


2016

# Adult Learning-Focused Professional Development for Dental Hygiene Clinical Instructors

Meghan Ann McGuinness  
*Walden University*

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# Walden University

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Meghan McGuinness

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2015

Abstract

Adult Learning-Focused Professional Development

for Dental Hygiene Clinical Instructors

by

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MA, Binghamton University, 2000

BS, Binghamton University, 1998

AAS, Broome Community College, 1997

Doctoral Study Submitted in Partial Fulfillment

of the Requirements for the Degree of

Doctor of Education

Walden University

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## Abstract

At a dental hygiene program within a community college in New York State, clinical instructors are hired based on their expertise as practitioners. Most clinical instructors lack a background in adult learning theory and practice, which is an issue because their students are adult learners whose average age is 26. The instructors' lack of knowledge in this area challenges their effectiveness. The purpose of this qualitative case study was to explore dental hygiene instructors' views about what kind of professional development offerings related to adult learning might help improve their teaching effectiveness. The conceptual framework for this project study was Lave and Wenger's situated learning theory. Semi-structured interviews were conducted with 8 part-time clinical instructors from the same academic department. Data were analyzed using thematic analysis. Five themes emerged from data analysis: participants' commitment to teaching, experience with students' attitudes, desire for communication, satisfaction with students' successes, and need for professional development. These findings led to the design of a professional development program that includes content on behaviorism, humanism, social cognitive theory, cognitivism, constructivism, and experiential learning theory. The goals of the program include providing clinical instructors with a background in adult learning theory and identifying ways to implement adult learning theory into clinical instruction. In potentially improving the teaching effectiveness of clinical instructors, this study may result in the better preparation of dental hygiene students and, ultimately, lead to improved patient care.

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## Dedication

This study is dedicated to my great aunt Ann. She was an effective educator, applauded administrator, successful author, and adored by the numerous students, colleagues, friends, and family she interacted with during her life. Her faith in God, dedication to her work, and enthusiasm for learning remain her legacy.

## Acknowledgments

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The process of completing doctoral work cannot be described. Although what I can describe, is the immense appreciation I have for friends and family who have listened, given advice, and prayed for me during this process. To my friends and family, I cannot thank you enough for your prayers, love, and support. To my colleagues who have spent time with me during this process, a simple thank you just doesn't suffice. I am beyond grateful for your support. I admire you all and thank you for your support. Thank you Jessica, Mary, Carolyn, Ryan and Kim, Ryan, Michelle, Denise, Debbie, Bonnie and Kevin, Francis and Helen, Sue and Larry, and Christy. To J, your unwavering support was the driving force for my work. I especially thank my Boston cousins for teaching me about style tags in Word.

To the participants of this study - your gift to the field of dental hygiene education often goes unappreciated. I admire you and acknowledge the gifts you share with the students every day.

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## Section 1: The Problem

### **Introduction**

Clinical education is the foundation for many health science programs in higher education (Chan, 2003; O'Connor, 2015). Clinical instructors are often experienced at what they do. Most clinical instructors do not possess background in adult learning theory and practice (Hunt, Curtis, & Sanderson, 2013). The clinical instructors do not typically have education in teaching methodology. The instructors teach adult learners who possess different needs from one another. Merriam, Caffarella, and Baumgartner (2007) explained that the context of adult life and social interaction shapes learning in adulthood. Dental hygiene is a health science program that requires nearly half of the required program hours include clinical instruction (American Dental Hygiene Association, 2014). The Commission on Dental Accreditation (CODA) requires dental hygiene instructors to have a background in educational methodology, as the instructors are teaching adults. How this requirement is met varies from institution to institution. Many dental hygienists become dental hygiene clinical instructors because of their clinical expertise and performance (Battrell et al., 2014). Dental hygiene clinical instructors may be proficient in the clinical setting but may lack the background to teach adults effectively.

A local community college in New York State has faced issues of recruiting dental hygiene instructors with a background in adult learning theory and practice. Many clinical instructors are hired based on their expertise and experience in the field of dental hygiene. Transitioning from a clinician to an educator can be difficult due to the added

responsibility of overseeing the student performing services on a patient (Reid, Hindere, Jarosinsk, Mister, & Seldomridge, 2013). Dental hygiene clinical instructors are primarily concerned about patient care. They oversee multiple students during a clinical session. Clinical instructors have more responsibilities than clinicians who are in practice.

I am a professor in this department and work with the instructors as a clinical coordinator. As a clinical coordinator, I oversee the scheduling of students during their clinical rotations, assign students to instructors, and answer questions related to clinical protocol during the clinical sessions. In discussions with instructors, personal communication with the leadership of the department, and analysis of student evaluations of instructors, I came to believe that clinical instructors in the department would benefit from more information about adult learning theory and the application of educational theories and models. For example, one student's response to the evaluation question about whether the instructor creates a professional atmosphere stated that she felt the instructor criticized her in front of the patient. In a different instructor evaluation, a student stated that the instructors are not consistent in their evaluation of students' performance. The student went on to say that, it would be better if the instructors told the students the same things concerning clinic policies and procedures. An example of this inconsistency related to the grading policy was the use of the instructor grading protocol. The students expressed that the instructors were unsure of when to deduct points in certain categories. As a clinical coordinator, I have witnessed my colleagues' tentativeness in evaluating students in the clinical setting.

The CODA has identified finding qualified clinical faculty as potential concern for the field. According to the American Dental Hygiene Association (ADHA; 2014), dental hygiene program directors identified concerns facing the future of dental hygiene education, 12% identified recruiting faculty as a concern (ADHA, 2014). Accreditation standards require that dental hygiene clinical instructors have a background in educational methodology and adult learning and teaching practices (CODA Dental Hygiene Standards, 2013). Standard three of the Accreditation Standards for Dental Hygiene Education Programs (2013) states that faculty members should have a background in educational methodology. The accrediting body has not set specific parameters for this requirement.

Faced with meeting program accreditation standards, my dental hygiene program in partnership with our institution's Teaching Resource Center jointly developed a PowerPoint presentation for new faculty to view prior to beginning their teaching assignment over 10 years ago. Faculty viewed the Dental Hygiene Learning Methodologies PowerPoint presentation using the distance-learning platform (ANGEL). Once new faculty members viewed the presentation, they submitted a form verifying that they completed the presentation. Our accrediting agency, the CODA, has found this acceptable for each of the past 8 years. Based on conversations I have had with the clinical instructors during these 8 years (e.g., Clinical Instructor A, personal communication, October 20, 2014), I have come to believe that clinical instructors need more preparation and information with regard to adult learning theory and practice.

In this section, I examine dental hygiene clinical instructors' lack of preparation for teaching adult students. Later in the section, I explain the local problem in greater detail. I then address the significance of this problem and review the literature on this topic. This information provides the rationale that supports the importance of the study.

### **Definition of the Problem**

Dental hygiene as a field of study has shown significant growth in recent years. In 2014, 287 associate degree- and 53 bachelor degree-granting programs in dental hygiene existed in the United States (Battrell et al., 2014). These numbers represent a tremendous increase. Consider that, in the 1950s, only 26 accredited programs operated graduating approximately 529 graduates annually (Solomon, 2012). In 2014, there were approximately 7,200 graduates of entry-level programs (ADHA, 2014). That statistic of 7,200 graduates represents nearly all those who enroll in dental hygiene programs. Almost five years ago, there were approximately 6,400 enrolled students in dental hygiene programs (ADHA, 2014). Therefore, over the last several years, there has been a steady increase in enrollment.

Despite increases in degree-granting programs and student applications, a shortage of dental hygiene faculty in the United States has been identified since 1999 (Hamamoto, Farrar, Caplan, Lanphier, Panza, & Ritter, 2013; Hand, 2006). Some programs have not filled dental hygiene faculty positions for lack of qualified applicants (Carr, Ennis, & Baus, 2010; Lamoreux, 2014). Experts are uncertain about what accounts for this dearth of qualified applicants (Lamoreux, 2014). Carr et al. (2010) and Lamoreux (2014) suggested that a discrepancy in pay (i.e., between private practice and

education), the costs of higher education, the geographic locations of dental hygiene programs, and minimal orientation and training may explain this phenomenon.

The problem of faculty shortage is a concern for all dental hygiene programs. Without qualified faculty applying for faculty vacancies, programs will hire dental hygiene clinical instructors who are not prepared as teachers (Battrell et al., 2014; Carr et al., 2010). Clinical instructors at my dental hygiene program have received only a minimal overview of adult learning theory and practice methodologies in order to meet an accreditation standard requiring all faculty to have a background in educational methodology (CODA Dental Hygiene Standards, 2013). Although this minimal overview has satisfied CODA, the effectiveness of instruction may be affected without better preparing the instructors. Dental hygiene instructors would potentially benefit from a comprehensive overview of adult learning theory and practice.

Simply having viewed a short presentation on teaching methodology may not be adequate to perform dental hygiene clinical instruction (Krautscheid, Kaakinen, & Warner, 2008). Based on existing research I investigated, what is lacking is an overview of best practices and how to apply best practices of adult learning (theory and practice) in the field of dental hygiene clinical education (Higgs & McAllister, 2007; McMillan, 2007; Paulis, 2011; Ruesseler & Obertacke, 2011). This evidence supported my study to learn more about dental hygiene clinical instructors' perceptions of adult learning. I interviewed participants and asked 12 semi-structured questions to explore their perceptions. After interviewing the eight clinical instructors and analyzing my data, I identified five themes. The clinical instructors noted throughout all the interviews that

professional development is needed and would help them to teach their students more effectively in the clinical setting. I found the instructors are committed to their work and enjoy helping their students. The instructors also reported a desire for communication and experiences with students' attitudes.

The setting of the local problem, a two-year community college located in Upstate New York, houses a dental hygiene clinic where students complete dental hygiene services for community members. Six full-time faculty members supervise students. Five of the six faculty members are tenured while one holds a non-tenure position. The remaining faculty members are part-time clinical instructors. One part-time instructor has earned a doctoral degree in education. Another part-time clinical instructor has a master's degree in adult education. Department leadership has hired the part-time clinical instructors based on their expertise and experience in the field of clinical dental hygiene. Furthermore, these clinical instructors have limited teaching experience. One part-time instructor began teaching less than a year ago. Two part-time clinical instructors have been teaching for approximately two years. The other instructors have between 5 and 10 years of part-time teaching experience.

As a professor in the department, I am aware of discussions that other full-time professors have had concerning part-time clinical instructors' lack of teaching experience. In many of these conversations, my colleagues specifically addressed clinical instructors' lack of exposure to adult learning theory and practice. Based on my observations, I believe that clinical coordinators and the department chairperson are in



support of part-time clinical instructors learning more about adult learning theory and how to apply it in the clinical setting.

Many clinical instructors teach in a manner consistent with how they were taught (Paulis, 2011). The longer that clinical instructors engage in teaching in such a manner, they may be more resistant to adopting new and best practices of adult learning theory and practice (McMillan, 2007). I am concerned about this possibility because, in the last decade, educators have increasingly been tasked with assessing not only clinical performance but also higher order thinking skills such as critical thinking (McComas, Wright, Mann, Cooper, & Jacks, 2013). For dental hygiene students to be successful, both as students and as future clinicians, they need guidance in the clinical setting from instructors who consistently encourage critical thinking skills and apply adult learning theories based on evidence (Paulis, 2011).

### **Rationale**

#### **Evidence of the Problem at the Local Level**

The problem involves clinical instructors not being prepared as educators. I gathered anecdotal information (from the clinical instructors and informal, peer observations made during the clinical sessions), my observations and conversations with instructors, personal communication with department leadership, and review of clinical instructor evaluations (completed by students; Instructor A, Instructor B, & Instructor C, personal communication, April 28, 2014; Professor A, personal communication, June 24, 2014). I received permission from instructors A, B, and C prior to my review of the student evaluations.

Some of the part-time clinical instructors have told me about their frustrations with daily clinical operations (Instructor A, Instructor B, & Instructor C, personal communication, April 28, 2014). Instructors told me that they do not feel comfortable assessing students' work because they do not feel as prepared as they would like to be (Instructor A, personal communication, October 20, 2014). The majority of the instructors' frustrations seem to stem from their lack of understanding of clinical protocol and uneasiness with handling certain grading and evaluation issues; students' inconsistent adherence to policies also frustrates instructors. Most of the instructors experience problematic student situations while in the dental operator when students are working with patients (Instructor A, Instructor B, & Instructor C, personal communication, April 28, 2014, October 20, 2014). However, they are not able to provide formal feedback to students until after patients are dismissed. The instructors then bring the issues to the attention of the clinical coordinator and, sometimes, the department chairperson.

The instructors may hesitate in evaluating the students without a deeper awareness of the learning needs of the students. This lack of awareness may present as poor communication or other inconsistencies. Without this deeper understanding of adult learning theory and practice, instructors may not be effectively guiding the dental hygiene students (Ruessler & Obertacke, 2011). Without a sound educational practice, the instructors may not effectively facilitate students' learning and provision of patient care.

In this dental hygiene program, I believe the executive leadership is unaware of the problem. At the departmental level, the leadership is aware of the problem, and the

department has held discussions on what needs to be done to solve the problem. Full-time faculty have had these discussions in order to prepare for the CODA site visit in 2017 (Professor A, Professor B, & Professor C, personal communication, October 17, 2014). Clinical instructors who have educational training may be better equipped to handle challenging situations that occur in the dental operatory (Lamoreux, 2014). With additional educational training, the instructors may be able to better identify the learning needs of the students. Students who excel clinically may also be overlooked as they do well and do not appear to need assistance. With advanced continuing education or training, clinical instructors may be able to intervene and identify those students needing more assistance (Graham, Bitzer, & Anderson, 2013). The institution has not surveyed clinical instructors to determine what assistance may help them to more fully develop their teaching.

### **Evidence of the Problem from the Professional Literature**

In 2013, dental hygiene program directors identified several concerns in the ADHA Dental Hygiene Program Director Survey (ADHA, 2014). Concerns include recruitment of new faculty or finding qualified professionals who express an interest in teaching (32%), competition for qualified faculty, and budgetary concerns. Many experts have noted that the field of dental hygiene education has faced difficulty in recruiting and retaining competent qualified clinical instructors (Carr, Ennis, & Baus, 2010; Hand, 2006; Hamamoto et al., 2013; Karimbux, 2013; Krautscheid et al., 2008; Paulis, 2011). One reason is that candidates consider wages offered to newly hired instructors to be undesirable (Karimbux, 2013; Lamoreux, 2014). A shortage of dental hygiene educators

exists and fewer dental hygiene clinicians are entering the field of education (Coplen, Klausner, Taichman, 2011; Lamoreux, 2014). Even the most competent and experienced instructors may lack the educational background necessary to instruct dental hygiene students effectively (Krautscheid et al., 2008). In addition, a record number of faculty have retired recently (Carr et al., 2010; Coplen et al., 2011; Wilder, 2010). These factors have led dental hygiene faculty to rely more heavily on adjunct clinical instructors and to hire those with less than desirable qualifications (Lamoreux, 2014). Recruitment procedures for dental hygiene clinical instructors must include emphasis on selecting professionals with the necessary educational background.

### **Definitions**

Below, I define key terms that are pertinent to my examination of dental hygiene clinical instructors and their professional development.

*Dental hygiene clinical instructor:* an adjunct, part-time clinical instructor who is involved in teaching dental hygiene students in a clinical setting. He or she instructs students on instrumentation techniques, assessment of patients, implementation of dental hygiene services, and evaluation of dental hygiene services (Paulis, 2011).

*Methods of dental hygiene clinical instruction:* the assistance, facilitation, and assessment of student learning undertaken by clinical instructors in teaching dental hygiene students (Paulis, 2011).

*Legitimate peripheral participation:* how individuals who are new in a field become experts within that field (Lave & Wenger, 1991).

### **Significance**

This problem, dental hygiene clinical instructors lacking a background in adult learning theory and practice, is important to both the local population and the larger population for several different reasons. Clinical instruction is the foundation for dental hygiene education. This structure places the clinical instructor in a crucial position to guide the students from novices to competent clinicians. Not only is this important for the dental hygiene students, but also it is important for the patients being treated by dental hygiene students during the instructional process. It is also important because the foundation of clinical learning for the students will enable them to become competent at different times. Students with poor clinical guidance may not improve at a rate comparable to students with excellent clinical guidance.

### **Guiding Questions**

The local problem identified that clinical instructors did not possess enough background in adult learning theory. The department did not know how to meet this need. Currently, the department does not offer any overviews or reviews of adult learning theories for the clinical instructors. The following inquiry sought to discover what would assist the instructors best.

The questions that guided this study were:

What perceptions about adult learning do dental hygiene clinical instructors have?

How do dental hygiene clinical instructors determine what a student's needs are in the educational setting?

What do dental hygiene clinical instructors want to learn from a professional development program?

### **Conceptual Framework**

The conceptual framework utilized for this study is Lave and Wenger's situated learning theory. In the late 1980s, Lave and Wenger described this model for learning (Wenger, 2010). Lave and Wenger (1991) described learning as a situated activity where a defining characteristic is legitimate peripheral participation. This concept can be directly related to the practice of dental hygiene clinical instruction. The dental hygiene clinical instructor transitions from clinician/practitioner to dental hygiene instructor. During this transitional process, the new clinical instructor takes on evolving characteristics that help to shape this aspect of their identity. As the new clinical instructor develops new skills and expands their knowledge, they become a member of a new community of practice (dental hygiene clinical instructors/educators) (Lave & Wenger, 1991).

The situated model for learning identifies the importance of the concept of a community of practice (Dochy, Gijbels, Segers, & Van Den Bossche, 2012; Wenger, 2010). Caldwell (2011) described this community of practice as the organization joined once the required tasks have been mastered. In this case, the community of practice would be the profession of dental hygiene.

During the learning process, many factors influence how the learner acclimates into the community of practice. The environment, including those who are instructing, greatly affects the development of the learner (Taylor, Marienau & Fiddler, 2000). To

educate effectively, the instructor should embrace the students' needs and understand their need to be self-directed in the learning process (Knowles, Holton, & Swanson, 2015). In dental hygiene clinical education, the intimate relationship between the patient, student clinician, and clinical instructor poses an unusual opportunity for both the instructor and the student to learn while working in their roles. The shared practice of working on a patient facilitates learning (Ainley & Rainbird, 2014). This shared practice provides the students with a foundation to build their clinical expertise.

Dental hygiene clinical instructors often begin their teaching career based on their expertise as clinicians. The field of dental hygiene education is a community of practice. More seasoned educators model behaviors for newer faculty. Dochy et al. (2012) described how adults learn according to the situated learning model. They state that within this community of practice, adults observe, work together and learn from those who are more experienced (Dochy et al., 2012). This legitimate peripheral participation (LPP) of the instructors aids them in becoming more effective educators. Dental hygiene students also experience this when learning in the clinical setting. Not only are the adult dental hygiene students learning how to perform detailed tasks, they are growing as individuals.

This subsection discusses the theoretical base/conceptual framework related to the problem in a manner that justifies the investigation of this problem as a worthwhile scholarly endeavor. It includes a critical review that documents the broader problem associated with the local problem addressed in the study and is drawn primarily from recent articles published in acceptable peer-reviewed journals or sound academic journals

and texts, or there is a justification for using other sources. Literature from diverse perspectives is included as appropriate.

### **Review of the Literature**

I used several databases to find existing literature. I searched research databases such as Education and Health Sciences Databases, ERIC, CINAHL, MEDLINE, Google Scholar, and PubMed. I used search words such as *clinical instruction, clinical instruction and effective teaching, effective teaching, clinical and teaching and dental hygiene clinical instruction, training, health sciences instruction, adult learning theory and practice, experiential learning, professional development, situated learning theory, and experts as teachers*. I organized the literature review using the following subheadings: adult learning theory, dental hygiene education, and clinical instruction in other health science disciplines. After reading articles, books, and other sources, I began to see themes and commonalities emerge. Once I did not find anything new or different among the materials I collected, I knew I had reached saturation of the literature.

#### **Adult Learning Theory**

This section of the literature review focuses on adult learning theory. Caldwell (2011) believes that educators have diverted the focus from experience leading to mastery to assessing learning and measuring outcomes (p. 273). Caldwell brought to light that not all clinical experiences are identical due to the nature of treating individual patients in healthcare education. Due to this situation, it is difficult to measure all learning outcomes the same because students working on patients will inevitably face a myriad of patient situations. Caldwell called for a return to situated learning, more specifically



apprenticeship learning. Apprenticeship learning is reflective of experiential learning where the learner completes work in order to learn and gain experience.

Situated learning is similar to experiential learning theory when applied to medical and healthcare training programs (Yardley, Teunissen, & Dornan, 2012). Most healthcare programs have a clinical education component. This clinical component involves students completing tasks that a professional would do under the supervision of a trained professional. Moreover, teaching clinical dental hygiene involves having students complete processes of dental hygiene care, which includes patient assessment all preventive dental services. The students create new meaning for the tasks they learn and complete by performing the duties of clinicians while learning. This learning is experiential, or based on performing tasks, because the students work side-by-side with the clinical instructor to gain knowledge of the technique, skill, or procedure (Yardley et al., 2012). With experience, the students move toward becoming competent at their work.

Early on in the educational setting, the novice learner relies heavily on the expert instructor. As time goes on and the learner acquires new skills and experience, the learner becomes more independent and less reliant on the instructor (Salyers, Carter, Cairns, & Durrer, 2014). This process of relying less and less on the instructor and becoming more independent is called scaffolding (Merriam & Bierema, 2014).

Scaffolding is closely related to Vygotsky's zone of proximal development (ZPD; Vacca, 2008). ZPD describes the collaborative learning process between educator and student (Gredler, 2012). Vacca (2008) described ZPD as a process akin to guided practice.

Initially, the student relies on the educator to lead in the completion of a task (Ash & Levitt, 2003). As the learning process continues, and the educator and student continue to work together, the educator slowly begins to guide the process and involve the student more in completing the task (Ash & Levitt, 2003; Vacca, 2008). Eventually, the student will perform the action independently of the educator (Ash & Levitt, 2003). The student who at one time relied heavily on the instructors' assistance has learned effectively and now moves toward competent, independent practice.

In order for successful learning to take place in a health care related learning environment, learners need to feel connected to what they are learning and supported throughout the process of skill development (Moore, 2010). A challenge in dental hygiene clinical instruction can be connecting dental hygiene theory, taught in the classroom, with dental hygiene practice and clinical experience (Moore, 2013). Although clinical instructors facilitate clinical instruction and ensure learning and patient safety, they are often isolated from the full-time faculty who teach the didactic courses, in the classroom (Clapper, 2010; Flood & Robinia, 2014). This dynamic may present a challenge when helping students connect theory to application.

Students in health science programs with clinical components must effectively link theory to application. If they are unable to connect theory to practice, they may not fully learn the material. Clinical instructors assist the students in making this connection between theory and practice. If the clinical instructor is not able to guide the student in making these connections, learning may become compromised.

Dental hygiene educators often lack a background in educational methodologies (Coplen et al., 2011). This deficiency may include a lack of understanding on adult learning. O'Toole and Essex (2012) defined the adult learner as an individual who carries the roles and responsibilities of an adult. Dental hygiene students are adult learners in a formal educational setting.

Wang (2012) identified four main orientations of adult learning theories: behaviorist, cognitivist, social, and experiential. Behaviorism aligns with clinical education, as we are changing and perfecting the techniques, or behaviors of the students. Behaviorist theories posit the idea that stimulus brings about a desired response (Seligman, Railton, Baumeister, & Sripada, 2013). Students present different abilities and strengths in the clinical setting. Cognitivist theories emphasize students' learning and understanding (Isbell, 2011). Cognitivist theories have one of two views. The first view of cognitivist theories identifies the learner as passive in the learning process. The learner is passive in a sense due to the influence of prior knowledge and experience. The second view reveals the learner as an active participant and the educator as a facilitator during the learning process (Isbell, 2011). Social learning theory is based on learning by observation and interaction (Bandura, 1977). A large piece of clinical instruction involves demonstration and modeling behaviors and practices for the students. Social learning theory maintains that controlled conditions drive behavior (Bandura, 1977). Experiential learning places the learners' experiences at the center of all learning (Peterson, DeCato, & Kolb, 2014). Experiential learning describes any learning where the students complete the task they are learning in order to gain experience and learn how

to do the task better in the future. All four orientations may be observed during dental hygiene clinical instruction.

When adult learners are successful in acquiring new skills and knowledge, an observable change is observed (Knowles et al., 2015). In dental hygiene clinical instruction, the students begin as novices and work toward achieving competency (Mould, Bray, & Gadbury-Amyot, 2011). The students must reach certain competencies (e.g., delivering fluoride treatments, exposing and processing radiographs, scaling and root planing teeth). They must demonstrate their proficiency in each area. In a similar fashion, dental hygiene instructors experience a transformation in their behavior as they morph into educators from clinicians (Krautscheid et al., 2008). This transformation is different for each individual, based on his or her experience and the setting.

The social setting or environment influences the behavioral transformation where the instructor and student work. Theorizing in the area of socio-cultural learning is multifaceted, with two main perspectives (Yardley et al., 2012). The first centers on activity theory (Yardley et al., 2012). Activity theory focuses on a student and a teacher working together for the same goal. This collaborative practice exists in dental hygiene clinical instruction. The second view is based on the communities of practice theory (Yardley et al., 2012). Students have their own community of practice where they learn along with other students, educators, and patients. Each interaction they have presents a unique learning opportunity. The premise of the social cognitive theory is that students are learning consistently in many different environments (Brandon & All, 2010). Within the social setting where learning takes place, learners may model the behavior of experts.

Both perspectives emphasize student and teacher collaboration (Gredler, 2012).

Collaboration between the teacher and student are at the heart of Vygotsky's ZPD when students complete actions while teachers provide assistance (Gredler, 2012). Similarly, novice instructors learn through observation. Novice instructors may model or mimic expert instructors' actions and provision of feedback to students. Both the students and the instructors may be experiencing behavioral transformation in the clinical setting.

Experiential learning, or learning from experience, provides a foundation for other theories such as reflective practice and situated cognition (Merriam & Bierema, 2014). Reflective practice is an important aspect of adult education (Jordi, 2011). Reflective practice involves calling on previous experiences to make decisions and judgments and critically think through a situation or activity (Jordi, 2011). Many expert clinical instructors practice reflective practice regularly. Doing so allows them to adjust their clinical teaching on the spot based on changing circumstances and evolving learning needs of the students. Reflective practice takes time to master and is similar to situated cognition where the novice tries to act and interpret as the expert does (Yardley et al., 2012). Situated cognition posits that the environment where learning takes place is as important as the learning (Burgess, Oates, Goulston, Mellis, 2014; Merriam & Bierema, 2014). In the clinical learning environment, the instructor becomes a role model, influencing the relationship between instructor and student and the learning process, overall (Burgess et al., 2014).

Part of the educational process involves expert coaching and motivating the novice (Salyers et al., 2014). Narayanasamy and Penney (2014) examined coaching as a

means of fostering motivation and positive behavioral change during professional development. They noted that when done successfully, coaching can change an entire workplace. This positive change may occur due to the team building aspect of coaching and time spent on building camaraderie. Coaching may be a beneficial skill for clinical instructors, as they are responsible for encouraging students and act as role models for students. The field of dental hygiene education does not offer professional development courses in coaching or adult learning theory. The majority of professional development offerings for dental hygiene clinical instructors are focused on clinical procedures and new skills or training.

### **Dental Hygiene Education**

Many academic institutions and some dental companies offer professional development offerings for dental hygienists. The topics are typically related to the improvement of clinical practice through evidence-based decision-making. Unfortunately, the dental hygiene clinical instructors do not have a resource for professional education solely for clinical instructors. Whereas in nursing, a specialty exists just for registered nurses who have graduate degrees and wish to focus their work on professional development. These individuals are nurse professional development (NPD) specialists (Curran, 2014). Curran (2014) found that in clinical nursing education, knowledge and use of adult learning and theory led to better learner outcomes.

Fones (2013) found evidence of a need for expertise in the field of dentistry in documentation from the early to mid-1800s. Specifically, the field of dentistry needed an expert who was responsible for preventive care, related to keeping teeth clean. While at

this time, this concept was not fully implemented nor was the title dental hygienist used. In 1914, a cohort of 10 women began working in the area of dental hygiene; their efforts encouraged the rise of dental hygiene as a professional field. During the past 100 years, dental hygiene has developed into a recognized health care profession (Grater-Nakamura, Aquilna-Arnold, Keates, & Lane, 2010). Dental hygienists find themselves increasingly in demand. In fact, a steady increase has been documented since the late 1960s and early 1970s (Coplen et al., 2011). According to the Bureau of Labor Statistics, the projected growth for jobs in dental hygiene between 2012-2022 is 33% (Bureau of Labor Statistics, 2012). This figure far exceeds the projected, average job growth of 11% for all professions during this period.

With sustained growth, the profession is facing challenges in some areas. Many researchers note that finding and training competent, entry-level health care providers is a key challenge (Carr et al., 2010; Coplen et al., 2011; Paulis, 2011). Accreditation standards provide guidance in confronting these challenges. For example, the CODA reviews dental hygiene curriculum and requires at least 684 hours of clinical instruction (ADHA, 2014). Accreditation standards provide a framework for programs to implement in order to prepare students as competent upon graduation. Educators must uphold these standards to ensure graduates are competent and entry-level ready for employment. This guarantee of competent graduates requires prepared, effective instruction in the clinical setting.

For these reasons, I am examining what can be done to ensure that entry-level dental hygiene programs facilitate students' transition into competent entry-level

clinicians. Coplen et al. (2011) found that there is and will continue to be a need for dental hygiene educators to have a strong clinical background. Ninety-nine percent of faculty respondents in their survey said that experience in clinical dental hygiene was important for future faculty (Coplen et al., 2011). However, as Paulis (2011) explained, not all skilled clinicians are able to become effective dental hygiene instructors. The majority of community college courses are taught by adjuncts, and many of these instructors do not have the time to fully immerse themselves into the curriculum (Mangan, 2015). Because many clinical instructors hold adjunct appointments, they may not be entirely familiar with the curriculum or how to implement it in a clinical environment (Mangan, 2015). In dental hygiene, an effective clinical instructor is one who can explain his or her knowledge for the benefit of the learner and assist the learner in bringing theory into practice (Kinchin, Baysan, & Cabot, 2008). The effective clinical instructor has a strong clinical background and is able to apply adult learning theory into their practice.

Even when dental professionals do have a desire to enter clinical dental hygiene education, they usually have little experience with evidence-based teaching methodologies (Krautscheid et al., 2008). Many of these professionals lack formal coursework in education and have not participated in formal training programs. This deficiency is potentially problematic as it may influence the effectiveness of instruction. Many sources cite the importance of clinical instruction across various health science disciplines (Carr et al., 2010; Giordano, 2008; Greenfield et al., 2012; McAllister, Higgs, & Smith, 2008). McMillan (2007) found a need for those entering health care provider



education to have a deeper understanding of the educator-learner relationship. A better understanding of the relationship will empower educators to more fully develop as instructors and be better prepared to teach effectively (McMillan, 2007). This deeper understanding allows instructors to mold students into professionals and not merely relay knowledge. The dental professional who is interested in dental hygiene education must understand the educational process and adult learning.

### **Clinical Instruction in Other Health Science Disciplines**

Across health science disciplines, a need exists for clinical educators who possess both clinical skill and expertise and knowledge of educational principles. For example, Kelly (2007) identified the importance of clinical instructors in the clinical education of physical therapy students. According to Buccieri, Pivko, and Olzenak (2011), no standards exist to require clinical instructors to have knowledge of educational principles in physical therapy education. Physical therapy instructors are usually individuals who have been licensed and have at least a year of experience (Buccieri et al., 2011). In the field of physical therapy education, the clinical experience is foundational yet the instructors may have minimal clinical experience.

Other fields that require clinical training are athletic training and speech pathology. In athletic training, Levy et al. (2009) identified teaching behavior as an important quality among clinical supervisors. Whereas in the field of speech pathology, the clinical instructor must be both a skilled practitioner and an effective instructor (Higgs & McAllister, 2007). Higgs and McAllister (2007) also pointed out that many clinicians are natural educators. The educators who demonstrate effective teaching

behaviors are well regarded. Effective teaching behaviors combined with clinical skill and experience are highly sought after in many educational programs.

Other programs seeking skilled professionals who can teach effectively include nursing and medicine as well. Ruesseler and Obertacke (2011) found that, in the field of trauma surgery, many clinician educators receive little feedback about their teaching effectiveness. Consequently, some observers critique mentors in medical education for being cynical, sexist, unfair, self-serving, and poor leaders (Jochemsen-van der Leeuw, van Dijk, van Etten-Jamaludin, & Wieringa-de Waard, 2013). Mentors who exhibit these attributes do not facilitate effective learner-teacher relationships (Grater-Nakamura et al., 2010). The importance of effective instruction is vividly apparent in a field where there is little room for error.

In contrast, other researchers found parallels between the clinical instruction of nursing and mothering (McKenna & Wellard, 2009). Students look to the clinical instructor to guide them and assist them in their learning. This parallels with how a mother guides her child through life. Just as a child trusts his or her mother to assist them, trust remains a key component of the relationship between the clinical instructor and students (McKenna & Wellard, 2009). The students trust that the clinician is skilled and competent in the field and as an educator. Most health care professionals are seen as educators within their profession. Even though they may be able to educate patients effectively, they are not always able to be successful in higher education (McAllister, Higgs, & Smith, 2008). The instructor has a responsibility to learn and facilitate effective instruction.

## **Clinical Instruction**

Being an effective instructor involves knowing the expectations of the learner. It also involves recognizing the strengths and weaknesses each person brings to the clinical setting (Henning, Weidner, & Jones, 2006). By recognizing strengths and weaknesses and understanding learners' expectations, it is easier for the clinical instructor to provide support and encouragement when needed (McKenna & Wellard, 2009). Guidance can be tailored to the needs of the learner, making instruction more effective.

I believe that having a background in educational methodologies would be useful for clinical instructors. Nearly 90% of the dental hygiene clinical instructors that Paulis (2011) interviewed agreed that having a pre-employment overview of educational methodologies would have made them more effective as educators. McMillan (2007) also recognized a need to educate clinical instructors about the skills necessary to be successful in clinical instruction in higher education. The CODA dictates that dental hygiene clinical instructors possess a minimum of a bachelor's degree and have coursework in educational methodology (Paulis, 2011). Based on my existing knowledge and understanding not all programs mandate this and require a background in educational methodologies. Paulis (2011) found that most clinical instructors base their teaching on how they were taught, and not on currently accepted educational methodologies. A potential solution to change this practice is to offer some form of educational methodology course to meet the needs of the dental hygiene clinical instructors.

An adjunct, part-time clinical educator may recognize the importance of utilizing best practices in education, but they may base their teaching on traditional methods

(Webb, Wong, & Hubball, 2013). In dental hygiene education, part-time clinical instructors are usually experts in the field, but this does not guarantee they will be expert teachers (Jarvis, Pratt, & Collins, 2010). While working in a community of practice (dental hygiene clinical instruction), an identified need is the establishment of professional identity (Lave & Wenger, 1991). This identity may be achieved through gradual, effective professional development that is grounded in educational theory and practice (Gearhart-Bouwma, 2012; Webb, et al., 2013).

Another area of concern is the aging of the current dental hygiene faculty and the difficulty faced when recruiting new faculty. Many dental hygiene educators have entered into retirement while their positions remain vacant. With the growing number of dental hygiene programs, a demand for faculty ensues (Battrell et al., 2014). The trifecta of growing programs, aging/retiring faculty, and lack of qualified future faculty members raises concern for the education and future generations of professionals.

Paulis (2011) wondered if professionals possessing minimum qualifications and questionable interest in the field of study will be hired to lead higher education programs in the future. Some schools have resorted to sharing faculty members between schools, hiring non-tenure track full-time or part-time faculty members, or leaving the positions vacant (Hamamoto et al., 2013). Some educators remain concerned about these potential solutions. Carr et al. (2010) suggested that little information exists on higher education and addressing the dental hygiene faculty shortages. Some fear the integrity and prestige of the profession will be diminished as these factors have historically been linked to the qualifications of the dental hygiene faculty (Coplen et al., 2011). With the increase in

dental hygiene faculty vacancies, there comes the need for qualified faculty. There has been significant difficulty in recruiting qualified individuals who possess the academic preparation and clinical skills to fill these needs (Coplen et al., 2011; Karimbux, 2013). Coplen et al. (2011) found that current faculty (who were an average age of 50 years of age) believed educational skills were of utmost importance when recruiting future faculty members.

Not only do programs suffer from faculty shortage issues, but with fewer clinical faculty, students and patients would likely suffer as well (Carr et al., 2010). With the potential of the quality of clinical education to influence patient outcomes, as well as student outcomes, there is a need to investigate what instructors need to work more effectively. With fewer clinical faculty, students treating patients will not receive as much one-on-one time with clinical instructors. That leads to more students working independently for longer periods of time.

Given the concern that there are fewer clinical faculty than in the past, educators from across disciplines can agree that substantive support must be provided to clinical educators (McAllister et al., 2008). When searching for a model for clinical instruction, little to no information could be found. Clinical instructors may teach intuitively or based on how they were taught (Coplen et al., 2011; Krautscheid et al., 2008). Again, this would especially hold true if the instructor has little background in education.

In 2011, Paulis recommended the implementation of a program for first time clinical dental hygiene instructors. This program may provide newly appointed clinical educators with a solid foundation to build their educational repertoire. Despite the

recognition that a program like this is needed and would better the dental hygiene clinical education process for all involved, little guidance and information can be identified.

Some authors have discussed the importance of a mentorship program for new faculty (Dunn, 2012; Grater-Nakamura et al., 2010; Paulis, 2011; Schonwetter, Lavigne, Mazurat, & Nazarko, 2006; Stalmeijer, Dolmans, Wolfhagen, Muijtjens, & Scherpbier, 2010). Clinical instructors have noted that there is support initially upon hire, but this is unsustainable and a necessity (Smith, Hecker-Fernandes, Zorn, & Duffy, 2012). The University of California, San Francisco is home to one of the nation's largest mentoring programs within a health science school (Feldman, Areal, Marshall, Loret, & O'Sullivan, 2010). Among surveyed faculty, the university found clinical instructors were less likely to have a mentor and effective mentor than traditional research faculty (Feldman et al., 2010). Another study on mentoring and clinical instructor identified clinical faculty as being less satisfied with mentorship (Chung et al., 2010). Professionals in other disciplines also remark that there are not enough resources for effective mentoring to take place. Carr et al. (2010) noted that there are not enough dental hygiene faculty to implement such programs and have them be effective.

The profession is at a standstill where most clinical instructors rely very little on what they know about education (Ruessler & Obertacke, 2011). If clinical instructors are using different methods to teach, it may be confusing to students and could ultimately affect the care provided to the patient (Garland & Newell, 2009). The profession of dental hygiene education includes clinicians who are teaching primarily based on their experiences and clinical skill with little to no emphasis on educationally sound practice.

Although many researchers have identified effective behaviors of clinical instructors, few have investigated what they know about educational methodologies.

In nursing, Chan (2003) found that the students' expectations of clinical instruction were higher than the actual clinical learning that took place. Another study found that the educational expectations of the students change from generation to generation (Henry & Gibson-Howell, 2011). The generation of college students known as the millennials have different learning needs than those who went to school before them. In addition to this, those instructing the millennials will have different expectations (Henry & Gibson-Howell, 2011).

O'Connor (2015) identified the importance of maintaining a positive tone in clinical education in order to empower students. Students work well in a more relaxed state built on a foundation of mutual respect. In order to create this atmosphere of collegiality, the clinical instructor must feel like he or she is an important part of the instructional team. O'Connor (2015) identified trust, respect, and communication as key aspects of this dynamic, synergistic relationship.

### **Implications**

The qualifications and requirements for professionals who wish to enter education are vague and may be misleading. There may be times when those who are hired are not the best fit for the position, but rather the best in the pool of selection. For those who are considering entering dental hygiene education, the issue of leaving the umbrella of "minimal qualifications" as acceptable and ambiguous may include the following: frustrated clinical instructors, frustrated students, breached educational process, and harm

to patient (Carr et al., 2010; Coplen et al., 2011). Further, not having a model of clinical instruction in place and relying on the instructor to navigate unfamiliar territory alone can have detrimental effects.

The findings of this project study could significantly improve instruction and patient care at a local community college. Based on the data collected and analyzed, appropriate next steps included the creation of a professional development program for dental hygiene clinical instructors. A professional development program (Appendix A) for dental hygiene clinical instructors will allow part-time faculty to build a cohesive community of practice built on adult learning theory and practice (Webb et al., 2013).

### **Summary**

Dental hygiene is a profession that is continuing to evolve. The educational component of the profession relies heavily on clinical instruction. Recent issues, such as dental hygiene faculty shortage, vacancies in dental hygiene faculty positions, and inadequately prepared clinical instructors, have been reported in the field of dental hygiene. Several have been explained in this section. There is a dental hygiene faculty shortage, dental hygiene faculty are retiring at growing rates, and many new dental hygiene graduates are not choosing to continue their education. Even when new graduates do continue their education, they are seldom considering a career in dental hygiene education. This brings dental hygiene education to a crossroads where there is an increasing demand for clinicians and a decreasing number of faculty to educate those clinicians (Battrell, et al., 2014; Carr et al., 2010; Coplen, 2011; Hamamoto et al., 2013; Wilder, 2010).



Many schools and many disciplines hire clinical faculty based on clinical expertise and not educational background (Buccieri et al., 2011; Gardner, 2014; Higgs & McAllister, 2006; Krautscheid et al., 2008; McMillan, 2007; Reid, Hinderer, Jarosinski, Mister, & Seldomridge, 2013). Since the relationship between the clinical instructor and students is an intimate, dynamic relationship, the implications of not understanding its interconnectivity could be detrimental to all those involved. If the clinical instructor does not guide the students along to be effective at performing a certain set of skills, the students may not develop those skills properly (Giordano, 2008). Students who have negative clinical education experiences may also have difficulty developing self-awareness and critical thinking skills in the clinical setting (Elisha & Rutledge, 2011).

There are three remaining sections of this project study. Section Two includes the research methodology to the project study. In Section Three, a description of the project (Appendix A) and review of existing literature are provided. Section Four includes reflections.

## Section 2: The Methodology

### **Introduction**

In this section I will describe the research design, approach, and the results of my data analysis. My purpose in carrying out this study was to determine which types of professional development offerings related to adult learning might improve dental hygiene clinical instructors's effectiveness in teaching. This investigation peered into the real-world of clinical dental hygiene education. As I discuss in this section, I believe that this type of inquiry best aligned with qualitative research methods. One feature of qualitative research is that it seeks to bring meaning to real-world contexts (Yin, 2011). By finding understanding in how things work or what people think, a deeper meaning can be realized. By interviewing dental hygiene clinical instructors, I sought to identify ways to assist clinical instructors in their teaching practice. Many clinical instructors have minimal exposure to adult learning theories (Gardner, 2014; McAllister et al., 2008; Paulis, 2011; Ruesseler & Obertacke, 2011), even though they teach adult learners, whose average age is 26. According to Merriam & Bierema (2014), adult learners have unique needs and circumstances that influence learning.

The participants for this qualitative case study research project were dental hygiene clinical instructors at a local community college in Upstate New York. The participants included eight part-time instructors, all of whom have educational degrees in dental hygiene. I used purposeful sampling because the instructors were readily available to me, as I am a professor in the department. The instructors possess a certain title (part-time clinical instructor) which makes them eligible to participate in this study. According

to Yin (2011), purposeful sampling is ideal when looking for participants who will provide data that are relevant and plentiful.

### **Research Design and Approach**

Quantitative and qualitative research methodologies exist on a continuum; the mixed methods approach is situated in the middle of this continuum (Creswell, 2009; Glesne, 2011). Mixed methods approaches require data to be collected using a qualitative and quantitative means (Creswell, 2009). A mixed methods design accommodates a larger number of participants and more statistical data (Yin, 2011). Due to the small number of participants, I did not choose a mixed methods design for this study.

In the field of education, researchers often use qualitative methods to grasp their participants' understanding of social phenomena (Merriam, 2009). Qualitative research enables the researcher to share the participants' views and perspectives (Yin, 2011). Sharing perspectives of educators provides a deeper understanding of educational practices and beliefs. The participants of this study shared their perspectives, which allowed me to develop a professional development plan (Appendix A) to meet their instructional needs.

Qualitative research methodologies include ethnography, grounded theory, case studies, phenomenology, and narrative inquiry. I chose not to use these specific methods for this study. Ethnography refers to a lengthy study completed in the field (Yin, 2011) and must include an intense study of the culture (Merriam, 2009). Phenomenology involves an intense study of the lived experiences of individuals (Merriam, 2009).

Although I studied the experiences of the clinical instructors, phenomenology would not have been best suited for this study. My study focused on learning about the clinical instructors' perspectives. More specifically, I focused on the perspectives the instructors have regarding adult learning. Grounded theory is set apart from other qualitative methods by being focused on building theory (Merriam, 2009). Because my purpose was not focused on theoretical development, I opted to use another qualitative method.

When used in qualitative research, case study research allows for in-depth study of a setting or particular case (Glesne, 2011; Yin, 2012). Glesne (2011) identified case study as an interpretivist tradition of qualitative inquiry that researchers use to gather information on, and better understand, others' perceptions. Case study research allows for the creation of descriptive narratives of a group of individuals or phenomenon within an authentic context (Hancock & Algozzine, 2006). I investigated the clinical instructors' perspectives based on their work within the same department.

### **Approach**

Although I could have used a quantitative research method for this study, I chose to conduct qualitative research. By using a case study design, I was able to explore and richly describe clinical instructors' perceptions (see Yin, 2011). I seek to examine instructors' teaching in a clinical setting; as Yin (2011) observes, a case study approach is appropriate for investigating a case in a real world context such as this. By using this method, I seek to provide a deeper level of understanding about my study topic; as Merriam (2009) notes, a case study approach is very helpful for interpreting complex phenomena.

I also collected and analyzed archival data. Archival data included personal communication and student course evaluations. I reviewed the course evaluations with the permission of the department chair and the clinical instructor of each course. The interviews and small sample size negated the use of a survey. I used interviews as the method of data collection used for this study. By conducting interviews, I was able to unveil and gain understanding of the instructors' perspectives.

### **Participants**

Qualitative researchers often use purposeful sampling (Yin, 2011). Most qualitative studies focus on a specific population or setting (Merriam, 2009). In order to more fully understand the problem or setting and answer research questions, researchers use purposeful sampling. Purposeful sampling involves the inclusion of members of the population of interest during the data collection process.

In this case study, the participants were female dental hygiene clinical instructors who teach part-time. I work with the instructors in the same academic department and am their clinical coordinator. I assist students with troubleshooting, scheduling issues that arise during the clinical session, and I update instructors on students' progress. Students are responsible for scheduling their patients and completing certain clinical requirements during their interactions with patients. I assist students when they have patients who cancel at the last minute or do not show for their appointments, who do not meet clinical requirements, or who refuse proposed treatments. I also troubleshoot staffing issues arising from a mismatch between students' scheduling and patients' availability to visit the clinic.

According to Yin (2011), an appropriate number of participants does not exist as a guide for a case study. By using purposeful sampling, I recruited eight participants. I conducted semi-structured interviews with eight participants. Semi-structured interviews involve the use of planned questions and a more conversational tone. This tone fosters an environment that allows ideas and thoughts to emerge during the interview. I believe that this sample size was sufficient for obtaining an in-depth understanding of my study topic and answering my guiding research questions.

### **Human Subjects Protection**

In order to uphold the ethical treatment of human participants, a researcher must seek and obtain approval from an institutional review board (IRB). Before I collected any data, I obtained IRB approval from both Walden University (IRB Approval # 03-16-15-0138079) and the community college. Following Walden University guidelines, I also completed the “Protecting Human Research Participants Course,” which is offered by the National Institute of Health’s Office of Extramural Research. I completed the course on May 31, 2014 (certificate number 1478120) and before I collected data.

Upon receiving approval from Walden University’s IRB and the local institution, I emailed prospective participants on March 19, 2015, and invited them to confirm their interest in participating. After participants confirmed their interest, I emailed the informed consent form to each participant and arranged an interview time. I attached the informed consent to the email the instructors received to inform the participants of their rights as participants. By replying to the email with the words, “I consent,” the instructors agreed to participate in the study.

For this particular study, minimal potential risks and/or benefits existed for the participants. Since I work with the participants, a potential for a conflict of interest existed. To address this concern, I explained to potential participants that their decision to participate (or, not to participate) in the project study would not influence or impact their employment or role at the college. As I wrote in the informed consent letter, I do not supervise participants and am not their manager. I informed participants that they participated of their own free will and would face no ramifications from deciding to participate or not to participate (Glesne, 2011; Yin, 2011).

I informed participants that they were selected based on their educational background alone. Clinical instructors in my program minimally possess an A.A.S. degree or an A.A.S. degree and B.S./B.A. degree in dental hygiene or a related field. According to Yin (2011), it is important that participants be selected fairly. Lastly, through the informed consent, I made participants aware that the information that they provided is confidential and that I would keep recordings and transcriptions in a secure, protected location about which only I know. Following Walden guidelines, I will store all data in a secure location for 5 years following study completion.

Each participant took part in a semi-structured interview lasting between 45 minutes and 1 hour. I conducted these audio-recorded interviews at one location, which I deemed neutral, as the office space is open to anyone. Interviews took place the last week of March 2015. In devising my interview questions, I drew from the work of Hunt, Curtis, and Sanderson (2013). My questions focused on the instructors' perceptions of clinical education, effective teaching practices, and the areas where the instructors felt

they needed more information or assistance. I asked 12 semi-structured questions. When I wanted to better understand or clarify participant responses, I asked probing questions to help the respondent be more specific.

### **Researcher-Participant Working Relationship**

I had an existing working relationship with the participants of the study. The participants and I work at the local community college, in the same department and in different roles. With this being acknowledged, it is imperative that I entered into this research study with an open mind (Glesne, 2011). I informed the participants of the purpose and nature of this study.

Given the working relationship between the researcher and the participants, the researcher-participant relationship was built on trust, support, and rapport before, during, and after the study (Glesne, 2011). As a coordinator, I do not evaluate the clinical instructors. I do provide guidance and organizational support during clinical sessions for the clinical instructors. This support includes assigning students to instructors, working with students and instructors to remedy clinical issues, and final decision making regarding scheduling issues, patient concerns, and students' questions. When assigning students to instructors, the coordinators use a tracking document to ensure fairness and equality in the assignment. For example, each instructor should see each student the same number of times during a semester.

### **Data Collection**

When implementing qualitative research strategies, a researcher may use qualitative interviewing for collecting data (Yin, 2011). The primary data source for this



study was the clinical instructors. Other data sources included archival data, including data I had gathered in my role as coordinator, which included conversations with our department chairperson and a review of students' course evaluations. Eight semi-structured interviews were completed. The interviewees' responses provided insight and understanding into what will assist them to teach more effectively in the clinical setting.

Each interview lasted between 45 minutes to 1 hour. Qualitative interviewing can be mentally exhausting for the researcher who is trying to gain understanding from the interviewee's perspective and experiences (Yin, 2011). Therefore, the interviews were spread out over an entire week.

The setting for the interviews was a private, quiet, and open office space at the community college. The times and dates of the interviews were determined based on what was convenient for the participants (Glesne, 2011). During the interviews, I was completely engaged and aware of the verbal and non-verbal cues of the interviewees (Glesne, 2011). I was able to do this by observing the participants gestures and body language during the interview (Yin, 2011). I allowed the interviewees to provide much of the conversation. One way I did this was by using effective probing or follow-up questions (Yin, 2011). I also remained neutral with demeanor, body language, and questions throughout the interview. Given the working relationship between the interviewee and interviewer, it was even more important to remain nondirective and neutral (Yin, 2011).

An interview protocol assisted in maintaining the principles described above. I began the interviews with reminding the participants of the purpose of the study and the

length of the interview. I reminded them that their participation was voluntary. Although I set boundaries, I let the participants direct the conversation (Yin, 2011). I asked the interview questions, but also allowed the participant to complete their thoughts in a thorough manner. Before moving on the next question, I asked the interviewee if she had anything else to add. Upon completion of the interview, I reminded the participant that the data will be stored on my password-protected computer for a minimum of 5 years after the study. I also reminded them that all information will remain confidential and anonymous. This interview protocol was typed and followed for each interview (Yin, 2011). This protocol included pleasantries to begin the interview (entering the interview) and the exit strategy to conclude the interview (Yin, 2011). The entering of the interview included a review of the informed consent and a verbal expression of gratitude to the participant. The exit strategy of the interview included verification that the information can be sent for member checking, or for preliminary analysis.

I took notes during the interviews, which were also audio-recorded. Upon conclusion of the interview, I transcribed the data. After the initial transcription, I reviewed the material again, checking for accuracy. The transcribed data remain stored in a private, password-protected computer.

I transcribed the interviews using manual coding. As a means of validating the findings and ensuring accuracy, the participants were asked to conduct member checks for accuracy of the transcribed interviews (Yin, 2011). This step was necessary as I am a dental hygiene educator and possess experiences in this field. Member checking helped prevent bias and my voice from clouding the collected data (Creswell, 2009; Yin, 2011).

Data were then coded, using inductive, emergent codes. I completed second cycle coding and patterns or themes began to emerge (Miles, Huberman, & Saldana, 2014). All information remained confidential, meaning that all information is kept private and will not be linked to a particular instructor. I downloaded the digital audio recorded interviews to my laptop. The data will be kept on this secured, password-protected, private laptop for a minimum of 5 years.

### **Data Analysis**

Holding true to the nature of qualitative research, thematic analysis was carried out. Data were coded by hand. Yin (2011) discussed the electronic and non-electronic methods of data analysis. Either way (electronically coding data or by hand) is acceptable, as long as care and attention are given to the information collected (Yin, 2011).

During the first cycle coding, some code words that were identified included the following: documentation, respect, engage, relearning, hands-on, light bulb, and time. This first cycle coding consisted of assigning words to chunks of data (Miles et al., 2014). Many code words were identified during the second cycle coding. Some of the codes that were used during the second cycle were as follows: mothering, respect, maturity, relationship, frustration, grading, protocol, consistency, interpretation, standards, changes, reviews, support, colleagues, skills, professional development, immersion, courses, continuing education, cutting edge, collaboration, communication, success, encourage, build, blossom, click, growth, outcome, explain, questions, attention, improve, and confidence. As coding is a way of discovering meaning, these codes were

then used to capture the essence of the data using themes. Throughout the first and second cycle coding process, themes began to emerge from the collected data (Miles et al., 2014).

The thematic analysis allowed for patterns or themes to emerge from the data collected (Yin, 2011). By identifying the themes or patterns of the data, a deeper understanding of the experiences of the clinical instructors was revealed (Glesne, 2011). Yin (2011) described the steps in the coding process as follows: compiling (reviewing and rereading notes), arranging data in an orderly format, open coding, and looking for patterns. Emergent coding was used in this study. Emergent coding was appropriate as I used the preliminary analysis of the data to identify what themes emerged from the data. The other type of coding, a priori, is used when the researcher identifies themes or established categories prior to data collection (Stemler, 2001). It was important for me to remain neutral during this step as well. Remaining neutral potentially allowed for hidden distinctions to arise from the data (Glesne, 2011).

By identifying patterns, or categories, in the collected data, I have gained greater insight on what the participants experience as clinical instructors with minimal exposure to adult learning theories. The findings influenced the intervention, a professional development program, to help the instructors learn how to teach more effectively.

### **Results and Themes**

After the second cycle coding, I identified five themes from the analysis of the data. The five themes that emerged were the following: clinical instructors were committed to teaching because they like helping dental hygiene students; part-time

clinical instructors described some students' attitudes as challenging; part-time clinical instructors desired clarification and communication in regard to policies, procedures, and implementation of protocol; part-time clinical instructors found student successes to be the most satisfying aspect of their work; and part-time clinical instructors were in great need of and desire adult learning professional development. The themes emerged from analysis of the responses to all 12 interview questions.

The information below details the five themes that emerged, the interview questions that generated the responses, the guiding questions that were addressed by the responses, and participant responses. The five emergent themes relate to why adult learning professional development is important for dental hygiene clinical instructors and what should be included in dental hygiene professional development for clinical instructors.

**Theme One: Part-time clinical instructors were committed to teaching because they like helping dental hygiene students.**

The emergent codes that helped to identify this theme, and the subthemes, include the following: mothering, sympathy, empathy, respect, maturity, and relationship. Theme 1 addresses the first and second research questions.

As an outlier, only one participant stated that she was not thinking of instructing and that the opportunity just came about. She stated: "It kind of happened by accident...I was just applying/looking for internships." (Participant A)

**Subtheme: The participants described the relationship they had with the students.** The other seven participants stated they wanted to be clinical instructors and

were interested in helping the students. The clinical instructors acknowledged that they had a clinical expertise that benefits the students. By sharing their knowledge, skills, and experiences, the clinical instructors are able to work with the students and help them. In the process of helping the students, the instructors formed relationships with the students. The instructors reported the following about the relationships they formed with the students. “I really like helping the students out, especially the ones who are passionate about what they are doing.” (Participant D) Another participant reported: “The longer they are here, the more comfortable they are with us, so they are willing to ask things. Once they get comfortable, they ask more.” (Participant A)

**Subtheme: The instructor-student relationship as compared to mothering.**

While several of the instructors alluded to mothering when describing clinical instruction, one participant noted that the similarities between the clinical instructor-student relationship and mothering drew her to instructing. She described her own experience as a student, in which she was like a mother to her peers. She stated that her dental hygiene instructors told her that she would do something other than clinical practice in an office because of this. The following quote relates to this relationship: “I just always try to be near where they are, so if they need something, they can get my attention. Just so they don’t feel abandoned.” (Participant G)

This relationship between mothering and clinical instruction was evidenced in the literature. McKenna and Wellard (2009) expressed the importance of recognizing this aspect of the student-instructor relationship. Similar to a mother guiding her child, an

instructor guides the dental hygiene student, which includes a transference of skills and knowledge. The instructors noted how they found watching students succeed satisfying.

The clinical instructors recognized that without their clinical practice and experience, they would not be able to help the dental hygiene students. The instructors saw the value in sharing their clinical experiences with the students. Most of the instructors recognized this type of learning. The experience of the instructors is preparation for teaching the students: “I guess the knowledge that I get on a daily basis from doing my job that I am able to convey to the students. Just you know they are able to benefit from my experiences.” (Participant G)

**Subtheme: Mutual respect between the instructors and students was a key component to the instructor-student relationship.** The instructors discussed the importance of mutual respect with the students when working clinically. Expanding on their experience, half of the clinical instructors noted that they expected the students to respect them and their knowledge. Some mentioned that respect must be mutual. The notion of treating students fairly and empathetically was noted in efforts to create a respectful environment. Again, this is similar to the mother-child relationship. The instructor or mother expects the student or child to respect him or her. When asked to identify the most satisfying aspect of clinical instruction, one participant stated: “When the students listen and understand what I have to demonstrate and tell them and when they respect it.” (Participant H)

Another participant explained her experience with teacher-student relationships and mutual respect as follows:

Well, I think my approaches deal with first knowing the students. I am lucky enough I think that I have a great arrangement because I get to know them early on in their education. By the time I am dealing with them chairside, I am grasping what their learning style is, their weaknesses, what their strengths are, and I try to ...and their personality. I think there is a fine line of being able to approach them in that way where we can have a mutual respect from a teacher-student relationship but we are indeed adults and in many cases, some of them are the same ages we are as instructors. (Participant B)

The instructors acknowledged the importance of mutual respect, and understanding the students as individuals. Half of the instructors discussed the importance of having a relaxed learning environment grounded in fairness and empathy. These instructors believed that a relaxed learning environment assists the instructor in helping meet the learning needs of the students.

**Subtheme: Instructors expressed empathy toward students.** The instructors noted that being sympathetic to the challenges of the students was important. The instructors, having graduated from dental hygiene programs, were empathetic to the demands of the dental hygiene students. The following are quotes from the instructors demonstrating this.

I try to put myself in their shoes. I treat them as humans – not expect them to know everything. Therefore, I always try to be very sympathetic to their needs – whether I feel that they really should have surpassed that at a certain stage. I still



try to stay sympathetic, because not everyone learned at the same level.

(Participant A)

“I really try to put myself in their position. To say, it’s about them – it is about their time in clinic. It’s their perception of how they feel I have chosen to be their instructor for the day.” (Participant C)

So I kind of help them to relax a bit. I think that goes back to when I was a student. I used to be so intimidated by all of them that I would never ask questions. Well, I never make them feel stupid for asking a question. I mean this is a learning experience for them. It’s what it’s about. (Participant E)

One instructor described an encounter she had with a student outside of the clinical environment. The student happened to be in the public health clinic where the clinical instructor worked. During a subsequent interaction, the student told the instructor how much more she respected her after watching her in her practice as a dental hygienist. This type of interaction can be positive, but it is also important for the clinical instructors to set boundaries with the students.

Setting boundaries with students is imperative to the learning process. When instructors blur the instructor-student relationship, it can be more difficult for the instructor to educate the students and more difficult for the students to accept feedback from the instructor. This is evidenced in the work of Kisiek, Bundrick, and Beckman (2010), who emphasized the importance of the instructor-student relationship in terms of effective learning. The instructor is at all times a role model to the students (Goldie,

Dowie, Goldie, Cotton, & Morrison, 2015). One instructor noted the thin line between personal and professional areas when acting as a role model:

I don't know if it's so much the learning aspect of it, but sometimes it's just dealing with their emotional issues and how to be caring but not overbearing and you don't want to feed into it either, so it escalates. Sometimes it's a fine line.

It's like the mom in you just wants to say get him out of your life, you don't know where the professional and the personal line ends. (Participant G)

This first theme addresses the first and second research questions. The first guiding question for this study sought to unveil perceptions about adult learning that the clinical instructors had. Based on the data collected and analyzed, the instructors felt that they were in a supportive, helpful role for the students.

While maintaining a helpful, supportive role, the instructors shared experiences they have had in regard to respect, mothering, and guiding students. The relationship between the clinical instructors and students is at best complicated. Overall, the instructors enjoyed helping the students and watching them grow clinically. Although, the instructors described what seem to be struggles among helping the students and issues with maintaining their respect.

The second guiding question for this study asked the instructors how they knew what the students' needs were. The instructors identified the importance of a calm setting, supportive instructor, and mutual respect. In addition to the environment, the instructors discussed the importance of knowing the students.

Although the instructors recognized that knowing the students was important, they could not tell me why. Further discovery may uncover the importance of knowing the students' strengths and weaknesses. This may evolve the practice of clinical instruction to include incorporating different types of learning theories.

**Theme Two: Part-time clinical instructors experienced some students' attitudes as challenging.**

Code words that led to this theme include maturity and attitudes. Theme two related to the third research question.

**Subtheme: Instructors reported that students lacked maturity.** Among the challenges identified by the instructors was the student-instructor relationship due to the immaturity of some of the students. Many instructors noted that by age, the students are adults; however, in behavior they act much younger. This explanation of the students' immaturity in the clinical setting leads me to believe that the instructors may not fully understand aspects of adult learning. For example, the constructivist orientation leads to the examination of how adults make meaning from their experiences. The students have different clinical experiences and they may grow and mature at varying paces. One instructor referred to the students' maturity levels as challenging:

You want to treat them as adults – but you sit and listen to them and it's almost like they are not there – the maturity level – which can be challenging, especially when you have to give them constructive criticism and they have never had to hear it or experience it. (Participant A)

Another instructor equated determining the students' maturity level with whether or not they are needy: "Some are very needy and others are more mature. I think it depends on the level of maturity whether they are needy or not." (Participant H)

Five of the instructors described their interactions with the immature students or students with attitudes as disrespectful. Other instructors described respectful interactions with students who desired to learn from them. Two instructors explained how they held their own ground with the students. As one instructor noted: "They (students) will challenge me and push my buttons, but I hold firm." (Participant C)

An instructor mentioned that by her being respectful to the students, the students were respectful to her. She stated that when students display attitudes or disrespect she reminded them why they are there. She said: "If you are going to be a dental hygiene student, then do the work and what is required of you, so that you can finish the program." (Participant H)

**Subtheme: Instructors reported witnessing students' attitudes.** The instructors identified challenges of dental hygiene education. These challenges may be perceptions that the dental hygiene clinical instructors have about adult learning (research question three). The clinical instructors may not understand the process of learning from a theoretical perspective and therefore see or witness actions displayed by the students as merely attitudes. The attitudes may be signals that the students' needs are not met.

When discussing students shutting down and not being open to criticism, one instructor stated:

I think a lot of them don't like being told they are doing something wrong. They do need to be knocked down a little bit – I don't want to say that in a negative way. But, they need to know if they are doing something wrong. (Participant F)

Another instructor linked the students' attitudes with laziness: "Sometimes it's just, um, kind of like some of the students' attitudes. They are not used to working hard for anything." (Participant G)

The instructors perceived that maturity and mutual respect led to enabling them in meeting the students' needs. This may be the case; however, it is also possible that the students need their learning to be facilitated in a different manner.

**Theme Three: Part-time clinical instructors desired clarification and communication in regard to policies, procedures, and implementation of the clinical protocol.**

Some code words that led to this theme were the lack of time, paperwork/computer work, inconsistencies, and semester evaluations. Many of the challenges reported by the instructors were related to policies and procedures of the dental hygiene clinic.

**Subtheme: The instructors displayed frustration due to lack of time, paperwork, and computer work.** Time was a challenge that all of the clinical instructors discussed during the interviews. Over recent years, the paper and computer work required of the students has increased significantly. The instructors noted that the students spend an enormous amount of time on paperwork and computer work and very little time on clinical exercises and practice. It almost seemed the instructors felt the

students are too busy with paperwork and computer work to complete clinical experiences. One instructor even mentioned thinking there was a better way.

I think the challenge is the need for the clinical staff to keep our standards as high as we have in the past, but continually be demanded of more and more...that causes us to feel as though we are not giving the students enough chairside clinical hands-on instruction as much as we'd like. We make students do a lot of paperwork. I feel like there are parts that could be somehow changed or evaluated or redone so students spend less time filling out forms and chairside paperwork and more time doing the clinical portion. (Participant B)

In addition to the increased work the students completed outside of the patients' mouths, the instructors were equally busy while working with approximately five students per clinical session. The ratio of instructor to students has slowly increased over time, and some instructors remember when the ratio was 1:3. As one instructor complained,

Not having enough time to teach them, especially demonstrating with the instruments and having them feel the calculus, and when you are 1:4 or 1:5, there's just not enough time. I think a lot of it has to do with too much paperwork, and it's repetitive too, I find. (Participant H)

A third of the instructors expressed frustration due to lack of time they had to spend with the students one on one. The lack of time may lead to unanswered student questions or questions missing a deeper understanding of a clinical concept. Once this type of educational opportunity has passed, it is difficult to reinvent it. When this

continually happens, as evidenced by the clinical instructors' responses, the quality of the education may be impacted. One instructor explained:

I do not feel that I have enough time to spend with them or to explain or clarify situations – spread thin. If you are rushing from one student to the next 'cause you don't want to put them behind on meeting their requirements or getting things done – it's challenging to find that fine line – ok I am just going to have to stop here to move on to the next thing. (Participant A)

One reason for the lack of time is the addition of content to clinical courses that were already content heavy. The clinical courses have not had content deleted, leaving little room for students' questions and follow-up. By adding more and more over time, the actual working time during the clinical session has become quite limited. The instructors noted that students were busy doing numerous tasks instead of focusing on the clinical practice of dental hygiene.

One instructor alluded to there being a better way to implement clinical instruction. Another instructor gave a suggestion for improving the time issue. She recommended an additional instructor to assist the instructors and act as support for the instructors. The additional instructor, she noted, would not only relieve the time pressure on the clinical instructors but also assist the students in accomplishing more tasks during the clinical session and not waiting so long for assistance.

**Subtheme: Inconsistencies among instructors existed about understanding and implementing clinical protocol.** The instructors all noted inconsistencies either between themselves and the clinical protocol or themselves and other instructors. It was

obvious that this has been recognized and discussed among the clinical instructors based on their responses and the frustrations they expressed.

The first inconsistency involves the instructors not knowing or understanding the clinical protocol or procedures. Some of the instructors have received their training elsewhere and may have learned procedures differently. Due to the ever-changing nature of dentistry, the field of dental hygiene changes frequently. Even for those who graduated fairly recently, protocols have evolved and are not the same as they remember learning them. These factors set the stage for inconsistencies to arise between the instructor and the program policies and procedures. One instructor stated: "I guess because I have not worked in the field in so long. Some of the procedures I was never taught." (Participant E)

The field of dental hygiene is constantly evolving. Due to these changes, the instructors must be change agents, as new procedures and products are being introduced every semester. In reference to these changes, one instructor stated:

Actually the other thing could be just implementing everything that comes down. Not so much for the students, but as the clinical instructor having new things thrown in every semester and just trying to come across like you know what you are doing, when half the time, you are not absolutely sure of yourself and then you ask people and they are not sure either. Unfortunately. (Participant G)

In the last year, the program adopted a new, online clinical grading system. The former system was used for over 30 years. This change has been difficult, as many



questions and uncertainties existed in the inaugural year. One instructor noted the following:

There's the new grading system that comes into play. People interpret questions and statements differently. So, I might interpret it one way, someone else may interpret it another way. So, I might grade differently on that area than another person and the students get frustrated because they get feedback from different people on different things. (Participant G)

The second inconsistency involved the instructors' lack of calibration. The instructors voiced that they were aware the students have been receiving inconsistent information. When asked what an ideal professional development program would include, one instructor stated: "I guess just the protocol. That all the instructors are on the same page – the students are getting consistent information from everybody." (Participant D)

The form of calibration that has been practiced has been limited to the instructors asking each other questions during clinical sessions. Based on the participants' responses, this has not been adequate for authentic calibration.

I think the hardest thing is having everyone not on the same page when it comes to sometimes grading. I get different answers from whoever you ask. I think that's just challenging and frustrating at the same time. But I think it just gets hard 'cause not everyone is on the same page about everything. (Participant F)

**Subtheme: Instructors used semester evaluations to assess their clinical instruction.** Despite the inconsistencies described by the instructors, communication

through the end of the semester instructor evaluations was described as an overall positive experience. In response to a question asking them how they knew their instruction was effective, several instructors identified the end of semester evaluations as the tool to assess effectiveness. Three instructors explained that they valued the evaluations, whether they were positive or negative reviews. One instructor mentioned that the evaluations were a way of letting her know if the students gained understanding. She stated: “You receive your semester reviews from the students – some are positive, some are negative. You take them both with stride.” (Participant A) Another instructor stated:

At the end of the semester, the evaluations that the student do. Those are very helpful. I like reading them whether they are good or bad because they help me out with the way – as far as getting through to the students. (Participant D)

Due to many changes in policy and protocol, lack of calibration, and miscommunication, the instructors did not feel prepared to teach in the clinical setting. Four of the instructors also identified themselves as not as up-to-date as they should be. By stating that they were not up-to-date, they took ownership for not knowing some of the policies and protocols. It was also clear that they wanted to know, but did not know how to get the information.

I don't think I am always up to date on what we have changed or what we are changing. So that confuses the students. I want to be on the same page as everyone else. I think that's one challenge. The best example would be a lot of the information that are being asked to fill out in the packets are – they are being

told to fill out the packet one way. I was taught or told another way. So then there's a whole disconnect between them and myself because now I have to tell them to do it my way, 'cause it's the only way I know is right but they are absolutely confused because they were told something different. (Participant A)

Some of the responses regarding inconsistencies among instructors and between protocol and instructor practice could be related to gaps between theory and practice. One instructor mentioned that she would like to know how to interpret the information taught in the classroom and implemented in the clinic. Often the clinical instructors are given handouts and not given the verbal instructions that the students receive.

“Just being introduced to how the students have been taught. The instruction they get in the classroom is all part of that process in the clinic. A lot of us instructors are not in the classroom.” (Participant D)

Guiding question number two asked how the instructors determine a student's learning needs in the educational setting. Based on the instructors' responses, they identified not meeting the students' needs with lack of time, abundance of paperwork, questions regarding paperwork, and continuous change within the clinical setting. This deficiency may best be resolved by implementing some type of cyclical professional development offering. The instructors clearly expressed they need more clarity and communication from the full-time faculty. Improved clarity and communication will decrease the inconsistencies faced by the instructors and as they expressed, will enhance the learning environment.

**Theme Four: Part-time clinical instructors found student successes to be the most satisfying aspect of their work.**

Some of the codes that were used as this theme emerged were communication, light bulb, growth, transformation, and guiding students. It was clear from the responses that the instructors found students' successes as the most satisfying part of clinical instruction. Many of the responses focused on students grasping material, being able to apply the material appropriately, and growing as clinicians. By understanding how to meet the needs of the students through professional development, the instructors may find their work more satisfying.

**Subtheme: Instructors witnessed students' growth. Instructors described the initial phase of growth as the light bulb moment.** All of the instructors described watching moments of understanding from the students. Some described this as the "Ah-ha!" moment while others explained that this is how they knew the students got it. This moment of understanding occurred when the students no longer needed the instructor's assistance and performed the task with little to no help. The progression describes moving across the ZPD, where the students go from not being able to complete the task on their own to being able to complete the task with minimal guidance. When asked about the most satisfying aspect of clinical instruction, three instructors replied: "The hands-on...when the light bulb goes off for them and they see connections between something or they find a new technique of doing something they thought was impossible. This is rewarding to see." (Participant A)

When you explain something to one of the students and you can kind of tell that they might not have it right away. I have been seeing this a lot with the freshmen. You explain something to them. Then they come back and say oh my gosh, I went home and looked something up or the next time I was in clinic I was able to say this because you said this about this and the other instructor thought this was great. (Participant F)

That light bulb moment when you see everything click in the student's head and it finally all makes sense and it all comes together for them. An example is the critical thinking page, when they are going through it and then they finally realize why they are going through it; that it's not just recording a lot of information – it's figuring out what the patient needs, what they want, their goals. It's not for nothing. They are finally able to pull information together and it makes sense to them. (Participant G)

The participants noted that students' successes and growth were the best part of their work as clinical instructors. The instructors understood the importance of the daily clinical triumphs for the students. These rewarding observations allowed the instructors to celebrate the students' successes.

**Subtheme: Instructors witnessed transformation among the students from their first semester to their final semester.** Some participants have instructed all four semesters of the program and recognized the students' growth over the entire course of the program was rewarding for them to witness. One instructor noted that she used the students' growth in clinical practice as an assessment of her teaching effectiveness. Even

though the instructors did not discuss scaffolding or the ZPD, they were describing it based on their experiences. When discussing this process, one instructor described:

The transformation I witness between the first semester to the fourth semester is something that totally amazes me every single year. In the long term when we start teaching small skills that continue to build and build and build. When we see the blossoming of a student in their final semester where they can put together all those little skills and little things that we have taught them to come together as a complete patient assessment...I feel it is a combined effort which I feel is excellent because each instructor that the student has brings to the table a different way of explaining something or a different way of doing something which could in fact all of the sudden click with the student. (Participant B)

Students begin seeing patients during their second semester. At that time, everything they experience clinically is new to them. They have not yet worked on patients, collected data using clinical forms, or worked with clinical instructors with patients until this point. Once the students progress to the third and fourth semesters of the program, they have an understanding of clinical policy and procedure. They obtain this understanding through experience. Between the beginning of the second semester and the end of the fourth semester, the students grow and transform into clinicians. An instructor described the difference between the freshmen students at the beginning and end of the semester:

In freshmen clinic, you have a million questions from the students. It's as soon as you walk in the door. There are so many – so much information that they have to

get into their heads and into the computer, and then to think about their patients.

After probably the first 8 weeks, it goes from so much conversation to all the sudden all the light bulbs went on. They don't ask the questions, they can draw upon their own information, get on the computer to look things up. You can't know what you don't know – is what I tell them all the time. (Participant C)

The instructors remarked on how amazing the students' transformations are from the beginning to the end of the program. Scaffolding procedures and guiding the students through processes moves the students from novices to competent graduates. The transformation that the participants noted is rewarding for the instructors to observe.

**Subtheme: Instructors described how they communicate with students during clinical instruction.** When asked to explain the strategies they employed to help students succeed, the instructors' responses were based on various means of communication. Instructors identified the importance of skill demonstration for the students. A few instructors explained that they questioned the students before the appointment to see how prepared they were for the patient appointment. One instructor stated that when working chairside with students and patients, she requested that the students identify where in the mouth they were experiencing difficulty and then she corrected it. She stated:

During the clinical, usually I have them show me what they are questioning and then I will sit down and try to help them figure out what they need to do. If I can't figure out how to help, I will go get someone else. (Participant E)

Instructors discussed how they were in constant communication with the students

during clinical instruction. The participants discussed communicating with students during skill demonstration, clinical practice, and evaluation. During clinical practice, the students might not have questions, but the instructors provided encouragement and praise for proper skill demonstration. The participants identified communication after the appointment as important, as this was a time when the students are provided with feedback.

**Subtheme: Instructors explained ways they guided students during clinical instruction.** When asked if they draw on any theories used during their instruction, none of the instructors could name an adult learning theory. Five instructors said they did not know at all although three said they could think of theories, but not the names of those theories.

Of the instructors who could not think of any theories, all seemed to want to know more information. One of the instructors stated that she has demonstrated a skill for the student and then has had the student repeat what she demonstrated. She also mentioned that nothing else applies to clinical instruction. Another instructor mentioned that she thought showing the students by demonstration was important. When asked if she used adult learning theories during clinical instruction, she stated: “Not that I can think of. One of the things I really like is instrumentation when you sit chairside with them and actually show them.” (Participant D)

An instructor who was unable to recognize any learning theories noted the importance of being nearby the students. She mentioned not wanting the students to feel



abandoned. This statement highlighted the nurturing component of her instructional practice. This also relates back to the mothering aspect of instruction.

The other instructors who stated they could think of theories but not the actual names of those theories described what they recalled as theories. Although she did not know the name, one instructor described Vygotsky's ZPD. She expressed that the students build on existing knowledge throughout the curriculum and she guides them throughout the process. She stated:

Boy, I have to think about the theories. I can't remember the name of them, but I deal with building on what skills they have and building their skills in an upward fashion in a manner they can achieve success and I encourage them in a manner that they can achieve success. Starting out at the basic level and being able to introduce skills and teaching them things that they can accept and excel all the way along so that they don't get defeated in order for them to be successful in their education. (Participant B)

Another instructor explained she has the students watch her, which shares similarities to the social cognitive orientation of learning (Merriam et al., 2007). The other instructor expressed how she felt it was important to make learning relevant to the students. This aligns with the constructivist approach to learning, as the learner makes sense of the learning through his or her experience (Merriam & Bierema, 2014).

I am trying to think of the theory we were taught. It is where you make....the experience has to be something that is relevant to what they are doing for them to be able to learn it and keep it. Do you know what I mean? Making things

relevant to the situation, to what they are doing, to their patient really helps them think it through clinically and cognitively. (Participant E)

The instructors also recognized that the students need encouragement and explanation throughout the clinical education process. The instructors mentioned that this type of guidance or coaching was necessary for meeting the students' needs. A better understanding of adult learning theory may give the instructors a greater awareness of the value of this instructor support.

**Theme Five: Part-time clinical instructors were in great need of and desire adult learning professional development.**

The subthemes identified with this information were support, getting together, continuing education, collaboration, and calibration. All eight of the instructors interviewed stated they needed more information and five directly stated they needed professional development as clinical instructors.

**Subtheme: Instructors were eager to collaborate with each other and with the full-time faculty.** The instructors discussed their reliance on each other for information. One instructor explained that when she was hired, she had been out of the field of dental hygiene for a while and essentially relearned procedures from other instructors. Several instructors mentioned they go to other instructors if they are not sure of something. These statements demonstrated a comfort level among the instructors. This also reflected the professional learning community that is shared in the dental hygiene clinic. Two of the instructors stated: "I do utilize the other instructors. I go to

them with questions when I feel I am getting off target.” (Participant C) “A lot of times, I am not sure of the answer, so I go to whomever and ask.” (Participant H)

Other instructors seemed to be more self-directed in their craft of clinical instruction. They noted studying or looking up information on their own. One respondent wanted to know more when asked about learning theories and even acknowledged that she would go home and study. She wanted to find a learning theory (“get one”) and bring the theory (“it”) to the next clinical session with her. She said: “I don’t but now I am going to go home and get one. I will bring it to clinic and use it next week. I don’t but I want one.” (Participant F)

The participants seemed to have a deep desire to collaborate with one another and the other faculty, including full-time faculty, in the department. The program does not offer formal or informal instructional meetings that may benefit the instructors and the department. The participants are self-directed professionals who have not had the opportunity to engage with their colleagues on a regular basis.

**Subtheme: Instructors highlighted the importance of getting together with and having the support of the full-time faculty.** Several clinical instructors brought up that they have received support and guidance from the full-time faculty and others noted how this is needed. One participant explained how when she was hired the full-time faculty reviewed information with her to ensure that she was giving the correct information to the students. Others stated that they would like the full-time faculty to assess their instruction based on what the students are being taught. Others wanted to know what is being taught in the classroom.

The gap between the didactic and clinical instruction was alluded to several times throughout the interviews. The clinical instructors mentioned that they wanted to sit in on a class with the students, and get together and ask questions about coursework. These types of interventions would allow for threading the classroom information into the clinical environment. One instructor stated the following regarding reviewing the clinical curriculum:

I would love to just work a whole week and learn everything that I wasn't taught back then. But in-services would be helpful. Having a program where once a year a week before clinic, if it was possible, that immersion into doing the impressions, doing probing, doing dental charts, all of the stuff, so that we are all on the same page. Being in that mode of having an instructor there who would oversee it. Not just I am sitting and probing someone. Having a full-time faculty say what is right. (Participant E)

Another instructor echoed this as she described wanting the same information that is given to the students:

I don't even care about the CEs. That doesn't even matter to me. It's more getting together and asking questions you know about XXX and XXX's class and what they instruct. 'Cause unless you are sitting in the classroom, you are not absorbing that information. You do forget a lot – you do – if you don't stay on top of things. (Participant H)

The participants voiced concern over not knowing what material was being taught

in the classroom because they implemented the same information in the clinical setting. The instructors acknowledged that spending time with the full-time faculty who teach the classroom courses would support their clinical instruction. The participants recognized that having this classroom information would improve the clinical experience for the students.

**Subtheme: Instructors described their desire for calibration and continuing education.** A third of the instructors also mentioned the need for calibration. One discussed efforts in the past and noted she would like more robust calibration and professional development offerings. Two instructors discussed calibration as a means of keeping everyone up to date and on the same page. They noted they would feel more prepared to teach the students if they were more confident in their knowledge and understanding of the clinical protocol. One instructor discussed the importance of calibration:

Maybe just go through the whole process and any processes prior to that current semester would be helpful. Just so everyone is on the same page, 'cause we all have a different way of teaching. Just being introduced to how the students have been taught. (Participant D)

The instructors who gave recommendations for professional development (some did not) provided answers focused on continuing education for dental hygiene practice. All licensed dental hygienists complete 24 continuing education credit hours for license renewal every 3 years. This explains why the participants answered how they did when

asked about their professional development preferences. None of the participants expressed a desire to learn more about teaching or the educational process.

One of the instructors responded that she would take anything. Five of the instructors noted that an offering before the start of a semester would be helpful. Most replied that they would like a refresher of didactic course materials, review of protocol/policies, instruction on the latest and greatest tools/equipment, and calibration. One instructor was specific in describing what she would like to see offered:

Professional development offerings for just the clinical staff and clinically based – not computers, not papers, I am talking hands-on. Um, but on the flip side, from a clinical instructor standpoint, I think skills that we have to teach and evaluate in the clinic are computer-based programs – our patient database and evaluation system are all computerized. I think we have to have some type of session or support/professional development whether it be within the confines of our people or bringing in people who have skills to give us more information on our programs. It is very difficult when the instructors are not as comfortable with a system that we are trying to teach the students how to use. (Participant B)

What was lacking from the responses was an understanding of adult learning theory and practice. Five of the instructors could not fully answer question seven, asking what theories they draw upon when teaching. However, three were able to respond to questions with information that matched existing theory. The lack of substantive responses is evidence that a professional development program, which includes information on adult learning theory and practice, is necessary.

## Conclusion

The findings of the study support the need for adult learning professional development for clinical instructors. To move forward as a profession, dental hygiene clinical instructors must become prepared educators in order to teach and influence dental professionals of the future. This information will provide current and future instructors with a deeper understanding of how adults learn.

The five themes are reflective of the transitional journey experienced by expert clinicians who become novice educators. The participants entered the field of clinical instruction due to their interest in helping students (theme one). In the early stages of clinical instruction, the challenges and advantages of instruction become abundantly clear. The instructors recognized the overall advantage of their work is celebrating and sharing students' successes. They also noted the difficulty of dealing with the challenges of students' attitudes (theme two).

As the instructors develop a greater understanding of the educational process, they developed a greater awareness of what they are missing or do not know. The instructors sought clarification on policy and procedure (theme three). During this time, the clinical instructors expanded their experience as educators as they relished in students' success (theme four).

As the instructors gained educational experience, they understood the importance of being up-to-date and having expertise in the field of dental hygiene and education. This was evident by their desire to learn from others and participate in professional development (theme five).

Like the students they instruct, dental hygiene instructors traverse stages of competence in the field of education. Based on their responses, the participants appeared to be in their own ZPD, each in their unique position. Just like the adult students they instruct, the dental hygiene instructors experienced the scaffolding process.

The instructors understood that dental hygiene students build upon existing material and grow throughout their time as student clinicians. This perception the participants had on adult learning aligns with adult learning theory, even though they were unaware of this. A better understanding of adult learning practice in the clinical setting would allow instructors to meet the educational needs of the students.

This study was viewed through the conceptual framework of situated cognition and legitimate peripheral participation. The goal of legitimate peripheral participation is to indoctrinate new professionals into a field by giving them simple, initial tasks so that they can learn the professional vocabulary and organizing principles of a community through observation (Lave & Wenger, 1991). Over time, the new professionals become experts. In the case of this study, a group of well-trained clinicians was becoming part of a community of educators (all at varying rates of adaptation and assimilation into this community). In examining the findings from participant interviews, it is clear that clinical instructors were stuck in the legitimate peripheral participation phase described in situated learning theory and were unable to move successfully beyond that entry-level participation toward intensive participation.

A lack of understanding of the organizing principles of the community hinders progress toward expertise as educators. Interviewees repeatedly expressed a desire for



professional learning opportunities that assisted them in understanding policies, procedures, and implementation of clinical protocol. The desire for the opportunity to collaborate with and observe experienced educators was also evident in interviewee responses. Access to social learning was minimal making it difficult for new educators to observe those who have a deeper understanding of adult learning theory. In considering what dental hygiene clinical instructors wanted from a professional development program (guiding question 3), it seems clear that there is a desire for information on adult learning theory that includes opportunities to discuss implementation of those theories.

Although clinical instructors did feel that they benefitted from student evaluations and that these enhanced their practice, it is unlikely that this feedback has been as effective as it could be (Conigliaro & Stratton, 2010). The opportunity to explore the underlying meaning of the evaluation with an experienced educator has been missing. In addition to relying on student evaluations in order to determine what students' needs are in the educational setting, instructors relied heavily on "maternal instinct" to nurture students toward success. The ideas of helping, mothering, expressing sympathy and empathy, encouraging maturity and growth and demanding respect were all evidenced in the participant interviews.

According to situated learning theory, the clinical instructors are attempting to grow from legitimate peripheral participation to intensive participation entirely through their social relationships with their students and each other. This is difficult, if not impossible (Lave & Wenger, 1991). A legitimate peripheral learning opportunity would give clinicians the opportunity to make the culture of educational practice their own.

This would include an opportunity to observe everyone involved in the process, what they do on a day-to-day basis, how they work and talk about their work, what other educators are doing and what educators need to understand in order to become truly successful practitioners. The clinical instructors in this study had only their own students and each other to rely on for this information. The instructors relied on evaluations and students' successes to measure their own success. The instructors also used this information to determine if they were meeting the needs of the students (guiding question 2).

Guiding question 1 asked about the perceptions that dental hygiene clinical instructors had regarding adult learning. The participants' responses demonstrated that the instructors have not been coached or mentored by the seasoned, full-time faculty. If they had really been engaged with experienced educators, they would know something about adult learning theories. No respondents could name a learning theory, indicating that clinicians had not moved beyond the very beginning of peripheral participation (learning discipline-specific vocabulary of educators). Three participants minimally described learning theory but could not provide names or an understanding of that theory.

A defining characteristic of situated learning theory is legitimate peripheral participation (Lave & Wenger, 1991). A key component of legitimate peripheral participation is becoming part of a community of practice. In order to become a member of a community of practice, an individual must become immersed in the field by completing low risk tasks, practice relevant vocabulary, and gain understanding of the

principles of the community. There must also be access to both social and physical learning and growth, including observation of experts.

The professional development program (Appendix A) described in section 3 provides an overview of adult learning theories and strategies to implement the learning theories in the clinical educational setting (ensuring the clinical instructors move from legitimate peripheral participation to intensive participation).

## Section 3: The Project

### **Introduction**

My purpose in carrying out this study was to explore dental hygiene clinical instructors' perceptions of adult learning theory and identify what would best assist them in providing effective clinical instruction. Based on my analysis of data, I decided to create a professional development program to meet the needs of the clinical instructors. In this section, I describe the professional development program and its purpose, goals, and learning outcomes. (See Appendix A for program materials, including schedule information and presentation outlines for each of the 3 full days of training.)

### **Description**

I titled my project, "Dental Hygiene Clinical Instructors Professional Development Program: Building a Foundation for Clinical Instruction upon Adult Learning Theory." The title reflected the purpose of the professional development program and its target audience who are the 13 dental hygiene faculty members at a local community college in upstate New York. My purpose was to incorporate adult learning theory (Merriam & Bierema, 2014) into the practice of dental hygiene clinical instruction. I included a review of adult learning theories and discussion on strategies for implementation as part of the program.

The dental hygiene program previously lacked a professional development offering that reviewed or provided an overview of adult learning theory. Accordingly, my professional development program focuses on six main orientations to adult learning: behaviorism, humanism, cognitivism, social cognitivism, constructivism, and experiential

learning theory. A program that allows the participants to be self-directed learners, integrates experience into the activities, and contains relevant information will provide a more meaningful experience for the participants (Tallerico, 2005). I believe that instructors would benefit from exposure to foundational aspects of learning theory before studying more detailed and complex theories.

I created the program materials based on my review of the literature (Ash & Levitt, 2003; Caffarella & Daffron, 2013; Creswell, 2009; Darling-Hammond & McLaughlin, 2011; Dochy et al., 2012; Drago-Severson, 2009; DuFour, DuFour, Eaker, & Many, 2010; Ertmer & Newby, 2013; Hattie, 2012; Hedegaard, 1990; Jordi, 2011; Lieberman & Miller, 2014; Raphael, Vasquez, Fortune, Gavelek, & Au, 2014; Rohlwing & Spelman, 2014; Webb et al., 2013; Merriam & Bierema, 2014). In addition to providing an overview of the learning orientations, I had instructors engage in activities during training sessions. The activities provided the dental hygiene clinical instructors with examples of how to implement theories within the clinical setting. A sense of community will be created as the participants perform activities individually and as a group to review adult learning material. A key element of situated learning theory is the community of practice (Lave & Wenger, 1991; Sharma & Bains, 2005). As the instructors share and reflect upon their educational practice, they contribute to their community of practice. As the instructors grow and develop new skills as educators, they will contribute and benefit from being part of this community of practice (Merriam & Bierema, 2014). Not all members of the community will be at the same point of growth,

therefore each member contributes and benefits from participating in the community of practice.

### **Proposed Project Goals**

My two goals for this professional development program were to provide dental hygiene clinical instructors with adult learning theory background in order to improve their teaching efficacy and to identify potential ways of implementing adult learning theory in the clinical instruction of dental hygiene. I believe that clinical instructors will be better able to understand the instructional process with an overview of adult learning theory (See Appendix A). To achieve my goals, I provided participants with an overview of adult learning theories and had them work on developing strategies to implement adult learning theories during their instruction. The instructors worked in groups and reflected individually to develop potential strategies to implement adult learning theory during their instructional practice. I selected the theories based on traditional learning orientations and the ability to implement the theories into the clinical instruction of dental hygiene. On the last day of training, I asked participants to discuss next steps for developing a sustainable plan for ongoing development. I hope the instructors develop and implement a sustainable plan to foster the inquiry and study of clinical instruction.

### **Project Rationale**

Based on my data analysis, I believe I have a strong rationale for this project. During interviews, my study participants provided in-depth and robust answers and information regarding their practice of clinical instruction. They also noted that they lacked an understanding of adult learning theory and practice and had few opportunities

for professional development in this area. In designing this professional development program, I sought to provide an overview of adult learning theories for the clinical instructors.

I found a need for more collaboration after the analysis of data. On day three of the program, participants will discuss how to sustain this professional development. One possibility is by creating professional learning communities. Although the instructors already have a community of practice, they may benefit from establishing a professional learning community and identifying dates and times to share and learn from one other (Merriam & Bierema, 2014). By creating a study group or reflective discussion group, the instructors will have the opportunity to grow professionally (Wenger, 2010). Professional development works best when it is ongoing.

### **Review of the Literature**

In creating this professional development program, I searched the following databases for relevant literature: CINAHL, ERIC, Google Scholar, Science Direct, PubMed, Education Research Complete, Binghamton University Library, and Education and Health Sciences Databases. I used the following terms for this review of the literature: *behaviorism, clinical instruction and professional development, cognitivism, constructivism, dental hygiene professional development, effective professional development, experiential learning, humanism, learning theories and dental hygiene, learning theories in health sciences, learning theories and nursing, professional development, professional development and health sciences, and social cognitive theory.* I separated this review of the literature into categories to reflect the findings to support

the themes that emerged from the data collection and analysis. I focused on professional development, learning theories, and briefly discussed the concept of learning communities in this literature review.

### **Professional Development**

Since the 1970s, many terms have been used for professional development. Although some have become passé, professional development and professional learning are still used today (Darling-Hammond & McLaughlin, 2011; Lieberman & Miller, 2014). Professional development practices foster collegiality, collaboration, a spirit of inquiry, synergy among the members, and reflection (Tallerico, 2014). Instructors who have expertise in a subject matter can improve their instructional practices by participating in professional development offerings.

For instructors to improve their teaching, they must develop professionally as educators, not just clinicians. Professional development is the best way that teachers improve their instruction (Darling-Hammond & McLaughlin, 2011; Lutrick & Szabo, 2012). Educators come to professional development sessions ready to actively learn (Rohlwing & Spelman, 2014). In-service training, or sessions where one person gives the information and all others are passive recipients, have become a thing of the past (Darling-Hammond & McLaughlin, 2011; Lieberman & Miller, 2014). To engage successfully in professional development, the teacher must become both the teacher and the learner (Darling-Hammond & McLaughlin, 2011). The educator must actively take on the role of the learner and collaborate with others.



Teachers benefit from professional development in several ways. Participation in professional development offerings is one of the best way to improve instruction (Lutrick & Szabo, 2012). It improves instruction and has been found to enhance learning (Pehmer, Groschner, & Seidel, 2015; Zehetmeier, 2014). With many professional development programs, the educators become resources for one another or establish networking potential (Hammond & McLaughlin, 2011). Professional development is an opportunity for professionals to collaborate with one another and build rapport with colleagues. Other advantages include opportunities for continuous improvement and continuous innovation (Pineiro, Macedo, & Costa, 2014).

Several disadvantages of professional development exist. The most significant disadvantages are time and resources (Filipe, Silva, Stulting, & Golnik, 2014; Pineiro et al., 2014). The lack of time and resources contribute to challenges that undermine the success of professional development programs (Caffarella & Daffron, 2013). Other disadvantages include lack of clear goals and lack of relevance to the audience (Caffarella & Daffron, 2013; Filipe et al., 2014). Stewart (2011) also added that even the best professional development could not prepare teachers for everything they will encounter. This challenge is largely due to the difficulty of sustaining professional development initiatives. Even when a change occurs after professional development, the change may be difficult to maintain. Van den Bergh, Ros, & Beijaard (2015) noted that sustaining behavioral change after professional development offerings is challenging.

Even the best educators require professional development. However, the best-equipped faculty often become resistant to change (Gearhart-Bouwma, 2012).

Professional development programs often encourage a change in behavior or process. Change can be a difficult process to experience for professionals (Lieberman & Miller, 2014). Three factors of professional development to consider when promoting change, as reported by Tate (2012), are teacher attitudes, student outcomes, and teacher behaviors. The design and implementation of the professional development program may have a positive effect on professionals (Tate, 2012). Guskey (1999) explained that when teachers' attitudes change, student outcomes also change, which, in turn, changes teachers' behaviors. This cycle can provide a foundation for continued professional development programs.

The National Staff Development Council (NSDC) recognizes the importance of professional development for everyone involved in the learning process (Lutrick & Szabo, 2012). NSDC describes learning communities as being critical in the learning process (Lutrick & Szabo, 2012). The development of a successful community of learning can create cohesion among colleagues (Darling-Hammond & McLaughlin, 2011; Webb et al., 2013).

In college and university settings, professional development should be offered for professionals in various positions (Darling-Hammond & McLaughlin, 2011). Educational institutions have an obligation to provide adjunct faculty with effective professional development (Morton, 2012). When providing professional development for adjunct instructors, the program facilitator should consider several factors. Adjunct instructors are often experts in their respective fields, but that does not guarantee them success as instructors (Webb et al., 2013). Professional development offerings must

review best practices. Adjunct instructors often have second jobs and do not have the time to devote to improving and building upon their educational practice. As adjunct instructors lack expertise in the educational environment, they are more likely to revert to traditional methods of education and familiarity (Webb et al., 2013). Professional development is a method to socialize the adjunct faculty member into the educational community.

Professional development programs are often successful when they contain certain qualities. Effective professional development programs must be engaging, collaborative, supportive, and connected to the curriculum (Darling-Hammond & McLaughlin, 2011; Lutrick & Szabo, 2012). Professional development must be made practical and relevant to the audience (Angeline, 2014; Darling-Hammond & McLaughlin, 2011; Tallerico, 2014; Visser, Coenders, F., Pieters, J., & Terlouw, C., 2013). The most effective professional development is gradual and personal (Gearhart-Bouwma, 2012; Shillingstad, 2012). These qualities are also important principles to uphold in effective adult education.

Professional development programs should have a foundation in educational theory (Webb et al., 2013). Educators then need to translate that theory and integrate it into practice (Darling-Hammond & McLaughlin, 2011). Lutrick and Szabo (2012) described this as the learning design element of professional development. The learning design builds the framework of the professional development offering upon the theories of education. There are many ways to implement learning theory in professional

development programs, including maintaining study groups and conducting peer observations (Lutrick & Szabo, 2012).

Another best practice in professional development involves making the program or initiative sustainable. Sustainability of professional development requires long-term activity that focuses on inquiry and collaboration (Darling-Hammond, 2011; Raphael et al., 2014). A possible reason professional development programs have difficulty sustaining growth is that many fall back on tradition and familiarity, instead of moving a group forward and setting new goals (Zehetmeier, 2014).

One way to sustain professional development is by establishing learning communities. Wenger (2010) discussed the importance of a community of practice that emphasizes participants' learning from one another, which requires interaction and trust. The importance of reflection is evident and supported in professional development research (Darling-Hammond & McLaughlin, 2011; Lieberman & Miller, 2014; Lutrick & Szabo, 2012; van den Bergh et al., 2015; Webb et al., 2013). Implementation of reflective practice allows professional development to become sustainable and self-directed. Lieberman and Miller (2014) identified different models of professional development and noted that at the core of all the models presented was reflection in learning communities. Professional development offerings should include sustainable learning community activities that encourage reflection.

### **Learning Theories**

Researchers have developed several learning theories, which reflect the fact that learning is a complicated process (Ertmer & Newby, 2013). During training, I provided

participants with an overview of traditional and experiential learning theories (see Appendix A). The professional development program focused on the following six learning theories: behaviorism, cognitivism, constructivism, experiential learning theory, humanism, and social cognitive theory. As I created the professional development program, I studied each learning theory. Therefore, this literature review on learning theory ensured for accuracy of the material presented in the professional development program.

**Behaviorism.** Health science educators implement many learning theories (Handwerker, 2012). In clinical education, instructors often draw from behaviorism because the approach identifies learning as a notable change in behavior (Handwerker, 2012; Merriam & Bierema, 2014; Nalliah & Idris, 2014). Instructors often show or demonstrate a skill and then have the student repeat it. In many programs, a student must repeat the skill or behavior until the instructor deems him or her competent. The works of Pavlov, Thorndike, Watson, and Skinner were all instrumental for behaviorism. The general concept behind this learning theory is that both positive and negative stimuli will influence learning. In clinical instruction, this may include the praise or constructive criticism of the instructor as eliciting the behavioral response from the student.

Pavlov and Watson studied classical conditioning (Pavlov, 1927; Moore, Manning, & Smith, 1978; Watson, 1970; Merriam & Bierema, 2014). Researchers have called Pavlov's classical conditioning the foundation of learning theory (Kurgat, Chebet, & Rotich, 2015; Moore et al., 1978). Pavlov discovered that a stimulus could elicit an unintended response that another stimulus would usually provoke (Hall, 1976). Pavlov

defined two key concepts: conditioned and unconditioned responses. The unconditioned response is what one would expect to have happen based on exposure to a certain stimulus. The conditioned response is what is observed after numerous events or stimuli have been introduced with the original or unconditioned stimulus (Hall, 1976). In clinical instruction, students have reported feeling upset after they receive poor performance reviews from instructors in the clinical setting. The students have also reported feeling anxious or upset upon future experiences in the clinical setting due to the previous interaction. Merely entering the clinical setting does not provoke feelings of anxiety for most, however, certain students may have experienced this classical conditioning.

Pavlov was originally studying the digestive system and the role of saliva (Moore et al., 1978). The subjects of his study were dogs presented with food, which in this case was meat powder. The dogs would salivate at the sight of the meat powder, which is an unconditioned response to an unconditioned stimulus. Upon discovery that the dogs would salivate at the mere sight of the handler or sounds of the unit dispensing food, Pavlov used additional stimuli with the food to determine if the same response could be achieved when the additional stimuli was used alone. The results showed that once a stimulus was paired with the unconditioned stimulus (meat), the new stimulus would become a conditioned stimulus achieving the same response as the unconditioned stimulus. Through experimentation, patterns and frequency of stimuli exposure were determined. Pavlov (1927) believed that education and training consisted of conditioned

behaviors and practices. Pavlov's work with classical conditioning was instrumental for behavioral and educational research.

Watson studied classical conditioning as it related to the study of the learning process, behavioral control, and behavioral prediction (Merriam & Bierema, 2014; Watson, 1970). Watson's research focused on external behavior while Pavlov's work was focused on conditioned reflexes (Pavlov, 1927; Watson, 1970). Watson, like Pavlov, believed classical conditioning was the pinnacle of learning (Hall, 1976). Watson focused his work on the emotional and social aspects of behavior, which is relevant to education as educators strive to encourage, reinforce, and model good behavior (Watson, 1970).

Watson's research showcased the importance of the frequency of events or repetition of behaviors in the learning process (Thorndike, 1932; Watson, 1970). Thorndike disagreed with this perspective (Thorndike, 1932). Thorndike ascertained that behaviors that precede positive rewards are more likely to be repeated; and behaviors that elicit negative consequences would be less likely to be repeated (Thorndike, 1911).

Thorndike studied animals placed in puzzle boxes as they tried to reach rewards. The animals were studied as they tried to determine how to obtain food that was placed on the outside of the box. After trial and error, the animals were able to open the door that allowed them to access the food. This situation was repeated numerous times. Eventually, the animals knew how to access the food readily, as they had already determined what did not work. The stimulus of hitting a certain area of the box caused

the desired response (door opening) and brought forth reward (acquiring food).

Thorndike described this process as instrumental learning (Hall, 1976; Thorndike, 1932).

Skinner (1974) built on Thorndike's work. Skinner's research on pigeons and reinforcing behavior based on outcomes led to what is known as operant conditioning (Jordan, Carlile, & Stack, 2008; Skinner, 1968). Skinner explained that behaviors can be better understood when what occurred before those behaviors is studied (Skinner, 1974). Skinner supported the importance of reinforcing positive or desirable behavior (Merriam & Bierema, 2014). Skinner also identified the importance of ignoring undesirable behavior in an effort to make it stop (Merriam & Bierema, 2014; Skinner, 1974). The outcomes or reinforcers influence what behaviors are displayed (Skinner, 1974). The effect that consequences have on behavior was key to the work of Skinner (Merriam et al., 2007; Merriam & Bierema, 2014).

Clinical instruction draws on behaviorism (Handwerker, 2012; Nalliah & Idris, 2014). The curricula of dental hygiene are outcomes-based and rely heavily on meeting objectives. Handwerker (2012) stated the best way to learn a profession was to modify the environment and reinforcement. During clinical instruction, the instructor may reinforce good behavior, evaluate frequently, and communicate expectations clearly (Nalliah & Idris, 2014).

The analysis of the data in this study illustrates the participants' legitimate peripheral participation. They did not move beyond the early stages of legitimate peripheral participation as dental hygiene educators. A more intensive participation may be achieved through learning how to incorporate behaviorism into educational practice.



Through observation and routine evaluation, the full-time faculty could provide positive and negative reinforcement to the clinical instructors. Similar to the process of students receiving feedback from the instructors, the instructors desired attention and praise from the full-time faculty. The analysis of data supported that the participants relied heavily on the student evaluations to determine if their instruction was effective. The students do not have background in educational practice and methodologies. The full-time faculty have an opportunity to mold the behavior of the participants and guide the participants' instructional practices.

The professional development program (Appendix A) includes an overview of behaviorism, participant reflection on incorporating behaviorism into instructional practice, and group discussion on best practices of introducing behaviorism into clinical instruction. During the implementation of the program, participants will interact with the full-time faculty to discuss what educational practices would elicit desired behaviors of the students. The reflection aspect of the program will allow the participants to analyze what they have learned and record where the material fits in relation to their instructional practice.

**Cognitivism.** An orientation of learning that is more focused on the actual mental process is cognitivism (Ertmer & Newby, 2013; Merriam & Bierema, 2014). The three pillars of cognitivism are cognitive development, memory, and instructional design theories (Merriam & Bierema, 2014; Nalliah & Idris, 2014). Cognitivists believe that when the learner is placed in an active role during the learning process, the learner's behavior changes due to the assimilation and accommodation of the new information.

Piaget, who is recognized as the father of cognitive psychology, differentiated development from learning (Merriam & Bierema, 2014; Nalliah & Idris, 2014; Piaget, 1964). The four stages of development as described by Piaget were originally intended to illustrate child development. The stages of cognitive development include sensorimotor, preoperational, concrete operational, and formal operational (Piaget & Inhelder, 1969). Piaget identified information that is processed and understood at each stage, but also explained the transition between stages (Piaget, 1950).

Piaget's work has been foundational for educators and can be applied to adult education (Merriam & Bierema, 2014). Kegan's theory of development used principles of Piaget's theory of child development as the foundation to explain how adults learn (Drago-Severson, 2009). Kegan's theory moved beyond the stages of development and added social and emotional contexts to explain how individuals grow and develop. Kegan's theory is based on constructing knowledge in a new way, continually developing, and making meaning of things we can influence and things we cannot (Drago-Severson, 2009).

Kegan (1994) discussed learning within the context of five orders of consciousness. The five orders of consciousness describe the dimensions of development within a socio-cultural perspective (Drago-Stevenson, 2009). The first and second orders of consciousness relate primarily to children. The first and second orders are part of continued development and act as interconnected parts to the higher orders (Drago-Stevenson, 2009; Kegan, 1994).

The third order of consciousness places focus on the socialization of an individual (Kegan, 1994). During this time, an individual begins to think in terms of his or her relationships with others. Emphasis in the third order of consciousness is placed on rules with little variation from societal norms. The individual in the third order of consciousness makes choices based on short-term effects and the effects on existing relationships.

Many professional students transition from the third to fourth orders of consciousness (Kegan, 1994). During the transition from third to fourth order consciousness, students leave behind the desire to please a field expert and become self-directed and autonomous (Drago-Stevenson, 2009; Kegan, 1994). Fourth order consciousness is referred to as the self-authoring mind (Drago-Stevenson, 2009; Kegan, 1994). Unlike the third order of consciousness, an individual in the fourth order becomes their own person and no longer needs direction from others. The fourth order of consciousness depicts the individual as an independent, self-directed learner. The self-directed learning that takes place in the professional setting does not just involve new information but learning and doing in a different way.

Cognitive theorists, who continued Piaget's work, noted the importance of acquiring a deeper meaning of new information. Influenced by Piaget, Ausubel differentiated between rote learning and a deeper level of learning (Ausubel, 1969; Merriam et al., 2007). Ausubel's work focused on linking existing information to newly presented information in order to attain a deeper meaning from learned material

(Ausubel, 1969). Maintaining information for long periods in order to retrieve it later is important for problem solving (Ausubel, 1969).

Problem solving and critical thinking skills are necessary for success in professional studies, like healthcare. Ausubel (1969) discussed how rote learning would not necessarily prepare the student for problem solving attempts during clinical situations. This can become problematic because the students do not have the context to link new information to prior knowledge that may have been memorized and retained for a short period. Recommended strategies to obtain deeper meaning of learned material include students making meaningful cues, watching demonstrations, and reviewing case studies (Ausubel, 1969; Jordan et al., 2008).

Another theorist whose work is often used in healthcare education is Bloom. Bloom is well known for the taxonomy of learning (Bloom, Engelhart, Hill, Furst, & Krathwohl, 1956; Merriam et al., 2007; Merriam & Bierema, 2014). Many educators use Bloom's taxonomy when developing curriculum. The taxonomy or classification described the levels of skills necessary for deeper and more meaningful learning to take place. The levels from simplest to most difficult include knowledge, comprehension, application, analysis, synthesis, and evaluation (Bloom et al., 1956).

In 2001, Anderson and Krathwohl updated the classification. The taxonomy also allows for deeper analysis and synthesis of material and even creation of new material. While the middle categories or levels remain the same, the outer levels were revised. The simplest level of cognition includes remembering in place of the former title, knowledge. The next category is labeled understanding. The last two categories have been changed

from synthesis and evaluation to evaluating and creating. The names of each level were also changed from nouns to verbs to reflect learning as an active process (Andersen & Krathwohl, 2001). Dimensions of knowledge for each level include factual, conceptual, procedural, and metacognition (Andersen & Krathwohl, 2001).

Cognitivism is also deeply seated in development, memory, and design of instruction. In educational practice, the focus with this learning orientation is on the learners, how they store material, and how they retrieve information. This focus aligns with dental hygiene practice, as the students receive information in a classroom setting. Then, the students are asked to perform the skills they learned during the lecture. The implementation of newly acquired skills is often first demonstrated and explained. When the students perform the skills on patients in the clinical setting, they must draw on this information, especially when they must problem solve.

The study participants reported being frustrated and cited inconsistencies between instructors. Their frustration may stem from not being able to recall clinical policies and procedures or differences in their interpretation of clinical policies and procedures. How the instructors store and retrieve the material could differ and lead to frustration over their differing interpretations. The participants desired collaboration with each other and the full-time faculty to minimize these differences in their interpretations. Collaboration with each other and the full-time faculty would provide the opportunity to increase calibration among the faculty. Participants also reported the joy of observing the students as they grasp the material and apply it. The participants identified witnessing the ah-ha moment and sharing in the students' successes as among the most gratifying experiences.

The participants remained in the outside layers of legitimate peripheral participation and did not have the same social and cognitive experiences as the full-time faculty members. Many instructors teach 1 to 2 half days a week, allowing minimal time to immerse themselves in the community of dental education practice. A more intensive participation would require increased hours of practice to gain experience and increased collaboration with full-time faculty.

The professional development program (Appendix A) includes opportunities for participants to discuss cognitivism, apply cognitive principles in teaching through an activity, and evaluate the activity. Participants will be drawing on their own cognitive processes and examine their educational practices and experiences. They will reflect on how to implement cognitive approaches effectively.

**Constructivism.** Constructivism also emphasizes making learning relevant to the learner (Ertmer & Newby, 2013). Constructivists focus on learning as giving new meaning to an experience (Ertmer & Newby, 2013; Merriam et al., 2007). Constructivist views are wed to experiential learning. Constructivism supports learner-centered environments and collaborative learning (Handwerker, 2012).

The views of constructivists mirror the work of Vygotsky, Dewey, Lave, Wenger, and Piaget. Piaget, who was discussed earlier for his work on cognitivism, also recognized the importance of age and experience in constructing new meanings (Nalliah & Idris, 2014; Piaget, 1964). These new meanings should be relevant to the learner to allow for deeper understanding (Ertmer & Newby, 2013). This deeper understanding

must be gained by the learner and not simply transferred to the learner by the educator (Nalliah & Idris, 2014). The learner is active in the learning environment.

Dewey (1938) emphasized that the environment has a major influence on an individual's learning experience. He further recognized that the learner's prior experiences as well as his or her experience of the current learning situation can influence his or her learning process. In order to garner new or deeper meaning to content, the associated experiences must be taken into consideration.

Lave and Wenger (1991) posited situated cognitive theory, which reflects apprenticeship learning (Sharma & Baines, 2015). Apprenticeship learning includes cognitive thinking, but also involves the experience in order to give deeper meaning to the learning experience (Lave & Wenger, 1991). The apprentice, or learner, moves through legitimate peripheral participation, as they become more skilled and acquire competence in the subject matter.

Vygotsky (1978) conceptualized the ZPD as the space where learning can take place where there is a reasonable gap between what the learner knows and does not yet know. As the learner moves through the ZPD, if the material is properly scaffolded, he or she is able to deal with increasingly difficult material. When the material is slightly difficult, yet not too difficult, for the learner, he or she is able to comprehend the material. Vygotsky's ZPD illustrates the construction of learner-created meaning (Nalliah & Idris, 2014; Vygotsky, 1978). Hattie (2012) also emphasized the importance of teachers collaborating with each other when they are in the ZPD.

Although the participants of this study were able to describe their teaching style and describe limited information regarding learning theory, they were not able to expand upon or name the theories. The instructors requested professional development as a means of collaborating with other faculty within the department. Collaborative learning will allow the participants to construct shared meaning based on experiences they have had. Collaborative learning will also provide the participants the opportunity to become more enmeshed in the community of educational practice.

The professional development program (Appendix A) includes reflective journaling on current participant practice and group discussion of strategies to incorporate constructivism in the clinical setting. The group discussion models constructivism, as it allows for collaborative learning among the participants. Participants will also share their experiences and learn from one another and create new meaning based on the discussions.

**Experiential learning.** The relationship between experience and education is essential (Dewey, 1938). Any healthcare based education program that has a clinical component is deeply reflective of experiential learning. The dental hygiene students provide real patient services while building experience. The experiences the students have are relevant to what they are studying. Learning while doing something that is relevant is the defining factor of experiential learning (Yardley et al., 2012).

Scholars noted that experience allowed for an added layer to the depth and breadth of learning (Yardley et al., 2012). Piaget (1964) highlighted how age (and experience) are critical to the learning process. Despite his work being primarily with



children, Piaget studied human knowledge and the development of intelligence (Kolb, 2015). Piaget also recognized the influence experience has on development and learning (Kolb, 2015).

The learning process is a different experience for everyone. Kolb, who was influenced by Piaget, Dewey, and Lewin, is known for describing the cycle of learning (Kolb & Fry, 1975; Kolb, 2015). This cycle involved gaining experience, making observations, reflecting on those observations, and absorbing new information (Kolb & Fry, 1975). Learners were also classified according to learning preference. Classifications of learning preference originally included accommodation, divergent, assimilation, and convergent (Kolb, 2015). The classifications have evolved into nine learning styles that include initiating, experiencing, imagining, reflecting, analyzing, thinking, deciding, acting, and balancing (Peterson et al., 2014). The Kolb learning styles illustrate increased self-awareness and ability to adapt to learning environments (Peterson et al., 2014). Kolb asserted that preferences to learning change over time (Kolb, 2015; Peterson et al., 2014).

Vygotsky (1978) described the relationship between the novice and the expert. This relationship allows the novice to improve and grow as a learner until he or she can effectively perform the tasks on his or her own. Vygotsky termed the place where the learner was not ready for independent work but was working with an expert to get him or her to that point as the ZPD (Gredler, 2012; Vygotsky, 1978). The dental hygiene clinical instructors work with the dental hygiene students to prepare them for dental

hygiene practice. This process can also be described as scaffolding. Little by little, the novice grows and improves until he or she becomes a competent, independent clinician.

Vygotsky's ZPD parallels experiential learning. The social aspects of learning are seen as integral to growth and development (Hedegaard, 1990). Learning occurs through the observation of others completing a task that we want to be able to complete or by discussing how to complete the task (Goodman & Goodman, 1990). Observation and discourse during learning are staples of fieldwork found in many disciplines of study. The apprenticeships, internships, or lab work require students to work with knowledgeable experts or instructors outside the classroom. The relationship between expert and student takes place in the ZPD (Gredler, 2012; Hedegaard, 1990; Jordan et al., 2008; Merriam & Bierema, 2014; Vygotsky, 1978).

Reflection is a key aspect of experiential learning (Rohlwing & Spelman, 2014). The educator or facilitator juggles the students, the material, and the reflection of the experience during the experiential learning process. Reflection on action is an important step when the learner is navigating the milestones toward becoming a competent professional. Reflection can be done in a number of ways, and perhaps the most common and successful way in education is through journaling. Reflective journaling helps the learner assess the learning process and make connections to perceptions or experiences they have already had (Jordi, 2011; Wald et al., 2015; Wattiaux, 2014).

Dental hygiene clinical instructors use their own experience to instruct and guide students in the clinical setting. The participants in this study described sharing their experience and tips they have learned with students. The students must complete

prescribed clinical hours so that they successfully complete the academic program. The clinical work, consisting of an expert clinician, mirrors an apprenticeship and the tenets of experiential learning. Empathy for the students' experiences guides the instructors' practice. Due to the experiences the instructors have had and once being students themselves, they are able to comprehend and recall the lived experiences of the students.

The participants reported that they lacked the opportunities to observe faculty during instructional times. The participants did not have faculty mentors or guides to assist them in their practice. There are no best practices for clinical instructors to follow. The principles of experiential learning include having opportunities to collaborate with others, observing experts or those in the field, and studying best practices and pitfalls to avoid. The participants did not have access to that which would allow them further immersion into dental hygiene education. Due to this lack of access, the participants continued to complete simple tasks that are familiar and remained in the legitimate peripheral participation.

The professional development program (Appendix A) includes an exercise where faculty will develop an approach to instruction. The participants will implement the instruction in small groups. Following the implementation of the exercise, participants will reflect and discuss instructional perspectives. The participants will also complete an educator role profile (Kolb educator role profile or KERP) online. The results will be shared and discussed in the context of experiential learning.

**Humanism.** The humanistic orientation of learning asserts that we have potential to learn and make sense of our experiences (Merriam et al., 2007). Andragogy and self-

directed learning describe how the adult learner progresses through stages of understanding until they understand the material at a competent level (Merriam & Bierema, 2014). Scholars who are credited with humanistic approaches include Maslow, Rogers, Knowles, and Mezirow (Maslow, 1943/2012; Knowles et al., 2015; Merriam et al., 2007; Merriam & Bierema, 2014; Mezirow & Taylor, 2009; Rogers & Freiberg, 1994).

The hierarchy of needs by Maslow described how an individual can transform or progress into all that they are capable of becoming (Maslow, 1943/2012; Merriam et al., 2007; Merriam & Bierema, 2014). The well-known triangle that illustrated this principle demonstrates how an individual transforms to reach their full potential. The levels of the triangle demonstrate the factors involved for a learner to be capable of learning. Maslow (1943/2012) studied psychologically healthy individuals to gain understanding of their position. Learners must be safe and have basic needs met so that they may effectively learn. The basic needs of physiology and safety are the first levels of Maslow's triangle. The next two levels include love and esteem. Maslow described the connectedness of love and esteem. People may enter one level before the other depending on their own backgrounds and needs. Although the last level, self-actualization, may lead us to believe that there is a finalization of this process, Maslow explained that in time situations will occur and there will be movement through the levels again.

Maslow's work laid the foundation for Roger's work on client-centered therapy, which later led to student-centered learning (formerly known as person-centered learning) (Maslow, 1943/2012; Rogers & Freiberg, 1994). Rogers' student-centered learning

placed emphasis on the learners as engaged students in a calm, trusting environment.

This environment, which is conducive to learning, includes a facilitator who guides the active learner (Heim, 2011; Jordan et al., 2008; Rogers & Freiberg, 1994). The teacher, acting as a facilitator, practices several behaviors during the facilitation of learning. The facilitator empathizes with students, praises students, and holds discussions with students more frequently (Heim, 2011; Jordan et al., 2008; Rogers & Freiberg, 1994). These behaviors translate to improved student scores, fewer reports of classroom disruption, and increased critical thinking practice by the students (Rogers & Freiberg, 1994).

When knowledge is attained through a facilitated environment rather than a forced environment, students learn independently. Individuals use this important skill of independent learning for life. Rogers coined the term lifelong learning (Merriam & Bierema, 2014; Rogers & Freiberg, 1994). His concept moved far beyond attending continuing education lectures or seminars. The idea of lifelong learning according to Rogers involved reflection and behavioral change.

Another theory that has roots in humanism is the transformational learning theory. Mezirow's transformational learning theory demonstrated learning as a substantive change of perspective or at least the entertainment of such a change (Merriam & Bierema, 2014; Mezirow & Taylor, 2009). This theory emerged from a study that followed women returning to higher education after a duration of time. The findings included transformed perspectives of and a deeper reflection on life. At its core, this theory recognized the importance of reflection and experience (Fleischer, 2006). The personal development of the learner is self-directed and they are responsible for their own

learning (Mezirow & Taylor, 2009). Mezirow believed learning involves deriving meaning from experience (Fleischer, 2006).

In the 1970s, Knowles introduced a theory that proposed adults learned differently than children (Knowles et al., 2015). Historically, educational theory studies involved animals. With time, studies included children, but rarely adults. The concept of andragogy, or Knowles's concept of adult learning, placed the focus on the learner and placed the teacher in a facilitator role (Knowles et al., 2015). This learner-centered approach to learning is congruent with the humanistic approach to learning.

The data analysis provided evidence that the participants reveled in student success. Participants acknowledged student transformation as part of student success. Participants also described the relationships they had with students as mutually respectful and similar to a relationship between a mother and child. In this sense, the mother would not be an authoritative figure, but a guiding force assisting in the process of learning.

The majority of the participants worked in private settings and instructed students at the college campus. The differences encountered between the two settings make it difficult for the participants to transfer between the two settings. This may make it challenging for the participants to fully immerse themselves in clinical education and become expert clinical instructors. Even over time the participants will not experience immersion in the clinical education setting without spending more time observing and socializing in the community of educational practice.

The professional development program (Appendix A) includes an overview of the humanistic approach to education. Participants will journal, reflect, and share with other

participants. The activities focus on application, reflection, and discussion of the theories of Maslow and Mezirow.

**Social cognitive theory.** Social cognitive theory has a foundation in cognitivism (Merriam & Bierema, 2014). A major theorist of this orientation was Bandura who asserted that learning involved both a change in behavior that warranted reinforcement and an environment conducive to the learning process (Bandura, 1977; Burgess et al., 2014; Merriam et al., 2007; Merriam & Bierema, 2014). Within this conducive environment, the emphasis was placed on the observation of others (Bandura, 1977; Merriam et al., 2007).

Bandura set out to study the aggressive behaviors observed in children (Rutherford-Hemming, 2012). After conducting research, he found that learning does occur from observation, which became known as observational learning (Bandura, 1977). The process of observational learning consists of observing, imitating, and modeling (Chavis 2012). Social learning is used frequently in the fields of criminology, behavioral therapy, and healthcare education (Brauer & Tittle, 2012; Chavis, 2012; Rutherford-Hemming, 2012). The observations of others influences what and how individuals learn (Bandura, 1977).

Several disciplines of study use modeling in the educational process. Learners, who may model the behaviors on their own later, observed behaviors and attitudes. In the practice of clinical dental hygiene education, the clinical instructor is observed at all times. The students observe the way the instructors appear physically and how they carry

themselves in front of the patients. This type of learning aligns with the social cognitive learning theory (Burgess et al., 2014).

The participants in this study modeled behaviors for students during their clinical practice. The instructors do not observe others routinely. This lack of observation may impede their growth and development as clinical instructors. It will also prevent them from fully socializing into the community of dental hygiene education practice. In order to move beyond the outer layers of legitimate peripheral participation, the participants must experience social learning, including observation of the experts.

The participants reported learning approaches including demonstrating procedures for students and having students watch them. These approaches include the observational learning that was discussed by Bandura (1977). The students are expected to model the behaviors they observe and are shown to be properly introduced to the community of practice.

### **Learning Communities**

Communities of learning, sometimes called professional learning communities are means of collaborative professional development (Linder, Post, & Calabrese, 2012; Lutrick & Szabo, 2012). The National Staff Development Council (2011) recognized that learning communities strengthen the fabric of education and help teachers to deepen their understanding of the educational process.

Learning communities have roots that are associated with several well-known adult learning theories. Those theories include Knowles's theory of andragogy and Mezirow's transformation theory (Knowles et al., 2015; Linder et al., 2012; Mezirow &



Taylor, 2009). Knowles' theory was centered on problem-based learning and life experiences. Learning communities are often established because of a task that needs to be completed (Linder et al., 2012). Mezirow's theory focused more on reflection leading to an action (Linder et al., 2012). Both views supported collaborative engagement and learning that help teachers grow as professionals as they guide students in their learning (Lutrick & Szabo, 2012).

The key elements of a learning community include empowering the members of the learning community, establishing trust among the members, and collaboration within the learning community (Kise, 2012). The focus on the learning community is on learning and continuous improvement (DuFour et al., 2010). The establishment and operation of the learning communities often includes camaraderie and empowerment among the members due to the creation of trust and shared knowledge (Linder et al., 2012)

One of the key elements mentioned above is empowering the members of the learning community. The learning community should establish a shared vision based on the members' experiences and expectations of participating in the learning community (DuFour et al., 2010; Hord & Hirsh, 2009; Kise, 2012). A collaborative culture is shaped from the onset of the learning community formation.

Another key element of a learning community is building trust among the members. Without trust among the members of the learning community, it will be difficult for the members to openly share and embrace new possibilities (DuFour et al., 2010) Trust can be built by establishing rapport with others in the learning community.

By working together and adhering to the guidelines established by the learning community membership, the group will be more likely to develop relationships centered on support of one another and collective inquiry (DuFour et al., 2010; Kise, 2012).

Collaboration is the key to the success of the learning community (Kise, 2012). A viable source of professional development will evolve, which will ensure continued collaboration within the learning community (DuFour et al., 2010; Linder et al., 2012). Ongoing collaboration coupled with clear direction and goals transition professional development into sustainable programs that foster professional growth and positive change.

## **Implementation**

### **Program Description**

The program will be implemented during the preparatory week prior to the start of classes in January 2016. An email asking them to save the date will be sent in advance to dental hygiene clinical instructors. A sample email can be found in Appendix A. The email will include a request for the instructors to reply to confirm their attendance. Prior to the implementation of the program, handouts will be made, the room and refreshments will be secured, journals will be purchased, and certificates of completion will be prepared.

The resources needed for this professional development program include physical space, copies of handouts, completion certificates, and a budget for food. The program will take place during paid preparatory time, so additional funds to compensate faculty will not be necessary. Participants will be provided a light breakfast all 3 days along with

lunch on the last day. A key component threaded throughout this professional development program is reflection. Participants will bring journals each day to complete journaling and reflection exercises.

On day one, participants will be given outlines of the program content for all 3 days. On the first day, there will be presentations on the introduction to the professional development program, behaviorism, experiential learning, and social cognitive theory. Participants will partake in journaling, discussion, and group activities. The activities will include a group discussion on adult learning, an individual and group activity on clinical instruction, and completion and discussion of the Kolb educator role profile. Participants will also complete individual, paired, and group activities on how to incorporate behaviorism, experiential learning, and social cognitive theory into clinical instruction. The participants will end the day with reflective journaling. The facilitator will document ideas during the discussions on a computer utilizing a projection screen to share ideas. After lunch, the participants will move to the computer lab to complete the Kolb educator role profile completion. To close day one, participants will complete evaluation forms.

On day two, presentations will be given on humanism and cognitivism. Participants will have the outline of the presentation material from day one. On day two, a picture of Maslow's hierarchy of needs will be projected onto the computer screen to guide participants in the activity on humanism and discussion of goal setting. Participants will discuss their suspected place in the hierarchy of needs diagram and share their responses with the group. The next activity will involve the participants setting a

goal and determining how they will meet this goal. There will also be journaling and discussion on cognitivism. The individual and paired discussion will include brainstorming of ideas for clinical implementation. Participants will teach one another a task using the cognitivist approach. Participants will also reflectively journal and complete the evaluation forms.

The presentation on the third day will include information on constructivism. Participants will complete journaling, discuss responses in pairs, and discuss with the group. An activity on learning and teaching orientations will be implemented. Participants will have the chart in the outline handout from day one (Taylor et al., 2000). Discussion of responses will follow in pairs and with the group. The last activity will be more involved. The participants will be asked to work in groups of two to three to construct an educational session for a clinical session. The instructions for the activity will be presented and will include using the theories discussed during the three days as the foundation of the educational session. They will be asked to formulate learning objectives for the session, identify what will be taught, and identify the evaluation process. Participants will reflect on the construction and implementation of the hypothetical educational session.

There are a few existing supports in place for this professional development program both within the department and from the campus. The department must have a program on this topic to comply with our accreditation standards. Therefore, all dental hygiene faculty will benefit from the information. With department and campus support, securing space on campus to conduct the program will be easy. By a departmental

request made to the appropriate office, a conference room will be reserved. By implementing the program when classes are not in session will reduce the risk of having difficulty in securing a room. In addition to the support of the department, the school's foundation allows department funding for special events like this. By applying for the \$850 necessary to implement this program, the awarded funding will allow for successful program implementation.

Each instructor will be responsible for participating in the 3-day professional development program. Participation will include listening to presentations, actively engaging in activities, and reflecting on their action as an educator and the program each day. I will act as the facilitator. Initially, I will send out the invitation email to the instructors in advance of the offering. In addition to securing the room, refreshments, and journals, I will follow the syllabus found in Appendix A during the implementation of the program. By reviewing basic concepts of traditional learning theories, I will provide the tools necessary for the instructors to assess the use of the theories of their teaching. There will also be allotted time for them to reflect on how they could incorporate additional learning theories in their teaching craft.

### **Program Evaluation**

The effectiveness of program evaluation is often measured by determining if the intended outcomes were met (Caffarella & Daffron, 2013). The professional development program has daily evaluations built in to allow for program evaluation (See Appendix A). A work-study student will analyze the evaluations by hand. The analyzed evaluations will indicate the areas where improvement is needed for future offerings.

The day three evaluation will include a question, which asks participants to identify anything they would have liked to see covered. This information will help in creating the content for future dental hygiene clinical instructors. This form of systematic, summative evaluation allows for reflection once the program has been implemented (Caffarella & Daffron, 2013).

Guskey (2000) noted that evaluation forms are commonly used for professional development programs. Other forms of evaluation include focus groups and one-on-one interviews (Guskey, 2000). Time and money are disadvantages of evaluation by focus groups and interviews. For this professional development program, evaluation forms are easily introduced at the end of each day. This feedback, once analyzed, will drive future professional development programs on incorporating adult learning theories into dental hygiene clinical instruction practice.

Professional development offerings should be offered at a minimum once every semester. Since this program is in its infancy, a follow-up session will be held in May of 2016 to review key factors presented and to present any changes that have occurred since the original offering. Ideally, the participants will establish professional learning communities to review clinical materials and study new research in the field of dental hygiene clinical practice, dental hygiene education, and adult education. This type of open-ended approach to professional development allows the participants to make decisions on the material to investigate and to opt out of participation if they choose to (Rohlwing & Spelman, 2014).

### **Implications**

The implications of this program include an improved quality of clinical education at the local setting. By allowing clinical instructors the opportunity to improve their craft, the improved service to the students will be demonstrated by the students' performances. When students are better prepared clinically, they can better assess and treat patients. This strength equates to improved patient care and outcomes. The potential positive social changes include improving education to students, improving care for patients, and changing the lives of many.

Because many health science programs within higher education have mandatory clinical components, the implications of this course could reach out to many professionals. I can see a program like this being used across health sciences programs, such as physical therapy, nursing, medical assisting, radiologic technology, and even into dental and medical training programs.

### **Conclusion**

Woven into the various health fields is ongoing professional development. Often this professional development exists on specific topics related to the services that the provider of care delivers. Unique to allied health academic programs is a need to educate clinical instructors in education and the craft of teaching. Clinical instruction will be more conducive to learning with participating in a professional development program that serves as a mechanism to improve teaching and learning.

Next is Section 4, or the Reflections and Conclusion Section. Within Section 4, the project strengths and weaknesses and recommendations for alternative approaches

will be discussed. I will also reflect on my journey throughout this project study in the areas of scholarship, leadership, and change. The importance and relevance of the work, along with implications, applications, and directions for future research will also be expanded upon in the next section.



## Section 4: Reflections and Conclusions

### **Introduction**

In this study, I investigated dental hygiene instructors' perceptions about the use of adult learning theory and dental hygiene clinical instruction. I found that the dental hygiene clinical instructors at the Upstate New York community college are in need of professional development and collaboration with their colleagues within the department. My findings led me to create a professional development program for dental hygiene clinical instructors, which I administered to my colleagues in my program. The professional development program's foundation is adult learning focused instruction (See Appendix A). The focus of the program is an overview of behaviorism, cognitivism, constructivism, experiential learning theory, humanism, and social cognitive theory. In this section, I consider the project's strengths and limitations, significance, and implications for future research and offer my recommendations and reflections.

### **Project Strengths and Limitations**

A strength of the professional development program is that it directly met the needs of the dental hygiene clinical instructors. I identified the needs of the dental hygiene clinical instructors through the analysis of the data. My initiative was the first time that dental hygiene clinical instructors in my program had professional development consulting theories of adult learning. Another strength is that the professional development program provided scholarly information on adult learning theories that the clinical instructors can use during clinical instruction. The professional development program provides an overview of learning theories. The professional development

program also includes discussion of the application of these learning theories and application activities to increase participant collaboration.

There are two limitations of this project. The first is time, as I was limited to conducting the program over 3 days. In designing the program, I found it challenging to address the complexities of adult learning theory and practice in a 3-day program. I believe that instructors may benefit from additional training on these theories. The other limitation is financial support. It may be difficult for the department to secure the appropriate funds to conduct a 3-day program and compensate the clinical instructors for their time. By holding the program in January, this challenge will be minimized, as the course will be offered during paid preparation time. The limitation still needs to be recognized by department leadership due to shrinking budgets (Tallerico, 2005).

### **Recommendations for Alternative Approaches**

Educators and practitioners find any problem will have multiple ways of being solved. Based on what I learned from carrying out this study, I believe that an alternative way to address this problem of limited time and financial support, may be to establish faculty learning communities within the department and hold ongoing study groups. Study groups and faculty learning community meetings will empower the part-time instructors to share and discuss their experiences. The instructors would have a more active role in their development as educators. I discussed and encouraged department leadership to consider this alternative during the training, but I believe that faculty learning communities will be difficult to mandate and sustain. Part-time faculty have

demands on their time as many have two or more jobs. Finding additional time to devote toward their professional lives may be difficult.

Another alternative may be to hold these programs once a semester. That way faculty will have time to work with one another and achieve a deeper level of inquiry. Holding a program every semester would require additional funding and time on the part of clinical instructors. Department leadership could procure additional funding with advanced planning. Also, if the instructors were informed of regular meetings every semester, they would be able to plan accordingly.

### **Scholarship, Project Development, Leadership, and Change**

In conducting my research and creating and implementing my professional development program, I learned many things. Learning about something and learning how to implement that something are two different things. I learned from my research, program planning, and delivery experiences and I consider all components to be foundational pieces of my academic journey.

I have a different perspective and greater understanding of qualitative research now. Since learning about the fundamentals of research and the processes involved in it, I have developed a deep appreciation for qualitative research. I did not anticipate the rich insights that I would glean from data collection.

I also did not anticipate fully the depth of inquiry involved in creating a professional development program. The facilitator of a professional development program must fully research the topics and content of the program before the implementation phase. During the completion of this study, I cultivated a deeper

understanding of adult learning theories, professional development, and the implementation of adult learning theories in a clinical setting. By studying and applying these topics, I was able to infuse traditional learning theories with best practices of professional development.

### **Analysis of Self as Scholar**

As a scholar, I have grown in numerous ways from my research experience. I have always wanted to do more. This lack of focus is not always advantageous. This process has made me appreciate quality over quantity. During the development of this professional development program, I tried to fit in so many different concepts and major pieces of information. However, by focusing on the most pressing needs that I identified during data analysis, I was able to narrow my topics, which I believe helped me develop a successful program.

As a registered dental hygienist, I am committed to being a lifelong learner in my professional field. As an educator, I pride myself on being able to research a topic thoroughly and find answers and/or solutions to questions and problems that exist. I have always had a spirit of inquiry and curiosity. This process has provided me with another valuable skill set. That skill set is the ability to conduct an in-depth inquiry on a particular subject. I am excited to be able to share my knowledge and enthusiasm of research with students.

### **Analysis of Self as Practitioner**

I have been a registered dental hygienist for 18 years. I have been a dental hygiene educator for 15 years. I began teaching in a part-time capacity and after 3 years

moved into a full-time position. As I have grown both personally and professionally, I have seen a need to provide assistance to dental hygiene clinical instructors. Because students and others know that many dental hygiene clinical instructors serve in part-time roles, they sometimes view them as serving in a limited capacity. The instructors may only be on campus 4 hours a week and therefore may not be available for the students. I am a firm believer that the clinical instructor holds a powerful, instrumental position. Student clinicians will never forget the hours that they spend with their clinical instructor. The number of hours the clinical instructor shares with the student are critical in the development of a skilled and competent clinician. I feel so fortunate to have been able to complete a project study that will support dental hygiene clinical instructors in their work with students.

### **Analysis of Self as Program Developer**

In the past, I have worked on curriculum, implemented lessons in classrooms and lab settings, and chaired committees and meetings. But, I have never developed a project of this magnitude. At times, I thought that realizing this project would be impossible. With perseverance and fortitude, however, I have created something of which I am proud. My hope is that many dental hygiene programs and perhaps other allied health programs will be able to reference this work to improve the state of their clinical education. Providing instruction that is more effective leads to better-prepared student clinicians (Ruessler & Obertacke, 2011). Better-prepared student clinicians become competent clinicians who better serve the public (Ruessler & Obertacke, 2011). Serving the public

in an improved capacity has the potential to change the rates of dental caries and periodontal disease and result in improved patient outcomes.

### **Reflection on the Importance of the Work**

Prior to conducting this project study, I believed the clinical instruction was important in molding a future dental hygienist. I knew from my own experience that in order to become a skilled and competent professional, you need the guidance of well-trained and prepared clinical instructors. Although I felt adequately prepared for dental hygiene practice after graduation, I continued to learn about clinical practice during my experiences in practice. After completing the study, I truly understand that successful clinical instruction is paramount for a dental hygienist to be successful in their practice.

Often, the public may refer to a semi-annual dental visit as simply a “cleaning appointment.” This is a misnomer. Dental hygiene students must complete approximately 2,900 hours of instruction, nearly half of those hours focused on clinical instruction, and take national and state licensing exams (ADHA, 2014). Most dental hygiene programs are competitive and have a maximum number of students admitted each year (ADHA, 2014). The dental hygienist is an educator, a skilled clinician, and a competent provider of health services. For this professional to become skilled and competent, he or she must complete a rigorous educational process, of which clinical instruction plays a large part.

A well-prepared dental hygiene clinical instructor holds much responsibility in training tomorrow’s dental hygienist. Academic training programs must professionally support the individuals who serve as dental hygiene clinical instructors. Professional

support may include professional development offerings and adequate time to work with the full-time faculty. These part-time professionals not only serve the students directly, but they also serve the patients who are seen by the students. In an indirect manner, dental hygiene clinical instructors serve the future patients of every single dental hygiene student whom they instruct.

### **Implications, Applications, and Directions for Future Research**

The implications of this professional development program are far-reaching. At the local level, clinical instruction may improve after the instructors participate in the professional development program. Dental hygiene education at other colleges and universities may benefit from implementing this program as well. All programs accredited by CODA must meet the same standards (ADHA, 2014). The content of this professional development program has the potential to influence the local level and the broader arena of dental hygiene education. More specifically, those who would benefit most from the improved clinical instruction are the students and the patients receiving care from the students. Improved patient care leads to improved outcomes (Battrell et al., 2014). By improving clinical instruction, patient outcomes might improve.

The changes that may arise from professional development in dental hygiene may improve the lives of countless people. Dental hygiene students would benefit from the professional development program, as an intended result is to have their learning needs met through more tailored teaching strategies. The students may experience a deeper understanding of the material and they would be better equipped to help the patients (Ruessler & Obertacke, 2011). One of the primary roles of dental hygiene students and

dental hygienists is to educate their patients (Paulis, 2011). By being better equipped, students have a greater chance of being effective in his or her patient instruction. The result may include improved patient compliance and improved patient results. If the student clinician teaches differently, patient outcomes improve, the oral health of many people will improve.

Future research may include applying learning theories in the clinical setting and comparing student outcomes with specific learning theory application. By identifying specific learning theories with higher student achievement, new ways of practicing dental hygiene clinical education may come to the forefront of the profession. As dental hygiene continues to evolve as a profession, it only makes sense that the approach to clinical excellence evolve and remain relevant.

### **Conclusion**

In this study, I investigated dental hygiene clinical instructors' perceptions of what professional development offerings related to adult learning might help improve their teaching effectiveness. Based on my own professional observations and my review of the literature, I identified a need on the part of clinical instructors for training on traditional learning theories related to adult learners and how to apply this knowledge. Understanding how to teach is critical for clinical instructors. Instructors have expertise based on their clinical experiences. They do not typically have training in educational pedagogy and practice. By combining their practical expertise with the application of learning theories, instructors will be able to better meet the learners' needs and improve teaching and learning outcomes.



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## Appendix A: Professional Development Program

### **Project: Dental Hygiene Clinical Instructors Professional Development Program: Building a Foundation for Clinical Instruction upon Adult Learning**

#### **Theory**

**Purpose:** The purpose of this 3-day dental hygiene clinical instructor professional development program is to improve dental hygiene clinical instruction. The program will include a review of adult learning theories and discussion on strategies for utilizing adult learning theory during clinical instruction.

**Development:** The design of this professional development program is based on my review of scholarly literature related to adult learning theories. Adult learning theories are discussed each day. On the same day, application exercises aligned with the theories are conducted. The theories that are reviewed are based on traditional adult learning orientations. The learning theories selected for this program include the following: behaviorism, experiential learning theory, social cognitive theory, humanism, cognitivism, and constructivism.

**Target Audience:** The target audience for this professional development program is dental hygiene faculty at a community college in upstate New York.

**Goals:** The goals of this professional development plan include the following:

1. To provide dental hygiene clinical instructors with the appropriate adult learning theory background to increase the effectiveness of their clinical teaching.

2. To identify ways of implementing adult learning theory into the clinical instruction of dental hygiene.

**Learning Objectives:**

**After completion of day one, participants will be able to:**

1. Define behaviorism.
2. Identify behavioral theorists.
3. Describe the principles of behaviorism.
4. Identify ways to incorporate behaviorism into dental hygiene clinical instruction.
5. Define experiential learning.
6. Identify experiential learning theorists.
7. Describe the principles of experiential learning.
8. Complete the Kolb Educator Role Profile (KERP).
9. Describe social cognitive theory.
10. Identify social cognitive theorists.
11. Describe the principles of social cognitive theory.
12. Identify ways to incorporate social cognitive theory into dental hygiene instruction.
13. Explain the objectives and process of reflective journaling.

**After completion of day two, participants will be able to:**

1. Define Humanism.
2. Identify humanistic learning theorists.

3. Describe principles of humanism.
4. Identify ways to incorporate humanism into dental hygiene clinical instruction.
5. Explain the process of reflective journaling.
6. Define cognitivism.
7. Identify cognitivist theorists.
8. Describe principles of cognitivism.
9. Identify ways to incorporate cognitivism into dental hygiene clinical instruction.
10. Complete reflective journaling.

**After completion of day three, participants will be able to/will have:**

1. Define constructivism.
2. Identify constructivist theorists.
3. Describe principles of constructivism.
4. Identify ways to incorporate constructivism into dental hygiene clinical instruction.
5. Identify which orientation to learning best aligns with your dental hygiene instruction.
6. Complete reflective journaling.

**Implementation:** The professional development program will be held during winter break in January 2016. The 3-day program will be mandatory for those clinical instructors teaching in the spring 2016 semester. Some faculty find identifying a



mutually free time difficult when planning department meetings. By holding the program the week before classes start, when faculty are preparing for the semester, faculty will be able to attend. Faculty will receive an email in advance, alerting them to this scheduled program. By acknowledging the email, faculty will confirm their planned attendance. I will prepare all handouts, activities, and secure a light breakfast for all of the three days and a lunch for the last day. Copies of handouts will be made on campus and the breakfast and lunch will be purchased with department funds. Participants will be asked to bring journals for the program and certificates to verify their participation in the professional development program.

### **Day One**

#### **Instructor Guidelines (See facilitator guide below for specific details)**

- Welcome participants and ensure everyone signed in for the day
- **Presentation:** Introduction to the Professional Development Program
- **Activity #1:** Defining adult learning
- **Presentation:** Begin the presentation on Behaviorism (Includes reflection on conditioning)
- **Activity #2:** Identifying ways to incorporate behaviorism into dental hygiene clinical instruction
- **Presentation:** Experiential learning
- **Activity #3:** Personal assessment of instructional experience
- **Activity #4:** Completion of Kolb Educator Role Profile
- **Activity #5:** Clinical Implementation Exercise

- **Presentation:** Presentation on Social Cognitive Theory
- **Activity #6:** Identifying ways to incorporate Social Cognitive Theory into dental hygiene clinical instruction
- **Activity #7:** Reflective journaling
- All participants will bring a notebook to journal in. Participants will be asked to reflectively journal on their experiences during day one.

<b>Day One</b>			
8:30-8:45	Check-In/Light Breakfast		15 Minutes
8:45-9:15	Introduction to the Professional Development Program	Review purpose, learning objectives, schedule	30 Minutes
9:15-9:45	Adult Learning Introduction <b>Activity #1-Defining Adult Learning</b>	Presentation	30 Minutes
9:45-10:00	BREAK		15 Minutes
10:00-11:30	Behaviorism	Presentation	1 Hour, 30 Minutes
11:30-12:00	<b>Activity #2 – Reflection/Discussion on Behaviorism</b>		30 Minutes
12:00-1:00	LUNCH – Brown Bag		1 Hour
1:00-3:00	Experiential Learning Presentation <b>Activity #3 - Journal Exercise</b> <b>Activity #4 – KERP</b> <b>Activity #5 – Clinical Implementation Exercise</b>	Presentation	2 Hours
3:00-3:15	BREAK		15 Minutes
3:15-3:45	Social Cognitive Theory	Presentation	30 Minutes
3:45-4:15	<b>Activity # 6– Reflection/Discussion on Social Cognitive Theory</b>		30 Minutes
4:15-4:45	Reflective Journaling <b>Activity #7 – Reflective Journaling</b>	Review journaling	30 Minutes
4:45	Conclusion of Day One/Day One Evaluations		

## **Handout - Introduction to the Professional Development Program**

- I. Introduction
  - a. Dental hygiene clinical instructors professional development program:  
Building a foundation for clinical instruction upon adult learning theory
  - b. Explanation of study, including data analysis
- II. Purpose
  - a. Improve clinical instruction
  - b. Review adult learning theories
  - c. Discuss strategies to implement adult learning theories during clinical instruction
- III. Program Goals
  - a. To provide dental hygiene clinical instructors with the appropriate adult learning theory background to increase the effectiveness of their clinical teaching
  - b. To identify ways of implementing adult learning theory into clinical instruction of dental hygiene
- IV. Ground Rules
  - a. Silence all electronic devices
  - b. Feel free to use the restroom at any time
  - c. Keep conversation outside of activities to a minimum
  - d. Program objectives
    - i. Day one

- ii. Day two
  - iii. Day three
- V. Review of Schedule
  - a. Day one
  - b. Day two
  - c. Day three
- VI. Evaluation
  - a. Next steps
  - b. Sustainability

**Handout - Day One, Adult Learning, Behaviorism, Experiential Learning,  
Social Cognitive Theory, and Reflection**

- I. Day One
  - a. Review objectives
  - b. Review schedule
- II. Adult learning
  - a. Adult
  - b. Roles and responsibilities
  - c. Formal learning
- III. Activity #1
  - a. In groups of 3-4 answer the following:
    - i. What do you view as adult learning?

- ii. How is this different from learning in childhood?
    - iii. How do you instruct differently given you are teaching adults?
  - b. After 20 minutes, reconvene and share responses
  - c. The responses will be recorded on the screen by the facilitator
- IV. Break – 15 Minutes
- V. Behaviorism as a Learning Theory
  - a. Classical conditioning
  - b. Operant conditioning
  - c. Social modeling
- VI. Historical Contexts
  - a. Pavlov (1890s)
  - b. Thorndike
  - c. Watson
  - d. Skinner
- VII. Reflection/Discussion on Behaviorism
  - a. Can you think of an action that elicits a negative response or a positive response from you?
  - b. Can you think of an action that elicits a negative response or a positive response from the students?
  - c. Jot your answers down in your journal
  - d. Group discussion
- VIII. Classical Conditioning

- a. Pavlov
- b. Observation
- c. Reinforcement

IX. Instrumental Conditioning

- a. Thorndike
- b. Puzzle boxes
- c. S-R theory of learning
- d. Laws of effect, exercise, readiness

X. Classical Conditioning

- a. Watson
- b. Psychological connection
- c. Observation of animals and humans

XI. Operant Conditioning

XII. TED ED video

- a. Dr. Peggy Andover
- b. Classical and operant conditioning

XIII. Principles of Behaviorism

- a. Intended behavior
  - i. Positive consequences (pass course, graduate)
  - ii. Reinforcement
- b. Undesirable behavior
  - i. Negative consequences (remediation, fail course)

- ii. Adopting new behavior

- XIV. Application of behaviorism

- a. Adult education – learner passive
- b. Technical education – reinforcement
- c. Skills based or competency based education

- XV. Best practices with behaviorism

- a. Encourage repeating good behavior
- b. Evaluate frequently
- c. Communicate objectives clearly
- d. Avoid punishment
- e. Individualize learning
- f. Provide varied stimuli

- XVI. Activity #2

- a. Take 20 minutes to answer the following in your journal
  - i. How have you been applying behaviorism in the clinical setting?
  - ii. In the examples you gave for number one, can you describe specifically how your practice is grounded in the theory of behaviorism?
  - iii. Identify two examples of how you could implement the principles of behaviorism in your clinical instruction.
  - iv. Partner with a colleague and discuss your answers (25 minutes)

- XVII. Lunch Break – One Hour



## XVIII. Experiential Learning

- a. Definition
- b. Setting

## XIX. Scholars

- a. John Dewey – people learn from experience
- b. Piaget – internal cognition – age and experience
- c. Kolb – learning cycle
- d. Vygotsky – zone of proximal development (*ZPD*)

## XX. Exercise

- a. Answer the following questions in your journal
  - i. How do you know what to teach in the clinic?
  - ii. How do you know when to intervene and assist the student?
  - iii. How do you know what they need when you are working with them?
- b. Reconvene and discuss responses

## XXI. Kolb

- a. Learning cycle
- b. Process of learning
  - i. Concept formation
  - ii. Test implications
  - iii. Experience
  - iv. Observations and reflection

## XXII. Experiential learning

- a. Educator's Role
  - i. Balancing act
    - 1. Student
    - 2. Material
    - 3. Reflection
- b. Roles of educator
  - i. Subject expert
  - ii. Evaluator
  - iii. Facilitator
  - iv. Coach

## XXIII. KOLB educator role profile

- a. Exercise
- b. Complete the KERP
- c. Print your results

## XXIV. Experiential educator roles

- a. Facilitator – conversation, rapport, creating a safe place for learning
- b. Subject expert - authority
- c. Evaluator – uphold standards, assist student as they move from novice to competent clinician
- d. Coach – provide feedback, encourage

XXV. Implementation

- a. Facilitator – journaling, brainstorming, sharing personal experience
- b. Subject expert – lecture, modeling, reading
- c. Evaluator – labs, case studies, homework
- d. Coach – field work, overseeing practicum/clinical sessions

XXVI. Vygotsky

- a. Supporting novice
- b. Novice moves through stages to become competent
- c. Mentoring by subject expert

XXVII. Zone of Proximal Development

- a. Assistance from educator/mentor
- b. Learner progresses through stages of learning with assistance
- c. Independent practice

XXVIII. Scaffolding

- a. Clinical instructor provides support to novice
- b. Novice builds experience
- c. Transition to competency
- d. Independent practice

XXIX. Experiential Learning Theory (ELT)

- a. Principles of ELT
- b. Creation of new knowledge

XXX. Clinical Implementation Exercise

- a. Brainstorm in groups of 2
- b. Determine how you already use experiential learning in your practice (see journal activity)
- c. Reconvene as a group
- d. Share and explain strategies for new means of practice

XXXI. Break – 15 Minutes

XXXII. Social Cognitive Theory

- a. Bandura
- b. Modeling
- c. Observation of others

XXXIII. Principles

- a. Learning occurs in social environment
- b. Observation
- c. Modeling

XXXIV. Application

- a. Student observing instructor
- b. Student models instructor
- c. Three factors working together – person, environment, learning

XXXV. Best practices

- a. Coaching
- b. Mentoring

- c. Modeling

XXXVI. Activity #6

- a. Take 20 minutes to journal
- b. Identify the following:
  - i. How have you been applying social cognitive theory in the clinical setting?
  - ii. In the examples you gave for number one, can you describe specifically how your practice is grounded in the theory of social cognitive theory?
  - iii. Identify two examples of how you could implement the principles of social cognitive theory in your clinical instruction.
- c. Partner with a colleague and discuss your findings

XXXVII. Reflective journaling

- a. Reflection-on-action
- b. Reflection-in-action
- c. Reflection on day one

XXXVIII. Day One Closure

- a. Questions
- b. Evaluation completion

### Day One – Facilitator Guide

- Review the handout, Introduction to the Professional Development Program
- Following the handout, present on day one material, adult learning, behaviorism, experiential learning, social cognitive theory, and reflection
  - Day One
    - Review objectives
    - Review schedule
  - Adult learning
    - Over the next three days, we will be discussing traditional adult learning theories and the implementation of those theories in the practice of dental hygiene clinical instruction. Before we begin, we need to identify what is meant as an adult learner. For our purposes, our students are 18 and older, so they are adults. They carry roles and responsibilities that would classify them as adults. Lastly, in our setting, learning is considered formal, as compared to informal.
- Facilitate activity #1
  - Have participants group together in groups of 3 or 4
  - Ask them to answer the following questions:
    - What do you view as adult learning?
    - How is this different from learning in childhood?
    - How do you instruct differently given you are teaching adults?

- The larger group will reconvene after 20 minutes. Groups will share their responses and the facilitator will document responses in the computer, which will be projected on a screen.
- Break – 15 Minutes
- Behaviorism as a Learning Theory
  - The first orientation of learning theories we will discuss is behaviorism. Behaviorism is closely related to dental hygiene clinical instruction. Behaviorism is based on the idea that a stimulus brings about a desired response or in other words if learning has taken place, a change in behavior will result. There are three cornerstones of behaviorism. They are classical conditioning, operant conditioning, and social modeling.
- Historical Contexts
  - Before we discuss the cornerstones in more detail, let's identify the main theorists of behaviorism. In the 1890s, Pavlov found that if he paired a stimulus with an action to get a desired outcome, soon the action was no longer needed. The stimulus would be associated with the desired outcome. I am sure you all have heard what happened with Pavlov, a dog, and a bell. Thorndike (early 1900s) is known for instrumental conditioning and was actually the first theorist to write a book on adult learning. In the 1920s, Watson identified that there was a psychological component to this behavioral conditioning. Skinner (1970s) is credited for stating that behaviorism is critical for adult learning.

- Reflection/Discussion on Behaviorism
  - Can you think of an action that elicits a negative response or a positive response from you?
  - Can you think of an action that elicits a negative response or a positive response from the students?
  - Jot your answers down in your journal
  - Group discussion
- Classical Conditioning
  - In a minute, we will watch a video that includes illustration of Pavlov's classical conditioning. Pavlov's unveiling of a conditioned response was the foundation for behaviorism. Every time he fed the dog, he would ring a bell. Eventually, the dog salivated at the ringing of the bell, thinking the meal was not too far behind. Pavlov observed that by reinforcing a behavior, a desired response would be created.
- Instrumental Conditioning
  - Thorndike has been called the greatest learning theorist of all time. He is known for studying the behavior of cats in puzzle boxes. By placing cats in puzzle boxes and a piece of fish on the outside of the box, Thorndike studied how long it would take the cat the escape to get the fish. In time, the cats would find a lever to open the box. By repeating this experiment, he timed how long it would take the cats to find the lever each time. Eventually, this led to the law of effect. This law stated that every time a



behavior was followed by an unpleasant outcome, the behavior was less likely to be repeated. In a reverse manner, every time a behavior was followed by a pleasant outcome (pressing the lever opens the puzzle box), the behavior was likely to be repeated. This became known as the S-R Theory of Learning. Thorndike also established the laws of readiness and exercise. The law of readiness described how substantive learning can be if the learner is ready. The reverse would also be true. If the learner was not ready to learn, the learning would not be as robust. The law of exercise states that repeating a process results in substantive learning.

- Classical Conditioning
  - In the 1920s, Watson constructed that there was more to effect of stimuli and response. He elaborated on this by stating that with humans, there is a psychological connection. By observing animals and humans, he highlighted the importance of our environment and the role it plays in learning.
- Operant Conditioning
  - Skinner is credited with the contribution of operant conditioning. Skinner recognized that by reinforcing a behavior that is desired, would bring about the repetition of that behavior. He also identified that by ignoring an undesirable behavior, the behavior is likely to stop. The consequence therefore drives the behavior. Skinner was known for advocating adult education, as he saw it as being critical for species survival.

- TED Ed Video – Dr. Peggy Andover
  - This video discusses Pavlov and then moves in more detail with operant conditioning.
- Principles of Behaviorism
  - Intended behavior
    - Positive consequences (pass course, graduate)
    - Reinforcement
  - Undesirable behavior
    - Negative consequences (remediation, fail course)
    - Adopting new behavior
- Application of Behaviorism
  - Adult education – learner passive
  - Technical education – reinforcement
  - Skills based or competency based education
- Best practices with behaviorism
  - Encourage repeating good behavior
  - Evaluate frequently
  - Communicate objectives clearly
  - Avoid punishment
  - Individualize learning
  - Provide varied stimuli
- Activity #2

- Take 20 minutes to answer the following in your journal
  - How have you been applying behaviorism in the clinical setting?
  - In the examples you gave for number one, can you describe specifically how your practice is grounded in the theory of behaviorism?
  - Identify two examples of how you could implement the principles of behaviorism in your clinical instruction.
- Partner with a colleague and discuss your answers (25 minutes)
- Lunch – One Hour
- Experiential Learning
  - Experiential learning can be defined as learning through experience. Recently, experiential learning has become popular in higher education. In many health science programs, experiential learning is critical, as there are hands-on or clinical components to these type of curricula.
- Scholars
  - John Dewey is a well-known for articulating that people learn from experience. Piaget, known as a constructivist, is also known for highlighting that age (and experience through age) influences learning. Kolb who is well known for his learning cycle, is also known for identification of learning styles. Lastly, Vygotsky's ZPD directly relates to our students and their learning as they progress through our curriculum.
- Exercise – Journal

- Have participants answer the following:
  - How do you know what to teach in the clinic?
  - How do you know when to intervene and assist the student?
  - How do you know what they need when you are working with them?
- Reconvene and discuss responses; document on screen
- Kolb
  - Kolb's learning cycle expresses the process of learning as moving through concept to reflection phases. Initially, a concept is taught, then the concept may be implemented in a different setting, the experience takes place, and then observations and reflections are made.
- Experiential Learning
  - Experiential learning theories recognize the educator is juggling or balancing the needs of the student, the material being taught or practiced, and the reflection in practice during the time of instruction. Kolb identifies that within this context, the educator wears different hats – that of a subject expert, evaluator, facilitator, and coach.
- Kolb Educator Role Profile (KERP)
  - At your computer, you will follow the link provided and complete the Kolb Educator Role Profile or KERP. Once you have completed the assessment, open your email. Print the report that you have been sent containing your KERP results.
- Experiential Educator Roles

- Facilitator – conversation, rapport, creating a safe place for learning
- Subject expert - authority
- Evaluator – uphold standards, assist student as they move from novice to competent clinician
- Coach – provide feedback, encourage
- In the report you printed, you will see which roles you relate more strongly to
  
- Implementation
  - Facilitator – journaling, brainstorming, sharing personal experience
  - Subject expert – lecture, modeling, reading
  - Evaluator – labs, case studies, homework
  - Coach – field work, overseeing practicum/clinical sessions
  - For each role, there are preferred ways of implementing activities as an educator
  
- Vygotsky
  - Vygotsky described the relationship between the novice and the expert. The novice cannot do certain tasks initially. He or she learns about the tasks and seeks assistance from the expert. As the expert guides the novice, he or she builds experience. With more experience, less guidance is required. Eventually, the novice progresses to being competent at completing the task.
  
- Zone of Proximal Development
  - Assistance from educator/mentor
  - Learner progresses through stages of learning with assistance

- Independent practice
  - Tackling more difficult tasks, as former tasks are completed competently
- Scaffolding
  - Clinical instructor provides support to novice
  - Novice builds experience
  - Transition to competency
  - Independent practice
  - This process transitions to the process of scaffolding. Eventually, the novice transforms into a competent clinician and can perform tasks independently of the subject expert.
- Experiential Learning Theory (ELT)
  - There are several principles of Experiential Learning Theory (ELT). First, learning is a process. When looking at ELT, we also know that learning is relearning. For us, the students learn the theory behind the procedure, and then relearn the procedure when they complete it clinically. Learning also requires adaptation to the environment. It is a result of this environment that learning takes place. Lastly, learning is all about creating new knowledge.
- Clinical Implementation Exercise
  - Brainstorm in groups of 2
  - Determine how you already use experiential learning in your practice (see journal activity)
  - Reconvene as a group

- Share and explain strategies for new means of practice
- Break – 15 minutes
- Social Cognitive Theory
  - Sometimes, social cognitive theory falls under the umbrella of cognitivism. This is because it contains elements of both cognitive theory and behaviorism. Today, we will discuss it on its own. Bandura, one of the leading theorists of this orientation of learning, felt that to understand learning you have to consider the cognitive changes and the behavioral changes. This includes understanding the environment that learning takes place in.
- Principles
  - By observing other adults, we learn behavior. This behavior that is modeled for us is part of our lesson, if you will. We use this frequently in the health professions.
- Application
  - Student observing instructor
  - Student models instructor
  - Three factors working together – person, environment, learning
- Best Practices
  - Coaching
  - Mentoring
  - Modeling
- Activity #6

- Take 20 minutes to journal
- Identify the following:
  - How have you been applying social cognitive theory in the clinical setting?
  - In the examples you gave for number one, can you describe specifically how your practice is grounded in the theory of social cognitive theory?
  - Identify two examples of how you could implement the principles of social cognitive theory in your clinical instruction.
- Partner with a colleague and discuss your findings
- Reflective Journaling
  - Reflective journaling is an example of reflection-on-action. By reflecting on what has happened, you can make deeper connections based on what you already know or perceptions you held. Reflective-in-action is usually used during clinical instruction. When a student is confused and lacks understanding, you use your reflection in the moment to determine what to do next to meet the learner's needs.
  - Reflection on day one
- Day One Completion
  - Questions?
  - Evaluation completion



<b>Evaluation Form – Day One</b>					
<p>Thank you for your participation in today's professional development program. Please complete the following evaluation.</p> <ol style="list-style-type: none"> <li>1. What were the strengths of day one?</li> <li>2. What were the weaknesses of day one?</li> <li>3. Do you have any questions remaining after day one?</li> <li>4. What was the most interesting aspect covered today?</li> </ol> <p>Please answer the following by circling the best response for each of the content areas covered today:</p>					
The objectives of the course were covered.	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
The material on Behaviorism was helpful to me as a clinical instructor.	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
The material on Experiential Learning was helpful to me as a clinical instructor	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
The material on Social Cognitive Theory was helpful to me as a clinical instructor.	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
The activities were helpful to me as a clinical instructor.	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
Journaling contributed to my professional development today.	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
Comments:					

## Day Two

### Instructor Guidelines (See facilitator guide below for details)

- Welcome participants back to day two
- Ask if there is a need for clarification on anything from day one
- Review schedule for day two
- **Presentation:** Presentation on Humanism
- **Activity #8:** Identifying ways to incorporate Humanism into dental hygiene clinical instruction-goal setting
- **Presentation:** Presentation on Cognitivism
- **Activity #9:** Identifying ways to incorporate Cognitivism into dental hygiene clinical instruction
- Reflective Journaling
- **Activity #10:** Educating using the cognitive approach

Day Two			
8:30-9:00	Check-In/Light Breakfast		30 Minutes
9:00-10:00	Humanism	Presentation	1 Hour
10:00-10:45	<b>Activity #8-</b> Discussion/Reflection on Humanism – Goal Setting		45 Minutes
10:45-11:00	BREAK		15 Minutes
11:00-12:00	Cognitivism	Presentation	1 Hour
12:00-1:00	Lunch – Brown Bag		1 Hour
1:00-1:30	Cognitivism	Presentation	30 Minutes
1:30-2:15	<b>Activity #9 –</b> Discussion/Reflection on Cognitivism		45 Minutes
2:15-2:30	BREAK		15 Minutes
2:30-3:15	Reflective Journaling		45 Minutes
3:15-4:00	<b>Activity #10 –</b> Educating others using the cognitive approach		45 Minutes
4:00	Conclusion on Day Two/Evaluations		

**Handout - Day Two, Humanism, Cognitivism**

- I. Day Two
  - a. Answer questions from day one
  - b. Review schedule for day two
  - c. Review day two objectives
- II. Humanism as a learning theory
  - a. Andragogy
  - b. Self-directed learning
  - c. Transformative learning
- III. Historical contexts
  - a. Maslow
  - b. Rogers
  - c. Knowles
  - d. Mezirow
- IV. Self-actualization
  - a. Maslow
  - b. Capability
  - c. Student focused
- V. Maslow's hierarchy of needs
  - a. Diagram
  - b. Use for next activity
- VI. Reflection

- a. Journal
- b. Answer the following questions:
  - i. What are you capable of becoming?
  - ii. Where do you think you fit in Maslow's hierarchy?
  - iii. Where do you think most of the students fit in Maslow's hierarchy?
- c. Reconvene as a group and share responses

VII. Student centered approach

- a. Rogers
- b. Lifelong learning
- c. Five principles

VIII. Andragogy and self-directed learning

- a. Knowles
- b. Adult learning
- c. Self-motivated student

IX. Transformative learning

- a. Mezirow
- b. Personal development
- c. Key to adult development and learning

X. Principles of humanism

- a. Self-directedness
- b. Meaningful personal involvement

- c. Core of adult learning
- XI. Application of humanism
  - a. Focus on adult learner
  - b. Learner takes responsibility for learning
  - c. Experience influences perspectives
- XII. Best Practices with Humanism
  - a. Learner is treated as whole person – mind, body, and spirit
  - b. Student-centered instruction – focus on student
  - c. Teacher is facilitator
  - d. Lifelong learning
- XIII. Activity #8
  - a. Identify something you would like to change
  - b. Make the goal realistic
  - c. Identify the following:
    - i. The goal
    - ii. How you will achieve the goal
    - iii. How you determine you have met the goal
    - iv. Why this is important to you
  - d. Track progress
- XIV. Break – 15 Minutes
- XV. Cognitivism as a Learning Theory
  - a. Cognitive development

- b. Memory
- c. Instructional design theories

XVI. Historical contexts

- a. Bode
- b. Piaget
- c. Ausubel
- d. Gagne
- e. Bloom

XVII. Cognitive development

- a. Piaget
- b. Model for Cognitive Development

XVIII. Memory

- a. Processing
- b. Short-term memory
- c. Long-term memory
- d. Brain-based learning

XIX. Instructional learning theory

- a. Ausubel
- b. new with old
- c. Theory of meaningful learning
- d. Assimilation theory of learning

XX. Instructional learning theory

- a. Gagne
- b. Instructional design theory
- c. Complex
- d. Taxonomy of learning outcomes

XXI. Instructional learning theory

- a. Bloom
- b. Taxonomy of cognitive outcomes
- c. Types of learning outcomes
  - i. Cognitive
  - ii. Affective
  - iii. Psychomotor
- d. Curriculum planning and objectives

XXII. Lunch – 1 Hour

XXIII. Principles

- a. Mind as a computer
- b. Information processing
- c. Deeper level of learning

XXIV. Application

- a. Brain's role in learning
- b. Experiences
- c. Ah-ha moment

XXV. Best practices

- a. Tailor instruction to learner
- b. Peer learning
- c. Environment

XXVI. Activity #9

- a. Take 20 minutes to answer the following in your journal:
  - i. How have you been applying cognitivism in the clinical setting?
  - ii. In the examples you gave for number one, can you describe specifically how your practice is grounded in the theory of cognitivism?
  - iii. Identify two examples of how you could implement the principles of cognitivism in your clinical instruction.
- b. Partner with a colleague and discuss your findings.

XXVII. Break – 15 Minutes

XXVIII. Reflective Journaling

- a. What have you learned during day two?
- b. What will you take away?

XXIX. Activity #10

- a. Find a partner
- b. Teach them something using a cognitivist approach – this can be on anything (how to change a flat tire, how to cook chicken noodle soup, etc.)
- c. You may verbalize the instruction and/or demonstrate



- d. When you are done, reflect on what went well with your instruction and what could be improved upon
- e. Switch roles and have your partner teach you what you have taught them
- f. Reflect on how well the “student” did
- g. With time the learner becomes competent

XXX. Day Two Completion

- a. Questions
- b. Evaluation completion

## Day Two – Facilitator Guide

- Day Two
  - Answer questions from day one
  - Review schedule for day two
  - Review day two objectives
- Humanism as a learning theory
  - Andragogy
  - Self-directed learning
  - Transformative learning
- Historical contexts
  - Maslow
  - Rogers
  - Knowles
  - Mezirow
- Self-Actualization
  - Maslow is perhaps the father of humanistic psychology. He is credited with the Theory of Human Motivation. This theory is based on the ever-popular hierarchy of needs. The focus is on the student and their intrinsic motivation to learn. The top of the hierarchy of needs pyramid rests in self-actualization and includes morality, creativity, spontaneity, problem-solving ability, lack of prejudice, and acceptance of facts. The level below self-actualization is esteem and includes self-esteem, confidence, achievement, respect for others, and respect by others. Below esteem is

love/belonging and includes friendship, family, and sexual intimacy.

Further down the pyramid is safety, which includes security, resources,

and health. The lowest level of the pyramid is physiological needs and

includes breathing, food/water, sex, sleep, excretion. To reach self-

actualization is a process of moving through these levels. For Maslow,

this simply meant that one met their goal of learning. It is therefore the

educator's responsibility to guide the learner to reach their goal of learning

and self-actualize.

- Maslow's hierarchy of needs
  - Description of Maslow's pyramid
  - Use this information for next activity
- Reflection
  - Journal
  - Answer the following questions:
    - What are you capable of becoming?
    - Where do you think you fit in Maslow's hierarchy?
    - Where do you think most of the students fit in Maslow's hierarchy?
  - Reconvene as a group and share responses
- Student-Centered Approach
  - In the 1980s, Carl Rogers disseminated his views of adult learning in the book, "Freedom to Learn for the 80s." His psychology view of client-

centered therapy is translated into the field of education as student-centered learning. Rogers is later credited with the concept of lifelong learning, which is used in many professions today, including ours.

Rogers's theory is based on the following five principles: involvement of the learner, internal motivation to learn or self-initiation, pervasion or learning resulting in changed attitudes and behavior, evaluation or the learner reflecting on their educational experience, and experience or identifying experiential learning as changing the individual learner.

- Andragogy and Self-Directed Learning
  - In the 1960s, Knowles's concept of andragogy sought to differentiate from the more commonly known term pedagogy. Knowles is credited for identifying the differences between pre-adult and adult learners. Most specifically, he identified six principles that sets the adult learner apart: the adult is self-directed, an adult draws on experience while learning, how ready an adult is to learn is dependent on their social role, an adult is more focused on solving a problem than actually gaining content knowledge, motivation comes from within, and adults seek to learn why something is important.
- Transformative Learning
  - Mezirow is credited with the transformational learning theory. The theory focuses on personal development. More specifically, the focus is on changing perspective and being open to new ways of thinking. There are

four main components to this theory. They are: experience, reflection, discourse, and action. These steps must take place with a deep level of inquiry. Some have called this questioning the status quo.

- Principles of humanism
  - Self-directedness
  - Meaningful personal involvement
  - Core of adult learning
- Application of humanism
  - Focus on adult learner
  - Learner takes responsibility for learning
  - Experience influences perspectives
- Best Practices with Humanism
  - Learner is treated as whole person – mind, body, and spirit
  - Student-centered instruction – focus on student
  - Teacher is facilitator
  - Lifelong learning
- Activity #8
  - Identify something you would like to change
  - Make the goal realistic
  - Identify the following:
    - The goal
    - How you will achieve the goal

- How you determine you have met the goal
  - Why this is important to you
  - Track progress
- Break – 15 Minutes
- Cognitivism
  - The three pillars of Cognitivism are cognitive development, memory, and instructional design theories.
- Historical Contexts
  - In the late 1920s, a Gestalt psychologist named Bode questioned behaviorists and encouraged a different way of thinking about learning. Piaget is a pioneer of cognitive theory. Ausubel, Gagne, and Bloom are introduced later and produce works that are related to the processing of information.
- Cognitive Development
  - Piaget, a pioneer of cognitive development, is widely known for his model of cognitive development. He asserted that adults move through stages during learning. The stages are infancy, childhood or preoperational, middle childhood or concrete operational, and formal operational.
- Memory
  - Cognitive theorists study how information is processed. It is important to analyze what the adults knows they know and what they do not realize they do not know. Cognitive theory also explores memory. This includes

how adults memorize and relate new information to old information.

There is also research on how aging impacts this process.

- Brain-based learning has also gained recognition in more recent years.

Brain-based learning involves study into the biological processes of how information is transferred.

- Instructional Learning Theory

- Ausubel's stance on learning was that rote learning is much different from substantial or deeper level learning and meaning. He is known for the Theory of Meaningful Learning. He also constructed the Assimilation Theory that exerts that new meaning is obtained and is assimilated with existing cognitive working.

- Instructional Learning Theory

- Gagne's Instructional Design Theory is still used today, despite the theory's complexity. The instructional design theory includes the taxonomy of learning outcomes, leaning environments, and nine instructional events.

- Instructional Learning Theory

- Bloom's taxonomy is used frequently by educators who are constructing curriculum. The taxonomy illustrates that at a basic level remembering and understanding takes place. Deeper inquiry and cognitive function leads to the application, analysis, and evaluation of information. Further yet, more developed cognitive practice leads to the creation of

information. Bloom also identified three types of learning outcomes.

They are cognitive, affective, and psychomotor.

- Lunch – 1 Hour
- Principles
  - The mind is a computer
  - Information enters the mind and is processed based on experience
  - Learning occurs on a deeper level
- Application
  - Brain's role in learning
  - Experiences used to process new information
  - Ah-ha moment
- Best Practices
  - Tailor instruction to the learner
  - Group work – peer learning
  - Creation of an environment that is conducive to learning
- Activity #9
  - Take 20 minutes to answer the following in your journal:
    - How have you been applying cognitivism in the clinical setting?
    - In the examples you gave for number one, can you describe specifically how your practice is grounded in the theory of cognitivism?



- Identify two examples of how you could implement the principles of cognitivism in your clinical instruction.
    - Partner with a colleague and discuss your findings (25 minutes).
- Break – 15 Minutes
- Reflective Journaling
  - What have you learned during day two?
  - What will you take away?
- Activity #10 - Educating using the cognitive approach
  - Find a partner
  - Teach them something using a cognitivist approach – this can be on anything (how to change a flat tire, how to cook chicken noodle soup, etc.)
  - You may verbalize the instruction and/or demonstrate
  - When you are done, reflect on what went well with your instruction and what could be improved upon
  - Switch roles and have your partner teach you what you have taught them
  - Reflect on how well the “student” did
  - With time the learner becomes competent
  - This activity illustrates that with time, the student does not need as much direction, or scaffolding, from the instructor. The more times you do this the more likely you would have a deeper level of understanding.
- Day Two Completion
  - Questions?

- Evaluation completion

<b>Evaluation Form – Day Two</b>					
<p>Thank you for your participation in today's professional development program. Please complete the following evaluation.</p> <ol style="list-style-type: none"> <li>1. What were the strengths of day two?</li> <li>2. What were the weaknesses of day two?</li> <li>3. Do you have any questions remaining after day two?</li> <li>4. What was the most interesting aspect covered today?</li> </ol> <p>Please answer the following by circling the best response for each of the content areas covered today:</p>					
The material humanism was helpful to me as a clinical instructor.	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
The material on cognitivism was helpful to me as a clinical instructor.	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
The reflective journaling was helpful to me as a clinical instructor.	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
The activities completed today were helpful to me as a clinical instructor.					
Comments:					

### Day Three

#### Instructor Guidelines (See facilitator guide below for details)

- Welcome participants back
- Answer any questions from the previous day
- Review schedule for the day
- **Presentation:** Constructivism
- **Activity #11:** Identifying ways to incorporate Constructivism into dental hygiene clinical instruction
- **Activity #12:** Aligning Learning Theory with Practice
- **Activity #13:** Incorporating Learning Theory into Practice/Bridging Theory with Practice
- Reflective Journaling
- Debriefing

Day Three			
8:30-9:00	Coffee/Light Breakfast		30 Minutes
9:00-10:00	<i>Constructivism</i>	Presentation	1 Hour
10:00-10:15	BREAK		
10:15-11:45	<i>Constructivism</i> <b>Activity #11</b> – Discussion/Reflection on Constructivism		1 Hour, 30 Minutes
11:45-12:45	LUNCH-Pizza, Salad		
12:45-2:00	<b>Activity #12</b> –Aligning Learning Theory with your Practice	Review/Complete Table; Discussion	1 Hour, 15 Minutes
2:00-2:15	BREAK		
2:15-3:15	<b>Activity #13-</b> Incorporating Learning Theory into Practice/Bridging Theory with Practice	Create an educational session for the clinical setting based on the learning theory of your choice; Small and Large Group Discussion	1 Hour
3:15-3:35	Reflective Journaling		20 Minutes
3:35-4:00	Debriefing Program Closure Evaluation Completion	Discussion of next steps Recommendations for future (PLCs?)	20 Minutes

### **Handout - Day Three, Constructivism and Application**

- I. Day Three
  - a. Questions from day one, two
  - b. Review schedule for day three
  - c. Review objectives for day three
- II. Historical context
  - a. Piaget
  - b. Dewey
  - c. Vygotsky
  - d. Lave
- III. Theory of Cognitive Development
  - a. Piaget
  - b. Cognition changes and maturation
- IV. Genuine development
  - a. Dewey
  - b. Learner and environment
- V. Experiential learning
  - a. Vygotsky
  - b. Meaning from experience
  - c. ZPD
  - d. Situated cognition
- VI. Principles

- a. Situated cognition
- b. Experiential learning
- c. Reflective practice
- d. Transformational learning

VII. Application

- a. Create meaningful experiences
- b. Learners are not a blank slate
- c. Collaborative learning

VIII. Best Practices

- a. Learner seeks meaning
- b. Service learning
- c. Communities of practice

IX. Break – 15 Minutes

X. Activity #11

- a. Take 20 minutes to answer the following in your journal:
  - i. How have you been applying constructivism in the clinical setting?
  - ii. In the examples you gave for number one, can you describe specifically how your practice is grounded in the theory of constructivism?
  - iii. Identify two examples of how you could implement the principles of constructivism in your clinical instruction.

- b. Once you answered your questions, partner with a colleague to discuss your findings
- c. Reconvene as a large group and discuss findings

XI. Lunch - 1 Hour

XII. Activity #12

- a. Aligning learning theory with your practice
- b. Refer to table below: “Relationships of Dimensions of Teaching and Orientation to Learning”
- c. Table:

Educator believes learning is centered on:	Orientation is predominantly:
Stimuli in external environment	Behaviorist
Internal cognitive structuring	Cognitivist
Affective and cognitive needs	Humanist
Interaction of person, behavior, and environment	Social learning
Internal construction of reality by individual	Constructivist
Educator defines purpose of education as:	Orientation is predominantly:
Producing change in desired direction	Behaviorist
Develop skills and ability to learn better	Cognitivist
Becoming autonomous	Humanist
Modeling new roles and behaviors	Social learning
Constructing knowledge	Constructivist
Educator views their role as:	Orientation is predominantly:
Arranging an environment that elicits a desired response	Behaviorist
Structuring content of a learning activity	Cognitivist
Facilitating the development of the whole person	Humanist

Modeling and guiding new roles and behaviors	Social learning
Facilitating learners' negotiation of meaning	Constructivist
Educator views learning process as:	Orientation is predominantly:
Behavioral change	Behaviorist
Internal mental process	Cognitivist
A personal act of fulfilled potential	Humanist
Interaction with and observation of others in a social context	Social learning
Construction of meaning from experience	Constructivism
Educators views efforts with adult learners as:	Orientation is predominantly:
Toward meeting behavioral objectives	Behaviorist
Competency-based	Behaviorist
Toward skill development and training	Behaviorist
Toward cognitive development	Cognitivist
Learning how to learn	Cognitivist
Correlating with intelligence, learning, and memory with age	Cognitivist
Framed by andragogy	Humanist
Toward self-directed learning	Humanist and Constructivist
Toward socialization and social roles	Cognitivist
Framed by mentoring	Social learning
Orientation to the locus of control	Social learning
Framed by experiential learning	Constructivist
Toward perspective transformation	Constructivist
Toward reflective practice	Constructivist
Taylor, Marienau, & Fiddler (2000); adapted from Merriam & Caffarella (1999)	

- d. Complete the table by identifying your preferences in the five areas
- e. Partner with a colleague and discuss each other's findings
- f. Discuss similarities and differences
- g. Describe why you selected the responses you did



h. Reconvene as a large group and discuss findings/responses

XIII. Break – 15 Minutes

XIV. Activity #13

a. Incorporating learning theory into practice – bridging theory into practice

b. Instructions

i. Working in groups of two-three, create an educational session for a clinic rotation

ii. Your lesson must be based on one of the theories we reviewed in this session

iii. You must work together to identify what content will be taught, how it will be taught, learning objectives for the session, evaluation type for the session, and the session schedule

iv. When you are done, reflect on how you incorporated the learning theory of your choice in to this process, as the foundation for your lesson

XV. Reflective Journaling

a. What did you learn during this professional development program?

b. How will you include learning theory into your practice?

c. What do you want to know more about?

XVI. Debriefing/Program Closure

a. Collect evaluations

b. Discussion of next steps (PLCs?)

- c. Recommendations for future professional development programs
- d. Certificate distribution

### Day Three – Facilitator Guide

- Day Three
  - Answer any questions from days two, one
  - Review schedule for day three
  - Review objectives for day three
- Historical Context
  - Several theorists known for constructivist orientation are Piaget, Dewey, and Vygotsky.
- Theory of Cognitive Development
  - Piaget, who we also discussed from the cognitivist orientation, focuses his work on the principle that cognition changes with age. As we age, meaning from what we learn becomes more insightful.
- Genuine Education
  - John Dewey is credited for explaining how important a given environment is to the learner. He asserts that “genuine education” takes place when there is a connection between the learner and their environment. This can be illustrated through the benefits of experiential learning.
- Experiential Learning
  - Vygotsky is thought by some to be the father of sociocultural constructivism. His work focusing on meaning obtained through experience is the foundation for the ZPD. The ZPD is fundamental basis for situated cognition. Situated cognition asserts that a learner works with

a more experienced guide (teacher, facilitator, instructor) until they can perform the function on their own.

- Principles
  - Situated cognition
  - Experiential learning
  - Reflective practice
  - Transformational learning
- Application
  - Create meaningful experiences
  - Learners are not a blank slate
  - Collaborative learning
- Best Practices
  - View learner as seeking meaning
  - Service learning
  - Communities of practice
  - Constructivist theory emphasizes the importance of the social constructs of our learning. Throughout much research about professional development and education, you see and hear the phrase communities of practice. Some refer to this as professional learning community (PLCs) or if at the college setting, faculty-learning communities (FLCs). The main benefit from sustaining such groups of inquiry seems to be the camaraderie and shared learning that takes place.

- Break – 15 Minutes
- Activity #11
  - Take 20 minutes to answer the following in your journal:
    - How have you been applying constructivism in the clinical setting?
    - In the examples you gave for number one, can you describe specifically how your practice is grounded in the theory of constructivism?
    - Identify two examples of how you could implement the principles of constructivism in your clinical instruction.
  - Once you answered your questions, partner with a colleague to discuss your findings
  - Reconvene as a large group and discuss findings
  - Responses recorded by facilitator on computer and projected onto screen
- Lunch – 1 Hour
- Activity #12
  - Aligning learning theory with your practice
  - Refer to the table “Relationships of Dimensions of Teaching and Orientation to Learning”
  - Source: Taylor, Marienau, & Fiddler (2000); adapted from Merriam & Caffarella (1999)
  - Complete the table by identifying your preferences in the five areas

- Identify which theoretical orientations fit best with your instructional practice. Note, I said orientations, as it will most likely be more than one!
- Partner with a colleague and discuss each other's findings
- Discuss similarities and differences
- Describe why you selected the responses you did
- Reconvene as a large group and discuss findings/responses
- Break – 15 Minutes
- Activity #13
  - Incorporating learning theory into practice – bridging theory into practice
  - Instructions
    - Working in groups of two-three, create an educational session for a clinic rotation
    - Your lesson must be based on one of the theories we reviewed in this session
    - You must work together to identify what content will be taught, how it will be taught, learning objectives for the session, evaluation type for the session, and the session schedule
    - When you are done, reflect on how you incorporated the learning theory of your choice in to this process, as the foundation for your lesson
- Reflective Journaling

- Answer the following questions in your journal:
  - What did you learn during this professional development program?
  - How will you include learning theory into your practice?
  - What do you want to know more about?
- Debriefing/Program Closure
  - Collect evaluations
  - Discussion of next steps (PLCs?)
  - Recommendations for future professional development programs
  - Certificate distribution

<b>Evaluation Form – Day Three</b>					
<p>Thank you for your participation in today's professional development program. Please complete the following evaluation.</p> <ol style="list-style-type: none"> <li>1. What were the strengths of day three?</li> <li>2. What were the weaknesses of day three?</li> <li>3. Do you have any questions remaining after day three?</li> <li>4. What was the most interesting aspect covered today?</li> </ol> <p>Please answer the following by circling the best response for each of the content areas covered today:</p>					
The material on constructivism was helpful to me in my role as an instructor.	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
Completing the activities today were helpful to me in my role as an instructor.	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
I have a better understanding of how adult learning theory fits within my practice of dental hygiene clinical instruction.	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
The reflective journaling contributed to my professional development today.	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
<p>Is there anything you would have like to have seen covered in this offering? Comments:</p>					



## Resources

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**3-Day Budget****Day One**

Light Breakfast/Coffee	\$200
Room	NA
Personnel	NA
Materials	NA
Grand Total	\$200

**Day Two**

Light Breakfast/Coffee	\$200
Room	NA
Personnel	NA
Materials	NA
Grand Total	\$200

**Day Three**

Light Breakfast/Coffee	\$200
Room	NA
Personnel	NA
Materials	NA
Lunch	\$250
Grand Total	\$450

**Three Day Total Budget Requested = \$850**

**Sample Email to Dental Hygiene Instructors Regarding the Professional  
Development Program**

TO: Dental Hygiene Faculty  
FROM: Meghan McGuinness  
SUBJECT: Professional Development Program

Dear Faculty:

I am delighted to inform you of a 3-day professional development program that will be held on January 20, 21, and 22, 2016. For those instructing in the clinical setting, this program will be mandatory and will help us to comply with the accreditation standards. By holding the program during the preparatory week, our hope is that conflicts will be minimized, if not prevented entirely.

The title of the program is Dental Hygiene Clinical Instructors Professional Development Program: Building a Foundation for Clinical Instruction upon Adult Learning. The program was developed in response to the interviews that you participated in during the Spring of 2015. The purpose of the program is to improve dental hygiene clinical instruction. To help us meet this goal, we will be reviewing adult learning theories and discussing how to implement them in the clinical setting.

Please reply to this email to confirm your planned attendance on January 20, 21, and 22, 2016. Look for more details to follow, as we get closer to January!

Sincerely,

Meghan McGuinness, Program Facilitator

## Appendix B: Interview Questions

Thank you so much for agreeing to this interview. First, I am going to ask you a few general questions to help me get a sense of your teaching experience in the clinical setting. After that, I will ask you questions that are more focused on teaching adult learners in the clinical setting. Lastly, I will be asking you about support for teaching that you have received or would like to receive.

### Overview Questions:

1. What prompted you to become a clinical instructor?
2. What do you find most satisfying about teaching in a clinical setting?
3. What do you find most challenging about teaching in a clinical setting?

### Teaching Adult Learners:

Most of the students in our clinical classrooms are adults—that is they are 18 years of age or older.

4. What needs, if any, do you notice about the adult students that you instruct?
5. Can you describe the kinds of interactions you typically have with the adult students during clinical instruction?
6. What approaches and strategies do you use in your clinical instruction that seem to work well in meeting the needs of the adult dental hygiene students?
7. Are you aware of drawing on any theories in your teaching and interacting with the adult students? Please explain.

### Support for Clinical Instruction:

I would like to revisit some of what we have talked about, this time through the lens of support (professional development) for your teaching.

8. How do you know that your clinical instruction has been effective?

9. In what ways do you feel most prepared to meet the learning needs of adult dental hygiene students clinically?
10. In what ways do you feel least prepared to meet the learning needs of adult dental hygiene students clinically?
11. What types of educational tools and support would be most helpful in your role as a clinical instructor?
12. What would an ideal professional development program look like to you as a dental hygiene clinical instructor?

That concludes the interview. I will be sending your responses via email to you so that you can review the information in case I may not have gotten exactly as you stated. I thank you again for your time.

\*Questions are adapted from and used with permission from the following source:  
Hunt, C., Curtis, A., & Sanderson, B. (2013). A program to provide resources and support for clinical associates. *The Journal of Continuing Education in Nursing* 44(6), 269-273.