty members were sent an introduction e-mail discussing the study and the voluntary nature of the study. Faculty member surveys were sent to all face-to-face FYE faculty members via e-mail 1 week after the introduction e-mail was sent with no way of knowing who would participate. The informed consent was the first section of the survey once faculty members clicked on the link provided in the e-mail. Any identifiers were excluded for the survey and the data analysis. Because all faculty members who participated were over the age of 18, an age of consent question was not needed on the faculty survey.

I also used general terms throughout the analysis for students and faculty members. Access to actual surveys once completed was restricted to my evaluation only, and any materials from the participation will be kept in a secure location for 5 years. Once this time frame has expired, all data and materials will be destroyed and deleted. Because I obtained results from one community college, I had a limited number of participants who willingly elected to take the survey; this resulted in a sampling error which was corrected automatically in SPSS (Creswell, 2012, p. 146).

The nature of the data collected was interval. The research question was the following: Is there a difference between the self-reported computer literacy proficiency ratings identified by

FYE students before entering their first face-to-face class and the computer literacy skills, which are identified by FYE faculty members as important for student success in FYE face-to-face classes in a community college? To answer this question, the two surveys were collected and independent *t* tests were used to analyze the means of the two groups (FYE instructors and FYE students) in order to evaluate if they were statistically different from each other. The *p*-value was set at .05. The FYE student participant group was larger in size in comparison to the FYE faculty participant group. The variability in the standard deviation was greater with uneven participant sizes than an independent *t* test with equal sample sizes; thus, using IBM SPSS software, a Levene's test of equality of variances was used to determine the homogeneity of the faculty and student population variance.

The Levene's test affected the Type I error rate in SPSS. The estimate of the means standard error of the student and faculty group is the standard deviation of the student and faculty group's dispersal divided by the square root of the participant size (Schultz, 1985). This was taken in account by the *t* test through SPSS; therefore, the student participants had a smaller standard error. If the Levene's test was statistically shown to produce unequal variances between the two groups, SPSS corrected this violation by adjusting the degrees of freedom using the Welch-Satterhwaite method. The Levene’s test and the Welch-Satterwaite features are hidden adjustments in SPSS and are labeled as Equal Variances Assumed, pooling the variance in both groups without overtly stating that the underlying features are used. SPSS includes both equal and nonequal variances assumed. To assume equal variances, the Levene’s test must not be significant. Although some data collected did not directly answer the research question, they were interesting and may have an impact on future research. I stopped reviewing here due to

time constraints. Please go through the rest of your section and look for the patterns I pointed out to you. I will now look at Section 3.

Assumptions

There was an underlying assumption that first-year persistence and retention was important to the institution under review; therefore, I could assume that the participation was truthful. Participants were assumed to understand directions given by the instructor. Anonymity and confidentiality was preserved throughout the distribution and the actual survey process as well as the collection of surveys. Participants were considered volunteers who were given an informed consent form and had the option to withdraw from participating at any time with no consequences.

Limitations

Because the study was conducted with one institution's FYE student and faculty member population, the scope was limited. A potential weakness that was present in this study was time; the most opportune time to conduct this study would have been on the very first day of classes so that I could have obtained data from any student who may or may not have subsequently dropped out. The IRB application was delayed. As a result, surveys were given out at a later time, therefore only collected responses from students who had persisted in the class and who may or may not have had some computer literacy skills built up in that time. There was no way of telling if a student had taken this course and withdrawn and/or failed at another time which could affect the student's answers. Another limitation was that the information received was only as good as the survey itself. The survey was a modified version of a pre-established survey; therefore, I could not deviate from the questions listed or receive qualitative responses.

Delimitations

This study was designed to determine if there are significant differences that exist between student and faculty member perceptions of computer literacy and LMS skills needed in an FYE classroom. The results of this research study could be generalizable to institutional administrators, instructors, and other stakeholders who teach, lead, or create policies for FYE students in general. The survey methodology of research that I selected may set an artificial boundary on which the findings may lose some of the generalizability.

Data Analysis and Results

IBM SPSS Version 21 was used to perform the analysis. Independent *t* tests were run to find any significant differences. Because some of the data collected did not directly answer the project study research question, I only used it as descriptive information that may pertain to future studies. Student participants reported that 51% considered themselves first generation students. Student participants also reported that 67% were female, and 47% were between the ages of 18 and 22. Student participants, at the rate of 40%, self-reported being over 25 years of age. This gives a good view of the age and gender of students that participated in this study. Also, it was reported by students that 89% had family access to a computer and 87% had access to Internet service. Students reported that having had Internet service for at least five years at the rate of 52%. When asked if education prior to college required a computer course, 45% answered they did not have a prior computer class. Those students who answered that they did not have a required computer class also answered at a rate of 33% that they did not elect to take a computer class before enrolling in college.

Table 1

Descriptive Demographic Information

	Student Self-Reported Percentages
First Generation	51%
Female	67%
Ages 18-22	47%
Ages 25 +	40%
Access to a Computer	89%
Access to Internet	87%
Internet Service for at least 5 Years	52%
Required Computer Course	45%
Elected Computer Course	33%

Note. 94 student participants.

The hypothesis called for ascertaining the difference between the perceived self-reported computer literacy skills of first-year students and the computer literacy skills that faculty members have identified that are needed in a student's first face-to-face class. Because I chose a previously validated instrument that has been used at other institutions, it included a wide range of computer skills, including software that was not required by the faculty members. There were areas in computer literacy that faculty did not require any skill level for students to participate in their courses. Because I only identified which computer literacy skills are necessary in the FYE classroom to be successful, I condensed my tables to include only those skills that reported a mean of > .10. Some of the questions required yes or no responses, for example, when discussing data as responses to be a mean of .11 it would represent 11% of the faculty members. Each of the categories were set up with 0 signifying no and 1 signifying yes, showing the percentage of

faculty members expectations and student participants who indicated that they had some knowledge of each type of computer literacy.

The research question is: What are self-reported computer literacy proficiencies identified by FYE students in their FYE class? Although the descriptive tables displayed throughout this analysis do not directly answer this question, they do give the reader an idea of what minimal experience in these computer literacy categories are expected in the FYE courses. Descriptive statistics were used to identify faculty requirements for student success for computer literacy. All software with a faculty mean of less than 2 (below average) and less than 10% (.10) were excluded. Windows, Microsoft Word, PowerPoint, Google Chrome, and Firefox were among the preferred operating systems, programs, and web browsers by faculty. Student skill levels were comparable to faculty preference with the exception of Firefox. More students preferred using Safari. Operating system categories: others and none; word processing software: Corel, Word Perfect, Lotus, Word Pro, Open Office, others and none; presentation software: Lotus, Corel, Open Office, and others; web browsers: Netscape, others, and none; database applications; web page development; and applications programming were areas where faculty reported little or no expectations or would not be useful to the institution. We can assume by this data that faculty deemed these areas as unimportant to their FYE classes. It was important to analyze data that showed specific tools within each generalized computer literacy category to ascertain the differences between faculty expectation and actual student skill level.

Based on the Likert scale within the pre-established survey, 0 represented having no skill or no skill required and 5 represented having high skill or high skill required. Because I only identified which computer literacy skills are necessary in the FYE classroom in order to be

successful, I condensed my tables to only those skills that have a Likert scale rating of 2 (somewhat low) or higher.

The sample size for the current study was 94 students and 41 faculty participants, thus exceeding minimums established by power analysis. The power analysis in IBM's SPSS adjusted the tests if errors occurred. An independent-samples *t* test was run in each area to determine if there were differences in student self-proclaimed proficiencies and faculty expectations of computer literacy skills. There were no outliers in the data. I ran *t* tests pertaining to the institution under review on the following:

1. Operating systems: Windows and Mac.
2. Word processing program types and tools: Word, Google Docs, opening and saving a document to a flash drive or Google Docs, copying/pasting, specifying line spacing and indenting paragraphs, applying borders and highlighting, and opening a new document template.
3. Using E-mail: Composing, sending, and forwarding e-mail and attaching a file within the e-mail system.
4. Presentation software types and tools: Microsoft PowerPoint, Google Slides, Prezi, none, creating a new presentation, adding slides, opening an existing presentation, saving a presentation with a new name and adding pictures to slides.
5. Web browsers: Internet Explorer, Google Chrome, Safari, and Firefox.
6. LMS use: Posting initial threads and replies in the discussion board forum, submission of assignments in a class session or module, sending and receiving messages via LMS instant messenger, and locating the course calendar of assignments and syllabus.

In all tests, Mean 1 was chosen for student participants and Mean 2 was chosen for faculty member participants. For Likert scale surveys, a mean of 2 was designated as somewhat low, 3 as average, and 4 as somewhat high. For multiple choice surveys, a participant choice of no was signified with a 0 and a choice of yes was signified with a 1.

Operating Systems

Regarding use of Windows operating systems, proficiencies were normally distributed, as assessed by Shapiro-Wilk's test ($p > .05$), but the assumption of homogeneity of variances was violated, as assessed by Levene's test for equality of variances ($p < .001$). Faculty member expectations ($M = .98$, $SD = .156$) were higher than student proficiencies of Windows knowledge ($M = .81$, $SD = .396$), a statistically significant difference, $M = .17$, 95% CI [.073, .261], t (3.515) = 132.117, $p = .001$, therefore the null hypothesis was rejected. The faculty member expectation was significantly different from the student proficiency in Windows operations.

Table 2

t Test for Equality of Means for Faculty Expectations and Student Skill Levels

	Levene's Test		*t* Test for Equality of Means				95% Confidence Interval of the Difference		
	F	Sig.	*t*	df	Sig. (2-tailed)	Mean Diff.	Std. Error Diff.	Lower	Upper
Windows OS	40.592	000	3.515	132.117	.001	.167	.048	.261	.073
			2.613	133	.010	.167	.064	.294	.041

Note. 94 student and 41 faculty participants.

Regarding use of Mac operating systems, proficiencies were normally distributed, as assessed by Shapiro-Wilk's test (p > .05), but the assumption of homogeneity of variances was violated, as assessed by Levene's test for equality of variances (p = .008). Faculty member expectations (*M* = .24, *SD* = .435) were lower than student proficiencies of Mac knowledge (*M* = .35, *SD* = .480), not a statistically significant difference, *M* = .11, 95% CI [.274, .060], *t* (1.275) = 83.643, *p* = .206. Since the p > .05, I failed to reject the null hypothesis. The faculty expectation was not significantly different from the student proficiency in Mac operating systems.

Table 3

Difference in Faculty Expectations and Current Student Experience

	Levene's Test		*t* Test for Equality of Means				95% Confidence Interval of the Difference	
	F	Sig.	*t*	df	Sig. (2-tailed)	Mean Diff.	Std. Error Diff.	Lower	Upper
Mac OS	7.367	.008	1.275	83.643	.206	.107	.084	.060	.274
			1.227	133	.222	.107	.087	.066	.280

Note. 94 student and 41 faculty participants.

Internet Web Browsers

Regarding use of Internet Explorer (IE), proficiencies were normally distributed, as assessed by Shapiro-Wilk's test (p > .05), but the assumption of homogeneity of variances was violated, as assessed by Levene's test for equality of variances (p < .001). Faculty member expectations (*M* = .56, *SD* = .502) were lower than student proficiencies of Internet Explorer knowledge (*M* = .78, *SD* = .419), a statistically significant difference, *M* = .32, 95% CI [.394, .037], *t* (65.332) = 2.407, *p* = .019; therefore, the null hypothesis was rejected.

Regarding use of Safari, proficiencies were normally distributed, as assessed by Shapiro-Wilk's test ($p > .05$), and the assumption of homogeneity of variances was met, as assessed by Levene's test for equality of variances ($p = .065$). Faculty member expectations ($M = .20$, $SD = .401$) were higher than student proficiencies of Safari knowledge ($M = .73$, $SD = .444$), a statistically significant difference, $M = .53$, 95% CI [.699, .379], t (133) = 6.670, $p = .000$; therefore, the null hypothesis was rejected. The faculty members' expectation was significantly different from the student proficiency in Internet Explorer and Safari.

Table 4

Difference in Faculty Expectations and Current Student Experience

	Levene's Test		*t* Test for Equality of Means				95% Confidence Interval of the Difference		
	F	Sig.	*t*	df	Sig. (2-tailed)	Mean Diff.	Std. Error Diff.	Lower	Upper
IE	15.652	.000	2.407	65.332	.019	.216	.090	.037	.394
			2.586	133	.011	.216	.064	.051	.381
Safari	3.450	.065	6.670	133	.000	.539	.081	.379	.699
			6.943	83.892	.000	.539	.078	.385	.693

Note. 94 student and 41 faculty participants.

Regarding use of Google Chrome, proficiencies were normally distributed, as assessed by Shapiro-Wilk's test ($p > .05$), and the assumption of homogeneity of variances was met, as assessed by Levene's test for equality of variances ($p = .654$). Faculty members' expectations ($M = .78$, $SD = .419$) were lower than student proficiencies of Google Chrome knowledge ($M = .80$, $SD = .404$), not a statistically significant difference, $M = .02$, 95% CI [.169, .134], t (133) = .227, $p = .820$; therefore, I failed to reject the null hypothesis. Faculty member expectation was not significantly different from student proficiency in Google Chrome (see table 5).

Regarding use of Firefox, proficiencies were normally distributed, as assessed by Shapiro-Wilk's test ($p > .05$), and the assumption of homogeneity of variances was met, as assessed by Levene's test for equality of variances ($p = .080$). Faculty member expectations ($M = .73$, $SD = .449$) were lower than student proficiencies of Firefox knowledge ($M = .66$, $SD = .476$), not a statistically significant difference, $M = .07$, 95% CI [.101, .245], t (133) = .823, $p = .412$; therefore, I failed to reject the null hypothesis. The faculty members' expectation was not significantly different from student proficiency in Firefox.

Table 5

Difference in Faculty Expectations and Current Student Experience

	Levene's Test		*t* Test for Equality of Means				95% Confidence Interval of the Difference		
	F	Sig.	*t*	df	Sig. (2-tailed)	Mean Diff.	Std. Error Diff.	Lower	Upper
Chrome	.202	.654	.227	133	.820	.017	.076	.134	.169
			.224	73.747	.823	.017	.078	.137	.172
Firefox	3.120	.080	.823	133	.412	.072	.088	.245	.101
			.843	80.642	.402	.072	.086	.242	.098

Note. 94 student and 41 faculty participants.

Because faculty expectations were lower than that of student skill levels in using Internet Explorer (IE), Google Chrome, and Firefox, it can be concluded that students do not need computer literacy training in these areas; however, 73% of faculty participants indicated a need for student knowledge in Firefox and 78% indicated a need for student knowledge in Google Chrome, which indicates that a student workshop may be implemented on a voluntary basis. Because only 56% of faculty participants indicated needing experience in IE and only 20% indicated needing experience in Safari, I concluded that faculty prefer students to have experience in IE over Safari.

Word Processing Systems and Tools

Regarding use of Microsoft Word, proficiencies were normally distributed, as assessed by Shapiro-Wilk's test (p >.05), but the assumption of homogeneity of variances was violated, as assessed by Levene's test for equality of variances (p = .001). Faculty member expectations (*M* = .95, *SD* = .218) were lower than student proficiencies of Microsoft Word knowledge (*M* = .86, *SD* = .347), not a statistically significant difference, *M* = .09, 95% CI [.027, .206], *t* (133) = 1.524, *p* = .130; therefore, I failed to reject the null hypothesis. The faculty member expectation was not significantly different from the student proficiency in Microsoft Word.

Regarding use of Google Docs, proficiencies were normally distributed, as assessed by Shapiro-Wilk's test (p >.05)' and the assumption of homogeneity of variances was met, as assessed by Levene's test for equality of variances (p = .229). Faculty member expectations (*M* = .37, *SD* = .488) were lower than student proficiencies of Google Doc knowledge (*M* = .31, *SD* = .464), not a statistically significant difference, *M* = .06, 95% CI [.117, .232], *t* (133) = .650, *p* = .517; therefore, I failed to reject the null hypothesis. The faculty member expectation was not significantly different from the student proficiency in Google Docs.

Table 6

Difference in Faculty Expectations and Current Student Experience

	Levene's Test		*t* Test for Equality of Means				95% Confidence Interval of the Difference	
	F	Sig.	*t*	df	Sig. (2-tailed)	Mean Diff.	Std. Error Diff.	Lower	Upper
Word	10.852	.001	1.524	133	.130	.090	.059	.206	.027
			1.812	116.197	.073	.090	.049	.187	.008
Docs	1.460	.229	.650	133	.517	.057	.088	.232	.117
			.637	72.986	.526	.057	.090	.237	.122

Note. 94 student and 41 faculty participants.

Regarding opening and saving a document onto a flash drive or in Google docs, proficiencies were normally distributed, as assessed by Shapiro-Wilk's test (p >.05), but the assumption of homogeneity of variances was violated, as assessed by Levene's test for equality of variances (p = .007). Faculty member expectations (*M* = 3.90, *SD* = 1.044) were slightly higher than, yet still in the average range for, student proficiencies of opening and saving documents (*M* = 3.73, *SD* = 1.369), not a statistically significant difference, *M* = .04, 95% CI [.260, .596], *t* (98.638) = .781, *p* = .437; therefore, I failed to reject the null hypothesis. The faculty expectation was not significantly different from student proficiency in opening and saving a document onto a flash drive or in Google docs.

Regarding copying and pasting, proficiencies were normally distributed, as assessed by Shapiro-Wilk's test (p >.05), but the assumption of homogeneity of variances was violated, as assessed by Levene's test for equality of variances (p = .038). Faculty member expectations (*M* = 4.10, *SD* = .917) were slightly higher than, yet still in the range of somewhat high for, student proficiencies of copying and pasting (*M* = 4.04, *SD* = 1.200), not a statistically significant difference, *M* = .06, 95% CI [.320, .430], *t* (98.452) = .291, *p* = .772; therefore, I failed to reject the null hypothesis. The faculty expectation was not significantly different from student proficiency in copying and pasting.

Regarding specifying line spacing and indenting paragraphs, proficiencies were normally distributed, as assessed by Shapiro-Wilk's test (p >.05), and the assumption of homogeneity of variances was met, as assessed by Levene's test for equality of variances (p = .267). Faculty member expectations (*M* = 3.49, *SD* = 1.075) were slightly lower than, yet still in the range of average for, student proficiencies of specifying line spacing and indenting paragraphs (*M* = 3.86, *SD* = 1.223), not a statistically significant difference, *M* = .37, 95% CI [.811, .063], *t* (133) =

1.692, p = .093; therefore, I failed to reject the null hypothesis. The faculty expectation was not significantly different from student proficiency in specifying line spacing and indenting paragraphs.

Regarding opening a new document template, proficiencies were normally distributed, as assessed by Shapiro-Wilk's test (p >.05); the assumption of homogeneity of variances was met, as assessed by Levene's test for equality of variances (p = .158). Faculty member expectations (M = 3.10, SD = 1.411) were slightly lower than, yet still in the range of average for, student proficiencies of opening a new document template (M = 3.54, SD = 1.471), not a statistically significant difference, M = .44, 95% CI [.983, .093], t (133) = 1.636, p = .073; therefore, I failed to reject the null hypothesis. The faculty expectation was not significantly different from student proficiency in opening a new document template. It could be concluded that, since the survey was taken after the beginning of the semester, the students either had the skills of opening/saving, copying/pasting, specifying line spacing/indenting paragraphs, and opening a new document template prior to attending their FYE course or they improved on these skills in the weeks before taking the survey.

Table 7

Difference in Faculty Expectations and Current Student Experience

	Levene's Test		*t* Test for Equality of Means				95% Confidence Interval of the Difference		
	F	Sig.	*t*	df	Sig. (2-tailed)	Mean Diff.	Std. Error Diff.	Lower	Upper
Open/Save	7.584	.007	.781	98.638	.437	.168	.216	.596	.260
			.703	133	.438	.168	.240	.642	.306
Copy/Paste	4.397	.038	.291	98.452	.772	.055	.189	.430	.320
			.262	133	.794	.055	.210	.470	.360
Spacing/Indent	1.244	.267	1.692	133	.093	.374	.221	.063	.811
			1.780	86.120	.079	.374	.210	.044	.791
New Template	2.014	.158	1.808	133	.073	.483	.267	.046	1.012
			1.818	77.626	.073	.483	.266	.046	1.012

Note. 94 student and 41 faculty participants.

Regarding applying borders and highlighting, proficiencies were normally distributed, as assessed by Shapiro-Wilk's test (p >.05); the assumption of homogeneity of variances was met, as assessed by Levene's test for equality of variances (p = .992). Faculty member expectations (*M* = 2.39, *SD* = 1.321) were lower than student proficiencies of specifying line spacing and indenting paragraphs (*M* = 3.59, *SD* = 1.273), a statistically significant difference, *M* = 1.20, 95% CI [1.672, .718], *t* (133) = 4.957, *p* = .000; therefore, the null hypothesis was rejected, and the faculty member expectation was significantly different from the student proficiency in applying borders and highlighting (see table 8).

Table 8

Difference in Faculty Expectations and Current Student Experience

	Levene's Test		*t* Test for Equality of Means				95% Confidence Interval of the Difference	
	F	Sig.	*t*	df	Sig. (2-tailed)	Mean Diff.	Std. Error Diff.	Lower	Upper
Borders	.000	.992	4.957	133	.000	1.195	.241	.718	1.672
			4.887	73.807	.000	1.195	.245	.708	1.682

Note. 94 student and 41 faculty participants.

Presentation Software and Tools

Regarding Microsoft PowerPoint presentation, proficiencies were normally distributed, as assessed by Shapiro-Wilk's test (p >.05), but the assumption of homogeneity of variances was violated, as assessed by Levene's test for equality of variances (p = .023). Faculty member expectations (*M* = .83, *SD* = .381) were higher than student proficiencies of Microsoft PowerPoint presentation (*M* = .74, *SD* = .438), but not a statistically significant difference, *M* = .09, 95% CI [.064, .233], *t* (1.132) = 87.060, *p* = .261; therefore, I failed to reject the null hypothesis. The faculty member expectation was not significantly different from the student proficiency in Microsoft PowerPoint presentation.

Regarding Google Slides, proficiencies were normally distributed, as assessed by Shapiro-Wilk's test (p >.05); the assumption of homogeneity of variances was met, as assessed by Levene's test for equality of variances (p = .062). Faculty member expectations (*M* = .15, *SD* = .358) were lower than student proficiencies of Google Slides (*M* = .21, *SD* = .411), but not a statistically significant difference, *M* = .06, 95% CI [.213, .080], *t* (133) =.896, *p* = .372; therefore, I failed to reject the null hypothesis.The faculty member expectation was not significantly different from the student proficiency in Google Slides.

Regarding having no experience (represented as none) with presentation software, proficiencies were normally distributed, as assessed by Shapiro-Wilk's test (p >.05), and the assumption of homogeneity of variances was met, as assessed by Levene's test for equality of variances (p = .102). Faculty expectations (*M* = .17, *SD* = .381) were higher than student reporting of no experience with presentation software (*M* = .12, *SD* = .323), but not a statistically significant difference, *M* = .05, 95% CI [.073, .180], *t* (133) = .840, *p* = .402; therefore, I failed to reject the null hypothesis. The faculty member expectation is not significantly different from the student experience in lack of experience with presentation software. Both faculty and student participants indicated that some experience in presentation programs was necessary; therefore, the difference was not statistically significant (see table 9 on the following page).

Table 9

Difference in Faculty Expectations and Current Student Experience

	Levene's Test		*t* Test for Equality of Means				95% Confidence Interval of the Difference		
	F	Sig.	*t*	df	Sig. (2-tailed)	Mean Diff.	Std. Error Diff.	Lower	Upper
PowerPoint	5.266	.023	1.132	87.060	.261	.085	.233	.233	.064
			1.071	133	.286	.085	.241	.241	.072
Slides	3.548	.062	.896	133	.372	.066	.074	.080	.213
			.947	86.993	.346	.066	.070	.073	.206
No Exp.	2.705	.102	.840	133	.402	.054	.064	.180	.073
			.788	66.245	.434	.054	.068	.190	.082

Note. 94 student and 41 faculty participants.

Because the differences in faculty expectation and student experience were not significant, or the students surpassed the expectations of the faculty in these areas, it can be

concluded that students do not need improvements of these skills in order to be successful in the FYE course.

Regarding Prezi, proficiencies were normally distributed, as assessed by Shapiro-Wilk's test ($p > .05$), but the assumption of homogeneity of variances was violated, as assessed by Levene's test for equality of variances ($p < .001$). Faculty member expectations ($M = .39$, $SD = .494$) were higher than student proficiencies of Prezi ($M = .18$, $SD = .387$), a statistically significant difference, $M = .21$, 95% CI [.036, .383], t (62.367) = 2.411, $p = .019$; therefore, the null hypothesis is rejected, and the faculty member expectation is significantly different from the student proficiency in Prezi. It can be concluded that students need a higher level of skill in using Prezi in order to be successful in their FYE course (see table 10).

Table 10

Difference in Faculty Expectations and Current Student Experience

	Levene's Test		*t* Test for Equality of Means				95% Confidence Interval of the Difference		
	F	Sig.	*t*	df	Sig. (2-tailed)	Mean Diff.	Std. Error Diff.	Lower	Upper
Prezi	19.939	.000	2.411	62.367	.019	.209	.087	.383	.036
			2.651	133	.019	.209	.079	.366	.053

Note. 94 student and 41 faculty participants.

It is important to note that Lotus, Corel, and Open Office presentation software were known by some students but were not a requirement by faculty members (at a rate of 0-not required for success), so they were excluded from the test. Because the differences in faculty expectation and student skill set using Prezi were significantly different in that faculty expected a higher skill set when using this program, it can be concluded that students do need to improve on this particular skill in order to be successful in their FYE course.

Regarding creating a new presentation, proficiencies were normally distributed, as assessed by Shapiro-Wilk's test (p >.05), and the assumption of homogeneity of variances was met, as assessed by Levene's test for equality of variances (p = .187). Faculty member expectations (*M* = 3.24, *SD* = 1.261) were slightly lower than, but still in the average range of, student proficiencies in creating a new presentation (*M* = 3.53, *SD* = 1.420), but not a statistically significant difference, *M* = .29, 95% CI [.797, .221], *t* (133) = 1.120; *p* = .265, therefore, I failed to reject the null hypothesis. The faculty member expectation was not significantly different from student proficiency in creating a new presentation.

Regarding adding slides, proficiencies were normally distributed, as assessed by Shapiro-Wilk's test (p >.05), and the assumption of homogeneity of variances was met, as assessed by Levene's test for equality of variances (p = .081). Faculty member expectations (*M* = 3.07, *SD* = 1.253) were slightly lower than, but still in the average range of, student proficiencies in adding slides (*M* = 3.46, *SD* = 1.442), but not a statistically significant difference, *M* = .39, 95% CI [.898, .129], *t* (133) = 1.480, *p* = .141; therefore, I failed to reject the null hypothesis. The faculty member expectation was not significantly different from student proficiency in adding slides.

Regarding opening an existing presentation, proficiencies were normally distributed, as assessed by Shapiro-Wilk's test (p >.05); the assumption of homogeneity of variances was met, as assessed by Levene's test for equality of variances (p = .819). Faculty member expectations (*M* = 3.37, *SD* = 1.445) were slightly lower than, but still in the average range of, student proficiencies in opening an existing presentation (*M* = 3.55, *SD* = 1.380), but not statistically significant difference, *M* = .18, 95% CI [.706, .331], *t* (133) = .715, *p* = .476; therefore, I failed to reject the null hypothesis. The faculty member expectation was not significantly different from student proficiency in opening and existing presentation.

Regarding saving a presentation with a new name, proficiencies were normally distributed, as assessed by Shapiro-Wilk's test (p >.05), the assumption of homogeneity of variances was met, as assessed by Levene's test for equality of variances (p = .763). Faculty member expectations (*M* = 3.27, *SD* = 1.415) were slightly lower than, but still in the average range of, student proficiencies in saving a presentation with a new name (*M* = 3.52, *SD* = 1.464), but not statistically significant difference, *M* = .25, 95% CI [.790, .284], *t* (133) = .932, *p* = .353; therefore, I failed to reject the null hypothesis. The faculty member expectation was not significantly different from student proficiency in saving a presentation with a new name.

Regarding adding pictures to slides, proficiencies were normally distributed, as assessed by Shapiro-Wilk's test (p >.05), and the assumption of homogeneity of variances was met, as assessed by Levene's test for equality of variances (p = .082). Faculty member expectations (*M* = 3.05, *SD* = 1.244) were slightly lower than, but still in the average range of, student proficiencies in adding pictures to slides (*M* = 3.44, *SD* = .485), but not a statistically significant difference, *M* = .39, 95% CI [.912, .137], *t* (133) = 1.461, *p* = .146; therefore, I failed to reject the null hypothesis. The faculty member expectation was not significantly different from student proficiency in adding pictures to slides. Faculty member expectations were met in creating a new presentation, adding slides, opening an existing presentation, saving a presentation with a new name, and adding pictures to slides.

Table 11

Difference in Faculty Expectations and Current Student Experience

	Levene's Test		*t* Test for Equality of Means				95% Confidence Interval of the Difference	
	F	Sig.	*t*	df	Sig. (2-tailed)	Mean Diff.	Std. Error Diff.	Lower	Upper
Create New	1.757	.187	1.120	133	.265	.288	.257	.221	.797
			1.174	85.267	.244	.288	.245	.200	.776
Add Slides	3.093	.081	1.480	133	.141	.384	.260	.129	.898
			1.564	87.068	.122	.384	.246	.104	.873
Open Existing	.053	.819	.715	133	.476	.187	.262	.331	.706
			.702	73.201	.485	.187	.267	.344	.719
Save Pres.	.091	.763	.932	133	.353	.253	.271	.284	.790
			.945	78.736	.347	.253	.268	.280	.786
Add Pictures	3.070	.082	1.461	133	.146	.387	.265	.137	.912
			1.566	90.196	.121	.387	.247	.104	.879

Note. 94 student and 41 faculty participants.

Because faculty member expectations were met in creating a new presentation, adding slides, opening an existing presentation, saving a presentation with a new name, and adding pictures to slides, it can be concluded that students do not need improvement in these skills in order to be successful in the FYE course.

Since the significant difference only lies within the use of Prezi, and faculty indicated a preference for Microsoft PowerPoint Presentation (PPT), training is recommended on a volunteer basis for the use of Prezi. Because faculty participant's expectations were slightly lower to lower than the student proficiencies in using the tools within a presentation software, it can be concluded that training could be presented to students on a volunteer basis.

LMS Tools

Regarding posting an initial thread and replies in a discussion board within the LMS (see Table 7), proficiencies were normally distributed, as assessed by Shapiro-Wilk's test (p >.05), and the assumption of homogeneity of variances was met, as assessed by Levene's test for equality of variances (p = .681). Faculty member expectations (*M* = 3.54, *SD* = 1.325) were higher than student proficiencies in posting an initial thread and replies in a discussion board within the LMS (*M* = 2.84, *SD* = 1.432), a statistically significant difference, *M* = .70, 95% CI [.178, 1.215], *t* (133) = 2.656, *p* = .009; therefore, the null hypothesis is rejected. The faculty member expectation was significantly different from student proficiency in posting an initial thread and replies in a discussion board within the LMS.

Regarding submitting assignments in a class session or a module within the LMS, proficiencies were normally distributed, as assessed by Shapiro-Wilk's test (p >.05), and the assumption of homogeneity of variances was met, as assessed by Levene's test for equality of variances (p = .123). Faculty member expectations (*M* = 4.20, *SD* = .980) were higher than student proficiencies in submitting assignments in a class session or a module within the LMS (*M* = 3.03, *SD* = 1.387), a statistically significant difference, *M* = 1.17, 95% CI [.690, 1.636], *t* (133) = 4.862, *p* = .000; therefore, the null hypothesis is rejected. The faculty member expectation was significantly different from student proficiency in submitting assignments in a class session or a module within the LMS.

Within the LMS, locating the course calendar of assignments and syllabus, proficiencies were normally distributed, as assessed by Shapiro-Wilk's test (p >.05), the assumption of homogeneity of variances was met, as assessed by Levene's test for equality of variances (p = .204). Faculty expectations (*M* = 4.20, *SD* = 1.077) were higher than student proficiencies in

locating the course calendar of assignments and syllabus within the LMS (*M* = 3.31, *SD* = 1.399), a statistically significant difference, *M* = .89, 95% CI [.401, 1.372], *t* (133) = 3.614, *p* = .000; therefore, the null hypothesis is rejected. The faculty member expectation was significantly different from student proficiency in locating the course calendar of assignments and syllabus within the LMS.

Table 12

Difference in Faculty Expectations and Current Student Experience

	Levene's Test		*t* Test for Equality of Means				95% Confidence Interval of the Difference	
	F	Sig.	*t*	df	Sig. (2-tailed)	Mean Diff.	Std. Error Diff.	Lower	Upper
Discussions	.169	.681	2.656	133	.009	.696	.262	1.215	.178
			2.739	81.982	.008	.696	.254	1.202	.191
Assignments	2.413	.123	4.862	133	.000	1.163	.239	1.636	.690
			5.551	105.690	.000	1.163	.210	1.579	.748
Calendar/Syl	1.626	.204	3.614	133	.000	.887	.245	1.372	.401
			4.000	97.734	.000	.887	.222	1.327	.447

Note. 94 student and 41 faculty participants.

Because the faculty member expectation is significantly different from student proficiencies in posting an initial thread and replies in a discussion board, submitting assignments, and locating the course calendar of assignments and syllabus within the LMS, it can be concluded that additional training to improve student skill set in these areas is necessary.

Regarding sending and receiving messages on the instant messenger (IM) system within the LMS, proficiencies were normally distributed, as assessed by Shapiro-Wilk's test (p >.05), and the assumption of homogeneity of variances was met, as assessed by Levene's test for equality of variances (p = .467). Faculty member expectations (*M* = 2.83, *SD* = 1.595) were

slightly higher than, but still in the somewhat low range (rate of 2) of, student proficiencies in sending and receiving messages on the instant messenger system within the LMS (*M* = 2.69, *SD* = 1.474), not a statistically significant difference, *M* = .14, 95% CI [.422, .697], *t* (133) = .487, *p* = .627; therefore, the null hypothesis is accepted. The faculty member expectation was not significantly different from student proficiency for sending and receiving messages on the instant messenger (IM) system within the LMS.

Table 13

Difference in Faculty Expectations and Current Student Experience

	Levene's Test		*t* Test for Equality of Means				95% Confidence Interval of the Difference		
	F	Sig.	*t*	df	Sig. (2-tailed)	Mean Diff.	Std. Error Diff.	Lower	Upper
IM	.533	.467	.487	133	.627	.138	.283	.697	.422
			.472	71.093	.638	.138	.292	.720	.444

Note. 94 student and 41 faculty participants.

Faculty member expectations were higher than student self-reported skill competencies in posting an initial thread and replying in discussion boards, submitting assignments in class sessions or modules, and locating the course calendar of assignments and syllabus in the LMS. Students may need more training these areas. Faculty member expectations were met for sending and receiving messages on the LMS instant messenger system. Therefore, it can be concluded that students do not need additional improvement in this skill set.

E-mail Tools

Regarding composing and sending e-mail, proficiencies were normally distributed, as assessed by Shapiro-Wilk's test (p >.05); the assumption of homogeneity of variances was met, as assessed by Levene's test for equality of variances (p = .432). Faculty member expectations

(*M* = 3.95, *SD* = 1.161) were slightly higher than, but still in the average range of, student proficiencies in composing and sending e-mail (*M* = 3.69, *SD* = 1.126), not a statistically significant difference, *M* = .14, 95% CI [.178, .697], *t* (133) = 1.174, *p* = .243; therefore, I failed to reject the null hypothesis. The faculty member expectation was not significantly different from student proficiency in composing and sending e-mail.

Proficiencies in attaching a file to an e-mail were normally distributed, as assessed by Shapiro-Wilk's test (p >.05), and the assumption of homogeneity of variances was met, as assessed by Levene's test for equality of variances (p = .827). Faculty member expectations (*M* = 3.61, *SD* = 1.430) were slightly higher than, but still in the average range of, student proficiencies in attaching a file to an e-mail (*M* = 3.56, *SD* = 1.324), not statistically significant different, *M* = .05, 95% CI [.456, .548], *t* (133) = .181, *p* = .857; therefore, I failed to reject the null hypothesis. The faculty member expectation was not significantly different from student proficiency in attaching a file to an e-mail. Faculty expectations were met in the skills of composing, sending, and attaching a file to an e-mail. (see table 14).

Table 14

Difference in Faculty Expectations and Current Student Experience

	Levene's Test		*t* Test for Equality of Means				95% Confidence Interval of the Difference		
	F	Sig.	*t*	df	Sig. (2-tailed)	Mean Diff.	Std. Error Diff.	Lower	Upper
Compose/Send	.621	.432	1.174	133	.243	.260	.221	.697	.178
			1.168	78.119	.239	.260	.219	.696	.176
Attaching Files	.048	.827	.181	133	.857	.046	.254	.548	.456
			.175	71.254	.861	.046	.262	.568	.476

Note. 94 student and 41 faculty participants.

Because the faculty member expectation is not significantly different from student proficiencies of composing, sending, and attaching a file to an e-mail, it can be concluded that students do not need additional improvements on these skills.

Regarding forwarding an e-mail, proficiencies were normally distributed, as assessed by Shapiro-Wilk's test (p >.05), and the assumption of homogeneity of variances was met, as assessed by Levene's test for equality of variances (p = .163). Faculty member expectations (*M* = 3.07, *SD* = 1.385) were lower than student proficiencies in forwarding an e-mail (*M* = 3.61, *SD* = 1.330), a statistically significant difference, *M* = .54, 95% CI [1.032, .035], *t* (133) = 2.115, *p* = .026; therefore, the null hypothesis is rejected. The faculty member expectation was significantly different from student proficiency in forwarding an e-mail (see table 15).

Table 15

Difference in Faculty Expectations and Current Student Experience

	Levene's Test		*t* Test for Equality of Means				95% Confidence Interval of the Difference		
	F	Sig.	*t*	df	Sig. (2-tailed)	Mean Diff.	Std. Error Diff.	Lower	Upper
Forwarding	1.968	.163	2.115	133	.036	.533	.252	.035	1.032
			2.197	72.763	.031	.533	.255	.052	1.070

Note. 94 student and 41 faculty participants.

Because the faculty member expectation is significantly different from student proficiencies forwarding an e-mail, a conclusion could be made that students do not need additional training to increase proficiencies in this area.

Summary of Outcomes

I used the data from the pre-established valid and reliable survey to eliminate all of the computer related programs and computer literacy skills that faculty members indicated were not

necessary for the success of the FYE course. Several questions in the survey did not serve a purpose for this study. My interest was only in the areas where faculty members indicated a clear expectation for FYE courses in particular and the gap between those expectations and students' current skill sets. Homogeneity of variances was not met in experience using Windows and Mac operating systems, Internet Explorer, Microsoft Word, Microsoft PowerPoint, and Prezi. Additionally, homogeneity of variances was violated in the specific skills of opening, saving, copying, and pasting. This does not affect the analysis in the Levene's tests for homogeneity of variances, because it is a robust test and can give the true significance level in close comparison to the nominal significance for a variety of distributions, therefore rendering it insensitive to symmetric heavy-tailed distributions.

Students' level of experience with Windows operating system, Internet Explorer, and Safari was significantly different than the expectations of faculty who teach FYE courses. The survey asked faculty members to indicate with a yes or no whether students needed experience in these categories. For Windows operating system, faculty member expectations exceeded the experience of FYE students. For Internet Explorer and Safari, student experience was higher than the expectations of the FYE faculty members. A conclusion could be made that, while the *t* test showed a significant difference in the experience with Internet Explorer and Safari web browsers, the students did meet, and even exceed, the expectations of the faculty. Information regarding the gap in expectations versus current experience in Windows OS can be valuable data for the institution. It could be concluded that students need more training in basic Windows OS functions. Similarly, there was a significant difference in faculty expectations and student knowledge in Prezi presentation software. There was not a significant difference in the expectations and experience in the top required presentation software, PowerPoint; however,

Prezi rated as second most required presentation software. Therefore, students may require additional training in Prezi.

Faculty member expectations of skill levels in adding borders and highlighting in word processing software, posting initial threads and replies in the LMS, submitting assignments in the LMS, locating the course calendar and syllabus within the LMS, and forwarding e-mails were significantly different than student self-reported skill levels. Survey questions were on a Likert scale from 0 (no skill level) to 5 (high skill level). Students indicated a level of 3 (average) of knowledge in adding borders and highlighting within word processing software versus faculty members' level 2 (somewhat average) expectations; therefore, students surpassed faculty member expectations. There was a significant difference between faculty member expectations and student skill level in forwarding e-mails and posting initial threads and replies, submitting assignments, and locating the course calendar and syllabus within the LMS e-mail.

Conclusion

Now that the study is complete, I will present the structured report to the intended audience. The audience includes administration, policy makers, and new student orientation committee members. The goal is to provide information from the study so that administration, institutional policy makers, and new student orientation committee members are able to recognize the potential importance of giving students computer literacy training (including LMS) before they enter the FYE course. The chancellor of the bi-regional college has requested an investigation in the matter of the low retention of FYE students, thus taking an interest in this research study. Currently, FYE faculty members do not mandate that students partake in the LMS training sessions; instead, students are simply encouraged to take LMS training sessions. Likewise, there are no basic computer literacy workshops or seminars that students can attend

before entering a face-to-face classroom. Indications are evident of a gap in faculty expectations versus students' current computer literacy skill set in certain skill areas, so it seems important that policy makers take measures toward making computer literacy and LMS workshops or seminars a mandatory curriculum component of FYE courses. Another possibility is to make LMS and basic computer literacy training a mandatory application process, based on the student's college entrance exam scores, combined with new student orientation.

I will call a meeting with the assessment committee and the dean of the University of Transfer division, where FYE resides, and present the findings using a presentation application with bulleted points of the project study and the predicted outcomes believed to be to the students' advantage in the future. The presentation will include the sections where there was a statistically significant gap in FYE faculty expectations and student proficiencies as well as the limitations of the study. Each presentation component will follow the typical stream of the research project. A copy of section two of the research study will be given to each member of the committee and to the dean.

Few areas of this study provided the rejection of the null hypothesis; therefore, this study should be followed up by a new study using the same survey to discover a more accurate depiction of what computer literacy skills keep students from persisting to the second semester in college. The skills that were surveyed in this study may have been picked up in the weeks prior in their FYE course and may have specifically led to a change in active classroom participation and persistence. Had I been able to distribute my surveys on Day 1 of the semester instead of Week 3, the findings may have been impacted. The findings of that new study would potentially allow policy-makers and administration to gain even more of an understanding of FYE students

who dropped the course. New data collected could also provide a platform to modify faculty development and create a new or use the current basic computer literacy placement exam.

Although the study only showed a significant difference in adding borders and highlighting in word processing software, posting initial threads and replies in the LMS, submitting assignments in the LMS, locating the course calendar and syllabus within the LMS, forwarding e-mails, and using Prezi, and because faculty indicated requiring some level of skill in almost all areas, I recommend changes that would include workshop availability in all skill areas. Descriptive data showed that faculty members indicated requiring an average skill in posting an initial thread and replies in the discussion boards and a somewhat high skill in submitting assignments and locating the syllabus and calendar within the LMS section. Additionally, faculty members indicated requiring an average skill level in composing, sending, forwarding, and attaching files to an e-mail in the e-mail section. Faculty members also indicated requiring an average skill in opening and saving, line spacing and indenting, and opening a new template, and a somewhat high skill level in copying and pasting in the word processing section. In the presentation section, faculty members indicated requiring an average computer literacy skill level in creating new presentations, adding slides, opening existing presentations, saving presentations with a new name, and adding pictures to slides. It can be concluded that, because faculty members indicated those skills necessary to be successful in the FYE courses, students should be provided with access to training to increase their skills.

Based upon the results of this study, a policy recommendation would be appropriate. Upon results of a mandated basic computer literacy placement exam, a requirement should be in place that all non-proficient students take a LMS and/or computer literacy training workshop or seminar, or a series of resources depending on the level of deficiency. It is essential that faculty

members and administration are cognizant of the benefit of not only using innovative technology themselves, but also teaching students how to use it in the classroom. There is great significance in examining the findings of a study that follows the current quantitative study, because a new study could gather data on students before dropping out of the FYE course and demonstrate student perceptions of how the institution and policy needs to evolve as technology advances.

Section 3: The Project

For this study, data included an online survey given to all FYE instructors who volunteered and a paper survey to all FYE students who volunteered. Two goals directed the data analysis: identifying differences in faculty expectations and student skill levels and determining a path for a policy change in order to implement future faculty member professional development and student training. This collection of quantitative data from 94 FYE students and 41 FYE instructors aided and justified the recommendations for a policy recommendation (Section 3) for the institution in the study. For FYE students, the implementation of a computer literacy section in the institution's placement exam and new computer literacy training policies for all incoming students who received low scores on those computer literacy sections is recommended. These recommendations should be made in collaboration with the new student orientation committee and institutional administration.

Section 3 includes a description of the policy paper, goals, and rationale. Additionally, a suggestion of implementable actions is made for improving the current policy in which student computer literacy readiness is mandatory during new student orientation. In this section, I address areas related to improving student computer literacy skills that were raised by the findings of this study in Section 2.

Purpose

This white paper was focused on policy recommendations, which are based on the study's findings. These findings created a foundation in which actionable steps for improving the new student orientation process, specifically computer literacy, are recommended.

The purpose of this quantitative study was to find the differences between computer literacy skills that FYE faculty members expected in their FYE courses from students and the

level of computer literacy skills that FYE students had in the FYE courses. Because the surveys could not be given to students at the beginning of the semester, the data were limited to those students who were still enrolled in their FYE courses; therefore, it is recommended that scholars repeat this study to distribute surveys to students on the first day of class or in new student orientation (NSO). Despite the limitation of surveying only those students who stayed enrolled in the class, I found some significant differences. Through descriptive data, I was also able to identify key components that faculty members identified as necessary computer literacy skills in order to be successful in the FYE course.

A literature review on placement exams, new student orientation, institutional policies, and computer literacy training for new students covers topics such as placement testing, FYE curriculum and objectives, new student orientation, and computer literacy among FYE students. Following the review of literature, a recommendation for changes in policy will be outlined. A statement of the study's implications for social change and change in the higher educational academic community completes the section. There was evidence of some significant results; nevertheless, the majority of outcomes were not statistically significant. Because surveys could only be obtained several weeks into the semester instead of at the beginning of the semester, student participants were limited to those who had not dropped out or who had not attended classes for the semester. However, based on the data that were received, I will recommend a change in policy for the betterment of new students.

Rationale

The quantitative data analysis from this study, the descriptive data, and the findings of my review of the literature formed a foundation for understanding the computer literacy and LMS skills needed for new students at the institution in this study, especially first generation students

entering college. I formed an understanding of the computer literacy needs for new students to be successful in their new student seminar class, which guided my policy recommendation aimed at enhancing the student's computer literacy and LMS skills to better match the FYE instructor's expectations.

The intent was to make a recommendation to the institution under study to change the current placement testing process, adding a computer literacy and LMS component, and to mandate student participation in a computer literacy and/or a LMS workshop before the semester officially begins. Identifying any barriers to policy implementation and acquiring input from the committee was important to the process. It was necessary to have the data from this study and the literature review to inform regional leaders and the committee before recommendations. The policy recommendation (white paper) format is appropriate for this study because it provides a timely, authoritative, and informative way to advocate for a change in current policy (Rogers, 2003; Sakamuro, Stolley, & Hyde, 2010) Some of the data, specifically in student participants, showed skill was lacking in comparison to faculty expectations. I found that these differences were in experience using Prezi and the Windows operating system. Additionally, faculty member expectations of skill levels in adding borders and highlighting in word processing software, posting initial threads and replies in the LMS, submitting assignments in the LMS, locating the course calendar and syllabus within the LMS, and forwarding e-mails were statistically higher than student self-reported skill levels. Although limited, the literature does have some information on the need for students to acquire these skills. Literature was also used to defend and to define the choices made in the policy recommendation.

Description and Goals

The current regional policies and curriculum on governance of student/academic support for FYE students were investigated, and a formal electronic change in policy form was completed to suggest policy changes for new students enrolled at the institution under study. Because each region (consisting of three campuses) can dictate its own FYE policies, a committee involving only administration, faculty members, and staff was required for such recommendations; therefore, including shareholders and the board was not necessary.

More readily available services and resources are needed for new students in NSO to ensure a higher success rate in their FYE courses. The focus was on three objectives for a policy recommendation; (a) add the SmarterMeasure and a LMS assessment to the placement testing, (b) require new students to take computer literacy workshops and/or a LMS workshop if selected based on the placement test results, (c) create a cohort of new students each semester who take part in the workshop that reflect the whole population of FYE students and track student persistence comparing past fall-to-fall institutional data to present data to determine if there is a significant difference in those former students who did not take the workshop(s), and (d) evaluate data and make changes to the workshops accordingly. All students would benefit from a more structured NSO including computer literacy workshops, but especially those who do not test with at least some skill level in the areas of computer literacy necessary to be successful in the FYE course. If new students understand what computer literacy skills are necessary for success in their first course, they may participate in workshops offering tools in those areas to increase their skill levels, thus increasing their chances of success.

The white paper will begin with recommendations for a computer literacy placement exam. The university has adopted a predesigned computer literacy assessment that will be the

recommended assessment for this white paper. Then, establishing how students will be chosen to take the workshops available will be explained. Each workshop will have a description, time frame, and process. If positive results are shown after the implementation of the recommendations, the findings will be presented to all Regional Academic Officers (RAOs) in hopes of implementing this process on all campuses.

Literature Review

The following key topics were used to critically review the literature: c*ollege readiness and placement exams*, *NSO*, *institutional policies*, and *student computer literacy training*. My search included Walden University, ERIC, government, Google Scholar, and ProQuest databases. Additionally, I reviewed many theses and dissertations through ProQuest and Walden in my research. I reviewed over 100 conference papers, institutional newsletters, peer-reviewed articles, theses, dissertations, and books over a period of 6 months. A majority of said articles were published within the last 5 years of the beginning of my search.

To find sources for this literature review, a search strategy was conducted using multi-database electronic resources including topics regarding.

The framework for this study was Bannan-Ritland's (2003) theoretical integrative learning design framework, which also coincides with this policy recommendation. I found that students in a face-to-face FYE course need similar computer literacy skills as those in an online classroom. As suggested by Dix (2007), adopting complex interventions, as suggested in Bannan-Ritland's framework of online learning tools, should be a part of mainstream traditional classrooms. Using the theoretical integrative learning design framework reinforces the quantitative data collected. In addition to the framework, completing a formal electronic change of policy form and creating a white paper were the most appropriate methods to bring about

institutional awareness to the problem identified and to implement NSO recommendations, which include the use of a new placement exam and workshops to increase student computer literacy skills.

White papers have been used to facilitate change in many areas, including the medical, criminal justice, business, and academic fields. White papers are used to write about services, technology, products, methodologies, and policies (Graham, 2013). Bower (2014) wrote about Australia's National Security Strategy based on several white papers revolving around the topic of national security. Yue brought attention to strategies currently being used and tools that could be used in the future to investigate decision-making processes and policies. Change within the EuFishBioMed field was facilitated by six research-based white papers: chemical biology of development and regeneration, Zebrafish embryos as alternative toxicological models, data integration for research in biology, quantitative modeling of developmental and regenerative processes, study of the brain and behavior in health and disease, and Zebrafish as models for complex human diseases and drug development (Kaufmann, 2015). In higher education, a white paper in the form of a MOOC report aided stake holders in institutions in the United Kingdom to understand the market value, changes in societal adoption, and implications (Yuan, Powell, & Cetis, 2013). Oxman and Wong (2014) used a white paper to describe 11 adaptive learning systems available in primary and secondary school systems including cloud computing technologies, the ability to detect a student's ability to cope, and competency-based learning.

I chose to implement this white paper in the form of a policy recommendation because, based on the data that were collected in this study, having LMS training as an optional workshop for new students is not aiding in student persistence. There needs to be more than just a LMS workshop that is mandated to all new students; a basic computer literacy workshop should be mandated if the

students did not pass out of the recommended added placement exams. I believe that making these policy changes will increase persistence, thus increasing retention rates.

I found that 51% of student participants considered themselves as first-generation students, 11% did not have family access to a computer, and 13% did not have access to Internet service. When asked if education prior to college required a computer course, 45% answered they did not have a prior computer class. For those students who answered that they did not have a required computer class, 33% elected not to take a computer class before enrolling in college. If over half of the student population is composed of first-generation students, extra training may be necessary to prepare them for college. Similarly, if some students did not have proper training or courses before college, they too would need more training.

College Readiness and Placement Exams

When creating suggestions for a policy change for college placement exams, it is important to look at what researchers have found on this subject. Researchers have shown that there is little to no computer literacy testing for incoming college students. Testing focuses on English and math subjects and is devoid of soft skills and technologically-based skills (Conley, 2010; Kahlenberg, 2010; Leohardt, 2011; Ravitch, 2010; Scott-Clayton, 2012). Colleges typically use a placement exam or a student's ACT or SAT scores to determine whether students will be successful in college. Academic-based placement testing for new students is not always an accurate depiction as to whether the student will be successful in college (Hodara, Jaggars, & Karp, 2012; Saxon & Morante, 2014; Scott-Clayton, 2012). The college readiness process customarily accepts SAT and ACT scores to place students into college courses or, in some institutions, a student's GPA is used to place them into college-ready courses or remedial courses. Remedial courses are used if the student did not qualify within the range that is required by the

institution (Fauria & Zellner, 2015). In 2012, colleges in North Carolina, California, and Florida noticed a gap in student success rates and achievement testing and began reviewing their placement testing processes and looking at alternative methods to test college readiness (Adams, 2012). Institutions have changed their policies, moving from placement testing like Accuplacer and Compass to using high school GPAs and even creating their own college readiness tests (Bracco, Dadgar, Austin, Klarin, & Broek, 2014; Hodara et al., 2012).

Kaplan's official partner of live instruction for the ACT (Compass) test revamped their testing to include online modules of video lessons and quizzes, as well as live 30- or 60-minute sessions with live instructors, but still focus on math, science, and English. A small, noncognitive portion that includes soft skills like grit was added, but it did not include computer literacy skills (Hoover, 2016). Although the mode in which high school students are taking the ACT has improved, expansion on subject matter is limited. Gateway courses at the regional level within the institution in this study are mandatory if students did not fit the parameters of the scores needed to move on to college-ready courses. In fall 2015, a report from the institution's institutional research department showed the percentage of students placed into gateway math courses averaged 53%. The percentage of students placed into gateway writing and reading courses averaged 52%.

First-generation students are often discussed in the literature when it comes to FYE. Nationally, first-generation students make up over 36% of FYE students (AACC 2014 Fact Sheet, 2014). At the institution in this study, the amount FYE student participants who self-reported as first-generation college students was approximately 50%, which was higher than the national average. First-generation students have a significant lack of knowledge in collegiate expectations (Logan, 2013) and are less likely to succeed and more likely to need transition support that

includes outreach from colleges, career counseling, basic application support, and actual experience on campus (Bryant & Duke-Benfield, 2014). If there is increasing enrollment of first-generation students over the years, further research and interventions may need to be pursued to reach those specific students.

Interventions to increase student retention could include a plethora of topics. Bryant and Duke-Benfield (2014) suggested that institutions incorporate college-readiness interventions that include cognitive strategies, content knowledge, academic behaviors, and contextual skills and awareness. Contextual skills and awareness include skills necessary to help students understand college infrastructure, college culture/student expectations, communication processes, and navigating college processes. Because most of the contextual skills and awareness interventions involve online components, the LMS training would be necessary as well.

Summer brain drain is a term used in academia to indicate the lack of active student participation in academic activity during the summer, resulting in a needed review process in the fall (Gibson & McKenzie, 2011). Garcia (2010) suggested that the absence of academic connectedness during the summer before their first year in college might play a role in first-generation students feeling a lack of a sense of community. Similarly, Padgett, Johnson, and Pascarella (2012) suggested that first-generation students are underrepresented in the college environment because they are lacking in cognitive and psychosocial issues. Because the institution in this projected policy change has over half of its FYE students self-reporting as first-generation students, this literature is relevant. In college-readiness programs that include cognitive and psychosocial skills as well as college infrastructure training like Washington State University's Integrated Basic Education and Skills Training (I-BEST) model, students were 56% more likely to succeed in taking college courses than student students who did not take I-BEST

training (Zeidenberg, Cho, & Jenkins, 2010). ınstitutions that implement these interventions are collecting encouraging student success data.

New Student Orientation

NSO programs are also common in higher education. These orientations typically focus on those students transitioning from high school to college in the last 3 days or more (College Board, 2011). Bucknell and Columbia University (2014) required students to participate in a NSO program before classes began, but their NSO program focused on academic programs. Brown University and the University of the West Indies (2014) focused on institutional resources, services, and college culture in general. According to a report from the institution in this study, the institution had a mandatory 30-minute online NSO focusing on the following topics: students' rights and responsibilities, Accuplacer, student handbook and calendar, student affairs, the Family Educational Rights and Privacy Act (FERPA), college resources, and student life

None of these institutions covered topics related to computer literacy or the LMS. Some participants in this study showed a need for student training in areas that were not covered in the NSO. Soria, Clark, and Koch (2013) researched a successful NSO, but it was not introduced to new students as an online module or a 2-hour workshop. It was an extended weeklong program provided to students before the semester began. This particular NSO increased FYE students' sense of belonging and social identity and increased retention. Policy recommendations from Soria et al. included extending the NSO program even longer so that students have small group reflection times led by peer leaders and time spent with their individual programs. Even though the NSO was similar in other institutions, the NSO at institution in this study had a shorter time frame and had only been offered online for the past few years. The lack in adequate time and

relevancy in the topics provided by the institution in this study challenged Sindhu's (2012) statements on proper NSO training that aid in nontraditional FYE students. Although many institutions use some form of NSO, the longer NSO programs are recommended but should not be viewed as a one-size-fits-all model (Deggs & Associates, 2011). Students in this study did not get adequate training on topics like soft skills and computer literacy as the current 45-minute online NSO module does not come close to the NSOs in other institutions that are successful. Furthermore, the absence of computer literacy training could have been a recipe for lower persistence rates in the first year in comparison to the other institutions.

Many institutions are including summer bridge programs in addition to NSO to help new students get acclimated to college life. Indiana University collected data that indicated students had higher success rates when attending a summer academic program during their first year in college than those who had not attended (Chism & Williams, 2008; Hansen & Trujillo, 2012). Although the program did include an FYE course with one objective covering computer literacy, a majority of subjects included financial aid awareness and self-awareness assessments. The University of Southern California has been implementing a successful summer bridge program before orientation for over 10 years. Their program, along with others, specifically focuses on increasing college-readiness in writing for low-income students (Castleman, Arnold, & Wartman, 2012; Castleman & Page, 2014; Relles & Tierney, 2014). Strayhorn (2011), also found that increasing knowledge throughout the summer before college courses began increased persistence among FYE students.

Topics among FYE faculty members and administrators at conferences usually include orientation and how to change it to fit the needs of the students (McGlynn, 2013). Even though policy changes are recommended after attending these conferences and professional

development, there is still a lack of intervention strategies and learner-centered orientations that truly prepare new students to persist to their sophomore year in college (McGlynn, 2013: Webster, 2016). The institution in this study was particularly lacking in the following topics when compared to other institutions in institutional strategies, student self-awareness (including setting goals), and the college learning environment (Brown, 2012; Espinoza & Espinoza, 2012; Wyatt, 2011). The only topic that was accurate in comparison to other institutions was support systems. Although the college learning environment topic was not explained in detail, throughout the literature, there was some indication that this particular NSO topic could mean the online learning environment as well. Tinto (2005) discussed the importance of institutions welcoming environment support, feedback, and involvement in changing policies that would promote student success. At the institution in this study, feedback from students and FYE faculty members clearly represent a need for changing the NSO to include mandatory computer literacy training.

FYE Institutional policies

Nationally, Johnstone and Soares (2014) studied several institutions on their FYE programs. Johnstone and Soares (2014) found that more than 150 members have created policies and governances based on the Liberal Education and America's Promise (LEAP) initiative while others are using Lumina's Achieving the Dream (ATD) to guide policy makers. Twelve community colleges adopted a competency based education program (CBE) program curriculum. Western Governor’s University (WGU) is among those institutions that have adopted the CBE curriculum. At WGU, policies that include innovative technology such as recorded lectures, simulations, and other learning resources have governed. FYE students need to be well versed on executing these modalities before entering the class. WGU has learning resource modules that

lead the students step-by-step before classes begin. This training can be revisited by students at any time. WGU policy makers continually revise their online orientation FYE program to fit the needs of students.

Traditional face-to-face college classrooms are becoming a term from the past to describe a classroom where most learning takes place in a physical classroom and work completed by students is submitted to the teacher personally. The blended learning platform is becoming the new traditional classroom, blending the traditional model with online learning. A study conducted at Kuwait University revealed that students participating in blended learning platforms were significantly more successful than those who were in a traditional classroom setting (Safar & AlKhezzi, 2013). Furthermore, Safar and AlKhezzi (2013) found that the quality of work was better than those who did not participate in the blended learning class. At the institution in this study, all new students participate in a new student FYE seminar or course, which has a blended learning platform; however, persistence was still approximately 50%, indicating a different cause in low persistence rates. The study showed that a component of this issue may be that students do not have the access or experience needed in computer literacy to handle classes that are using innovative technology. In this study, the institution's provost, (2014) made blended learning mandatory by stating that all classes should be incorporating assignments in their LMS. These blended learning formats are current with best practices, but there is a gap in what skill levels students have and what instructors are expecting them to know.

The goal of placement policies in open-access colleges is to match new students to the courses in which they have an adequate score (Scott-Clayton, 2012). Some institutions that have analyzed the results of placement testing in said colleges have changed their policies to include some type of placement testing preparation. Hodara and Jaggars (2012) found that placement

policies in Georgia, North Carolina, Oregon, New Jersey, Texas, Wisconsin, and Virginia required some modification if students did not test into college-level courses. Similar to the states in Hodara and Jaggar's study, the institution in this study used a method that required students who tested below a specific cut-off to enroll in free college-placement prep modules that would prepare them for college-level courses. Additional similarities were that the institution in this study only used modules that prepared students for English and math skills. Although free and helpful, these modules or courses that institutions provide for new students are still missing valuable computer literacy skills that need to be addressed.

In a 2014 institutional report, the provost at the college in which this study was conducted announced a switch to using a more customized Accuplacer placement test for new students instead of the former Compass test. Based on ATD initiatives that are unlike the CBE model, the focus is more on Science, Technology, Engineering, and Mathematics (STEM) program initiatives and mandatory advising appointments. This statewide policy change was created through a collaborative effort of faculty members and the college board over a 2-year period. Faculty members and the college board identified 5 reading and 11 math objectives specific to the college's student population. From there, members of the faculty and the college board created curriculum groups that were used to set standards in reading, writing, and math, resulting in the way the institution would have Accuplacer test college readiness in new students. These testing components included: writing an untimed electronic essay, answering 40 comprehension questions, and answering math questions beginning with elementary algebra. These students were then given scores along with feedback, and the writing and reading were assessed using a comprehensive rubric. This placement testing was used if a student’s SAT/ACT scores, recent high school grade point average, or prior institutional completion of coursework were not

available. After a review of data on past cohorts showed significant success, other policy changes included: requiring faculty members to add assignments in the LMS, advising surveys for faculty members to raise flags on students at risk, hiring supplemental instruction (SI) leaders in the SI program, and adding more co-requisite math and English courses. Institutional policies should, "promote the creation of pathways that enable students to move into postsecondary education and training programs more quickly, complete credentials, and transition into careers or to four-year colleges" (Bryant & Duke-Benfield, 2014, p. 4).

Student Computer Literacy Training

FYE students have a higher chance of persistence in institutions that provide clear and consistent expectations and requirements (Tinto, 2012). Jacobs (2016) discussed his research at Canadian Community College in their nursing program in which pre-program workshops were mandated. Jacobs found that in comparison to students who did not participate in pre-program workshops, students who did participate had a 32% increase in program success. Similarly, Ball State University conducted a study in which first generation college students transitioning from high school participated in a five-week program before stepping foot in a college classroom. This program included several workshops, campus life training, career assessments, and financial aid education. Once students completed the program, students would be assigned to a faculty member as a mentor (Logan, 2013). A qualitative study on a 2-week pre-anatomy and physiology program workshop provided data that proved to be very successful in new students who participated in the workshop in comparison to students who did not participate. Furthermore, students reported more knowledge on the big picture of the program in comparison to those who did not participate (Abdullahi & Gannon, 2012).

The recommendations in this white paper are consistent with the data from my study that show a significant gap in several areas of FYE faculty member expectations and FYE students once in the FYE course. Similarly, Calvani, Fini, Ranieri, and Picci (2012) conducted a study on 14- to 16-year-olds concerning their level of digital literacy. The researchers found when it came to technical aspects of computer literacy, in comparison to cognitive and socio-ethical competencies in computer literacy, students were inadequate. Researchers concluded that understanding students' computer literacy skills through assessment is imperative for institutions. Based on Calvani, Fini, Ranieri, and Picci (2012) and the results in my own study, students should have the opportunity to use such assessments to gauge what level of computer competency they have already acquired.

Computer literacy does not mean the same to educators as it does to new students today. First-year students, although knowledgeable when it comes to smart phones, have proven to be unsuccessful in basic computer skills (Nixon, 2013). Since the study demonstrated expectations of faculty members in the use of computers and not through the use of smart phone technology, policy should include computer-based computer literacy training in NSO. My proposal, as described in the following section, to change the placement exam policy to include mandated workshops is only an option provided to the assessment committee and the RAOs to enhance student learning in their first course in hopes of increasing persistence rates among FYE students.

Implementation

In an interview with the dean of the University of Transfer division (2016), I discovered that the submission for the change in policy form should be sent to the assessment committee and dean of the correlating department. This is the first step in changing the policy in this institution. The form will then be vetted by the committee and a review of the entering student policies will

take place. If the committee votes in support of the recommendation, it will then be forwarded to the RAOs (Waltz-Freel, personal communication, July 7, 2016). If the RAOs support the policy recommendation in the form submitted, the presentation can commence, the white paper can be submitted, and a committee can be formed for review. It is important to include FYE faculty members, NSO administration, and student advisors to vet the proposed workshop implementation and determine the best process for moving forward (Vella, 2010). Since the individuals suggested in committee involvement are salaried and required by administration to participate in regional committee work, no budget was required for this portion. Upon reviewing the current SmarterMeasure computer literacy assessment being used and paid for by the institution, it will be my recommendation that SmarterMeasure is utilized to measure new students' computer literacy skills.

The committee would then be charged with vetting the recommended selection process, and the workshops (included in the white paper) that have been created and utilize the current volunteer-based LMS training module to create a LMS placement test. Based on their assessment and feedback, these workshops will be mandated for students who placed into basic computer literacy workshops and/or a LMS workshop. All workshops will be open to students on a volunteer basis if they tested out of the recommended computer placement exams. Future data will be shared with IR and stakeholders and could impact the NSO in the face-to-face and online format in other regions and campuses.

Potential Resources and Existing Supports

Implementing this policy change supports the institutional goal to increase student success in the first year of college. By integrating the suggested SmarterMeasure computer literacy test as a placement exam and creating a LMS placement exam’ and placing new students

into correlating workshops based on those scores, FYE student skill level will move closer to course instructor expectations. According to the literature review in Section 2 of this study, students found a variety of adversity that led to high levels of frustration (Ngo-Ye, 2014; Ratliff, 2009; Wallace & Clariana, 2005; Weisber, 2011). The institution can control one portion of these frustrations, which is lack of skill in computer literacy and/or LMS.

A way to control costs is to use the SmarterMeasure assessment already being used by the institution. Also, current full-time advisors and full-time FYE faculty members can present the workshops as part of their schedule. Currently, in the institution in this study, full-time faculty members are required to work toward several additional student engagement hours per year. The institution does currently have an online LMS training program, which can easily be transformed into an assessment and face-to-face workshop. The committee can assist in the development of these assessments and workshops. Additionally, the St. Paul Community Literacy Consortium has given Creative Commons Attribution-NonCommercial 4.0 International License to students needing training in the topics that the study indicated as necessary for new students (Basic Computer Skills Curriculum, 2016).

Potential Barriers

RAO approval, associated committee work in developing workshops, and timing and format of workshops are potential barriers for the proposed policy recommendation. Additionally, students who attended college 10 or more years ago, under the proposed student selection process, would not be required to participate in the SmarterMeasure and LMS placement exams. If students have not been involved in a college infrastructure that uses current innovative technology, the student could struggle through his/her first course because he/she may not be able to meet the expectations of the FYE faculty member (Krieg, 2013). By making the

workshops available to all students on a volunteer basis, those students who have not participated in higher education for years could be recommended by their advisors to attend the workshops anyway.

Proposal for Implementation and Timetable

The presentation to the assessment committee could take three hours to allow discussion of the data on both the student side and instructor side. Discussing other colleges who have reported similar policy changes will also be a part of this presentation. If the assessment committee does support the proposed policy change, it may take up to one month for the chair to forward and discuss the change with the RAOs. The RAOs have up to one month to ask questions and give feedback before making a decision. If the RAOs decide to support the policy change, the policy will not be put into place until committee work is done. The total amount of time before the policy change can be implemented is one academic year. Once one academic year has been completed and the proposed policy change implemented, a comparison of persistence rates will be reviewed and the committee can revise workshops as needed.

Roles and Responsibilities of Student and Others

My role in implementing this policy change will be to provide the data from my study and discuss similar policies that other institutions are implementing. I will recommend that I am part of the committee that creates the workshops that will be required, so that I can give provide the creative commons resources that I have found and my expertise in creating workshops for student success based on my research findings and my review of the literature. Once workshops are implemented, FYE faculty member roles would be to report suggestions to the FYE chair to change the workshops to benefit their students. RAOs of the institution play an important role in

approving the policy change, and the committee's roles (in addition to workshop curriculum etc.) would include creating a budget for any costs that may come up in future academic years.

Advising and FYE faculty member participation in presenting workshops in the two weeks prior to the beginning of each semester will be assigned by supervisors and the department chair of Student Success. One option could be that administration reaches out for volunteers. An option to train these presenters could be a pre-recorded webinar that is built into the LMS or a professional development session presented by the department chair of Student Success.

Policy Evaluation

The committee should hold meetings after each semester to discuss persistence data in the FYE courses and compare that data to previous semesters before the policy was implemented. After the completion of each semester, I will conduct a Likert-scale survey through the LMS, created for all FYE faculty members to gain feedback on how well the workshops are working toward student success in their courses. Because all faculty members participated (41) in this study, I know that the topics that have been recommended as an option for the workshops based on the proposed change in policy are known to the faculty members. The comprehensive FYE faculty member survey will be conducted via a Survey Monkey link sent by e-mail at the end of each semester. This survey will allow FYE faculty members to give their feedback on whether the specific workshops are helping students obtain the skills needed to be successful in their courses and what changes may need to be made. However, it is my recommendation that the survey have a brief overview of the topics that are covered in the workshops and the policy details. The sections should be worded to determine which expectations have been met by at least 80% of their students.

Because the study showed that a majority of faculty members expected at least an average skill level or higher in basic computer literacy, LMS and e-mail tools, word processing programs, and presentation programs, the survey will reflect on each of those sections accordingly. These sections will mirror the sections within the SmarterMeasure and LMS placement exam. The survey can be built into the courses by full-time LMS staff for each FYE course. I will send out a reminder via e-mail to ask the FYE faculty members to complete the survey at the end of their courses. The data obtained in the LMS will reside in the system for five years so that if the institution would like to conduct a longitudinal analysis, the information will be available for each year that the policy is in place.

Culminating semester survey data from FYE instructors will play a key role in committee work for workshop and policy improvement, but after a full academic year, fall-to-fall persistence data will be the ultimate indicator of whether this change in policy is working. This data can be obtained from the institution's institutional research department and I can run a *t* test in SPSS to see if significant differences in persistence have occurred between the current policy and previous policy. Based on these forms of data, the committee should be able to assess whether the change in policy is successful, needs to be modified, or should be nullified. Because the committee who created the workshops and gave input in the LMS placement exam is made up of advisors, student affairs staff, and faculty members, their insight and collaboration will also be valuable. After the committee collects feedback from the surveys provided to FYE instructors at the end of their courses, the committee will discuss these data and create a report recommending any policy changes that are based on findings. Because the committee cannot make official decisions alone, survey and persistence data will be shared with the assessment

committee and the RAOs to identify successes or potential for policy improvement because RAOs are key stakeholders in this policy recommendation.

If no improvements are necessary, another academic year of surveys and committee meetings will commence, but because technology is evolving and the students' skills of computer literacy are increasing, I predict that a time will come to pass when new students will not need a computer literacy or LMS assessment. For these reasons, survey data from FYE faculty members and persistence data should be kept for at least five years to analyze progression and facilitate change as technology evolves.

Implications Including Social Change

Researchers have studied computer literacy in higher education for years, and most proposed a solution to review initiatives or change policies to help better prepare students in their courses; yet, very little of the research shows implementation of suggested policies (Adams, 2012; Atack, 2003; Bryant & Duke-Benfield, 2014; Hodara & Jaggars, 2012; Johnstone & Soares, 2014; Loover, 2016). The policy change proposed as a result of this study will mandate that new students take computer literacy and LMS placement exams, and based on those results, provide computer literacy and LMS training through a series of workshops, thus enhancing the student learning process in their student success courses. By increasing computer literacy and LMS skill levels, students may have a better opportunity to persist and complete their educational goals. Therefore, students may be able to impact their local communities, affecting social change upon receiving their degree.

Local Community

This recommended policy change addresses the needs of the learners in the local community by increasing persistence rates among FYE students. If students are simply offered a

workshop, and the institution is just recommending participation, students will often bypass the option even if it will increase their chances of success. In an interview with the director of advising at the institution in this study I learned about the current optional LMS training module. Additionally, I learned that only about 20% of new students who are offered this free training attend by making placement testing and workshops mandatory, there would be no questions as to whether the student has been provided the best training available to be successful in college. Because students are currently dropping or failing out of their FYE courses at approximately 50% at this institution, if the policy change is implemented, faculty members could see a rise in class attendance and an overall positive grade distribution, thus giving the institution an increase in enrollment dollars. Additionally, there may be fewer students on academic warning, because, theoretically, persistence will be increased. Students will be able to impact their local community in a positive way, because they will have the training necessary to work in a world that increases their use of technology every year.

Far-Reaching

Students who receive these mandatory workshops should increase their computer literacy and LMS skills exponentially. Research shows that if a student persists in his/her first year, the chances of graduation are increased; if students are given all opportunities to succeed in their very first course, it can be postulated that students have a better chance of succeeding in their programs (Mansfield et al., 2011; Stewart, Lim, & Kim, 2015). Upon graduation, students can enter society as productive members providing for their families and for the community. However, on a larger scope, if this policy change is evaluated as suggested and another quantitative study is implemented, it could lead to other institutions following in their footsteps,

leading the charge to a greater influence on the way institutions look at computer literacy placement testing and mandatory workshops on an international level.

Conclusion

In this quantitative study, I gathered data from 41 FYE instructors and 94 students at a large Midwestern community college. I also gained information from the institution's research department and interviewed division deans and academic affairs administration. The methodology used in this study allowed an investigation of computer literacy skill levels and instructor expectations to be successful in a student's FYE course. The results of the study provide relevant information regarding the gap between student skill level and instructor expectations and allow comparison of the data with the current new student policy for the institution's policy makers, the assessment committee, and the RAOs. This provides a framework for further research and review of the policy changes in the future. The goal for this policy change is to increase student skill level to match the expectations of the instructors, resulting in FYE course success and increased persistence rates in the institution. The proposed policy change resulting from this study concisely outlines the key issues in the current policy and suggests creating a policy that mandates new student computer literacy and LMS placement testing, and based on those results, requires students to participate in workshops that will increase their skill levels. This policy change is an ongoing implementation that is I encourage policy makers to review often as technology changes every year. Further exploration of facets of persistence should also be included. In Section 4, I outline limitations and strengths of this policy change, along with my scholarly considerations and my reflections on potential future research.

Section 4: Reflections and Conclusions

Section 4 is a reflection on the policy change that has been proposed in Section 3. I also present my scholarly development, implications of the policy change for social change, and recommendations for the future FYE at the institution in this study as well as all other institutions. For the past decade, I have been passionate about persistence, and my own struggles as a new single mother in my first year of college with little support fueled my desire to play a part in the betterment of the FYE. This study aided me in my quest to explore this topic through a wider lens. I designed this study to understand the current computer literacy skill levels and what is needed in a student's first course to aid in their success. The policy change proposed as a result of this study should extend the convention of student success improvement within FYE programs in higher education. My self-reflection is a result of my research and experiences as a scholar and leader in my institution.

Policy Recommendation Strengths

The policy recommendations in this study have the potential to benefit the study site. This policy change could precipitate action toward the development of FYE student computer literacy skills that are expected in classes before entering the classroom. The recommendation includes measures and stipulations that have potential to improve the NSO and the college placement exams, which would place students in the training needed for a student personally instead of a whole group. Measures that are recommended could require further research and investigation in college and community resource allocation, thus improving the institution's student success retention plan.

In the student and faculty member participant surveys, I found a significant gap in several areas in expected computer literacy skills and skills that students already required. Faculty

member participants identified skills within computer literacy that were contributing factors to student success in their courses, thus providing a rationale for the recommendations related to students and developing their computer literacy skills. Additionally, improving the entrance process by providing necessary training for student success is consistent with the theory of transactional distance where structure, learner autonomy, and dialogue in courses require computer literacy to enhance student and faculty experiences and the communication process (Norris, 2001).

The policy recommendations would potentially increase access to training programs for students who need to increase their computer literacy skills and incorporate NSO faculty and FYE instructors in the selection of training topics that are suitable for FYE learners and meeting students where they are. Placement recommendations could increase the number of students who are properly placed into classes based on exam scores. In the age of changing technology, the recommendation could also enhance connectivity and engagement in the classroom.

Recommendations for Remediation of Limitations

Making computer literacy training available to FYE students before they enter the classroom has been found to be successful in a variety of modalities. Whether it is a bridge program for recent high school graduates (Chism & Williams, 2008; Hansen & Trujillo, 2012) or computer literacy as a part of a workshop program (Gibson & Silberberg, 2000), these training sessions are valuable to student success. During this transitional process of implementing new policy, I foresee some limitations that would need to be reviewed before the next term.

Students who are labeled as classes only are students who opt out of taking courses for college credit. This label only allows them to take the classes; they do not earn a degree. During the selection process, if students are applying for college and are identified as *classes only*

students, the placement exam process may not recognize this label and students may not need additional computer literacy training. Professional development given to advisors would be necessary to understand that students who are enrolled as classes only could attend the workshops as an option for improvement of computer literacy skills instead of a requirement. Furthermore, students who may choose not to take the mandated workshops before entering the classroom would not be able to attend classes until completing the workshops. Because there is a limited number of faculty members and advising staff to implement workshops, timing may conflict with student schedules, thus preventing them from completing the workshops. A solution to these possible limitations would be to offer online modules and weekend face-to-face workshops. Cooper and Johnson (2013) supported implementing alternative modalities of delivery. Alternative modalities, including electronic platforms, are limiting in themselves because, if the students lack computer literacy skills, an online module may be cumbersome. Holding weekend face-to-face workshops may put undue burdens on faculty members and advising staff.

The policy recommendation relies on the RAOs' decision to approve of the changes and move forward with committee work to implement placement exam changes and to create the training workshops for the students who have been selected. Because administration has to give approval, this policy recommendation is limited in what implementations can be put into place. I suggest adding an addendum on to the change of policy recommendation that, should the RAOs object to it, the feedback will be documented and communicated back in the recommendation and a time frame for a second draft including the changes will be requested.

When being placed into the correct training areas based on the placement testing, students who only need to develop one skill may be subjected to taking the full training, thus being

trained on other skills that they may already have. The recommendation to alleviate this limitation is to provide professional development for advisors, training them on communication with students and not allowing students to self-enroll into the training modules. Additional information can be provided to advisors regarding the curriculum of each training session so they can provide a better match for students who may not be degree-seeking. Although this solution targets a potential limitation regarding placement testing, suggestions to bridge the gap between student skill level and expectations should also be addressed.

One suggestion to bridge the gap between the expectations of instructors and the skill level of students is to change the curriculum to include computer literacy training on the first day. A request to have a computer lab on the first day could be done so that LMS staff could give a 45-minute presentation. The tutoring center could also offer computer literacy sessions for students who choose to partake in training sessions. These types of alternatives to the suggested policy change may not bridge the gap completely, because it would not be a requirement, but the availability could provide more of an opportunity for student success.

If students are trained in computer literacy before entering the classroom, one of the FYE course objectives may become obsolete in the future, and committee work will be necessary to modify statewide objectives. In this case, I would recommend that the committee replace the objectives and competencies that require computer literacy skills with an objective that is reflective of what is needed in the community, such as soft skills. An alternative solution to the problem may be to address the student success committee members directly to change the objectives and competencies within the course itself.

Scholarship

The combination of independent knowledge, reviewing the literature, and interdependence allowed me to progress as a student to a scholar. Applying research techniques to create a quantitative study that addressed a local problem was necessary for recommending a change of policy and increasing my scholarly thinking and implementation processes. There were several challenges that I faced in meeting the institutional standards of the EdD program and conducting quantitative research while protecting the interests of the institution where I work. This study has strengthened my scholastic capabilities by allowing me to learn higher educational leadership components through classwork and research. Recognizing that being a quantitative researcher requires a person to watch his/her biased tendencies while conducting statistical tests and interpreting data in a scholarly way has made me grow both intellectually and personally.

Policy Recommendation Development and Evaluation

This policy recommendation was a direct result of the quantitative research study I conducted to investigate a local problem. I learned that developing a recommendation to change policy must be discussed at many different levels of institutional hierarchy. Conducting a literature review and developing inter-institutional collaborations on any given subject may be important; however, there is still a process a researcher must go through to explore how to implement a strategy to approach a local, and quite possibly national, issue. The amount of time it takes to implement a change in policy is greater than what a young researcher's ambitious ideas may be. It takes time, effort, and scholarly inquiry to develop a solid policy recommendation and patience to conduct ongoing review to implement modifications due to unforeseen issues.

Leadership and Change

As a student success leader in my institution, I often feel like FYE is second to STEM programs and singular articulation pathways (SAP), but having research to back my claims has created a dialogue that has encouraged collaboration with those programs and FYE to facilitate increased persistence. I learned that I have a voice in leadership. When interviewing administration on the processes of creating a change in policy, administration was truly open to ideas of implementing research-based NSO, placement exam, and student success practices. Creating change within an institution and achieving one's goals takes time and dedication. It also takes a lot of support from the people that you work with in the institution. Building relationships and understanding other people's strengths, and using those strengths in implementing change, is a part of leadership. Through leadership, one can create change for the betterment of the students. My research and development of a change of policy recommendation has contributed to my leadership skills, because this process required my knowledge of best practices, FYE, theory-based processes, and quantitative research practices to address a community college problem.

Analysis of Self as Scholar

Locally, a problem existed, and as a student, the educational track that I have succeeded in has amplified my divergent thinking processes in the analytical portion of this study. Interdependence has not been a strength for me, but through this process, I have learned to listen to those who are scholarly in the community and through the doctoral program, thus creating interdependent qualities in myself. Overcoming adversity is an important lesson that I learned as well. Despite personal issues that have developed throughout this process, the determination and support of my chair and committee member have helped me build the confidence in my own scholarly process to succeed in this accomplishment.

Throughout the literature review, I have gained a deeper level of understanding as to how changes can be made based on inquiry and statistically significant data. I have had an authentic quantitative research experience, thus allowing me to expand my knowledge of student success and apply future research techniques for problems that may occur within institutions that I may want to study. I did not realize that my own research could affect institutions on a national and quite possibly a global level. Throughout the review of the literature, I learned that there is not a lot of research regarding my topic, and other institutions have similar issues without scholarly research to back up recommended solutions. Scholastic growth is important to me as I continue to research and publish after obtaining my degree.

Analysis of Self as Practitioner

As a student success leader and FYE practitioner in the community college setting, this study and policy recommendation process has expanded my knowledge of the FYE faculty member expectations and the current computer literacy skill level that students have coming into the classroom. In interviewing administration and advisors and studying institutional student success reports, I was able to obtain a big-picture view of how the FYE could aid or hinder retention depending on processes that are in place. It was very edifying for me as a practitioner to combine the components of scholarly inquiry to make recommendations to improve these processes. Collaboration with institutional leaders, academic services, and student services is key to raising awareness of the solutions to problems within FYE.

Analysis of Self as Policy Recommendation Developer

Creating policy change cannot happen overnight. It requires strategic development with goals, time frames, suggested implementations, and approval and review of the literature. I learned that building trust and relationships with FYE faculty members, administration, and

advising staff is very important when it comes to creating change within an institution, especially when considering recommendations that mandate students to partake in workshops based on newly-developed placement exams. Rescinding control over survey participation processes, the IRB process, and data collection was a lesson that was necessary for me to learn objectivity and integrity and to develop my scholarship.

The Project's Potential Impact on Social Change

The importance of the work I did as a scholar, by using statistical findings to identify the gap between FYE instructor expectations and FYE student current computer literacy skill levels, makes an important contribution and could have a lasting impact on the institution that was studied. The information disseminated locally and through a wider scope, is supported by educational research and presents the potential for collaborating with leadership to create new policies to improve student success. By creating new placement and FYE policies, there is a potential for impacting social change at a local level, because students may acquire computer literacy and LMS skills necessary to complete their courses successfully, thus reducing dropout rates due to frustration and increasing persistence. Because there was very limited literature on this subject and very few research projects implemented regarding computer literacy skills in a face-to-face classroom, the assumption could be made that other institutions nationally and globally are facing similar problems, thus this research has the potential to impact social change on a wider scope.

Implications, Applications, and Directions for Future Research

The implications of this research study and recommended change of policy is important for FYE, where student computer literacy skills may not match the expectations of FYE faculty members. I learned that timing may influence results in a scholarly study. Because of the IRB

approval processes, I was not able to distribute surveys until after the first day of the semester. It is my position that my study should be repeated, but only with new students, and the survey should be given to them before their classes begin during their advising session or during the first day of their FYE course. Such a study would more accurately depict the whole population, including the students who dropped out, were withdrawn by the institution, or are at risk of failing out at a later time. Repeating this study could give more accurate data, giving better support for the request to change the policy. The research that I completed, and the recommendations to change the policy, support the application of computer literacy skills in the classroom to promote student success.

A qualitative study exploring the perceptions of students and the role of technology is suggested to bring awareness to technologies that are being used regularly and technologies that are not being used regularly for student success. An open-ended interview with FYE students could identify computer literacy skills that do not need to be included in the mandated workshops or additional computer literacy skills needed that may not be recommended in the policy change. In the interview process, an open-ended question regarding any self-perceived inadequacies in the institution that hinders student success could also open the door for additional conversation outside of computer literacy, therefore expanding my quantitative study and aiding in the review process of the change of policy recommendation.

The findings in my research imply that testing students on their computer literacy skills and placing them into workshops that increase said skills can address some of the issues causing FYE students to fail. Because this class uses a blended learning modality and technology is ever changing, future research should be done to keep current with the latest trends in higher education. Additionally, as high schools incorporate more technology in their classrooms, the

evolving needs of students will need to be reviewed, and modifications to institutional policy will need to be made. A qualitative study should be explored to discover other areas of student dissatisfaction and possible solutions.

Conclusion

As results in my study indicated, a significant difference was found between faculty member expectations and current student experience in adding borders and highlighting in word processing software, posting initial threads and replies, submitting assignments, locating the course calendar and syllabus within the LMS, and forwarding e-mails. Faculty member expectations of posting initial threads and replies, submitting assignments, locating the course calendar and syllabus within the LMS, and forwarding e-mails were statistically higher than the skill level of students who participated (see Table 2). Although data did not show significant differences, FYE faculty member participants indicated an expectation of at least an average skill level in in the following categories: composing, sending, and adding attachments in e-mails; opening, saving, using line spacing, copying, pasting and opening a new template within a word processing program; and creating new presentations, adding slides, opening a new template, and saving in presentation software (see Table 2). Through this research study, I was able to develop a recommended change of policy based on my findings where new students could be tested on computer literacy and LMS skill levels and placed appropriately into workshops that would provide more support towards student success in their FYE courses.

I successfully addressed a local institutional problem of the lack of computer literacy skills in the FYE classroom, which was implicated as a possible reason for the low persistence rates. The limited scope and inability to distribute surveys in a timely manner contributed to the weaknesses of this study. Alternative solutions for this problem includes conducting additional

quantitative and qualitative research studies in a timely manner and analysis of current and future new student entrance and NSO policies. While there are a variety of ways to implement change within the institution under study, computer literacy was an under-researched topic among FYE students in the face-to-face classroom and needed further exploration. Workshops that can be developed per the recommended change of policy can provide opportunities for FYE students to increase their computer literacy skills, thus potentially increasing their success in the FYE classroom where expectations of computer literacy are high. The evolving use of technology in the classroom makes future research in this field important for increasing student success.

References

AACC 2014 Fact Sheet. (2014). Retrieved from http://www.aacc.nche.edu/AboutCC/Documents/Facts14_Data_R3.pdf

Abdullahi, A., & Gannon, M. (2012). Improving college students' success in gateway science courses: Lessons learned from an anatomy and physiology workshop. *American Journal of Health Sciences (AJHS)*, *3*(3), 159-168. doi:10.19030/ajh.v3i3.7134

ACT National Collegiate Retention and Persistence to Degree Rates. (2014). Retrieved from http://www.act.org/research/policymakers/pdf/ret

Adelman, C., Ewell, P., Gaston, P., & Schneider, C. (2014). The degree qualifications profile 2.0: Defining U.S. degrees through demonstration and documentation of college learning. Indianapolis, IN: Lumina Foundation for Education, Inc. Retrieved from https://www.cpp.edu/~academic-programs/Documents/dqp.pdf

Allen, I., & Seaman, J. (2013). Changing course: Ten years of tracking online education in the United States. Newburyport, MA: Sloan Consortium. Retrieved from http://www.onlinelearningsurvey.com/reports/changingcourse.pdf

Allen, I., & Seaman, J. (2014). Grade change: Tracking online education in the United States, 2013. *Babson Survey Research Group and Quahog Research Group, LLC. 3*(5), 2014. Oakland, CA (2014) Retrieved from http://www.onlinelearningsurvey.com/reports/gradechange.pdf

Allen, I.E. & Seaman, J. (2011). Going the distance-online education in the United States, *2011*. *Babson Survey Research Group and Quahog Research Group, LLC*, Oakland, CA (2011) Retrieved from http://sloanconsortium.org/publications/survey/going_distance_2011

An, B. P. (2013). The impact of dual enrollment on college degree attainment: Do low-SES students benefit? Los Angeles, CA: *Educational Evaluation and Policy Analysis, 35*(1), 57–75. doi:10.3102/0162373712461933

An, B. P. (2015). The role of academic motivation and engagement on the relationship between dual enrollment and academic performance. Las Vegas, NV: *Journal of Higher Education, 86*(1), 98-126. doi:10.1353/jhe.2015.0005

Andersson, D., Reimers, K., & Maxwell, S. (2013). Utilizing the web to enhance student engagement and achievement. In *INTED2013 International Technology, Education and Development Conference* Valencia, Spain. Retrieved from https://library.iated.org/publications/INTED2013

Asselin, M., & Doiron, R. (2008). Towards a transformative pedagogy for school libraries 2.0. *School Libraries Worldwide, 14*(2), 1-18. Retrieved from http://www.iasl-online.org/Resources/Documents/slw/v14/14_2asselin_doiron.pdf

Astin, A. W. (1993). What matters in college?: Four critical years revisited (Vol. 1). San Francisco, CA: Jossey-Bass.

Atack, L. (2003). Becoming a web-based learner: Registered nurses' experiences. *Journal of Advanced Nursing, 44*(3), 289-297. Retrieved from http://onlinelibrary.wiley.com/doi/10.1046/j.1365-2648.2003.02804.x/full

Atherton, M. C. (2014). Academic preparedness of first-generation college students: Different perspectives. *Journal of College Student Development, 55*(8), 824-829. doi:10.1353/csd.2014.0081

Aviles, M., & Eastman, J.K. (2012). Utilizing technology effectively to improve millennials' educational performance. *Journal of International Education in Business, 5*(2), 96-113. Retrieved from https://works.bepress.com/jacqueline_eastman/42/

Bailey, T. (2009). Rethinking developmental education in community college (CCRC Brief No. 45). New York, NY: Columbia University, Teachers College, Community College Research Center.

Bajzek, D., Brooks, J., Jerome, W., Lovett, M., Rinderle, J., Rule, G., & Thille, C. (2008). Assessment and instruction: Two sides of the same coin. In C. Bonk et al. (Eds.), *Proceedings of World Conference on E-Learning in Corporate, Government, Healthcare, and Higher Education 2008* (pp. 560–565). Chesapeake, VA: AACE. Retrieved from http://www.editlib.org/p/29661.

Bakerson, M., & Rodriguez-Campos, L. (2006). The valuation of internet usage within the graduate-level classroom. *International Journal of Learning*, *13*, 15–72. Retrieved from https://www.ijlter.org/index.php/ijlter

Bakerson, M., Trottier, T., & Mansfield, M. (2015). The value of embedded formative assessment: An integral process in online courses implemented through advances in technology. In S. Koc, X. Liu, & P. Wachira, *Assessment in Online and Blended Learning Environments* (pp.3-17). Charlotte, NC*: Information Age Publishing*.

Bannan-Ritland, B. (2003). The role of design in research: The integrative learning design framework. *Educational Researcher*, *32*(1), 21-24. doi:10.3102/0013189X032001021

Barefoot, B. O. (2000). The first-year experience-are we making it any better? *About Campus, 4.* Retrieved from https://eric.ed.gov/?id=EJ619313

Barkley, E. F., Cross, K. P., & Major, C. H. (2014). *Collaborative learning techniques: A handbook for college faculty*. Hoboken, NJ: John Wiley & Sons.

Barnes, W., Slate, J. R., & Rojas-LeBouef, A. M. (2010). College-readiness and academic preparedness: The same concepts? *Current Issues in Education, 13*(4). Retrieved from http://cie.asu.edu/

Barnett, E., Bucceri, K., Hindo, C., & Kim, J. (2011). Ten key decisions in creating early colleges: Design options based on research. New York, NY: *National Center for Restructuring Education, Schools and Teaching (NCREST)*, Teachers College, Columbia University. Retrieved from http://www.tc.columbia.edu/ncrest/2000_2012.html

Barnett, E. A., Fay, M. P., Bork, R. J. H., & Trimble, M. J. (2013). Reshaping the college transition: States that offer early college readiness assessments and transition curricula. *Institute on Education and the Economy Community College Research Center.* doi:10.7916/D8445JGF

Bartholomew, K., Johnson, D., Ormond, P., & Mulbery, K. (2003). Computer literacy: Use IT or lose it. *Utah Valley State College School of Business Journal*, *1*, 6-14. Retrieved from https://www.uvu.edu/woodbury/jbi/volume2/barth-john-ormo-mulb.html.html

Basic Computer Literacy Test Objectives: What skills does BC's basic student technology literacy test cover? (2013). Broward College. Retrieved from http://www.broward.edu/sacs/compliance/References%20And%20Documentation/3.4.12/L3%20Computer%20Literacy%20Test%20Objectives.pdf

Basic Computer Skills Curiculum. (2016). *St. Paul Community Literacy Consortium.* Retrieved from http://spclc.org/curricula-resources/computer-curriculum

Beck, C. T., & Gable, R. K. (2001). Ensuring content validity: An illustration of the process. *Journal of Nursing Measurement*, *9*(2), 201-215. Retrieved from https://www.ncbi.nlm.nih.gov/pubmed/11696942

Beetham, H., & Sharpe, R. (Eds.). (2013). *Rethinking pedagogy for a digital age: Designing for 21st Century Learning*. London, England: Routledge.

Belfield, C., & Crosta, P. M. (2012). Predicting success in college: The importance of placement tests and high school transcripts. *Community College Research Center.* Retrieved from http://ccrc.tc.columbia.edu/publications/predicting-success-placement-tests-transcripts.html

Benson, R., & Samarawickrema, G. (2009). Addressing the context of e-learning: using transactional distance theory to inform design. *Distance Education, 30*(1), 5-21. doi: 10.1080/01587910902845972

Berk, R. A. (1990). Importance of expert judgment in content-related validity evidence. *Western Journal of Nursing Research, 12*(5), 659-671. doi:10.1177/019394599001200507

Bloom, B. S. (1956). *Taxonomy of educational objectives. Vol. 1: Cognitive domain*. New York: McKay.

Boling, E. C., Hough, M., Krinsky, H., Saleem, H., & Stevens, M. (2012). Cutting the distance in distance education: Perspectives on what promotes positive, online learning experiences. *Internet and Higher Education*, *15*(2), 118-126. doi:10.1016/j.iheduc.2011.11.006

Bonk, C. J., & Graham, C. R. (2012). *The handbook of blended learning: Global perspectives, local designs*. Hoboken, NJ: John Wiley & Sons.

Bower, E. Z. (2013). Australia's National Security Strategy: Lessons from the Pivot Down Under. *Center for Strategic and Interna-tional Studies*. Retrieved from https://www.csis.org/

Bracco, K. R., Dadgar, M., Austin, K., Klarin, B., Broek, M., Finkelstein, N.,… & Bugler, D. (2014). Core to college evaluation: Exploring the use of multiple measures for placement into college-level courses. Seeking alternatives or improvements to the use of a single standardized test. *WestEd*. Retrieved from https://eric.ed.gov/?id=ED559630

Brown, C., Murphy, T. J., & Nanny, M. (2003). Turning techno-savvy into info-savvy: Authentically integrating information literacy into the college curriculum. *Journal of Academic Librarianship*, *29*(6), 386-398. doi:10.1016/j.jal.2003.08.005

Brown, J. L. (2012). Developing a freshman orientation survey to improve student retention within a college. *College Student Journal, 46(4),* 834-852. Retrieved from http://www.ingentaconnect.com/content/prin/csj/2012/00000046/00000004/art00013

Brown, P. (2011). Teaching the millennial students. In *Proceedings from the American Society of Business and Behavioral Sciences annual conference. Las Vegas*.

Brown University. (2014). Undergraduate student orientation. *Institutional Report.* Retrieved from https://www.brown.edu/academics/college/orientation/

Bryant, R. T. A. F., & Duke-Benfield, A. E. (2014). Keeping college within reach: Sharing best practices for serving low-income and first generation students (Recommendations for reauthorization of the higher education act). *Office of the President. DePaul University.* Retrieved from http://offices.depaul.edu/president/speeches-and-communications/2014/Pages/keepingcollegewithinreach-writtentestimony.aspx

Buckenmeyer, J. A., Barczyk, C., Hixon, E., Zamojski, H., & Tomory, A. (2015). Technology's role in learning at a commuter campus: The student perspective. *Journal of Further and Higher Education*, 1-20. doi:10.1080/0309877X.2014.984596

Bucknell University. (2014). New student orientation. *Bucknell University New Student Orientation.* Retrieved from http://www.bucknell.edu/orientation.html

Burdman, P. (2012). Where to begin? The evolving role of placement exams for students starting college. *Jobs for the Future*. Executive Summary. Retrieved from http://www.jff.org/publications/where-begin-evolving-role-placement-exams-students-starting-college

Burton L., & Mazerolle S. (2011). Survey instrument validity part I: Principles of survey instrument development and validation in athletic training education research. *Athletic Training Education Journal*; *6*(1): 27-35. Retrieved from https://eric.ed.gov/?id=EJ935072

Calvani, A., Fini, A., Ranieri, M., & Picci, P. (2012). Are young generations in secondary school digitally competent? A study on Italian teenagers. *Computers & Education*, *58*(2), 797-807. doi:10.1016/j.compedu.2011.10.004

Cano, E. V., & García, M. L. S. (2015). Analysis of risks in a learning management system: A case study in the Spanish National University of Distance Education (UNED). *NAER: Journal of New Approaches in Educational Research*, *4*(1), 62-68. doi:10.7821/naer.2015.1.107

Carr, J., & Rockman, I. (2003). Information-Literacy Collaboration: A Shared Responsibility. *American Libraries*, *34*(8), 52-54. Retrieved from http://www.jstor.org/stable/25648877

Castells, M. (2011). *The rise of the network society: The information age: Economy, society, and culture* (Vol. 1). Hoboken, NJ. John Wiley & Sons.

Castleman, B. L., Arnold, K., & Wartman, K. L. (2012). Stemming the tide of summer melt: An experimental study of the effects of post-high school summer intervention on low-income students' college enrollment. *Journal of Research on Educational Effectiveness*, *5*(1), 1-17. doi:10.7821/naer.2015.1.107

Castleman, B. L., & Page, L. C. (2014). A trickle or a torrent? Understanding the extent of summer "melt" among college-intending high school graduates. *Social Science Quarterly*, *95*(1), 202-220. doi:10.1111/ssqu.12032

Chan, N. N., Walker, C., & Gleaves, A. (2015). An exploration of students' lived experiences of using smartphones in diverse learning contexts using a hermeneutic phenomenological approach. *Computers & Education*, *82*, 96-106. doi:10.1016/j.compedu.2014.11.001

Chickering, A.W., & Gamson, Z. F. (1987). Seven principles for good practice in undergraduate education. *AAHE bulletin*, *3*, 7. doi:10.1002/tl.37219914708

Chism, L. P., & Williams, G. (2008). Implementation of first-year seminars, the summer academy bridge program, and themed learning communities. *Metropolitan Universities*, *19*(2), 8-17. Retrieved from https://journals.iupui.edu/index.php/muj/article/view/20342

Cho, M. H., & Cho, Y.J. (2014) Instructor scaffolding for interaction and students' academic engagement in online learning: Mediating role of perceived online class goal structures *Internet and Higher Education*, *21*, 25–30. doi:10.1016/j.iheduc.2013.10.008

Cho, S. W., Jacobs, J., & Zhang, C. (2013). Demographic and academic characteristics of Pell grant recipients at community colleges. *New York, NY: Community College Research*

Center at Teachers College, Columbia University. Retrieved from http://ccrc.tc.columbia.edu/publications/demographic-academic-characteristics-pell-grant.html

Chow S-C, Shao J, Wang H. (2008). *Sample size calculations in clinical research*. 2nd ed. Boca Raton, FL: Chapman & Hall/CRC. Section 3.2.1, page 58.

Churches, A. (2009). Bloom's digital taxonomy. Retrieved from*:* http://edorigami.wikispaces.com/file/view/bloom%27s%20Digital%20taxonomy%20v3.01.pdf/65720266/bloom%27s%20Digital%20taxonomy%20v3.01.pdf

Cohen, J. (2013). Statistical power analysis for the behavioral sciences. *Academic press*.

Cohodes, S. R., & Goodman, J. S. (2012). First degree earns: The impact of college quality on college completion rates. *Digital Access to Scholarship at Harvard.* Retrieved from: https://dash.harvard.edu/handle/1/9396433

Coiro, J., Knobel, M., Lanskshear, C., & Leu, D.J. (Eds.). (2014). Handbook of research on new literacies. *Routledge*. New York, NY.

Coley, R., Cradler, J., & Engel, P. K. (1997). Computers and classrooms: The status of technology in US schools. *Policy Information Report*.Educational Testing Service (ETS). Retrieved from https://www.ets.org/research/policy_research_reports/publications/report/1997/bzkv

Conchar, M. P., Meric, H. J., & Wright, B. (2015). The online learning environment: Delivering quality?. In *Marketing Dynamism & Sustainability: Things Change, Things Stay the Same…* (pp. 66-69). Springer International Publishing. New York City, NY.

Conde, M. Á., García-Peñalvo, F. J., Rodríguez-Conde, M. J., Alier, M., Casany, M. J., & Piguillem, J. (2014). An evolving learning management system for new educational

environments using 2.0 tools. *Interactive Learning Environments*, *22*(2), 188-204. doi:10.1080/10494820.2012.745433

Conley, D. T. (2007). Redefining College Readiness. *Educational Policy Improvement Center (NJ1)*. Retrieved from http://files.eric.ed.gov/fulltext/ED539251.pdf

Conley, D. T. (2010). *College and career ready: Helping all students succeed beyond high school*. John Wiley & Sons. Hoboken, NJ.

Conley, D. T., McGaughy, C. L., Kirtner, J., van der Valk, A., & Martinez-Wenzl, M. T. (2010). College readiness practices at 38 high schools and the development of the college career ready school diagnostic tool. *Eric.* Retrieved from https://eric.ed.gov/?id=ED509644

Cooper, T., & Johnson, C. (2013, June). Web 2.0 Tools for Constructivist Online Professional Development. In *Proceedings of World Conference on Educational Media and Technology* (pp. 1923-1926). Retrieved from https://www.editlib.org/noaccess/112231

Cox, C. (2009) The digital divide: Information competency, computer literacy, and community college proficiencies. *Academic Senate for California Community Colleges.* Retrieved from: http://www.asccc.org/content/digital-divide-information-competency-computer-literacy-and-community-college-proficiencies

Creswell, J. W. (2012). *Educational research: Planning, conducting, and evaluating quantitative and qualitative research* (Laureate custom ed.). Boston, MA: Pearson Education, Inc.

Cuban, L. (1993). Computers meet classroom: Classroom wins. *Teachers College Record*, *95*(2), 185-210. Retrieved from https://pdfs.semanticscholar.org/6722/85d1d9fdcb318785ebeb07cf06386e230aa1.pdf

Dahlstrom, E., Brooks, D. C., & Bichsel, J. (2014). The current ecosystem of learning management systems in higher education: Student, faculty, and IT perspectives (p. 3).

Research report. Louisville, CO: ECAR, September 2014. Retrieved from http://www.educause.edu/ecar. 2014 EDUCAUSE. CC by-nc-nd.

Daily, J. A., & Landis, B. J. (2014). The journey to becoming an adult learner: From dependent to self-directed learning. *Journal of the American College of Cardiology*, *64*(19), 2066-2068. doi:10.1016/j.jacc.2014.09.023

Darling-Hammond, L., Wilhoit, G., & Pittenger, L. (2014). Accountability for college and career readiness: Developing a new paradigm. *Education policy analysis archives*, *22*(86), 1. Retrieved from https://eric.ed.gov/?id=EJ1050070

Darling-Hammond, L., Zielezinski, M. B., & Goldman, S. (2014). Using technology to support at-risk students' learning. *Alliance for Excellent Education*. Retrieved from http://all4ed.org/reports-factsheets/usingtechnology/

Dascalu, M. I., Bodea, C. N., Moldoveanu, A., Mohora, A., Lytras, M., & de Pablos, P. O. (2015). A recommender agent based on learning styles for better virtual collaborative learning experiences. *Computers in Human Behavior*, *45*, 243-253. doi:10.1016/j.chb.2014.12.027

Debuse, J. C., & Lawley, M. (2015). Benefits and drawbacks of computer-based assessment and feedback systems: Student and educator perspectives. *British Journal of Educational Technology*. doi:10.1111/bjet.12232

Deggs, D., & Associates. (2011) Students' adjustment to college: A comparison of orientation program attendees and non-attendees. *Journal of College Orientation and Transition, 18*(2), 44-50. Retrieved from http://www.nodaweb.org/page/jcot_spring_2011/JCOT---Spring-2011.htm

Dewey, J. (1997). *How we think.* Mineola, N.Y: Dover Publications. Courier Corporation.

Dix, K. L. (2007). DBRIEF: A Research Paradigm for ICT Adoption. *International Education Journal*, *8*(2), 113-124. Retrieved from http://files.eric.ed.gov/fulltext/EJ834152.pdf

Dixon, N. (2013). Scaffolding fully online first year computer literacy students for success. *Irish Journal of Academic Practice*, *2*(1), 5.

Dixson, M. D. (2012). Creating effective student engagement in online courses: What do students find engaging? *Journal of the Scholarship of Teaching and Learning*, *10*(2), 1-13. Retrieved from http://josotl.indiana.edu/article/view/1744

Downing, S. (2013). *OnCourse*. Houghton Miflin: Boston, MA: Cengage Learning.

Dragon, D. (2012). How to get free or cheap internet access. Retrieved from http://www.wisebread.com/how-to-get-free-or-cheap-internet-access

Driscoll, A., Jicha, K., Hunt, A. N., Tichavsky, L., & Thompson, G. (2012). Can online courses deliver in-class results? A comparison of student performance and satisfaction in an online versus a face-to-face introductory sociology course. *Teaching Sociology*, *40*(4), 312-331. doi:10.1177/0092055X12446624

Eastman, J. K., Iyer, R., & Eastman, K. L. (2011). Business students' perceptions, attitudes, and satisfaction with interactive technology: An exploratory study. *Journal of Education for Business*, *86*(1), 36-43. doi: 10.1080/08832321003774756

El-Bishouty, M. M., Chang, T. W., Lima, R., Thaha, M. B., & Graf, S. (2015). Analyzing learner characteristics and courses based on cognitive abilities, learning styles, and context. *Smart Learning Environments* (pp. 3-25). Springer Berlin Heidelberg. doi:10.1007/978-3-662-44447-4_1

Ertmer, P. A., Ottenbreit-Leftwich, A. T., Sadik, O., Sendurur, E., & Sendurur, P. (2012). Teacher beliefs and technology integration practices: A critical relationship. *Computers & Education, 59*(2), 423-435. doi:10.1016/j.compedu.2012.02.001

Espinoza, P. & Espinoza, C. (2012). Supporting the 7th-year undergraduate: Responsive leadership at a Hispanic-serving institution. *Journal of Cases in Educational Leadership*, 15(1), 32-50.doi: 10.1177/1555458912440738

Falloon, G. (2011). Making the connection: Moore's theory of transactional distance and its relevance to the use of a virtual classroom in postgraduate online teacher education. *Journal of Research on Technology in Education*, *43*(3), 187-209. doi:10.1080/15391523.2011.10782569

Faul, F., Erdfelder, E., Lang, A.-G., & Buchner, A. (2007). G*Power 3: A flexible statistical power analysis program for the social, behavioral, and biomedical sciences. *Behavior Research Methods*,*39*, 175-191. doi:10.3758/BF03193146

Fauria, R., & Zellner, L. (2015). College students speak success. *Journal of Adult Development, 22*(3), 90-99. doi:10.1007/s10804-014-9203-0

Figlio, D., Rush, M. & Yin, L. (2013). Is it live or is it internet? Experimental estimates of the effects of online instruction on student learning. *Journal of Labor Economics 31*(4): 763–84. doi:10.1086/669930

Fink, L. D. (2013). *Creating significant learning experiences: An integrated approach to designing college courses*. John Wiley & Sons. Hoboken, NJ.

Fitzgerald, M. A. (2004). Making the leap from high school to college: Three new studies about information literacy skills of first-year college students. *Knowledge Quest*, *32*(4), 19-24. Retrieved from

http://search.proquest.com/openview/e4032bff041d724ef39c07f72b23509b/1?pq-origsite=gscholar&cbl=6154

Fraenkel, J. R., Wallen, N. E., & Hyun, H. H. (1993). *How to design and evaluate research in education* (Vol. 7). New York. McGraw-Hill.

Garcia, V. (2010). First-generation college students: How co-curricular involvement can assist with success. *Vermont Connection*, *31*(1), 6. Retrieved from http://scholarworks.uvm.edu/tvc/vol31/iss1/6

Gardner, J. N. (1986). The freshman-year experience. *Journal of the American Association of Collegiate Registrars and Admissions Officers, 61*(4), 261-274. Retrieved from http://www.aacrao.org/resources/publications/college-university-journal-(c-u)

Gardner, J. N., & Siegel, M. J. (2001). Focusing on the first-year student. *Priorities, 17*, 1-17. Retrieved from https://eric.ed.gov/?id=ED458865

Garrison, R. (2000). Theoretical challenges for distance education in the 21st century: A shift from structural to transactional issues. *International Review of Research in Open and Distributed Learning*, *1*(1). doi:10.19173/irrodl.v1i1.2

Gibson, J., & McKenzie, D. (2011). Eight questions about brain drain. *The Journal of Economic Perspectives*, *25*(3), 107-128. doi:10.1257/jep.25.3.107

Gibson, K. E., & Silverberg, M. (2000). A two-year experience teaching computer literacy to first-year medical students using skill-based cohorts. *Bulletin of the Medical Library association*, *88*(2), 157. Retrieved from http://europepmc.org/articles/PMC35215

Gilbert, D. H. (2012). From chalk and talk to walking the walk: Facilitating dynamic learning contexts for entrepreneurship students in fast-tracking innovations. *Education+ Training*, *54*(2/3), 152-166. doi:10.1108/00400911211210260

Gilbert, J. (2005). New times and new literacies. In M. Kalantzis, G. Varnava-Skoura, & B. Cope (Eds.), *Learning for the Future: New Worlds, New Literacies, New Learning, New People.* Australia: Common Ground Publishing.

Goldstein, J., & Behuniak, P. (2012). Can assessment drive instruction?: *Understanding the impact of one state's alternate assessment*. Research and Practice for Persons with Severe Disabilities, *37*(3), 199–209. doi:10.2511/027494812804153589

Goldstein, L. (2012). A guide to college & university budgeting: Foundations for institutional effectiveness. *National Association of College and University Business Officers.* Retrieved from http://www.nacubo.org/

Goode, J. (2010). Mind the gap: The digital dimension of college access. *Journal of Higher Education*, *81*(5), 583-618. *People* (pp. 59-84). Australia: Common Ground Publishing.

Graham, C. R. (2013). Emerging practice and research in blended learning. *Handbook of distance education*, *3*. doi:10.4324/9780203803738.ch21

Grant D., Malloy A., & Murphy, M. (2009). A comparison of student perceptions of their computer skills to their actual abilities. *Journal of Information Technology Education*: *Research*, *8*(1), 141-160. Retrieved from https://eric.ed.gov/?id=EJ835532

Green, L. S., Inan, F. A., & Denton, B. (2012). Examination of factors impacting student satisfaction with a new learning management system. *Turkish Online Journal of Distance Education*, *13*(3), 189-197. doi:10.12697/education-3-11-6

Grinder, S., Kelly-Reid, J., & Mann, F. (2014). Graduation rates for selected cohorts, 2005-10; and student financial aid in postsecondary institutions, academic year 2012-13. NCES 2014-15. U.S. Department of Education. Retrieved from http://nces.ed.gov/pubs2014/2014105.pdf

Gross, M., & Latham, D. (2012). What's skill got to do with it?: Information literacy skills and self-views of ability among first-year college students. *Journal of the American Society for Information Science and Technology, 63*(3), 574-583. doi:10.1002/asi.21681

Hansen, M., & Trujillo, D. (2012). Summer bridge program 2012 quantitative report. *University College, Office of Research, Planning and Evaluation IUPUI.* Retrieved from http://irds.iupui.edu/Portals/SDAE/Files/Documents/(2012)%20Summer%20Bridge%20Questionnaire%20Report.pdf

Hicks, S. D. (2011). Technology in today's classroom: Are you a tech-savvy teacher? *Clearing House: A Journal of Educational Strategies, Issues and Ideas*, *84*(5), 188-191. doi:10.1080/00098655.2011.557406

Hilbert, M. (2015). Digital divide (s). *International Encyclopedia of Digital Communication and Society*. doi:10.1002/9781118767771.wbiedcs012

Hill, J. B., Macheak, C., & Siegel, J. (2013). Assessing undergraduate information literacy skills using project SAILS. *Codex: The Journal of the Louisiana Chapter of the ACRL*, *2*(3), 23-37. Retrieved from http://acrlla.org/journal/index.php/codex/article/view/77

Hodara, M., Jaggars, S. S., & Karp, M. M. (2012). Improving developmental education assessment and placement: Lessons from community colleges across the country. CCRC working paper No. 51. *Community College Research Center, Columbia University*. Retrieved from http://ccrc.tc.columbia.edu/publications/developmental-education-assessment-placement-scan.html

Hoffman, D. L., & Novak, T. P. (1998). Bridging the racial divide on the Internet. *Science*, *280*(5362), 390-391. doi:10.1126/science.280.5362.390

Hoffman, M., & Blake, J. (2003). Computer literacy: Today and tomorrow. *Journal of Computing Sciences in Colleges*, *18*(5), 221-233. doi:10.1145/1047344.1047467

Hoover, E. (2016). 7 Questions about a surprising new venture in online test preparation. *Chronicle of Higher Education, 62(33) A15.* Retrieved from http://www.chronicle.com/article/7-Questions-About-a-New/236157

Hossler, D., Ziskin, M., Lucido, J., Schulz, S., Dadashova, A., Zerquera, D. (2011, March). *How four-year colleges and universities organize themselves to promote student persistence: The emerging national picture.* New York, NY: College Board.

Huang, W. H. D., Hood, D. W., & Yoo, S. J. (2013). Gender divide and acceptance of collaborative Web 2.0 applications for learning in higher education. *Internet and Higher Education*, *16*, 57-65. doi10.1016/j.iheduc.2012.02.001

Huffman, W. H., & Huffman, A. H. (2012). Beyond basic study skills: The use of technology for success in college. *Computers in Human Behavior*, *28*(2), 583-590. doi:10.1016/j.chb.2011.11.004

Humphreys, A. & Soscia, S. (2013). Three trends shaking up admissions: Admissions departments must adapt to meet the changing needs and expectations of students. *University Business*, *16*(8). Retrieved from https://www.universitybusiness.com/article/three-trends-shaking-admissions

Hwang, H. R., & Choung, J. Y. (2014). The co-evolution of technology and institutions in the catch-up process: The case of the semiconductor industry in Korea and Taiwan. *Journal of Development Studies*, *50*(9), 1240-1260. doi:10.1080/00220388.2014.895817

Ishizuka, K. (May 2006). Virtual high school: MI to define online experience now required of high school graduates. Retrieved from http://nces.ed.gov/ipeds/datacenter/institutionprofile.aspx?unitId=acb0abb4b3b2

Islam, A. N., & Azad, N. (2015). Satisfaction and continuance with a learning management system: Comparing perceptions of educators and students. *The International Journal of Information and Learning Technology*, *32*(2), 109-123. doi:10.1108/IJILT-09-2014-0020

Jacob, W. J. (2015). Globalization and higher education policy reform. In *Second International Handbook on Globalisation, Education and Policy Research* (pp. 151-165). Springer Netherlands. doi:10.1007/978-94-017-9493-0_10

Jacobs, S. (2016). Pre-semester workshops and student nurse retention. *College Student Journal*, *50*(2), 153-158. Retrieved from http://www.ingentaconnect.com/contentone/prin/csj/2016/00000050/00000002/art00002#expand/collapse

Jaggars, S. S. (2014). Choosing between online and face-to-face courses: Community college student voices. *American Journal of Distance Education*, *28*(1), 27-38. doi:10.1080/08923647.2014.867697

Jaggars, S. S., & Xu, D. (2010). Online Learning in the Virginia Community College System. *Community College Research Center, Columbia University*. Retrieved from http://ccrc.tc.columbia.edu/our-research.html

Jerald, C. D. (2009). Defining a 21st century education. *Center for Public education*. Retreived from http://www.centerforpubliceducation.org/Libraries/Document-Library/Prototypes/21st-Century

Johnson, L., Adams, S., Cummins, M., Estrada, V., Freeman, A., & Ludgate, H. (2013). The NMC horizon report: 2013 higher education edition. Retrieved from https://www.nmc.org/publication/nmc-horizon-report-2015-higher-education-edition/

Johnson, R. C. (2012). *The impact of parental wealth on college enrollment & degree attainment: Evidence from the housing boom & bust*. Working Paper, 2012. University of California Berkeley: Goldman School of Public Policy. http://socrates. berkeley. edu/~ ruckerj/RJabstract_ParentalWealth_KidCollege_12-11. Pdf.

Johnson, S. D., Aragon, S. R., & Shaik, N. (2000). Comparative analysis of learner satisfaction and learning outcomes in online and face-to-face learning environments. *Journal of Interactive Learning Research, 11*(1), 29-49. Charlottesville, VA: Association for the Advancement of Computing in Education (AACE).

Johnstone, S. M., & Soares, L. (2014). Principles for developing competency-based education programs. *Change: The Magazine of Higher Learning*, *46*(2), 12-19. doi:/10.1080/00091383.2014.896705

Jones, K. (2013). Developing and implementing a mandatory online student orientation. *Journal of Asynchronous Learning Networks*, *17*(1), 43-45. Retrieved from https://www.researchgate.net/journal/1092-8235_Journal_of_Asynchronous_Learning_Network

Junco, R., Merson, D., & Salter, D. W. (2010). The effect of gender, ethnicity, and income on college students' use of communication technologies. *CyberPsychology, Behavior, and Social Networking*, *13*(6), 619-627. doi:10.1089/cyber.2009.0357

Kahlenberg, R. D. (2010, September 22). 10 myths about legacy preferences in college admissions. *Chronicle of Higher Education.* Retrieved from http://chronicle.com/article/10-Myths-About- Legacy/124561/

Kaiser, F., Maassen, P., Meek, L., van Vught, F., de Weert, E., & Goedegebuure, L. (Eds.). (2014). *Higher education policy: An international comparative perspective*. Elsevier: Amsterdam, Netherlands.

Kalantzis, M., Varnava-Skoura, G., & Cope, B. (Eds.). (2002). *Learning for the future: New worlds, new literacies, new learning, new people*. Australia: Common Ground Publishing.

Kannapel, P. J. (2012). High school capstone courses: A review of the literature. *Edvantia (NJ1)*. Retrieved from https://eric.ed.gov/?id=ED539346

Kanny, M. A. (2015). Dual enrollment participation from the student perspective. *New Directions for Community Colleges*, *2015*(169), 59-70. doi:10.1002/cc.20133

Krieg, D. (2013). High expectations for higher education? Perceptions of college and experiences of stress prior to and through the college career. *College Student Journal*, *47*(4), 635-643. Retrieved from http://www.ingentaconnect.com/content/prin/csj/2013/00000047/00000004/art00008#exp and/collapse

Kuh, G. D. (2003). What we're learning about student engagement from NSSE: Benchmarks for effective educational practices. *Change: The Magazine of Higher Learning*, *35*(2), 24-32. doi:10.1080/00091380309604090

Kuh, G. D., Kinzie, J., Schuh, J. H., & Whitt, E. J. (2011). *Student success in college: Creating conditions that matter*. Hoboken, NJ: John Wiley & Sons.

Kulik, J. A. (2003). *Effects of using instructional technology in elementary and secondary schools: What controlled evaluation studies say*. Arlington, VA: SRI International.

Kusano, K., Frederiksen, S., Jones, L., Kobayashi, M., Mukoyama, Y., Yamagishi, T., Sadaki, K. & Ishizuka, H. (2013). The effects of ICT environment on teachers' attitudes and technology integration in Japan and the U.S. *Journal of Information Technology Education: Innovations in Practice*, 12(1), 29-43. Informing Science Institute. Retrieved from https://www.learntechlib.org/p/111684

Lankshear, C., & Knobel, M. (2003). *New literacies: Changing knowledge and classroom learning.* Philadelphia, PA: Open University Press.

Latham, D., & Gross, M. (2013). Instructional preferences of first-year college students with below-proficient information literacy skills: A focus group study. *College & Research Libraries*, *74*(5), 430-449. doi:10.5860/crl-343

Leonhardt, D. (2011). Top colleges, largely for the elite. *New York Times.* Retrieved from http://www.nytimes.com/2011/05/25/business/economy/25leonhardt.html?_r=1&ref=economicscene

Lim, D., Morris, M., & Kupritz, V. (2014). Online vs. blended learning: Differences in instructional outcomes and learner satisfaction. *Sloan Consortium*, *11*(2), 27-42. Education Superior International. Retrieved from https://www.learntechlib.org/p/104046

Logan, K. (2013). Creating a transition program for first-generation college students. *Doctoral dissertation, Ball State University.* Retrieved from http://cardinalscholar.bsu.edu/bitstream/handle/123456789/197478/LoganK_2013-3_BODY.pdf?sequence=1&isAllowed=y

Lombardi, A., Seburn, M., & Conley, D. (2011). Treatment of nonresponse items on scale validation: What "don't know" responses indicate about college readiness. *Online Submission*. Retrieved from https://eric.ed.gov/?id=ED518170

Lonsdale, M., & McCurry, D. (2004). *Literacy in the New Millennium*. National Centre for Vocational Education Research Ltd., Stational Arcade, Adelaide, SA 5000, Australia.

Long, B. T. (2014). The financial crisis and college enrollment: how have students and their families responded?. In *How the financial crisis and Great Recession affected higher education* (pp. 209-233). University of Chicago Press.doi:10.7208/chicago/9780226201979.003.0007

Lowe, W. (2000). Transactional distance theory as a foundation for developing innovative and reactive instruction. *Journal of Educational Technology & Society, 3*(1), 1-3. Retrieved from http://www.jstor.org/stable/jeductechsoci.3.1.1

Ma, R., & Oxford, R. L. (2014). A diary study focusing on listening and speaking: The evolving interaction of learning styles and learning strategies in a motivated, advanced ESL learner. *System*, *43*, 101-113. doi:10.1016/j.system.2013.12.010

Mandernach, B. J., & Palese-Sanderson, K. (2015). Data analytics and predictive modeling: The future of evaluating online teaching. *eLearn*, *2015*(1), 2. doi:10.1145/2721891.2696534

Mansfield, M. & Bakerson, M., (2012). Persistence rates at IVY Tech community college: Faculty and student perceptions in congruence with achieve the dream data. *In S. Whalen (Ed.), Proceedings of the 8th National Symposium on Student Retention,* 2012, New Orleans. (pp. 1/12) Norman, OK: The University of Oklahoma. Retrieved from https://csrde.ou.edu/wp-content/uploads/2012_Conference_Schedule.pdf

Mansfield, M., Webb, S., & O'Leary, E. (2011). Retention in higher education: Faculty and student perceptions of retention programs and factors impacting attrition rates. *ERIC.* Retrieved from http://www.eric.ed.gov/PDFS/ED521416.pdf

Martindale, Neil. (2002). *The Cycle of Oppression and Distance Education.* Athabasca University.

McCarthy, J. (2010). Blended learning environments: Using social networking sites to enhance the first year experience. *Australasian Journal of Educational Technology, 26*(6), 729-740. doi:10.14742/ajet.1039

McGlynn, A. (2013). Engaging and motivating college students to promote academic achievement and degree completion. *Paper presented at 2013 International Higher Education Teaching and Learning Conference*, Orlando, FL. Retrieved from https://www.hetl.org/hetl-research/

McLaughlin, E. J. (2013). Teaching millennials: Bridging the schism between traditional instruction and active engagement of undergraduate students in a problem-based introductory finance class. *International Research Journal of Applied Finance*, 4(2), 263-270. Retrieved from https://www.irjaf.com/home.html

Means, B., Toyama,Y., Murphy. R., Bakia, M., and Jones, K. (2009). Evaluation of Evidence-based Practices in Online Learning: A Meta-analysis and Review of Online-learning Studies. *Washington, D.C.: U.S. Department of Education*. SRI International. Retrieved from https://www.sri.com/work/publications/evaluation-evidence-based-practices-online-learning-meta-analysis-and-review-onlin

Mellow, G. O., & Heelan, C. M. (2014). *Minding the dream: The process and practice of the American community college*. Lanham, MD: Rowman & Littlefield.

Mills, L. A., Knezek, G. A., & Wakefield, J. S. (2013). Understanding information seeking behavior in technology pervasive learning environments of the 21st Century. *Turkish Online Journal of Educational Technology*, *12*(4), 200. Retrieved from http://www.tojet.net/

Moore, M. G. (1993). 2 Theory of transactional distance. *Theoretical Principles of Distance Education*, 22. doi:10.4324/9780203803738.ch5

Moore, M. G., & Kearsley, G. (2011). *Distance education: A systems view of online learning*. Boston, MA: Cengage Learning.

Motamedi, V. (2013). An analysis of readiness of education students in the use of technology at Mississippi State University. *European Journal of Social & Behavioural Sciences, 4*(1), 756. doi:10.15405/FutureAcademy/ejsbs(2301-2218).2012.4.10

Mueller, J. A., & Miller, S. E. (2013). Diverse millennial students in college: Implications for faculty and student affairs ed. by Fred Bonner II, Aretha F. Marbley, and Mary F. Howard-Hamilton (review). *Review of Higher Education*, *37*(1), 122-124. doi:10.1353/rhe.2013.0074

Murray, D., Koziniec, T., & McGill, T. (2015). *Student perceptions of flipped learning.* In Proc. 17th Australasian Computing Education Conference (ACE 2015) Sydney, Australia, CRPIT, 160. D'Souza, D. and Falkner, K. (Eds.), ACS. 57-62. Retrieved from http://crpit.com/abstracts/CRPITV160Murray.html

Ng, E. S., Schweitzer, L., & Lyons, S. T. (2010). New generation, great expectations: A field study of the millennial generation. *Journal of Business and Psychology*, *25*(2), 281-292. doi:10.1007/s10869-010-9159-4

Ngo-Ye, T. (2014). Computer literacy challenges for adult returning students, lost in a different generation of computer? *Computer, 5*, 15-2014. Retrieved from http://aisle.aisnet.org/mwais2014/14

Norris, P. (2001). *Digital divide: Civic engagement, information poverty, and the internet worldwide*. New York, NY: Cambridge University Press.

Norton, A., Sonnemann, J., & McGannon, C. (2013). The online evolution: when technology meets tradition in higher education. *Grattan Institute*, *48*. Retrieved from https://grattan.edu.au/report/the-online-evolution-when-technology-meets-tradition-in-higher-education/

O'Hanlon, N. (2002). Net knowledge: Performance of new college students on an internet skills proficiency test. *Internet and Higher Education*, *5*(1), 55-66. doi:10.1016/S1096-7516(02)00066-0

Owen, P. (2010). A transition checklist for high school seniors. *School Library Monthly*, *26*(8), 20-23. Retrieved from http://eduscapes.com/instruction/articles/owen.pdf

Padgett, R. D., Johnson, M. P., & Pascarella, E. T. (2012). First-generation undergraduate students and the impacts of the first year of college: Additional evidence. *Journal of College Student Development*, *53*(2), 243-266. doi:10.1353/csd.2012.0032

Park, S. W. (2013). The potential of web 2.0 tools to promote reading engagement in a general education course. *TechTrends*, *57*(2), 46-53. doi:10.1007/s11528-013-0645-1

Parkes, M., Stein, S., & Reading, C. (2015). Student preparedness for university e-learning environments. *Internet and Higher Education*, *25*, 1-10. doi:10.1016/j.iheduc.2014.10.002

Pascarella, E. T. (2001). Identifying excellence in undergraduate education are we even close?. *Change: The Magazine of Higher Learning*, *33*(3), 18-23. doi:10.1080/00091380109601796

Patil, P., Mulimani, D., & Desai, B. L. (2015, January). Prominent assessment of students learning and statistical analysis of quizzes. In *Proceedings of the International Conference on Transformations in Engineering Education* (pp. 567-568). Springer India. doi:10.1007/978-81-322-1931-6_69

Prensky, M. (2001). Digital natives, digital immigrants. *On the Horizon.* NCB University Press, *9*(5) Retrieved from http://ictlogy.net/bibliography/reports/projects.php?idp=629

Prensky, M. (2013). Digital natives, digital immigrants. *Cross Currents: Cultures, Communities, Technologies*. doi:10.4135/9781483387765.n6

Price, D. V., & Tovar, E. (2014). Student engagement and institutional graduation rates: Identifying high-impact educational practices for community colleges. *Community College Journal of Research and Practice*, *38*(9), 766-782. doi:10.1080/10668926.2012.719481

Psacharopoulos, G. (2014). The returns to investment in higher education. In *Using Data to Improve Higher Education* (pp. 121-148). Sense Publishers. doi:10.1007/978-94-6209-794-0_8

Race, P. (2014). *The lecturer's toolkit: A practical guide to assessment, learning and teaching*. New York, NY: Routledge.

Ratliff, V. (2009). Are college students prepared for a technology-rich learning environment? *Journal of Online Learning and Teaching*, *5* (4). Retrieved from http://jolt.merlot.org/vol5no4/ratliff_1209.htm.

Ratliff, V. S. (2013). Online attrition at a community college in rural Appalachia: A phenomenological study. *Doctoral dissertation*. 743. Liberty University. From http://digitalcommons.liberty.edu/doctoral/743

Ravitch, D. (2010). *The death and life of the great American school system: How testing and choice are undermining education*. New York, NY: Basic Books.

Relles, S. R., & Tierney, W. G. (2014). Improving college writing before the freshman year: Findings from 10 years of a summer bridge program. The summer before series. *Pullias Center for Higher Education*. Retrieved from http://pullias.usc.edu/

Robertson, J., Macvean, A., & Howland, K. (2012, June). Embedding technology in the classroom: The train the teacher model. In *Proceedings of the 11th International Conference on Interaction Design and Children* (pp. 20-29). ACM. doi: 10.1145/2307096.2307100

Robinson, H., & Gilliam, C. (2014). The digital usage gap: A study on the technology proficiency of community college students. In *Society for Information Technology & Teacher Education International Conference*. Retrieved from https://www.learntechlib.org/p/130892

Roblyer, M. D. (2000). The National Educational Technology Standards (NETS): A review of definitions, implications, and strategies for integrating NETS into K-12 curriculum. *International Journal of Instructional Media*, *27*(2), 133-46. Retrieved from http://search.proquest.com/openview/8c9df427af9fe02bfb062e25413eceb9/1?pq-origsite=gscholar&cbl=30932

Rogers, E. M. (2003). *Diffusion of innovation (5th ed.).* Florence. MA: Free Press.

Safar, A., & Al Khezzi, F. (2013). Beyond computer literacy: Technology integration and curriculum transformation. *College Student Journal*, *47*(4), 614-626. Retrieved from http://www.ingentaconnect.com/content/prin/csj/2013/00000047/00000004/art00006#expand/collapse

Sakamuro, S., & Stolley, K. (2010). White paper. Purpose and audience. *Purdue Online Writing Lab*. Retrieved from http://owl.english.purdue.edu/owl/resource/546/1/

Salmon, G. (2013). *E-tivities: The key to active online learning*. London, England: Routledge.

Sample Size Calculator. (2012). Retrieved from: http://www.surveysystem.com/sscalc.htm

Saxon, D. P., & Morante, E. A. (2014). Effective student assessment and placement: Challenges and recommendations. *Journal of Developmental Education*, *37*(3), 24-31. Retrieved from https://ncde.appstate.edu/publications/journal-developmental-education-jde

Schroeder, C. (2003). The first year and beyond. *About Campus*, *8*(4), 9-16 CHECK

Schultz, B. B. (1985). Levene's test for relative variation. *Systematic Biology*, *34*(4), 449-456. doi:10.1093/sysbio/34.4.449

Scott-Clayton, J. E. (2012). Do high-stakes placement exams predict college success? *Columbia University*. Retrieved from http://ccrc.tc.columbia.edu/publications/high-stakes-placement-exams-predict.html

Shea, P., & Bidjerano, T. (2014). Does online learning impede degree completion? A national study of community college students. *Computers & Education*, *75*, 103-111. doi:10.1016/j.compedu.2014.02.009

Shih, R. C. (2011). Can Web 2.0 technology assist college students in learning English writing? Integrating Facebook and peer assessment with blended learning. *Australasian Journal of Educational Technology*, *27*(5), 829-845. Retrieved from https://ajet.org.au/index.php/AJET/article/view/934/211

Sindhu, P. (2012). Towards understanding the successful learner: A case study of IGNOU. *Turkish Online Journal of distance Education, 13*(2), 372-337. Retrieved from http://tojde.anadolu.edu.tr/

Singh, A. K. (2014). Non-traditional students' quest for higher education: Personal and environmental challenges in a rural community college (Doctoral dissertation, Wilmington University Delaware. Retrieved from http://gradworks.umi.com/36/15/3615218.html

SmarterMeasure Institutional Data Set (2015). Readiness ranges analysis. *Smarter Services, LLC.* Retrieved from https://admin.readi.info/administrationreports.readinessranges

Soria, K., Lingren Clark, B., & Coffin Koch, L. (2013). Investigating the academic and social benefits of extended new student orientations for first-year students. *Journal of College Orientation and Transition*. The University of Minnesota Digital Conservancy. Retrieved from http://hdl.handle.net/11299/150089

Stewart, S., Lim, D. H., & Kim, J. (2015). Factors influencing college persistence for first-time students. *Journal of Developmental Education*, *38*(3), 12. Retrieved from http://search.proquest.com/openview/3ace7b132f04306f1b2cfa3d2207eafe/1?pq-origsite=gscholar&cbl=47765

Strayhorn, T. L. (2011). Bridging the pipeline: Increasing underrepresented students' preparation for college through a summer bridge program. *American Behavioral Scientist, 55*(2), 142-159. doi:10.1177/0002764210381871

Struhl, B., & Vargas, J. (2012). *Taking college courses in high school: A strategy for college readiness*. Boston, MA: Jobs for the Future.

Symonds, W. C., Schwartz, R., & Ferguson, R. F. (2011). Pathways to prosperity: Meeting the challenge of preparing young Americans. *Cambridge, MA: Pathways to Prosperity Project at Harvard Graduate School of Education*. Retrieved from http://nrs.harvard.edu/urn-3:HUL.InstRepos:4740480

Tanyel, F., & Griffin, J. (2014). A ten-year comparison of outcomes and persistence rates In online versus face-to-face courses. *B> Quest*. Retrieved from http://www.westga.edu/~bquest/

Tess, P.A. (2013). The role of social media in higher education classes (real and virtual): A literature review. *Computers in Human Behavior, 29*, 60-68. doi:10.1016/j.chb.2012.12.032

The Condition of College and Career Readiness (2014). *National ACT report.* Retrieved from http://www.act.org/research/policymakers/cccr14/pdf/CCCR14-NationalReadinessRpt.pdf

Tinto, V. (1975). Dropout from higher education: A theoretical synthesis of recent research. *Review of Educational Research, 45*, 89– 125. doi:10.3102/00346543045001089

Tinto, V. (1987). *Leaving college: Rethinking the causes and cures of student attrition*. Chicago, IL: University of Chicago Press. 518 L. Wild and L. Ebbers.

Tinto, V. (1993). *Leaving college: Rethinking the causes and cures of student attrition (2nd ed*.). Chicago, IL: University of Chicago Press.

Tinto, V. (2005).Taking student success seriously: Rethinking the first year of college. *Ninth Annual Intersession Academic Affairs Forum.* Retrieved from http://www.uky.edu/ie/sites/www.uky.edu.ie/files/uploads/CF_Taking%20Student%

Tinto, V. (2012). Moving from theory to action: a model of institutional action for student success. *College Student Retention: Formula for Student Success*, 2012, 252-266. Retrieved from https://nces.ed.gov/npec/pdf/Tinto_Pusser_ExecSumm.pdf

Tinto, V., Russo, P., & Kadel, S. (1994). Constructing educational communities: Increasing retention in challenging circumstances. *Community College Journal*, *64*(4), 26– 29. Retrieved from http://www.aacc.nche.edu/Publications/CCJ/Pages/default.aspx

University of the West Indies. (2014). General orientation for new undergraduate students. Retrieved from http://www.mona.uwi.edu

U.S. Department of Education, National Center for Education Statistics. (2013). Table 302.10: Recent high school completers and their enrollment in 2-year and 4-year colleges, by sex: 1960 through 2012. U.S. Department of Education, National Center for Education Statistics (Ed.), *Digest of Education Statistics* (2013 ed.). Retrieved from http://nces.ed.gov/programs/digest/d13/tables/dt13_302.10.asp

U.S. Department of Education, National Center for Education Statistics. (2013). Educational technology. In U.S. department of education, national center for education statistics (Ed.), *Digest of education statistics* (2013 Ed.). Retrieved from http://nces.ed.gov/programs/digest/d12/

Van Dusen, G. C. (2014). Digital dilemma: Issues of access, cost, and quality in media-enhanced and distance education. *ASHE-ERIC Higher education report, 27*(5). Jossey-Bass Higher and Adult Education Series.

Vaughn, N. (2007). Perspectives on blended learning in higher education. *International Journal on Elearning. 6*, 81-94. Retrieved from https://www.aace.org/?s=Perspectives+on+blended+learning+in+higher+education

Vella, J. (2010). *Indicators of learning, transfer and impact. In designing and assessing learning experiences*. Hoboken, NJ: John Wiley & Sons, Inc.

Venezia, A., Kirst, M. W., & Antonio, A. L. (2003). *Betraying the college dream: How disconnected K-12 and postsecondary education systems undermine student aspirations*. Palo Alto, CA: Stanford University Bridge Project.

Venkataraman, S., & Sivakumar, S. (2015). Engaging students in Group based Learning through e-learning techniques in Higher Education System. *International Journal Of Emerging Trends In Science And Technology, 2*(01). Retrieved from http://ijetst.in/ems/index.php/ijetst/article/view/470

Vigdor, J., & Ladd, H. (2010). Scaling the digital divide: Home computer technology and student achievement (No. w16078). *National Bureau of Economic Research.* doi:10.1111/ecin.12089

Voorn, R.J., & Kommers, P. (2013). Social media and higher education: Introversion and collaborative learning from the student's perspective. *International journal of social media and interactive learning environments*, *1*(1), 59-71. doi:10.1504/IJSMILE.2013.051650

Wagner, T. (2010). *The global achievement gap: Why even our best schools don't teach the new survival skills our children need--and what we can do about it.* Basic books.

Wallace, P., & Clariana, R. (2005). Perception versus reality—determining business students' computer literacy skills and need for instruction in information concepts and technology. *Journal of Information Technology Education: Research*, *4*(1), 141-151. Retrieved from http://www.jite.org/documents/Vol4/v4p141-151Wallace59.pdf

Walpole, M. (2003). Socioeconomic status and college: How SES affects college experiences and outcomes. *Review of Higher Education*, *27*(1), 45-73.

Wang, S. (2015). Perceived attributes and factors influencing instructors using E-textbooks in higher education. *Dissertation.* Retrieved from: http://Aquila.usm.edu/dissertations41

Webster, M. (2016). *Impact of orientation programs on nontraditional students' perceived academic success in adult education programs* 10018616. Dissertations & Theses. Walden University. (1767790867). Retrieved from http://ezp.waldenulibrary.org/login?url=http://search.proquest.com/docview/1767790867?accountid=14872

Weisberg, M. (2011). Student attitudes and behaviors towards digital textbooks. *Publishing Research Quarterly*, *27*(2), 188-196. doi:10.1007/s12109-011-9217-4

Winke, P., & Goertler, S. (2008). Did We Forget Someone? Students' Computer Access and Literacy for CALL. *CALICO Journal*, *25*(3), 482-509. Retrieved from http://www.jstor.org/stable/calicojournal.25.3.482

Wyatt, L. (2011). Nontraditional student engagement: Increasing adult student success and retention. *Journal of Continuing Higher Education*, 59(1), 10-18.doi:10.1080/07377363.2011.544977

Xu, D., & Jaggars, S. S. (2011). Online and hybrid course enrollment and performance in Washington state community and technical colleges. CCRC working paper No. 31. *Community College Research Center, Columbia University*. Retrieved from http://ccrc.tc.columbia.edu/our-research.html

Young, G. (2015, January 1). Connect2Compete. *Annual Report*. Retrieved from http://everyoneon.org/about/c2c/

Zeidenberg, M., Cho, S. W., & Jenkins, D. (2010). Washington State's integrated basic education and skills training program (I-BEST): New evidence of effectiveness. CCRC working paper No. 20. *Community College Research Center, Columbia University*. Retrieved from http://ccrc.tc.columbia.edu/our-research.html

Zurita, G., Hasbun, B., Baloian, N., & Jerez, O. (2015). A blended learning environment for enhancing meaningful learning using 21st Century skills. In *Emerging Issues in Smart Learning* (pp. 1-8). Springer Berlin Heidelberg. doi:10.1007/978-3-662-44188-6_1

Appendix A: Electric Change of Policy Form and White Paper

Note: This petition form was modified based on the electronic version through the institution that was represented within this project. I have eliminated the institution's name throughout this form to preserve anonymity.

New Policy Change Form (electronic submission)

Use this form to create a new policy to be considered by an appropriate governing body. If you would like to propose a change to an existing policy, please use this revision template.

Name * Malinda Mansfield

Email * malinda.mansfield@waldenu.edu

Suggested Policy Title * Computer Literacy College Placement and Workshops

Policy Number * TBD

Purpose/Rationale *

Upon IRs approval, I conducted a quantitative study on our campus in January 2016 to find the differences between computer literacy skills FYE faculty members expected in FYE courses and the level of actual self-proclaimed computer literacy skill levels FYE students reported. As stated through our institutional research department at the statewide Department Chair retreat, students are failing their E courses at an average of 50%. Currently, there is an even greater gap in the digital divide, because FYE course curriculum asks students to obtain resources, read materials, and submit work into Blackboard, as well as utilize a word processing system, the institutional email system, and presentation software, but policy states that students do not have to be trained before taking the FYE course.

Data from this study included an online survey given to all FYE instructors who volunteered and a paper survey to all FYE students who volunteered. One main goal directed the data analysis: identifying differences in faculty expectations and student skill levels. This collection of quantitative data from 94 FYE students and 41 FYE instructors aid and justify the recommendations for a policy recommendation. Unexpected descriptive data also gave interesting indications for faculty preferences for specific identifiable computer literacy skills needed to succeed in their FYE course. For FYE students, the implementation of SmarterMeasure as a computer literacy placement exam and new computer literacy training policies for all incoming students. Workshops to

increase these skills are recommended to be offered to all students, but mandated to those who received low scores on those computer literacy sections is recommended.

Through the data, I was able to identify a gap between student's current skill levels and instructor expectations. Also, key components that faculty members identified as necessary computer literacy skills in order to be successful in the FYE course were indicated by the faculty through descriptive data. The findings that showed significant differences in faculty expectations and student skill levels were; experience in using the Prezi and the Windows operating system. Additionally, faculty member expectations of skill levels in, adding borders and highlighting in a word processing software, posting initial threads and replies, submitting assignments, and locating the course calendar and syllabus within the Blackboard, and forwarding emails were statistically higher than student self-reported current skill levels. Even though data showed some significant results, most of the results shown were not statistically significant. Because surveys could only be obtained several weeks into the semester instead of at the beginning of the semester, student participants were limited to those who had not dropped out or who had not attended classes for the semester. However, based on the data that were received, I am recommending a change in policy for the success of new students in FYE courses, thus aiding in increasing persistence rates.

Minimum 1 page (single spaced). Subject of the policy and a brief description of what it is trying to accomplish.

Governing Body *

This proposal, as described in the following section, to change the placement exam policy including mandated workshops is only an option provided to the assessment committee and the Regional Academic Officers (RAO) who are responsible for maintaining and updating the suggested policy.

Who on campus is responsible for maintaining and updating this policy?

Proposed Policy Change Summary *

Because the data showed that instructor expectations were statistically higher than the actual skill levels of participants in some areas, there was a clear gap in what policy dictates for instructors and the lack of training students need. I am proposing that one option for students, as a part of the policy change, mandatory participation in workshops based on placement testing takes place to aid in meeting the expectations of faculty before classes begin. I propose that workshops are held during normal institutional operational hours and because SmarterMeasure and the Blackboard are already licensed by the institution, there should be no further expenditures.

At the rate of 30% or higher, faculty members expected students to have some experience in the Windows operating system, Microsoft Word, Microsoft PowerPoint presentations, Prezi, Internet Explorer, Google Chrome, and Mozilla Firefox web-browsers. It could be concluded that training for these skills would be necessary for all new students, as it is expected. Although several interventions could take place based on these results, it is my recommendation that placement testing include computer literacy and Blackboard components. Students should take

placement testing at least one month before classes begin in the event that students need workshops to improve their skill levels.

Because students should not be subjected to unnecessary training, I am recommending adding a computer literacy (SmarterMeasure) and a Blackboard placement exam to the new student process. In order to match faculty member expectations, I am recommending that the policy include stipulations that would require students to score at least at an average level before entering the new student success course. The computer literacy test should be given in sections and each section would be the basis for several sections of computer literacy workshops. Based on data, the computer literacy test should consist of basic computer literacy skill sections including; the use of different web-browsers, basics in the Windows operating system, utilizing word processing software, and presentation software. If a student does not pass the test of specific sections, the student should only be required to take those specific workshops. For example, if the student does not score at a rate of average or above within using a word processing system and utilizing different web-browsers, the student would only be required to take the web-browser and the word processing workshops.

Since I was unable to collect data within the first week of this course, information was not collected on those students who had dropped out of the course or were withdrawn from the course. Students who were not able to participate could have been students who were computer literacy/Blackboard proficient or may have needed more institutional services. I do believe, however that I have sufficient data on instructor expectations and the knowledge of the new student success course curriculum that has led me to this policy recommendation as an option for the institution.

It is my recommendation that a policy change takes place requiring all new students take the SmarterMeasure assessment, as it is currently licensed by the institution in this study. The SmarterMeasure is made up of seven components that assess computer literacy and soft skills. The soft skills measured are identified as "individual attributes," "life factors," and "learning styles," including; motivation, procrastination, asking for help, time management, support, finances, and preferred method of learning (visual, verbal, social solitary, physical, aural, and logical). Although these soft skills are assessed, soft skills will not be a factor in placement results. The SmarterMeasure does give recommendations for improvements of those skills (SmarterMeasure Data Set, 2015). The computer literacy skills measured will be a factor in placement. These skills are identified as "reading skills," "technical knowledge," "technical competency," and "typing skills."

It is recommended that the Blackboard placement exam should include; posting initial threads, replying to fellow students, submitting assignments, and locating the calendar and syllabus. Additionally, an institutional Email section should be a part of this assessment. Within the LMS, there was a significant difference regarding posting initial discussion board threads and replying to other students, knowing how to submit assignments, and locating the course syllabus and calendar. Although an instant message system is available to both students and instructors, instructors indicated that it did not seem to be a factor in FYE success. All instructor participants expected students to be able to use the campus email system and the tools within the system, however instructors had a higher expectation of forwarding emails than student ability.

Although data did not show significant differences, FYE faculty member participants indicated an expectation of at least an average skill level in in the following categories; composing, sending, and adding attachments in emails, opening, saving, utilizing line spacing, copying, pasting and opening a new template within a word processing program, and creating

new presentations, adding slides, opening a new template, and saving for presentation software. The placement test should be built as a course in Blackboard. The recommendation is to create an assessment that uses a Blackboard Org. A student could use the self-enrollment feature in the Blackboard Org.

The test will include interactive class sessions that contain actions that are frequently used in both traditional and online courses. The student will be given a set of tasks and if the student can complete these tasks at a grade of C (70%) or better, the student can advance to his/her courses without taking Workshop 5.

All students can participate in the workshops. Students can take all workshops in one day or choose to spread them out over the 2 weeks prior to the semester's start date. Students can retake the workshops at any time if they feel more training is needed. Student can also meet with the presenters one-on-one after the workshops upon appointment. Once the workshop(s) has been completed, the student will be given a certificate of completion and the student can take this certificate to their advisor to remove the block put onto their courses. If the student does not take the workshops necessary based on placement testing, the student will have until the following semester to complete and then are open to take courses. Since data shows that students prefer practicing computer skills that are necessary for college success, curriculum of the workshops will include informational material as well as practice sessions for each topic (Latham & Gross, 2013).

Faculty members indicated requiring only a somewhat low computer literacy skill in using the instant messaging system, which would indicate a low priority for student expectation in this skill. An average skill level was indicated by faculty members in posting an initial thread and replies in the discussion boards, and a somewhat high skill in submitting assignments and locating the syllabus and calendar within the LMS section. They also indicated requiring at least an average skill level in composing, sending, forwarding, and attaching files to an Email in the Email section. Even though data only showed a significant difference in forwarding emails, it is recommended that the Blackboard workshop includes all areas of these sections to capture all students who may be struggling. This includes where to find instructor information in the LMS and utilizing the tools represented in the study for the email system. If students did not score at an average skill level in the LMS placement assessment, it is my recommendation that part of the policy includes a student requirement to take either a computer literacy workshop, and/or a LMS workshop. If a student tested out of the computer literacy placement exam but did not place out of the LMS exam, the student would only need to take the LMS workshop. If a student placed out of the LMS exam but not out of the computer literacy exam, the student would then need to take the computer literacy workshop. Students who tested out of this section could still opt to take this workshop.

Once students have completed the workshops, they are given the same computer literacy and/or LMS placement exam for the sections that did not receive a passing score. If skills have improved to average levels, students will be permitted to begin classes. It is current policy that a student must see a personal advisor to sign up for classes. It is recommended that students who did not pass for the second time be allowed to retake the workshops, upon which point the workshop presenter can sign a waiver for the student's advisor so that students can attend classes. The current training sessions should be a requirement instead of optional to students who have tested below average on the LMS placement testing. The policy recommendation is to include face-to-face workshops (which will be explained in detail within the white paper) instead of the current online modality and includes:

- Accessing college web-sites (courses, college infrastructure, resources, and email)
- Accessing Blackboard tabs (courses, organizations, library and IM)
- Accessing announcements (desktop and smart phone application)
- Locating the course syllabus, calendar, and instructor information
- Class sessions (understanding calendar alignment, course information/assignment folders)
- Discussion boards (initial threads and replies)
- Assignment submission (copying/pasting from word processing program, attaching files, double-checking grade book, rubrics, and scoring/feedback from your instructor)
- Course resources
- Grades
- Communication (Campus Connect email tools using Blackboard Communication and IM)

A detailed summary of proposed change in policy. Maximum 10 pages. Budget and timeline may be requested at a later time.

Entities Affected By The Policy *

I understand that this change of policy form will need to be approved by the assessment committee first, then the RAOs. Upon approval, I would then submit my official white paper including detailed descriptions and procedures of this policy recommendation and workshops. This policy would apply to Enrollment and Advising administrators and staff as well as FYE faculty, and FYE students.

To whom does the policy apply (administrators, faculty, staff, students, visitors, etc.)?

Responsible Officer *

Malinda Mansfield

This individual is responsible for keeping the policy up to date and coordinating a detailed review at least once every year.

Appendix *

A copy of the white paper has been attached

Any applicable related information to the policy.

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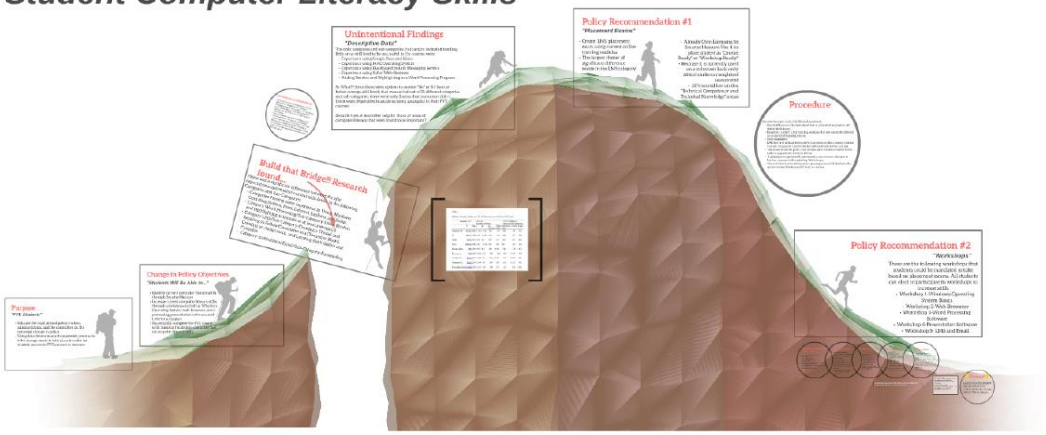
Bridging the Gap By: Malinda Mansfield

Bridging the Gap Between FYE Faculty Expectations and Student Computer Literacy Skills



Prezi

White Paper

by

Malinda Mansfield

Doctoral Study Submitted in Partial Fulfillment

of the Requirements for the Degree of

Doctor of Education

Walden University

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Introduction

Success rates in FYE courses are a primary focus at the institution that was under study. Implementing interventions to increase success rates is a practice recognized by the FYE leaders at the institution. Administrators and leaders address issues that affect stagnant success rates. Although enrollment stays steady, success rates in the FYE courses continue to stay at approximately 50%. Among administration, this is the most noticeable non-persisting class. Data in this study included an online survey given to all FYE instructors who volunteered and a paper survey to all FYE students who volunteered. Two goals directed the data analysis: identifying differences in faculty expectations and student skill levels, and determining a path for a policy change in order to implement future faculty member professional development and student training.

This collection of quantitative data from 94 FYE students and 41 FYE instructors aided and justified the recommendations for a policy recommendation for the institution in the study. For FYE students, the addition of a computer literacy section to the institution's placement exam and new computer literacy training policies for all incoming students who received low scores on those computer literacy sections is recommended. These recommendations should be made in collaboration with the NSO committee and institutional administration.

Research Question

In this research study, I asked whether a difference existed in FYE faculty expectations of computer literacy skills and FYE student current computer literacy skill levels. Student experience in Windows operating system, Internet Explorer, and Safari was significantly different than the expectations of faculty who teach FYE courses. The survey asked faculty members to indicate yes or no whether students needed experience in these categories. In regards to use of the Windows operating system, faculty member expectations exceeded the experience

of FYE students. In regards to Internet Explorer and Safari, student experience was higher than the expectations of the FYE faculty members. A conclusion could be made that while the *t* test showed a significant difference in experience with Internet Explorer and Safari web browsers, the students did meet, and exceed, the expectations of the faculty. Information regarding the gap in expectations versus current experience in Windows OS can be valuable data for the institution. It could be concluded that students need more training in basic Windows OS functions. Similarly, there was a significant difference in faculty expectations and students' knowledge in Prezi presentation software. While there was not a significant difference in faculty expectations and student experience in the most required presentation software, PowerPoint, Prezi rated as the second most required presentation software.

After completing this study, the data from participants pointed to the need for changes to the existing college placement procedures and NSO implementation. Because the data showed that instructor expectations were statistically higher than the actual skill levels of participants in some areas, there was a clear gap in what policy dictates for instructors and training required for students. I am proposing that one option for students, as a part of the policy change, is mandatory participation in workshops based on placement testing to aid in meeting the expectations of faculty before classes begin. The budget would be minimal, as the workshops would be presented by full-time FYE instructors and advisors who are required to dedicate eight additional days per year to student interaction. Additionally, the workshops would be held during normal institutional operational hours, and because SmarterMeasure and the LMS are already licensed by the institution, there would be no further expenditures regarding building costs.

Currently, the institution in this study does not make it mandatory for students to take a computer literacy or LMS aptitude test. According to policy, the new student success course has

at least eight objectives (some divisional new student success courses have 11) and over 20 competencies that each student must reach for implementation. Within these objectives, only one objective covers computer literacy and college infrastructure. FYE faculty member participant data showed a significant difference in expectations of student experience using Windows operating system and experience using Prezi software. Faculty members expected students to have more experience in Windows as opposed to Mac OS in order to be successful in their courses. Furthermore, faculty members indicated a preference for student experience using Microsoft PowerPoint over Prezi, but students met the expectation.

Faculty member expectations of skill levels in adding borders and highlighting in word processing software, posting initial threads and replies, submitting assignments, locating the course calendar and syllabus within the LMS, forwarding emails, and using Prezi were significantly different than student self-reported skill levels. Survey questions were on a Likert scale from 0 (no skill level) to 5 (high skill level). Students indicated a higher level (3, average) of knowledge in adding borders and highlighting within word processing software than faculty members' expectations (2, somewhat average); therefore, students surpassed the faculty member expectations. Posting initial threads and replies, submitting assignments, locating the course calendar and syllabus within the LMS, and forwarding emails showed a significant difference between faculty member requirements and student skill level.

Table 1

t Test for Equality of Means for Faculty Expectations and Student Skill Levels

	Levene's Test		*t* Test for Equality of Means				95% Confidence Interval of the Difference	
	F	Sig.	*t*	df	Sig. (2-tailed)	Mean Diff.	Std. Error Diff.	Lower	Upper
Windows OS	40.592	.000	3.515	132.117	.001	.167	.048	.261	.073
IE	15.652	.000	2.407	65.332	.019	.216	.090	.037	.394
Safari	3.450	.065	6.670	133	.000	.539	.081	.379	.699
Prezi	19.939	.000	2.411	62.367	.019	.209	.087	.383	.036
Borders/High.	.000	.992	4.957	133	.000	1.195	.241	.718	1.672
Discussions	.169	.681	2.656	133	.009	.696	.262	1.215	.178
Assignments	2.413	.123	4.862	133	.000	1.163	.239	1.636	.690
Calendar/Syl.	1.626	.204	3.614	133	.000	.887	.245	1.372	.401
Forward E-mail	1.968	.163	2.115	133	.036	.533	.252	.035	1.032

Note. 94 student and 41 faculty participants.

Because there was significant difference shown in each category of the surveys given to faculty and students, the sub-categories seem less important to the big picture. Because there are significant differences in each category, training should be made available to all students in all categories so that they may increase their skill levels in computer literacy, thus having a better chance at passing their FYE courses. This would require a change in policy. The recommendation would be to include a computer literacy placement exam and, based on those results, even though all students can voluntarily participate in workshops provided, mandate workshops for those students who are not up to par according to their results.

Unintentional Focus of the Study

The initial hypothesis of this study focused on the hypothesized differences between faculty expectations and student computer literacy skill levels in their FYE courses. However,

there were only eight areas where a gap was found between faculty and students. This finding may be explained by when the students were surveyed. Students were surveyed after several students had been dropped for no-shows or voluntarily withdrawn from their courses. There were some data, however, that may still be interesting to the institution. The descriptive data showed that, at the rate of 30% or higher, faculty members participants expected students to have some experience in the Windows operating system, Microsoft Word, Microsoft PowerPoint presentations, Prezi, Internet Explorer, Google Chrome, and Mozilla Firefox. It could be concluded that training for these skills would be necessary for all new students, as these skills are expected. Although several interventions could take place based on these results, it is my recommendation that placement testing include computer literacy and LMS components. Students should take placement testing at least one month before classes begin to determine if students need workshops to improve their skill levels.

Because students should not be subjected to unnecessary training, I am recommending adding a computer literacy (SmarterMeasure) and a LMS placement exam to the new student process. In order to match faculty member expectations, I am recommending that the policy include stipulations that would require students to score at least at an average level in expected skills before entering the new student success course. The computer literacy test should be given in sections and each section would be the basis for several sections of computer literacy workshops. Based on data, the computer literacy test should consist of basic computer literacy skill sections including the use of different web browsers, the basics of the Windows operating system, the use of word processing software, and the use of presentation software. If a student does not pass the specific sections of the test, the student should only be required to take workshops for those sections. For example, if the student does not score at a rate of average or

above in using a word processing system and using different web browsers, the student would only be required to take the web browser and the word processing workshops. Those students could opt to participate in all of the workshops to improve their skills, as all workshops will be made available to all students.

Policy Recommendation Implementation

Since I was unable to collect data within the first week of this course, information was not collected on those students who had dropped out of the course or who were withdrawn from the course. Students who were not able to participate could have been students who were computer literacy/LMS proficient or they could have been students who needed more institutional services. It is my recommendation to repeat this study to gain more accurate data on the whole population before the FYE class begins or on the first day of class. I do believe, however, that I have sufficient data on the gap between instructor expectations and student skills. Since all major categories had at least one subcategory that had a significant difference, generalized workshops including all subcategories should be included. This is also true for the inadvertent focus being the instructor's self-proclaimed importance of each subcategory and the knowledge of the new student success course curriculum, thus leading to this policy recommendation as an option for the institution. I believe these workshops should be available to all students, but especially those students who do not place into being college ready as determined by their computer literacy placement exam.

SmarterMeasure Computer Literacy Assessment

The SmarterMeasure computer literacy assessment is a current assessment that the institution in this study uses, but it is only provided to students on a volunteer basis. According to an institutional report, even though most courses require students to use computers and the

LMS daily, in 2015, only 38% of students took the assessment offered and, of those who took it, 20% scored low on the technical competency and technical knowledge categories (SmarterMeasure, 2015) By using a computer literacy placement test such as SmarterMeasure and workshops based on results of this study, students may have more success in their FYE courses, resulting in higher persistence rates.

It is my recommendation that a policy change take place requiring all new students take the SmarterMeasure assessment, as it is currently licensed by the institution in this study. The SmarterMeasure assessment is made up of seven components that assess computer literacy and soft skills. The soft skills measured are identified as individual attributes, life factors, and learning styles and include topics such as motivation, procrastination, asking for help, time management, support, finances, and preferred method of learning (visual, verbal, social solitary, physical, aural, and logical). Although these soft skills are assessed, soft skills will not be a factor in placement results. The SmarterMeasure does give recommendations for improvements of those skills (SmarterMeasure Institutional Data Set, 2015). The computer literacy skills measured will be a factor in placement. These skills are identified as reading skills, technical knowledge, technical competency, and typing skills.

LMS Assessment

Based on data from this study, I recommend that the LMS placement exam include posting initial threads, replying to fellow students, submitting assignments, and locating the calendar and syllabus. Additionally, an institutional e-mail section should be a part of this assessment. Within the LMS, there was a significant difference between instructor expectations and student skill in posting initial discussion board threads and replying to other students, submitting assignments, and locating the course syllabus and calendar. Although an instant

message system is available to both students and instructors, instructors indicated that it did not seem to be a factor in FYE course success. All instructor participants expected students to be able to use the campus e-mail system and the tools within the system, however instructors had a higher expectation of skill in forwarding e-mails than student ability (see table 2).

Table 2

Difference in Faculty Expectations and Current Student Experience

	Levene's Test		*t* Test for Equality of Means				95% Confidence Interval of the Difference	
	F	Sig.	*t*	df	Sig. (2-tailed)	Mean Diff.	Std. Error Diff.	Lower	Upper
LMS									
Discussions	.196	.681	2.656	133	.009	.696	.262	1.215	.178
Assignments	2.413	.123	4.862	133	.000	1.163	.239	1.636	.690
Calendar/Syl.	1.626	.204	3.614	133	.000	.887	.245	1.372	.401
IM	.533	.467	.487	133	.627	.138	.283	.697	.422
E-mail									
Compose/Send	.621	.432	1.174	133	.243	.260	.221	.697	.178
Attach Files	.048	.827	.181	133	.857	.046	.254	.548	.456
Forward	1.968	.163	2.115	133	.036	.533	.252	.035	1.032

Note. 94 student and 41 faculty participants.

Although data did not show significant differences, FYE faculty member participants indicated an expectation of at least an average skill level in in the following categories: composing, sending, and adding attachments in e-mails; opening, saving, using line spacing, copying, pasting and opening a new template within a word processing program; and creating new presentations, adding slides, opening a new template, and saving in presentation software. The placement test should be built as a course in the LMS. The recommendation is to create an

assessment that uses the current LMS as an organization module. A student can enroll in this assessment by taking the following steps:

1. Log into the LMS using their personal log-in information.
2. Click on the Organization tab. This will take the student to the catalog area.
3. Choose the LMS Placement Exam and then click "Go"
4. Click "Self Enrollment," and then click "Go"
5. Upon clicking "Go", students will be taken to the test area where they can begin their test.

This test will be based on the currently used LMS training sessions that are offered as an optional training course and the data received by this study. The test will include interactive class sessions that contain actions that are frequently used in both traditional and online courses. The student will be given a set of tasks and if the student can complete these tasks at a grade of C (70%) or better, the student can advance to his/her courses without taking Workshop 5. Those students who did receive a passing score will also have the option to take Workshop 5 if they so choose.

The following actions should be tested in the LMS assessment:

- Accessing college websites (courses, college infrastructure, resources, and e-mail)
- Accessing LMS tabs (courses, organizations, library, and IM)
- Accessing announcements
- Locating the course syllabus, calendar, and instructor information
- Understanding calendar alignment and finding the course information and assignment folder
- Participating in discussion boards (initial threads and replies)

- Submitting an assignment (copying/pasting from word processing program and attaching files)
- Understanding a rubric
- Locating course resources
- Understanding the grades tab
- Communicating via e-mail

Student Selection Process

It is my recommendation that the student selection process only mandate students who are new to the college experience to participate in the SmarterMeasure and LMS placement exams and the workshops if needed, but workshops should be offered to all other students if they would like to brush up on skills where they need improvement. New students need extra help and training upon entering college, but training should include all students on a voluntary basis. It is recommended that the institution provide the workshops to students during morning sessions and evening sessions on Mondays, Wednesdays, Fridays, and Saturdays. Because students need these skills to be successful in their first course at the institution, it is recommended that these workshops be held during the two weeks of faculty in-service prior to the beginning of the semester. Since early college and dual-credit high school students have their own placement process, the computer literacy and LMS workshops can be recommended to those students, but should not be a requirement. Similarly, students transferring from another institution or those who have attended college previously should not be required, but rather given an option, to take the workshops provided.

If students test below average in 2-4 of the SmarterMeasure assessment computer literacy sections, the student will be required to take Workshops 1- 5. If the student only tested below

average on on-screen reading rate and recall, the student should only be required to take Workshop 2. If the student only tested below average on technical competency, the student should be required to take Workshops 3-5. If the student only tested below average on typing skills, the student should only be required to take Workshop 1. If students test below average in the LMS placement exam, they should be required to take Workshop 5.

These workshop requirements may be in addition to the workshops needed based on the SmarterMeasure Assessment. For example, if students only tested below average on on-screen reading rate and recall, but also tested below average in the LMS placement exam, the student should have to take both Workshops 2 and 5. If a student tests at a rate of average or above in both the SmarterMeasure and LMS placement assessments, no workshop should be necessary before attending classes.

Workshop Curricula

This policy change, which includes mandatory workshops depending upon placement exam status, is only recommended as an option based on this study. Students can take all workshops in one day or choose to spread them out over the two weeks prior to the semester's start date. Students can retake the workshops at any time if they feel more training is needed. Student can also meet with the presenters one-on-one after the workshops upon appointment. Workshops should last anywhere between one and three hours with breaks in between for workshops lasting more than two hours. Once the workshop(s) have been completed, the student should be given a certificate of completion so the student can take this certificate to their advisor to remove the block put onto their courses. If the student does not take the workshops necessary based on placement testing, the student should have until the following semester to complete and then are open to take courses. Until students complete these workshops, there will be a block

placed on the students account so they are unable to take their courses. Since research shows that students prefer practicing computer skills that are necessary for college success, curriculum of the workshops should include informational material as well as practice sessions for each topic (Latham & Gross, 2013).

Workshop 1-Windows Operating System Basics

At the rate of 98%, faculty members indicated an expectation of at least an average (Likert scale 3) student skill level in experience with the Windows operating system. Because faculty member expectations in Windows operating system exceeded the experience of FYE students, a workshop is recommended as a part of the change in policy to increase student skill levels.

Table 3

t Test for Equality of Means for Faculty Expectations and Student Skill Levels

	Levene's Test		*t* Test for Equality of Means				95% Confidence Interval of the Difference	
	F	Sig.	*t*	df	Sig. (2-tailed)	Mean Diff.	Std. Error Diff.	Lower	Upper
Windows OS	40.592	.000	3.515	132.117	.001	.167	.048	.261	.073
Mac OS	7.367	.008	1.275	83.643	.206	.107	.084	.060	.274

Note. 94 student and 41 faculty participants.

Handouts and in-class activities will be taught regarding everyday Windows program use for college success. This workshop will be best suited for students who scored below an average skill level in SmarterMeasure's technical knowledge, technical competency, and typing speed and accuracy sections. This workshop would be approximately three hours in length with a 30-minute break in between. The following topics would be included during this workshop:

- Windows vocabulary and symbols

- Mouse skills
- Connecting to Wi-Fi and using Windows Defender
- Creating folders
- Finding and opening files on a computer, external device, or in the cloud
- Saving files on a computer, external device, or in the cloud
- Typing speed and accuracy

Workshop 2-Web-Browsers

The institution's LMS is designed to work best with the Mozilla Firefox web browser. In all statewide distance learning courses, Firefox is a required free download under the "Course Information" tab. Additionally, faculty members, at the rate of 73%, indicated that an expectation of at least an average (Likert scale 3) student skill level in experience with the Firefox web browser. A workshop is recommended to increase student skill levels. Because there was a significant difference in knowledge and expectation regarding Safari and Internet Explorer, the recommendation is to have a workshop based on web browsers in general.

Table 4

Difference in Faculty Expectations and Current Student Experience

	Levene's Test		*t* Test for Equality of Means				95% Confidence Interval of the Difference		
	F	Sig.	*t*	df	Sig. (2-tailed)	Mean Diff.	Std. Error Diff.	Lower	Upper
IE	15.652	.000	2.407	65.332	.019	.216	.090	.037	.394
Safari	3.450	.065	6.670	133	.000	.539	.081	.379	.699
Chrome	.202	.654	.227	133	.820	.017	.076	.134	.169
Firefox	3.120	.080	.823	133	.412	.072	.088	.245	.101

Note. 94 student and 41 faculty participants.

Handouts and in-class activities will be taught regarding everyday web browser use for the institution's specific LMS. This workshop will be 2 hours in length with a 5-minute break in between. The following should be included during this workshop:

- Web-browser basics: downloading and vocabulary
- Using the URL to find websites and tabs
- Understanding different search engines and screen splitting
- Finding college resources through the web browser
- Reading and citing online articles through the web browser

Workshop 3-Word Processing Software

All instructors expected some skill level in using the tools in a word processing system. There was a significant difference in skill and expectation in adding borders and highlighting in a word processing system.

Table 5

Difference in Faculty Expectations and Current Student Experience

	Levene's Test		*t* Test for Equality of Means				95% Confidence Interval of the Difference	
	F	Sig.	*t*	df	Sig. (2-tailed)	Mean Diff.	Std. Error Diff.	Lower	Upper
Open/Save	7.584	.007	.781	133	.437	.168	.216	.596	.260
Copy/Paste	4.397	.038	.291	133	.772	.055	.189	.430	.320
Spacing/Indent	1.244	.267	1.692	133	.093	.374	.221	.063	.811
New Template	2.014	.158	1.808	133	.073	.483	.267	.046	1.012
Borders	.000	.992	4.957	133	.000	1.195	.241	.718	1.672

Note. 94 student and 41 faculty participants.

This workshop will be 2 hours in length with a 10-minute break in between. The following should be included in this word processing workshop:

- Resources
- Types of software
- Opening new templates
- Spell and grammar check
- Using tools (bold, italics, columns, tables, insert, underline, and font type)
- Formatting (indents, line-spacing, and headings)
- Saving and choosing file types
- Copying/pasting

Workshop 4-Presentation Software

Faculty members indicated a preference for Microsoft PowerPoint over Google Slides and Prezi. Even so, there was a significant difference between student skill level and faculty expectations for the use of Prezi (see table 6).

Table 6

Difference in Faculty Expectations and Current Student Experience

	Levene's Test		*t* Test for Equality of Means				95% Confidence Interval of the Difference	
	F	Sig.	*t*	df	Sig. (2-tailed)	Mean Diff.	Std. Error Diff.	Lower	Upper
Prezi	19.939	.000	2.411	62.367	.019	.209	.087	.383	.036
PowerPoint	5.266	.023	1.132	87.060	.261	.168	.085	.233	.064
Slides	3.548	.062	.896	133	.372	.055	.066	.080	.213
None	2.705	.102	.840	133	.402	.374	.054	.180	.073
Create New	1.757	.187	1.120	133	.265	.288	.257	.221	.797
Add Slides	3.093	.081	1.480	133	.141	.384	.260	.129	.898
Open Existing	.053	.819	.715	133	.476	.187	.262	.331	.706
Save Pres.	.091	.763	.932	133	.353	.253	.271	.284	.790
Add Pictures	3.070	.082	1.461	133	.146	.387	.265	.137	.912

Note. 94 student and 41 faculty participants.

Only 17% of the faculty members indicated not requiring any knowledge of presentation software for success in their FYE courses. Since 83% of faculty members indicated that students needed to have some skill level in presentation software, an option to remedy this need may be to provide a workshop for students. The mean for the skill level necessary for student success in their FYE courses, indicated by faculty members, was 3.10, which represents an average skill level. Faculty members indicated requiring an average computer literacy skill level in creating new presentations, adding slides, opening existing presentations, saving presentations with a new name, and adding pictures to slides. This presentation workshop will be one hour in length with a 5-minute break in between. The following should be included in this workshop:

- Resources
- Types of software

- Opening new presentations and choosing a layout
- Adding slides
- Spell and grammar check
- Using tools (insert, transitions, animations, and slideshow)
- Saving and choosing file types
- Presenting in the classroom

Workshop 5-LMS and E-mail

Because student e-mail is located within the LMS, it is my recommendation to have a workshop that combines both categories. Faculty members indicated requiring only a somewhat low computer literacy skill in using the instant messaging system, which would indicate a low priority for student expectation in this skill. An average skill level was indicated as necessary by faculty members in posting an initial thread and replying in the discussion boards, and a somewhat high skill was required in submitting assignments and locating the syllabus and calendar within the LMS section.

Faculty members indicated requiring at least an average skill level in composing, sending, forwarding, and attaching files to an e-mail in the e-mail section (see table 2). Even though data only showed a significant difference in forwarding e-mails, finding the course calendar and syllabus, and submitting discussion boards posts and assignments, it is recommended that the LMS workshop includes all subcategories of the survey to provide more training to all areas including: where to find instructor information in the LMS and using the tools represented in the study for the e-mail system. If students did not score at an average skill level in the LMS placement assessment, it is my recommendation that part of the policy include a student requirement to take a computer literacy workshop and/or a LMS workshop. If a student

tested out of the computer literacy placement exam but did not place out of the LMS exam, the student would only need to take the LMS workshop. If a student placed out of the LMS exam but not out of the computer literacy exam, the student would then need to take the computer literacy workshop.

Once students have completed the workshops, they are given the same computer literacy and/or LMS placement exam for the sections that did not receive a passing score. If skills have improved to average levels, students will be permitted to begin classes. It is current policy that a student must see a personal advisor to sign up for classes. It is recommended that students who did not pass for the second time be allowed to retake the workshops, at which point the workshop presenter can sign a waiver for the student's advisor so that the student can attend classes. The current training sessions should be a requirement instead of optional to students who have tested below average on the LMS placement testing. This workshop should be 1 hour and 30 minutes in length with a 10-minute break in between. The policy recommendation is to include face-to-face workshops instead of the current online modality and include the following topics:

- Accessing college websites (courses, college infrastructure, resources, and e-mail)
- Accessing LMS tabs (courses, organizations, library and IM)
- Accessing announcements (desktop and smart phone application)
- Locating the course syllabus, calendar, and instructor information
- Understanding calendar alignment, course information folder, and assignment folder
- Positing on discussion boards (initial threads and replies)
- Submitting assignments (copying/pasting from word processing program, attaching files, double-checking grade book, using rubrics, and understanding scoring/feedback from your instructor)

- Course resources
- Grades
- Communication (e-mail tools using the LMS and the institutional e-mail system and using the LMS IM)

Next Steps

While the statistical findings are important, I was unable to collect data within the first week of this course. Information was not collected on those students who had dropped out of the course or were withdrawn from the course. Descriptive data did show some other interesting findings that may aid in our future policy changes. Students who were not able to participate could have been students who were computer literacy/LMS proficient or may have been students who needed more institutional services; because we are unable to know for sure, the research should be repeated in order to gain more accurate data on the whole population before the FYE class begins or on the first day of class. I do believe, however, that the data that was found on instructor expectations and student skills showed enough significant areas of differences that we can look at the bigger picture at the institution and provide better services to the students. Since all major categories had at least one subcategory that had a significant difference, workshops including all subcategories should be included until the research study has been repeated. It is better to provide all services to all students so that we catch those students who may not be persisting as opposed to providing the workshops that may correlate with the minimal significant findings. This is also true for the inadvertent focus being the instructor's self-proclaimed importance on each subcategory and the knowledge of the new student success course curriculum. I believe change in policy should be mandated and the workshops recommended should be available to all students, but especially those students who do not place into being

college ready based on their computer literacy placement exam. Ongoing evaluation and improvement will ensure that new study and fall-to-fall institutional data gathered is used to create change in the institution. While this white paper only summarizes the study's results, all data and analysis is available upon request.