

University of Nevada, Reno

**Students' Perception of Important Teaching Behaviors in Classroom and Clinical
Environments of a Community College
Nursing and Dental Hygiene Education Program**

A Dissertation Submitted in Partial Fulfillment of the
Requirements for the Degree of Doctor of Philosophy in
Educational Leadership

by

Vickie J. Kimbrough-Walls

Dr. Rita M. Laden/Dissertation Advisor

May 2012

© by Vickie Kimbrough-Walls 2012
All Rights Reserved



University of Nevada, Reno
Statewide • Worldwide

THE GRADUATE SCHOOL

We recommend that the dissertation
prepared under our supervision by

VICKIE J. KIMBROUGH-WALLS

entitled

**Students' Perception of Important Teaching Behaviors in Classroom
and Clinical Environments of a Community College
Nursing and Dental Hygiene Education Program**

be accepted in partial fulfillment of the
requirement for the degree of

DOCTOR OF PHILOSOPHY

Rita M. Laden, Ed.D., Advisor

Patricia Miltenberger, Ed.D., Committee Member

William Thornton, Ph.D., Committee Member

Melanie Minarik, Ph.D., Committee Member

Cleborne Maddux, Ph.D., Committee Member

MaryAnn Demchak, Ph.D., Graduate School Representative

Marsha H. Read, Ph.D., Dean, Graduate School

May 2012

Abstract

Student success is dependent on effective instruction. Yet, effective teaching is difficult to define and described differently by students, faculty, and administrators. Nursing and dental hygiene education programs require faculty to teach in both classroom and clinical environments. However, accreditation agencies for these programs mandate licensed practitioners as instructors. As a result, they have little to no formal training or experience in education methods. Each semester, colleges and universities use student evaluations of educators to measure effective teaching. However, criteria for evaluation instruments greatly vary. This study focuses on students' perception of important teaching behaviors in classroom and clinical settings for a nursing and dental hygiene program at a Western community college.

Acknowledgements

The quest for self-improvement through higher education never seems to end. One day, I was satisfied with my accomplishments, the next I opted to step into a doctoral program. I could not enter this educational opportunity and accomplish this goal without support and encouragement.

I must acknowledge my professors and dissertation committee members for their expertise, demeanor, and ability to guide diverse professionals. The knowledge brought to their classrooms kept me in awe and ready for the next challenge. I can only aspire to achieve accomplishments of similar caliber and truly appreciate my time with Drs. Laden, Miltenberger, Thornton, Maddux, and Minarik.

I had the good fortune to link with Jennifer, also in pursuit of her doctorate degree. We are life-long friends. Then there are my co-workers Lori and Melissa, who looked at me as a mentor, a boss, and most importantly, a friend. They too, joined in the pursuit of higher education, and we became a 'pack' of smart women learning, growing, and laughing together.

My mom has always been proud of my pursuits and accomplishments. She is a mom, one intelligent person, advisor, and best friend. My sons pursue their lives, their careers, and their loves. They have understood the fact that their mom was 'always busy'. Most of all I appreciate my husband Mick. He has lived this pursuit along with me. Letting me desert him for much needed study and writing time; accepting that one day it will be done and I will return to spend weekends with him, versus a computer. Thank you sweetheart, I am finally finished; can I take you to the movie?

Table of Contents

Abstract	i
List of Tables	vi
Chapter I - Introduction	1
Statement of Problem.....	3
Purpose of Study	3
Background of the Study	5
Accreditation Requirements.....	5
Evaluation of Teaching	7
Student Evaluation of Educational Quality (SEEQ).....	8
Research Questions	9
Method	9
Data Analysis	10
Theoretical Framework	11
Significance of Study	11
Limitations	11
Delimitations.....	12
Assumptions.....	12
Definitions of Terms	13
Chapter II - Review of Literature.....	14
Part One - Theoretical Framework	14
Adult Learners	14
Experiential Learning.....	15

Problem-Based Learning	17
The Adult Learner and the Andragogical Model.....	19
Experiential and Problem-Based Learning in Nursing Education.....	21
Experiential and Problem-Based Learning in Dental Education	24
Part Two - Effective Teaching	26
Effective Teaching in Community Colleges.....	28
Effective Teaching in Healthcare Education	32
Differences in Classroom and Clinic Environments.....	38
Part Three - Evaluating Effective Teaching in Higher Education	40
Teacher Evaluation Instruments	40
Student Evaluation of Educational Quality (SEEQ).....	45
Summary	47
Chapter III - Methodology	48
Research Questions	48
Selection of Participants	49
Instrumentation	49
Survey Instrument.....	49
SEEQ Modification and Use.....	50
Validity of Instrument.....	52
Reliability of the Instrument	53
Data Collection	54
Data Analysis Approach	55
Researcher Qualifications and Bias	58

Ethical Issues	59
Summary	59
Chapter IV - Results.....	60
Results of Data Analysis	60
Descriptive Statistics.....	61
Summary of Descriptive Statistics for Subscale Items	61
Summary of Correlations	63
Research Question 1	66
Research Question 2	67
Research Question 3	74
Summary	76
Chapter V - Discussion and Conclusion	78
Summary of the Study	78
Discussion of the Findings.....	80
Implications for Practice	83
Recommendations for Further Research.....	86
Conclusion	87
References.....	89
Appendix A.....	98
Appendix B	102
Appendix C	104
Appendix D.....	105

List of Tables

Table 2.1 - The INFORMED problem-solving process (abbreviated) developed by Tricia Moore (2007)	25
Table 4.1 – Descriptive statistics of total SEEQ scores of classroom and clinic surveys..	61
Table 4.2 - Results of Spearman’s Rank Order Correlation analysis between the total SEEQ scores for classroom and clinic surveys	62
Table 4.3 – Matrix of Spearman’s Rank Order Correlation analysis of classroom dimensions.....	63
Table 4.4 – Matrix of Spearman’s Rank Order Correlation analysis of clinic dimensions.....	64
Table 4.5 – Spearman’s Rank Order Correlation coefficient and variance between classroom and clinical dimensions.....	65
Table 4.6 - Wilcoxon Matched Pairs Signed Ranks test results of total SEEQ scores between classroom and clinical surveys	66
Table 4.7 - Wilcoxon Matched Pairs Signed Ranks test results for the <i>Learning/Academic Value</i> dimension between classroom and clinical surveys.....	67
Table 4.8 - Wilcoxon Matched Pairs Signed Ranks test results for the ‘ <i>Instructor Enthusiasm</i> ’ dimension between classroom and clinical surveys.	69
Table 4.9 - Wilcoxon Matched Pairs Signed Ranks test results for the <i>Organization/Clarity</i> dimension between classroom and clinical surveys.....	70
Table 4.10 - Wilcoxon Matched Pairs Signed Ranks test results for the <i>Group Interaction</i> dimension between classroom and clinical surveys.....	71

Table 4.11 - Wilcoxon Matched Pairs Signed Ranks test results for the <i>Individual Rapport</i> dimension between classroom and clinical surveys.....	72
Table 4.12 - Wilcoxon Matched Pairs Signed Ranks test results for the <i>Breadth of Coverage</i> dimension between classroom and clinical surveys.	73
Table 4.13 – Summary of descriptive statistics of frequency analysis for responses in 24 subscale items.....	74
Table 4.14 - Frequency of common terms listed by nursing and dental hygiene participants describing effective teaching characteristics that most benefits their learning.....	76

Chapter I – Introduction

Effective teaching in higher education institutions is crucial in order for students to accomplish their primary goal of obtaining a degree and preparing for a career. Studies on teaching effectiveness are found across a spectrum of disciplines in higher education, from general education to online courses (Wilson, 1998). Ralph (2003) identifies common attributes of exemplary instructors, which include a commitment to learners, knowledge of material, organization, management of the environment, and collaboration with others. Effective teaching is particularly important in health care fields such as medicine, dentistry, nursing, and dental hygiene and vital to those who will move into licensed practice (Schönwetter, Lavigne, Mazurat, & Nazarko, 2006).

Expert knowledge, practical experience, and advanced degrees are deemed adequate qualification for teaching in healthcare programs of all degree levels (Schönwetter et al., 2006). In fact, these qualifications are required by accrediting agencies such as the Commission on Dental Accreditation (CODA), and the National League for Nursing Accrediting Commission, Inc. (NLNAC). However, experience in teaching or teaching methodologies is not a requirement. Schönwetter et al. (2006) stated that in education programs such as nursing and dental hygiene, “effective teachers are produced by happenstance rather than by design” (p. 624). When practitioners become educators, they must gain experience in educational methodologies and best practices in classroom and clinical teaching. There is a learning curve in gaining such experience and becoming an effective educator.

Effective instructors are concerned about students, yet must also be concerned about themselves and their instructional performance (Ralph, 2003). Novice instructors

began their career in education focused more on their appearance and whether or not students liked them (Ralph, 2003). As teachers gained more experience, their concerns moved to performance, timing, and pace. Ralph (2003) noted that the difference between a mediocre instructor, and one he characterized as exemplary, was genuine commitment to the educational welfare of the student.

Feldman (1989) reviewed nearly sixty studies and identified eight characteristics of effective teachers as described by students. These included concern for students, knowledge of subject matter, stimulation of interest, availability, encouragement of discussion, enthusiasm, and preparation. Others such as Easton (1985) concluded that in order to be effective, instructors had to plan and organize goals, encourage student participation, show respect and interest in students, and monitor student progress. Wynne (1981) found that effective teachers used instructional time appropriately, set objectives and planned learning strategies related to student needs, and used handouts and appropriate instructional material. Organization and established goals were commonalities found in the majority of studies on effective teaching.

Most research on effective teaching has occurred at the college or university level. Hammons and Barnsley (1996) were “disappointed to find so little valid research on the characteristics of the effective community college teacher” (p. 321). There is a lack of research focused on community college education. There is also a lack of studies on healthcare education programs offered by community colleges. Research is needed on teaching effectiveness at the community college level in all course subjects and healthcare programs such as nursing and dental

hygiene.

Statement of the Problem

Most research for nursing and dental hygiene programs occurs at the university level and little research exists on community college programs. There is plenty of research on effective teaching in clinical settings for nursing programs but little research on teaching effectiveness in the classroom. For dental hygiene, little research exists on teaching effectiveness in classroom and clinical settings.

Accrediting agencies for health education programs require licensed practitioners as instructors. Practitioners have little to no training or experience in educational methods. This deficit adds to the learning curve for understanding and developing effective teaching skills vital to student success. By researching students' perceptions of important teaching behaviors in both clinical and classroom environments of community college nursing and dental hygiene programs, a better understanding of effective behaviors can be gained. As a result, development of faculty workshops to introduce and improve teaching methods of practitioners will contribute to teaching effectiveness in community college healthcare programs.

Purpose of Study

The purpose of this study is to compare students' perceptions of important teaching behaviors of nursing and dental hygiene instructors in both classroom and clinical settings. This study analyzes students' perception of important teaching behaviors displayed by practitioners in the classroom environment, and compares them to perceived important teaching behaviors in the clinical setting.

Healthcare education programs offered at universities and community colleges include medicine, dentistry, nursing, dental hygiene, dietetics, dental assisting, radiologic technology, and pharmacy technician. In the United States, most of the nursing and dental hygiene education programs are offered by community colleges (NCES, 2011). Eighty-eight percent of dental hygiene programs are in community colleges and graduates obtain either a certificate or associate's degree (U.S. Dept. of Labor, 2011). For nursing, 42 percent of graduates obtain an associate's degree.

Both nursing and dental hygiene education have a classroom (didactic) and a clinical component. Clinical education for nursing includes a simulation lab (SIM). However, most clinical education for nursing occurs in hospitals. For dental hygiene programs, a dental clinic is a required teaching environment. The learning environment of a clinic or hospital is challenging. The student is a trainee clinician responsible for patient care, so the clinic or hospital is both a learning environment and a patient care facility (Gerzina, McLean & Fairley, 2005). Instructors need to be effective in both settings. In order to develop exemplary healthcare programs, institutions must find practitioners in order to comply with accreditation requirements yet these practitioners must become effective educators.

Schönwetter et al. (2006) looked at the difference in students' perception of teaching effectiveness in the classroom and clinic for dental and dental hygiene education at the university level. They identified seven categories of effective teaching qualities: individual rapport, organization, enthusiasm, learning, group interaction, exams, and assignments and breadth of coverage. Findings from their study coincided with those by Feldman (1989), Easton (1985), and Wynne (1981).

Clinical settings create an environment where student learning preferences and faculty teaching styles intertwine. In a clinical setting, faculty use more hands-on demonstration techniques and work in closer proximity to students. Schönwetter et al. (2006) found rapport to be the most important quality for clinical instructors, whereas organization was preferred in classroom instructors.

Educators in nursing and dental hygiene programs are also role models, assessors, confidantes, and facilitators. With 88% of dental hygiene programs provided by community colleges, 32% report recruitment of qualified faculty the highest concern and challenge (American Dental Hygienists' Association, 2010). For practitioners new to education, the diverse role of teaching requires a spectrum of knowledge to be effective in teaching. This makes it more difficult to recruit qualified teachers. Therefore, by learning which teaching behaviors are perceived as important by nursing and dental hygiene students, new faculty can learn how to employ methodologies that enhance student success.

Background of the Study

Accreditation requirements. Effective teaching is critical to student success in nursing and dental hygiene, yet accreditation standards generally require minimal qualifications. Accrediting agencies for such programs set educational standards nationwide. Nursing programs require that the majority of instructors have master's degrees, yet no teaching experience. Associate degree nursing programs must comply with the following in order to meet accreditation standards: (a) full-time faculty credentialed with a minimum of a master's degree with a major in nursing and maintain expertise in their areas of responsibility; (b) the majority of part-time faculty are credentialed with a minimum of a master's degree with a major in nursing; and (c) the remaining part-time

faculty hold a minimum of a baccalaureate degree with a major in nursing (National League for Nursing Accrediting Commission, 2008).

Accreditation standards for dental hygiene educators are similar. CODA's (2011) educational Standard 3 includes: (a) the dental hygiene program must be staffed by a core of well-qualified full-time faculty who possess a baccalaureate or higher degree; (b) faculty providing didactic instruction must have earned at least a baccalaureate degree or be currently enrolled in a baccalaureate degree program; (c) all dental hygiene program faculty members must have current knowledge of the specific subjects they are teaching; and more recently that (d) all program faculty must have documented background in educational methodology consistent with teaching assignments. Yet, neither practicing nurses nor dental hygienists enter higher education with experience in teaching methodologies. So when hired, practitioners must complete professional development courses that focus on teaching methods.

Nursing and dental hygiene students must complete coursework in subjects such as oral biology, pharmacology, pathology, anatomy, pathophysiology, and clinical patient care. The complexity of these courses makes it essential that instructors understand how to teach and how students learn. Yet, healthcare educators are hired for their expertise and clinical experience. Novice instructors tend to learn their subject matter through the course of teaching it, supporting the statement by Schönwetter et al. (2006) that "effective teachers develop by happenstance" (p. 624).

Healthcare education programs must meet accreditation standards established by their respective agencies, yet the lack of teaching experience exists among practitioners recruited as educators. Associate degree nursing and dental hygiene programs are often

two years or four semesters in length. For new educators, teaching effectiveness may not be realized for five or six years. Therefore, the learning curve for effective teaching can be longer than the two years it takes for students to matriculate through a program. Yet, what makes an effective teacher? How can colleges determine effectiveness in educators hired for these essential positions?

Evaluation of teaching. One means of determining effectiveness of teachers is through student evaluation of courses and teachers. Each semester, colleges and universities collect student evaluations of teaching effectiveness. Murray (1983) indicated that evaluations: (a) assist in identifying strengths and weaknesses; (b) provide feedback to guide faculty development; (c) provide tangible incentives for improvement; and (d) can be pivotal in tenure decisions.

Marsh (2006) acknowledged the research by Abrami and d'Apollonia (1991), Cashin, Downey and Sixbury (1992), and Feldman (1997) who indicated teaching was a complex activity consisting of multiple dimensions including clarity, teachers' interactions with students, organization, and enthusiasm. Such complexity makes it difficult to evaluate effectiveness, particularly in programs where instruction occurs in two vastly different environments such as classrooms and clinics. Classroom environments for healthcare education programs are relatively similar to those in general education. Yet, instructors must still use a variety of methodologies to engage student participation.

For clinical teaching environments, Gerzina, McLean, and Fairley (2005) observed a "range of educational modalities: lectures, large and small group tutorials, collaborative groups, problem-based learning, simulation, web-based technology, and direct patient care" (p.1378). With such a broad spectrum of modalities, instructors enter health care education

ill prepared to teach. Schönwetter et al. (2006) denoted that students measure clinical instruction based on behaviors and competence versus methodology. Evaluation surveys or instruments in clinical settings are identical to those used in classroom environments. Colleges and universities may not utilize an appropriate mechanism to evaluate teaching in clinical settings versus that of the classroom. Therefore, evaluation of clinical instruction may be inadequate.

Students' Evaluation of Educational Quality (SEEQ). Herbert Marsh is a recognized expert in psychometrics and promotes the *multidimensionality* of teaching and students' evaluation of teaching in relation to validity, perceived bias, and usefulness. Multidimensionality consists of many characteristics or behavior students may observe in a teacher (e.g., a teacher may be organized, yet lack enthusiasm). Because teaching is complex, Marsh and Roche (1992) suggested that evaluations should reflect its multidimensionality. Marsh and Roche (1992) asked teachers and students to rate the importance of selected survey items related to effective teaching to determine which items had the potential to be most useful for constructive feedback. "These criteria, along with psychometric properties, were used to develop and revise the SEEQ instrument, supporting content validity" (Marsh & Roche, 1997, p. 218).

Marsh's (1984) SEEQ survey includes nine dimensions for evaluating teaching effectiveness: learning/academic value; instructor's enthusiasm; organization/clarity; group interaction; individual rapport; breadth of coverage; examinations; assignments; and background/class characteristics. Marsh and Dunkin (as cited by Marsh and Roche, 1993) demonstrated that the SEEQ dimensions are "consistent with principles of effective teaching and learning established on the basis of accepted theory and research" (p. 218).

There are over 30 published factor analyses on the SEEQ instrument all of which have confirmed it adequately measures teaching effectiveness (Marsh & Roche, 1993).

Research questions. Through this study, the researcher sought to understand students' perception of teaching behaviors in both classroom and clinical environments of nursing and dental hygiene education programs. Specifically, this study addressed the following research questions:

1. For the total score, are there significant differences in mean SEEQ total scores of students' perception of important teaching behaviors for classrooms and students' perception of important teaching behaviors for clinical environments in nursing and dental hygiene programs?
2. For each subscale score, are there significant differences in scores of select SEEQ dimensions for students' perception of important teaching behaviors for classrooms and students' perceptions of important teaching behaviors for clinical environments in nursing and dental hygiene programs?
3. How do dental hygiene and nursing students perceive teaching strengths relative to classroom and clinical instruction?

Method. This is a descriptive study, and used a mixed-method approach in a survey. Using a modified version of Marsh's (1984) Students' Evaluation of Educational Quality (SEEQ) survey instrument, ordinal and qualitative data was collected from 55 second-year students in nursing and dental hygiene education programs in a small Western community college.

During regular classes in the fall semester, a research assistant distributed two surveys to the participants and collected them. Students completed two surveys, one each

for a classroom and clinical setting. The modified survey consisted of 24 close-ended questions, and one open-ended question. The dependent variable for research question one is the mean SEEQ total scores. For research question two, the dependent variable is the mean SEEQ scores for each of the selected six teaching dimensions. Fifty-five of a possible 67 participants completed the surveys for a response rate of 82 percent.

Data analysis. To determine which teaching behaviors were important in the two teaching environments, the Spearman's Rank Order Correlation Coefficient and the Wilcoxon Matched-Pairs Signed Rank test were computed to analyze classroom and clinical ratings. Scores for the classroom environment were compared to scores for the clinical environment. The Spearman's Rank Order Correlation Coefficient is a non-parametric measure of the strength and direction of association between two variables measured on an ordinal scale. The Wilcoxon Matched-Pairs Signed Rank test is a non-parametric test often regarded as being similar to a matched pairs t-test. The Wilcoxon test determines differences between groups of paired data when the data do not meet the rigor associated with a parametric test (MacFarland, 1999). It is also used when the data are likely to be non-normally distributed. Unlike less robust non-parametric tests, such as the sign test, the Wilcoxon Matched-Pairs Signed Ranks test determines the magnitude of difference between the matched groups (MacFarland, 1999).

The Spearman's Rank Order Correlation Coefficient was selected due to non-normally distributed variables having a monotonic relationship (e.g., as one or the other variable increases they increase together or one variable increases and the other decreases) (Laerd Statistics, 2012). Correlation and frequency was computed to determine if any one

dimension indicated a difference in perceived important teaching behaviors in the classroom and clinical learning environment.

Content analysis was used for the open-ended question of the survey to identify themes and the frequency of common terms used by students to describe perceived important teaching behaviors of instructors in both nursing and dental hygiene programs.

Theoretical framework. Experiential learning theory and problem-based learning is the framework used in this descriptive study as it relates to Malcolm Knowles' Andragogy model for adult learners. Chapter 2 presents the theoretical framework in detail.

Significance of study. The findings from this study will: (a) contribute to literature and research conducted in community college-based nursing and dental hygiene programs; (b) add to the literature in nursing and dental hygiene teaching methodology; (c) contribute to determining important teaching behaviors as perceived by nursing and dental hygiene students to be most optimal for learning; (d) help to bridge the gap in how faculty approach teaching in both classroom and clinical environments; and (e) provide a foundation for developing faculty education modules focused on adult learning.

Limitations. This study was limited to one community college in a Western state. The study was limited in the number of participants identified as second-year students enrolled in nursing and dental hygiene programs and not generalized for similar institutions. Limitations also include the study's focus on teaching behaviors and techniques in classroom and clinical teaching environments applicable to each program and that the two survey instruments conduct six consecutive tests on the same subjects. This

study focused only on teaching behaviors and techniques; it did not focus on course content or actually evaluate specific instructors.

Delimitations. Delimitations were determined by the researcher due to a need to understand differences in perception among adult students in community college nursing and dental hygiene programs and how perception differences may help improve teaching skills among practitioners. In order to acquire richer data, first year students were not included in this study. Their exposure and interaction with instructional faculty in clinical and classroom settings is limited and not at the same level as second year students who are closer to graduation.

First year students are assimilating to program policies, procedures, and requirements, which may not have allowed them to begin building a student-teacher relationship. Second year students have been interacting with faculty in classrooms and clinics for at least one year, which may contribute to some level of rapport and professional relationship. This length of time may also contribute to more accurate ranking of perceived important teaching behaviors.

A second delimitation is the researcher's acknowledgment that adult learning theory spans decades of literature and research, and although some aspects are applicable to this study, research is limited to adult learning preferences in higher education and healthcare programs. Finally, there are many studies on teaching effectiveness in classrooms and clinical environments, individually, and research that covered all college level topics. This researcher used only those studies applicable to higher education with a focus on adults in healthcare education programs.

Assumptions. The following assumptions apply to this study: (a) the selected participants will respond accurately on the survey indicating their perception of important teaching behavior and teaching effectiveness; (b) the selected participants understand vocabulary and concept of teaching methodology once explained by the research assistant; (c) the data collected measures the perception of important teaching behaviors; and (d) the interpretation of data accurately reflects student perception and its relationship to teaching effectiveness.

Definition of Terms

Andragogical model – a model developed by Knowles (1980) where it is assumed that teaching adults should differ from teaching children.

Clinical teaching – a process of teaching and learning in a health care setting where direct patient care is involved.

Experiential learning - the process of making meaning from direct experience; learning through reflection on doing, which is often contrasted with rote or didactic learning.

Didactic – the term used in health sciences to identify lecture courses versus clinical courses.

Dental hygiene student – a student accepted and enrolled in a dental hygiene program.

Nursing student - a student accepted and enrolled in a nursing program.

Problem-based learning - student-centered pedagogy in which students learn about a subject in the context of complex, multifaceted, and realistic problems.

SEEQ – Students' Evaluation of Educational Quality (Marsh, 1994).

SETs – Student Evaluation of Teachers

Chapter II - Review of Literature

This chapter, consisting of three parts, is a review of the literature related to the study. Part one presents information on adult learners, the theoretical framework of Kolb's experiential theory and problem-based learning theory as it relates to Knowles' Andragogical model. The second part presents research on teaching effectiveness in community colleges and educational environments used by nursing and dental hygiene programs. The third part presents research on student evaluations of teaching with a focus on Herbert Marsh's Students' Evaluation of Educational Quality (SEEQ) survey instrument.

Part One: Theoretical Framework

Adult Learners. There is a significant range in age and life experience of students entering healthcare education programs offered by community colleges. Students in such programs are considered adult learners. Just what is an adult learner? Malcolm Knowles spent many years and a great deal of energy answering this question. Knowles identified adults by two criteria: an individual who performs roles associated by our culture with adults (worker, spouse, parent, soldier, responsible citizen) and an individual who perceives himself or herself to be responsible for his/her own life (Thoms, 2011).

According to the National Center of Education Statistics (NCES) adult education activities are formal activities including basic skills training, apprenticeships, work-related courses, personal interest courses, English as a Second Language (ESL) classes, and part-time college or university degree programs. The NCES categorizes learner participants in age groups. Participation for adult education activities included individuals aged 16 or older (NCES Indicator 7, 2011).

The 2008 National Adult Student Priorities Report by Noel Levitz stated that adult students “25 years of age and older make up nearly 50% of the U. S. college enrollments. Thirty percent of these students are enrolled full-time and 70% are seeking degrees” (p. 2). The American Association of Community Colleges (2012) reports the average age of community college students as 28 years old, with 45% being between the ages of 22-39 and 15% 40 years of age or older.

Adult learners enter healthcare education programs at varying stages of life. Each will have varying levels of life experience. This experience is one way to engage students in their learning process. Experiential and problem-based learning techniques are commonly used in healthcare education programs as they allow adults to participate as active learners. Experiential learning and problem-based theories relate to Knowles (1970) andragogical model in that they allow students and teachers to apply personal experiences to learning in the classroom. Using experiential and problem-based methodologies also assists teachers in helping students develop critical thinking skills, apply knowledge to patient cases, and reflect on whether or not desired outcomes were achieved.

Experiential learning. Experiential learning is defined as “the process whereby knowledge is created through the transformation of experience” (Kolb, 1975, p. 41). Students in healthcare professions share a common need to practice the knowledge gained from classroom and clinical situations. Use of experiential learning methodologies allows them to increase their level of learning (Laschinger, 1990). Kolb (1975) presented a learning model based on experiences. He argued that the learning cycle begins at one of four points and should be viewed as a continuous spiral. Kolb also suggested that the first step of the learning process begins by carrying out a particular action then observing the

effect of that action in a given situation. The second step is to understand those effects so that when encountering a similar situation one might anticipate the result if one was to take the same action. The third step is to understand the general principle under which the particular instance falls (Clark, 2011).

Kolb (1975) stated that effective learning entails the possession of four different abilities and students would fall into one of these categories depending on their learning preference:

1. Concrete experience (CE): learners must become fully and openly involved with new experiences.
2. Reflective observation (RO): learners must step back and reflect on their experiences.
3. Abstract conceptualization (AC): learners must understand what they observe and incorporate those observations into sound theories.
4. Active experimentation (AE): learned theories must be tested and used as a basis for decision-making and problem solving.

Patterson (1977) explained that experiential learning is an evolution of Carl Rogers' humanistic education movement. Experiential learning that "takes place in every day life, has meaning and personal relevance" (Patterson, 1977, Chapter 5). The role of the teacher is that of facilitator who needs to address five areas conducive to experiential learning: (a) setting a positive climate; (b) clarifying the purposes of the learners; (c) organizing and providing learning resources; (d) balancing emotional and intellectual components for learning; and (e) sharing feelings and thoughts with learners, without dominating (Culatta, 2011).

Rogers (1994) noted that learning occurs when the student participates in the process and has control over its nature and direction. Influenced by Knowles and Cross, Rogers (1994) developed principles of adult learning through experience:

- Significant learning takes place when the subject matter is relevant to the interests of the student.
- Learning new attitudes or perspectives are more easily assimilated when external threats are minimal.
- Learning proceeds faster when the threat to self is low.
- Self-initiated learning is the most lasting and pervasive.

Principles of experiential learning help the development of teaching styles used in healthcare programs by exposing students to real-life situations through case study and live patient care. Repetition of patient care procedures and interaction with teachers enhances student competence and builds a deeper and more concrete knowledge base. This knowledge can then be applied to similar cases in the future, which augments the student's ability to determine treatment options despite different patient variables. Kolb's (1984) model for experiential learning also lends itself for application to problem-based learning, which has been used in health education programs over the past two decades.

Problem-based learning. Problem-based learning (PBL) can be traced back to early twentieth century philosophy. A publication by John Dewey advocated “engaging the learner in everyday problems to facilitate learning” (Rich, Keim, & Shuler, 2005, p. 649). However, credit for the development of PBL education is attributed to McMaster University in Canada (Gerzina et al., 2003). It was introduced at McMaster because of first year medical students failing to see the relevance of didactic course material such as

anatomy and biochemistry to their future profession as physicians (Loyens, Sofie, Magda, & Rikers, 2008).

In response to a recommendation by the World Health Organization, healthcare education has incorporated problem-based learning in curricula revisions over the past two decades (Gerzina et al., 2003). Barrows and Tamblyn (1980), leaders in the field of medical PBL education, addressed three critical educational objectives of PBL:

1. The acquisition of a rich body of deeply understood knowledge that is integrated from a wide variety of disciplines, structured in ways that will facilitate recall and application to other problems, and enmeshed with the problem-solving required to analyze and solve patient problems;
2. the development of effective clinical problem-solving, self-directed learning, and team interpersonal skills; and
3. the development of an insatiable curiosity and desire to continually learn.

Problem-based learning includes unique characteristics well suited for healthcare education. These include open-ended cases with no *right* answers, cases that are context-specific, self-directed students, collaborative groups, and teachers whose primary role is a facilitator versus lecturer. Clinical educators use objectives of PBL, including effective reasoning, and self-directed learning.

Problem-based learning differs from the traditional lecture formatted methodology in that it employs small-group facilitation. Loyens et al. (2008) pointed out that students gain a better understanding of problems by discussing them with fellow students, then generating potential explanations or solutions. Prior knowledge of a problem by any single

group member is limited, yet discussion leads students to formulate ideas initiating self-directed learning (Loyens et al., 2008).

In dental education, much like medicine, a significant focus of the curriculum is on patient problems. Fincham and Shuler (2001) identified a specific, yet simple structure and necessary ground rules as an essential ingredient for PBL to succeed in curriculum. This essential element is the ability of students to function effectively in a group. Therefore, faculty has incorporated much more group work in the learning environment.

The adult learner and the andragogical model. Experiential and problem-based learning theories are related to Knowles' (1970) andragogical model for adult learning. Knowles (1970) advocated for teaching methods that addressed adult students by incorporating their previous experience into the learning. In 1968, he wrote an article entitled “Andragogy, not Pedogogy” which introduced a need for teachers to change strategies when teaching adult learners. In 1970, Knowles presented an emerging theory for adult learning that he called andragogy. The theory focused on the fact that adults have varying life experiences, which they bring into the learning environment. As the theory of andragogy continued to develop, Knowles (1970) and others like Elias and Merriam (1995) believed the learning continuum had two ends: pedagogy at one and andragogy at the other. There are four assumptions in the andragogical model:

1. As a person matures, self-concept moves from being a dependent personality to being a self-directed human being.
2. People accumulate a growing reservoir of experience that becomes an increased resource for learning.
3. Readiness to learn becomes increasingly oriented to the developmental tasks

of social roles.

4. Time perspective changes from one of postponed application of knowledge to immediate application, and accordingly, orientation toward learning shifts from one of subject-centeredness to one of problem-centeredness.

(1995, p. 39)

Knowles (1970) explained each assumption in more detail as well as their implications in adult education.

Assumption 1 - self-concept. Self-concept for children is one of dependency on adults (Knowles, 1970). Until children become self-dependent, they are reliant upon adults for everything. During adolescence, children begin to move toward self-dependency and begin to make decisions on their own (Knowles, 1970). Once self-concept allows the child to define himself as an adult, the role of learner becomes that of a producer or doer (Knowles, 1970). The adult now becomes self-directed. Adult learners “need to be treated with respect, involved in mutual inquiry with the teacher, and given responsibility for their own learning” (Knowles, 1970, p. 40).

Assumption 2 - experience. The second assumption in the andragogical model addresses the experience brought to the education environment by adult learners. Each adult learner brings a different background from his or her youth (Knowles, 1970). The age of the adult learner adds to the volume and type of experience. “An adult *is* what he has done” (Knowles, 1970, p. 42). Adults define themselves by their experience, achievements, and invested value. Use of teaching methods such as case studies, group discussion, and simulation exercises allows adult learners to influence their own learning as well as that of other adult learners.

Assumption 3 - readiness to learn. Just as in childhood, adulthood has its transition points and learning is influenced by when and why adults enter education. For example, for early adults employment needs may drive learning, while middle-aged adults might retrain for career changes. Learning is dependent on when and why adults enter education.

Assumption 4 - orientation to learning. The final assumption in the andragogical model is orientation to learning. Knowles (1970) explained that adults enter education with a different time perspective than children. Adults want to learn for immediate needs. Educators must orient the learning environment for those immediate needs.

Adult learners tend to be problem-centered in their orientation to learning therefore curriculum is best focused on problem-based content (Knowles, 1970). “Problem-centered orientation implies that the most appropriate starting point for learning are problems and concerns that adults have on their minds as they enter education” (Knowles, 1970, p. 49).

Overall, the andragogical process involves establishment of an environment conducive to adult learning, an organization structured for participative planning, diagnosing the needs for learning, and developing objectives and activities appropriate for adults who bring a rich foundation of experience to the classroom. As Knowles' (1970) research points out, adult learners have different needs and expectations than do younger students. As a result, educators must be flexible and adapt teaching methodologies to the adult population. This is particularly important in community colleges where the average age is 28 (AACC, 2012).

Experiential and problem-based learning in nursing education. The foundation of nursing education grew from the field of medicine and its approach to curriculum development and teaching methodology. As the field of medicine branched out to develop

education for nurse practitioners, curriculum and teaching methodology required modification. Experiential learning for nursing students does not cover the same content as that for medical students. However, nursing students do bring in a variety of personal experience that may apply to their learning environments.

Guided by Kolb's experiential theory, Lashinger and Boss (1984) conducted a study using 186 first-year nursing students in both a university and certificate program and found the personal experience of students had greater influence on those students who exhibited concrete learning styles than those identified as having abstract learning styles. The researchers explained that students falling in the abstract style were more likely to be influenced by subject matter that was relevant to them, versus concrete learners who are more influenced by role models.

In a literature review conducted by Laschinger and Boss (1984), no differences were found in learning styles between undergraduate nursing students and post-RN (Registered Nurse) students. However, they reported that other researchers found post-RN students to have "a higher active experimentation (AE) score than undergraduates" (Laschinger & Boss, 1989, p. 988). As reviewed by Laschinger and Boss (1989), Burke's (1988) study showed that among 134 administrators of nursing education programs, the predominant learning style was that of 'assimilator' (using abstract conceptualization) as described in Kolb's (1984) model. Similar results were found in their review of Hodges' (1988) research with 87 British teachers in a nursing program.

Most research reviewed by Laschinger and Boss (1989) focused on the relationship between student learning styles and preferences as applied to decision-making skills and the role of nurses. They concluded through literature review, that Kolb's learning cycle

appeared to be useful as an instructional model for nursing education. The model promotes the development of diverse learning environments used in nursing which improves retention of information.

Using a case study approach, Andrews and Jones (1996) explored the use of problem-based learning among eleven fourth year nursing students in the United Kingdom. Results of data analysis highlighted several strengths and weaknesses associated with the use of PBL in both the teaching and learning process. Weaknesses were that students lacked a depth of knowledge and instructors needed to have a greater amount of knowledge for case problems and core course content (Andrews & Jones, 1996). One strength, however, was that various learning styles could be accommodated through use of PBL techniques.

In addition to the accommodation of various learning styles, Andrews and Jones (1996) found that the use of problem-based learning motivates students, enables them to think independently, and to become self-directed. Their research concluded that there was little evidence to demonstrate students would have the ability to make better decisions in real life situations. Indications were that PBL might, however, have value as an educational tool and “facilitate skill acquisition thought to be important in professional problem-solving” (Andrews & Jones, 1996, p. 364).

Williams’ (2001) findings supported that of Andrews and Jones (1996) where undergraduate nursing students exposed to problem-based learning methodology “acquire knowledge and skill within the disciplinary domain of nursing by encountering key professional practice situations as the initial stimulus and focus of their learning activity” (p. 85). She found that students who are exposed to problem-based learning have common

attributes, including:

- (a) ability to acquire an essential body of retrievable and useable knowledge and skills; (b) ability to transfer knowledge and skills effectively to deal with a variety of situations; and (c) develop continuous learning skills to extend or improve their knowledge base in order to remain professionally competent. (Williams, 2001, p. 90)

In order for nursing students to meet educational goals, professional practice situations, or patient problems were used as the catalyst for learning; this varied from conventional instructional methodology. PBL prepares nursing students for professional practice by engaging them in authentic activities during their learning that can be applied in actual practice (Williams, 2001).

Experiential and problem-based learning in dental education. Much like medicine and nursing, dental hygiene education transitioned from dentistry through apprenticeships and proprietary school settings, to universities and community colleges (Haden, Morr, & Valachovic, 2001). Dental hygiene education also needed to restructure educational methodology and delivery of core content. Most notably was introducing faculty to PBL, which shifted faculty roles from instructor to facilitator (Fincham & Schuler, 2001).

Most studies in dental hygiene occur at the baccalaureate level. This may be due to the majority of baccalaureate dental hygiene programs being associated with university dental schools (ADEA, 2011). Moore's (2007) study researched B.S. degree dental hygiene programs that had implemented PBL curriculum. She observed that collaborative learning brought out the social aspect of "sharing and negotiating constructions of knowledge" (p.

1059). After visiting several programs and various versions of PBL models, she developed a framework of steps designed to help students remember better, when transferring knowledge to new problems. Using the acronym, INFORMED, Moore (2007) developed problem-solving steps students could use more effectively, and is presented in Table 2.1.

Table 2.1

The INFORMED problem-solving process (abbreviated) developed by Tricia Moore (2007).

I	Information/Issues/Ideas: Discuss ideas and hypotheses about the issues to determine what it known
N	Need: determine information needed to progress with solving the problem
F	Find: find good resources for needed information
O	Others: after learning information, share with others, compare findings
R	Real/Reflect/Recycle: state the real problem in clear terms; be sure you are solving the right problem
M	Make: make a list of all the possible solutions or hypotheses
E	Evaluate: evaluate each potential solution or hypothesis
D	Decide/Deliver/Debrief: deliver the solution determined to be the best

Using the INFORMED method, students rated the problems as the most beneficial activity, and found the INFORMED steps helped to organize their thought process and discussion. However, Moore (2007) explained the difficulty in evaluating whether or not PBL is effective, and whether or not students gain more or better critical thinking skills. Because PBL provides more sophistication in the acquisition of knowledge and skills, Moore (2007) concluded that the goal of PBL is to produce practitioners who can solve real-life problems, develop new insights, and perform in varied contexts.

Adding PBL in dental hygiene education programs required institutions to provide faculty development workshops that focused on instructional methodology. The University

of Southern California School of Dentistry (USCSD) was one of the first to design and offer a skills building program in problem-based learning for faculty (Dalrymple, Wuenschell, Rosenblum, Paine, Crowe & von Bergmann, 2006). Integrating adult learning principles was a major element of PBL workshops. Workshops “utilized extended role play methods providing participants with personal experiences in the PBL learning cycle” (Dalrymple et al., 2006, p. 249).

Participating faculty experienced the entire PBL process while simultaneously learning how to effectively facilitate student learning (Dalrymple et al., 2006). Workshop elements included patient case simulation, researching and producing learning materials, application of knowledge, and self or peer evaluation. Despite the difference in the participant’s knowledge of patient problems used in case studies, their life experiences brought a richer discussion to the learning process. Faculty completing the PBL workshop reported overall satisfaction, highly rating the group work and interpersonal skill building as it reinforced a cooperative learning environment (Dalrymple et al., 2006).

Part Two: Effective Teaching

There has been an abundance of studies on teaching effectiveness across the spectrum of disciplines in higher education, from general education to online courses (Wilson, 1998). However, most of these studies have been conducted in four-year college and university settings. Few studies have been done at the community college level. Research is one of the missions for universities but not the mission of community colleges (AACC, 2012). It is important to research effective teaching in community college environments due to a diversity of instruction needs ranging from general education to workforce and specialty programs.

Easton (1984) and Outcalt (2000) referenced the lack of research on community college teaching, which is echoed by Hammons and Barnsley's (1996) concern for needed studies in community college teaching effectiveness. Most health education programs such as nursing and dental hygiene are housed in community colleges, yet most of the research done on these programs has been conducted at four-year institutions. Additional research is needed on health education programs at community colleges.

The learning environment and the students are different at the community college and four-year institutional levels. Students at four-year institutions are more commonly traditional students who are younger, generally attend school full-time and live on campus. As of 2001, students under the age of 22 constituted only 42 percent of all credit-seeking students in community colleges (Adelman, 2005). Students in community colleges are generally older, work more hours, have families and live at home (AACCC, 2012). These students may seek workforce skills, a change in career, or transfer to a four-year institution.

In community colleges, perceived effective teaching may be affected by the substantial number of part-time instructors since community colleges rely on a high number of adjunct instructors. In fall 2009, there were 1.4 million faculty members in all degree-granting institutions, including 0.7 million full-time and 0.7 million part-time faculty (NCES, 2011). According to the National Center of Education Statistics, full-time faculty employed in the public 2-year colleges was at the 30 percent level in 2009. In general, the number of full-time faculty has been growing at a slower rate than part-time staff. With the wide-range of diversity in the education provided for students in community colleges, research in effective teaching is much needed.

Effective Teaching in Community Colleges. Community college faculty value excellence in the classroom and instructors devote themselves to employing methodologies that contribute to student success. Many community colleges work to achieve authentic learning both inside and outside of the classroom. Research on effective teaching in community colleges has not gained the same attention as research at the university level, yet effective teaching is a goal for any institution (Sperling, 2003).

Outcalt (2000) reviewed research studies in community college teaching. He recognized the size and diversity of education provided by these institutions. An important point found by Outcalt's (2000) literature review was that faculty isolation affected effective instruction. Isolation occurred due to lack of institutional support and mentoring. Newly hired teachers had to "figure it out on their own" (Outcalt, 2000, p. 59). Additionally, Outcalt (2000) noted an increase in adjunct faculty hires, as institutions enforced efforts to reduce salaries and benefits. Generally, adjunct faculty is less available to students, which negatively affects teaching. The under-preparedness of students also failed to contribute to effective teaching (Outcalt, 2000). Student preparation for college coursework is essential to their success and the success of teachers. When teachers reverted to developmental teaching styles, it impaired the opportunity for implementing techniques that led to self-directed learning.

Outcalt (2000) found that many community colleges were moving toward curriculum changes that included collaborative learning, learning communities, and self-directed learning. Institutional-wide changes better targeted the learning needs of the diverse community college population. Development of collegial programs for faculty

advancement and improved instructional performance also concentrated on effective teaching strategies (Outcalt, 2000).

Easton (1984) also found a lack of research on community college teaching. In order to determine effective teaching behaviors he conducted a qualitative study using four Chicago-based community colleges. Easton (1984) investigated the instructional styles of those determined to be exceptional teachers. Criteria for being exceptional included full-time and part-time instructors teaching general education courses who had a higher ratio of students achieving a high grade point average (Easton, 1984).

Results indicated that effective teachers displayed teaching behaviors in four categories: (1) high organization; (2) student-oriented; (3) encourage student participation; and (4) provide students with regular feedback. Two decades later, results found by Schwönwetter et al. (2006) mirrored those reported by Easton (1984). Although Schwönwetter et al. (2006) studied effective teaching in healthcare programs; effective behaviors demonstrated by faculty were similar to those teaching general courses. Students in general education courses preferred teachers who were organized, provided clarity, had a good rapport with students, and were available.

Community colleges across the United States are committed to promoting and maximizing opportunities to meet the needs of students (Sperling, 2003). Yet, community colleges have not received the attention that universities have received regarding teaching and scholarship. Sperling (2003) reported that in order to fill this gap the American Association of Higher Education (AAHE) turned its focus to effective teaching within community colleges. The AAHE began promoting scholarship of teaching and learning in community colleges using the university model as an example. Methodologies already

used in universities could now be brought to community colleges through faculty development workshops. Few community college educators were “grounded in learning theory, because they were not formally trained educators” (Sperling, 2003, p. 596). Community college instructors lacked the foundation from which to build effective teaching theory and skills. They also lacked knowledge of student learning preferences. One strength was their passion for student success therefore they tended to work diligently at learning how to become effective (Sperling, 2003).

Alfred (1985) identified three conditions that aided in defining teaching effectiveness in community colleges: social change, faculty expectations, and characteristics of the academic organization. Effective teaching requires motivated faculty who are involved in many levels of the institution (Alfred, 1985). He argued that rapid social changes and economic conditions redirected faculty interest from student outcomes. As a result, faculty becomes “disengaged due to burnout, stress, and alienation” (Alfred, 1985, p. 9).

Effective teaching required students to meet faculty expectations, and there were many ways for students to fall short. Colleges contributed to this shortfall through marginal instructional resources, and lack of recognition for effective teaching performance (Alfred, 1985). In order to improve teaching effectiveness, Alfred (1985) presented recommendations to address areas most needing academic support. These included providing teachers with data on the demographics of the students, engaging teachers in on-going student outcomes, increasing their involvement at the institutional level, shared governance, staff development, and internal auditing/evaluation. Alfred (1985) concluded

by indicating that community colleges must be clear in their values, expectations, and resources.

Excellence in community college teaching not only requires collaboration and support by administration and faculty; it requires teachers to exhibit specific behaviors preferred by students. DuBois' (1993) research focused on five teachers in a New England community college. Teachers were selected based on excellent student evaluations over a 5-year period. His review of literature supports that of Easton (1984) and Schwönwetter et al. (2006) with respect to students needing availability of their instructors, organization skills, and ability to present clear ideas.

DuBois (1993) used a mixed-methods approach to determine the characteristics that students evaluated as effective teaching. His results were not unlike those of Schwönwetter et al. (2006). Attributes exhibited included: "(1) a strong command and organization of subject matter; (2) enthusiasm about the discipline and presentation in class; (3) approachability and friendly style with students; and (4) the ability to motivate students toward academic success" (DuBois, 1993, p. 460). Teachers identified as exemplary viewed teaching as more than an occupation. They viewed teaching as "the chance to enhance one's life by making a difference in another's life" (Dubois, 1993, p. 469).

A unique finding in DuBois' (1993) study was discovered through the qualitative interviews. He found what he described as 'hidden characteristics'. Each of the five selected instructors had similar life experiences. These included: overcoming hardships during childhood, an attraction to the helping professions, being inspired by past teachers, identifying themselves as a teacher/messiah, and their need for students as much as the students needed them (Dubois, 1993). Dubois (1993) noted that this aspect of effective

teaching was rarely reported in the literature. More research on hidden characteristics may reveal other factors that contribute to teaching effectiveness.

As presented, researchers find that community colleges are challenged in determining teaching effectiveness. The diverse student population and increased number of part-time faculty factor into teachers' lack of understanding in theories of learning and educational methodology. Easton (1984) and Schwönwetter et al. (2006) found that students prefer similar teaching behaviors. Students want organized and accessible instructors. Community college administrators and faculty can access resources such as those provided by the American Association of Higher Education to develop programs addressing scholarship of teaching and learning. Continued research efforts at the community college level, including specialty and healthcare programs, will contribute to better-trained educators who promote and support student success.

Effective Teaching in Healthcare Education. For healthcare education, the clinical learning environment is the focus for most research on effective teaching. Research in medicine and nursing is studied more heavily due to clinical components of required education. Effective teaching in clinical settings for dental schools is now found in the literature.

Teaching in healthcare dates back to Herman Boerhaave; a professor of medicine at the University of Leyden in the 1700s (Lindeboom, 2007). Classes consisted of 100 or more students and teaching was mainly theoretical. Boerhaave began clinical teaching in the St. Caecilia Hospital in 1714 using twelve beds for what is now the modern method of bedside teaching (Lindeboom, 2007).

When formal education programs for nurses were established, hospitals and clinics were included for patient-based learning. Then in the early 1900's, dentists began to train their assistants to perform oral health education, and the discipline of dental hygiene emerged (Wilkins, 2010). Effective teaching has become a strong area for research in the allied dental health arena during the last two decades (ADEA, 2011). There are many studies for effective teaching in the clinical environment for nursing programs, yet fewer studies exist on the classroom setting. Dental hygiene is one discipline lacking in research studies of any kind.

“Effective teaching is critical for student learning, especially in professional fields...” (Schwönwetter et al., 2006, p. 624). Because of the importance placed on effective teaching in healthcare education programs, they require accreditation by independent agencies other than those accrediting the college or university. The National League Nursing Accrediting Commission (NLNAC) accredits nursing programs. The American Dental Association's Commission on Dental Accreditation (CODA) is responsible for accrediting all allied dental health programs in the United States. Accreditation requirements state that instructional faculty must have a license to practice, a baccalaureate or master's degree, and experience in the field, yet no teaching experience. As Schwönwetter et al. (2006) stated, “In far too many professional programs like medicine, dentistry, dental hygiene, and nursing, effective teachers are produced by happenstance rather than design” (p. 624). Only in the last three years has CODA required faculty to have experience in teaching methodology (CODA, Standards of Allied Dental Education, 2011).

In the last three decades, researchers began studying teaching in healthcare

environments. Easton (1984), Dubois (1993), and Schwönwetter et al. (2006) reported that in healthcare education students preferred the following attributes in teachers: organization, knowledge, and availability. Students begin developing perceptions of effective and ineffective instructors early in their college educational career (Berg & Lindseth, 2004). Before acceptance into healthcare programs, students have taken several pre-requisite courses. Therefore, know many of the general education instructors. In fact, as Berg and Lindseth (2004) found, students will advise their peers on who is and who is not a 'good' instructor. As a result, "perceptions become one basis for assessing teacher effectiveness" (Berg & Lindseth, 2004, p. 565).

Berg and Lindseth (2004) studied teaching effectiveness in nursing instructors from the perspective of the student. Using content analysis, ten themes resulted from the students' responses. Of those ten, the top five effective characteristics were: (1) ability to get along with students; (2) ability to teach at the students' knowledge level; (3) ability to explain material in a down-to-earth manner; (4) concern with student needs; and (5) wanting students to do well. Berg's (2004) results are not different from DuBois (1993), or Schwönwetter et al. (2006). Yet, characteristics of instructors are only one aspect of effective teaching in healthcare education. A framework for curriculum that allows for self-directed study and experiential learning play a key role.

Experiential learning and PBL allow students to interact with peers and teachers in the sharing of knowledge and ideas in classrooms and clinical settings. The andragogical approach to learning in these fields is threaded into an experiential and problem-based framework. This framework leads students toward a self-directed approach to achieving goals and success. Knowles (1970) defined self-directed learning as "a process in which

individuals take initiative, with or without help from others in diagnosing their learning needs, formulating goals, implementing learning strategies, and evaluating outcomes” (p. 18). This approach to teaching and learning is most applicable to the clinical learning environments in healthcare education.

In health sciences, “progressive education means the learning should be active and foster critical thinking” (McCarlie & Orr, 2010, p. 481). Redirecting traditional education toward problem-based and experiential learning would require full-time instructors to take the lead. Medical, dental, and other healthcare education programs employ more adjunct instructors than full-time teachers. Changing traditional lecture-based instruction is difficult when there is more adjunct faculty than full-time.

A literature review conducted by Daggett, Cassie, and Collins (1979) focused on studies of effective clinical teaching. Their initial discovery was the realization that “training efforts for clinical teachers was neither very extensive nor particularly revealing” (Daggett et al., 1979, p. 152). Practicing professions such as social work, medicine, and clinical psychology required skills in the discipline yet none of these professions invested in the training of those who supervise students. Daggett et al. (1979) found that nursing educators implemented pedagogical strategies yet did not address specific skills for *teaching*, however, “nursing had the largest number of topics addressing clinical instruction” (Daggett et al., 1979, p. 153). The researchers also discovered that medicine covered a broader scope of topics within its curricula including how to teach in clinical settings.

Snyder, Hekelman, and Carter (1998) examined the congruence of clinical teaching behaviors among 31 medical instructors and their students. Eighteen clinical teaching

behaviors were included on a survey instrument and given to both faculty and students. Results indicated the students felt faculty was best at presenting information, correcting them without belittling them, asking critical thinking questions, and providing students with direction. Faculty identified that they were best at helping students incorporate facts, and agreed with students on the remaining areas (Snyder et al., 1998).

Snyder et al. (1998) concluded that congruent relationships needed to exist in order for students and faculty to take advantage of learning opportunities in clinical settings. Faculty development remained an important factor to “enhance teaching skills with a goal of producing more efficient and effective teaching strategies” (Snyder et al., 1998, p. 1).

Schwönwetter et al. (2006) conducted a qualitative study in the dental and dental hygiene programs at the University of Manitoba. This study focused on the perception of effective classroom and clinical teaching. They noted the lack of research in effective teaching behaviors in dental and dental hygiene programs, despite the amount of literature found in other disciplines of higher education.

Research by Schwönwetter et al. (2006) attempted to define effective teaching behaviors in the classroom and clinical environments for dental programs. They evaluated 695 qualitative statements found in the nominations for teaching awards of 40 instructors. The statements were reflective of both learning contexts: classroom and clinical. Guided by Marsh's (1984) Students' Evaluation of Educational Quality (SEEQ) instrument, students were asked to describe teaching characteristics of instructors versus evaluating hypothetical teaching characteristics.

Seven categories of effective teaching resulted: individual rapport, organization, enthusiasm, learning, group interaction, exams and assignments, and breadth

(Schwönwetter et al., 2006). The seven categories also aligned with Marsh's (1984) SEEQ instrument. Themes consisted of "effective teaching in the classroom as organization and rapport, whereas in the clinical setting rapport was the most frequently described behavior" (Schwönwetter et al., 2006 p. 624). Additionally, dental students perceived enthusiasm more effective than did dental hygiene students. Schwönwetter et al. (2006) concluded that through the identification of perceived effective teaching behaviors among dental faculty, program administrators could establish goals for improvement in teaching techniques.

Irby (1994) researched the components needed to be an effective clinical instructor in medicine and found four factors that distinguish an excellent teacher, including: (1) serves as a positive role model for a health care professional; (2) is an effective supervisor/mentor of learners; (3) has a dynamic approach to teaching; and (4) is a supportive person. A literature review conducted by Henzi, Davis, Jasinovicis, and Hendrickson (2006) resulted in more than 600 articles on clinical teaching strategies in medical education. They found these same four components consistently cited throughout the research as factors that distinguish an excellent teacher.

Competent patient care is vital to healthcare programs such as medicine, nursing, and dentistry. There is complexity in healthcare education and effective teaching is needed in the learning environments, which include classroom and clinical experience. Educators for these programs typically come from the private sector. Though knowledge of student learning preferences and methodology in teaching is now required by accrediting agencies, it is lacking in those who seek to become the educators. Much of the research focused on student perception as a guideline to determine the definition of *effective*.

Differences in Clinic and Classroom Environments. There are distinct differences in the teaching environments used in healthcare education programs. Classrooms are essential for presenting foundational concepts of health science, disease etiology, and prevention. Clinical settings are needed for students to apply didactic concepts of patient care and to provide a forum for professional interaction.

Generally, the clinical environment for nursing education includes hospital sites. Student nurses rotate into different hospital settings where they interact with physicians, nurses, patients, and faculty. Nursing students learn how to approach patient care as directed by the physician. Dental hygiene students provide direct patient care in a dental clinic environment. The dental hygiene student performs all aspects of patient treatment, while overseen by faculty. Clinical education is essential to healthcare programs yet still requires effective teaching in classroom settings. Students must learn to apply classroom knowledge to patient care. The biggest challenge for healthcare educators is getting students to transfer classroom knowledge to the care of patients in the clinic.

The “ability to teach in the classroom is considered sufficient preparation for clinical teaching, however it is a surprisingly different multidimensional role” (Karuhije, 1997). Schwönwetter et al. (2006) noted the same finding in journals of medicine, nursing, and dentistry. Both arenas require the same basic functions of teaching: instruction, participation, interaction between students and faculty, and evaluation. However, the teaching skills required in the two environments can be vastly different. Effective teaching in one setting may not equally translate to the other.

Karuhije (1997) reported that educators believed experience, as a clinician, would smoothly carry over to effectiveness in teaching when in the classroom. Until recently,

teaching experience was not required in order to become a nursing or dental hygiene educator. Before becoming educators, most teachers in healthcare programs were clinicians. Therefore, they have more experience in a clinical setting than a classroom setting. However, Karahiju (1997) argued that practical clinical experience did not necessarily equate to effective teaching skill in either the classroom or clinical setting.

Schwönwetter et al. (2006) examined studies done in medicine and nursing in order to compare research in classroom and clinical environments of dental programs. Similar to nursing, educators in dental programs present didactic content in the classroom that is to be applied by the student to patient situations in the clinical setting. However, students perceived different teaching behaviors as effective based on the learning environment. Effective teaching in classroom environments for dental hygiene students consisted of skill in lecturing, clear organization, and knowledge of subject matter (Schwönwetter et al., 2006). There were perceived differences in teaching effectiveness between part-time and full-time teachers. Students identified that full-time educators needed knowledge of subject matter, whereas part-time teachers needed high lecture skill (Schwönwetter et al., 2006).

Studies on effective clinical teaching tended to focus on the stakeholders: the dental educators, the patients, and the students. Karuhiji (1997) argued that clinical instruction might need to be thought of as a separate entity from classroom teaching. In the clinic, students are expected to apply knowledge to real-life patient situations. Clinical teaching places students and teachers in “closer proximity with each other, resulting in greater rapport that can influence learning” (Schwönwetter et al., 2006, p. 625). Both Karuhiji

(1997) and Schwönwetter et al. (2006) also found that effective clinical teaching included the teacher's ability to provide constructive feedback to students.

Clinical experience and methodologies used in practice is not the same as that used in the classroom. The two teaching environments are distinctly different. Training instructors on methodologies to ensure effectiveness applicable to the distinct environments used for healthcare education can ensure graduates of a quality education. Karuhiji (1997) concluded that teaching qualities and clinical experience of instructors also need to be viewed separately.

Part Three: Evaluating Effective Teaching in Higher Education

Research on effective teaching also had many studies focused on the survey instrument and the content items used to evaluate courses and teaching strategies. Students' evaluations play a significant role in how the university or college measures the effectiveness of teachers, which influences tenure and promotion. This section presents research on the effectiveness of students' evaluation of teaching used by colleges and universities. This study uses a modified version of the Students' Evaluation of Educational Quality (SEEQ) survey developed by Herbert Marsh (1984).

Teacher evaluation instruments. In order for students to perform well, teachers must be effective in their instructional strategies and must exhibit behaviors that lead to learning. Yet, effective teaching is difficult to define due to the lack of standard measures and because teaching is complex and multidimensional (Marsh, 1993). Student evaluations of teachers have been the most frequently used method for determining teaching effectiveness.

Marsh and Overall (1980) and Murray (1983) were among those seeking to inform administrators and program developers about the need to build appropriate evaluation forms that are valid and useful.

Poorly worded or inappropriate items will not provide useful information. If a survey instrument contains a hodgepodge of ill-defined items, and the surveys are summarized and items are averaged, there is no basis for knowing what is being measured. Surveys need to contain groups of related items that are derived from a logical analysis of the content of effective teaching and the purposes that the ratings are to serve, supported by theory, research, and factor analysis. (Marsh & Roche, 1993, p. 218)

By doing so, truer measurements of effective classroom teaching could be obtained and used to improve teaching behaviors among educators.

Several instruments were developed to measure effective teaching, including the Endeavor by Frey in 1975, and the Michigan State Student Instructional Rating System (SIRS) by Warrington in 1973. In 1984, Marsh developed the Students' Evaluation of Educational Quality (SEEQ), which will be discussed in detail later in this chapter.

Marsh (1984) pointed out that a significant amount of research on effective teaching was conducted in American education during the 1970s and 1980s, yet reported that wide and varied opinions rose from the results. He stated that differences occur among researchers due to researcher bias, unrealistic expectations of what student evaluations can or should do, and inconsistency in the “plethora of ad hoc instruments based upon a varied item content and untested psychometric properties” (p. 708).

As discussed by Marsh (1984), researchers targeted three areas for inclusion in their research: “How do teachers behave? Why do they behave as they do? And what are the effects of their behavior?” (p. 707). These questions resulted in three specific variables, including:

process variables – focused on global teaching methods and specific teaching behaviors; *forecasting variables* - such as characteristics of teachers and students; *context variables* - which included substantive, physical and institutional environments; and *product variables* - such as student academic/professional achievement, and attitudes. (Marsh, 1984, p. 708)

Most academic disciplines on college and university campuses lend themselves to lecture-style teaching methodology. As more health education programs have been developed, most campuses have a multitude of courses that require a clinical setting. This is particularly true of dental hygiene and nursing. Yet, there are only a few studies conducted on those instruments used to evaluate health education in both the classroom and clinical setting.

Nine indicators of effective clinical teaching were identified through a literature review conducted by Hamdy, Williams, Tekian, Shazali, and Bandaranayake (2001). The indicators were similar to those found by Marsh (1993) and included: availability, defines objectives, eases student access, encourages professional skills, encourages clinical reasoning, encourages self-learning, gives continuous feedback, meets student learning needs, and is a good role model. Hamdy et al. (2001) conducted a study on the effectiveness of the Visual Indicators of Teaching and Learning Success (VITALS)

implemented at the College of Medicine and Medical Sciences in Bahrain. Students evaluated clinical faculty on their perception of effective teaching using a 5-point Likert scale. The difference with the VITALS system is that it displayed evaluation results in a visual format versus a statistical format. By using vertical bars to display results, instructors could easily see the areas of their strengths and weaknesses.

There is “no universal method or survey instrument to evaluate clinical dental teachers” (McGrath, Yeung, & McMillan, p. 45). McGrath et al. (2005) attempted to develop and validate an evaluation questionnaire for clinical dental teachers. Using existing literature to generate a pool of questions, along with faculty and student feedback, the Effective Clinical Dental Teaching (ECDT) questionnaire was developed to evaluate clinical teaching effectiveness. Categories on the survey consisted of learning climate, control of clinics, communicating goals, promoting understanding and retention, evaluation, feedback, and promoted self-directed learning.

McGrath et al. (2005) distributed the questionnaire to 148 dental students who evaluated 29 clinical educators. Scores from the questionnaire showed “significance ($p < .01$), indicating that its construct in the use of criterion was valid when compared with global ratings (very poor to very good) of effective teaching” (McGrath et al., 2005, p. 45). Cronbach’s alpha resulted in $>.80$ in all domains of the ECDT.

As McGrath et al. (2005) reported, there is “no gold standard or criteria with which to evaluate the quality of a clinical dental educator” (p. 47). Therefore, the development of the ECDT was essential in providing a method to evaluate teaching effectiveness in clinical dentistry. McGrath et al. (2005) believed they had done just that. Administrators, dental faculty, and students were now able to implement an effective and valid instrument.

Ngware and Ndirangu (2005) conducted a study on teaching effectiveness from the lecturer's perspective. The purpose of the study was to establish whether appropriate tools existed for evaluating teaching effectiveness. It also focused on how effectively the obtained information from the evaluations was used to improve academic standards, and to determine the validity and reliability of the instrument used (Ngware & Ndirangu, 2005). Using a descriptive approach, three Kenyan universities and 79 participants were randomly selected for the study. Data was collected using a questionnaire that had been piloted to establish reliability ($r = .77$). Major content items used on the questionnaire included: presentation, subject matter, and personal attributes. Those instructors evaluated taught in a wide array of courses: business, humanities, engineering, technology, health sciences, and environmental studies. However, results of analysis by Ngware and Ndirangu (2005) were specific to the selected universities. They found through this research no “standard instrument for measuring teaching effectiveness, and that the existing instruments are university-specific and student satisfaction oriented” (p. 199).

Colleges and universities develop evaluation forms used by students each semester to evaluate the course and the instructor. Onwuegbuzie, Witcher, Collins, Filer, Wiedmaier, and Moore (2007) used a mixed-methods approach to assess the validity of a teaching evaluation form by examining students' perception of characteristics of effective college teachers. The form used by Onwuegbuzie et al. (2007) was already implemented at a midsize public university in a U.S. mid-southern state. Participants included 912 college students, a 10.66% sample of the student body. Students were enrolled in 68 different degree programs including nursing, pre-pharmacy, premedical, and dietetics (Onwuegbuzie et al., 2007). The evaluation form consisted of two parts: the first section used ten items

with a five-point rating scale that elicited students' opinions about their learning experiences, and the second part used a five-point scale to critique their instructors (Onwuegbuzie et al., 2007). Data analysis included qualitative and quantitative techniques resulting in nine emerging themes.

Of the nine emerging themes found by Onwuegbuzie et al. (2007), "five represented the second part of the evaluation and were identified as: (a) professional – one who is organized in preparing the course; (b) transmitter – one who clearly conveys course material; (c) connector – one who is available to students; (d) director – one who is an expert in his/her field; and (e) responsive – one who is a provider of student performance" (p. 150). The four other themes not represented by items included on the evaluation form and identified as: student centered, expert, enthusiast, and ethical. Onwuegbuzie et al. (2007) concluded that a "gap existed between what the developers of evaluation forms considered to be characteristics of effective teaching and what the students deem to be the most important traits" (p. 151). The researchers reported that the gap suggested student criteria for evaluating college teachers might not be represented adequately in evaluation forms used by universities. Given that universities will continue to use student ratings as one measure of evaluating teaching effectiveness, Onwuegbuzie et al. (2007) suggested designing and scoring a validated instrument that can provide both formative and summative information on the efficacy of instruction at the college level.

Students' Evaluation of Educational Quality (SEEQ). Marsh (1984) conducted interviews with faculty and students and reviewed current literature to determine which characteristics were important to effective teaching. Using this information he developed the Students' Evaluation of Educational Quality (SEEQ). Marsh (1984) indicated that this

systemic approach to development of the instrument “constitutes evidence of content validity, and is less likely to contain trivial factors” (p. 710).

March (1984) included nine factors he found important to effective teaching based on his review of literature and interviews. These factors are: (1) learning/value; (2) instructor enthusiasm; (3) organization/clarity; (4) group interaction; (5) individual rapport; (6) breadth of coverage; (7) examinations/grading; (8) assignments/reading; and (9) workload difficulty.

To thoroughly evaluate effectiveness in teaching, the SEEQ was formatted using the nine factors as teaching domains. The original SEEQ survey is divided into three sections. Section I is an evaluation of effective teaching using the nine domains and a 9-point Likert scale. Section II uses a qualitative approach providing students the opportunity to comment on teaching behaviors or to support their choices in Section I. Section III collects student demographics.

The SEEQ instrument has been researched extensively. Statistical tests conducted in approximately 50,000 courses with almost a million students in a wide range of disciplines at both the undergraduate and graduate levels have shown that SEEQ is both valid and reliable (March & Roche, 1997). Perry and Smart (1997) presented an approximated .95 reliability for SEEQ dimensions when used to evaluate educators and their teaching effectiveness. Feldman (1989) found mean correlations for the dimensions of the SEEQ SETs to range between .15 and .42, and the mean of correlations for overall ratings to be .29.

Because of its multidimensional approach, “Richardson (2005) identifies the SEEQ instrument as the most widely used in published research” (Marsh, 2006, p. 4). The factor

structure of the SEEQ instrument has been replicated by other researchers and those designing an instrument to measure effective teaching. Marsh (2006) noted that the, most compelling support is provided in his 1991 study with Hocevar, where an archive of 50,000 sets of class-average ratings reflecting responses to 1 million SEEQ surveys, they defined 21 groups of classes that differed in terms of course level (undergraduate/graduate), instructor rank, and academic discipline. The nine SEEQ factors were identified in each of the 21 separate factor analyses. The average correlation between factor scores based on the separate analysis and factor scores based on the total sample were over .99. (p. 4)

Summary

This chapter has presented the literature related to the study. Part one presented the framework of Kolb's experiential learning theory and problem-based learning as related to Knowles' theory of andragogy. Part two presented research on teaching effectiveness in higher education and in the classroom and clinical environments for healthcare education. Part three presented research on student evaluations of teaching with a focus on Herbert Marsh's Students' Evaluation of Educational Quality (SEEQ) survey instrument. Chapter III presents the method for data collection and analysis.

Chapter III - Methodology

Little research exists on both classroom and clinical teaching for dental hygiene and nursing programs in community colleges. Most of the research has taken place at the university level despite the fact that community college programs outnumber those in universities (ADEA, 2011). The purpose of this study was to compare students' perceptions about important teaching behaviors of nursing and dental hygiene instructors in clinical settings with students' perceptions about important teaching behaviors of teachers in classroom settings.

This chapter is divided into the following sections: research questions; the selection of participants; instrumentation; data collection; and data analysis.

Research Questions

Research questions for this study are as follows:

1. For the total scores, are there significant differences in mean SEEQ total scores of students' perception of important teaching behaviors for classroom environments and students' perceptions of important teaching behaviors for clinical environments in nursing and dental hygiene programs?
2. For each subscale score, are there significant differences in SEEQ dimension scores of students' perception of important teaching behaviors for classroom environments and students' perceptions of important teaching behaviors for clinical environments in nursing and dental hygiene programs?
3. How do dental hygiene and nursing students perceive teaching strengths relative to classroom and clinical instruction?

Selection of Participants

The setting of the study was a small Western community college offering several allied health education programs. Total student enrollment averages 13,000 with a full time equivalent (FTE) student count of approximately 7, 200 students. Enrollment in either the nursing or the dental hygiene associate degree program was required in order to participate in this study. These programs were selected due to similarities in student admission processes, pre-requisite courses, and accreditation requirements for qualified instructors. Both the nursing and dental hygiene program followed a traditional two-year (four semesters) academic program of study.

The target population was nursing and dental hygiene students in their second academic year, which gave them at least one year of interaction with instructors in both classroom and clinical settings. At the time of the study, there were 55 nursing students and 12 dental hygiene students for a total 67 possible participants.

Instrumentation

Survey instrument. A modified version of Marsh's (1984) Students' Evaluation of Educational Quality (SEEQ) survey was used for this study (Appendix A). Marsh's (1984) research of teacher evaluations and measuring teaching effectiveness led to the development of the Students' Evaluation of Educational Quality (SEEQ) survey. Marsh (2006) explained that student evaluations of teaching (SETs) differ in the "quality of items and the way the teaching effectiveness construct is operationalized" (p. 3). Marsh (2006) reported that validity and usefulness of SET information depended on the content and coverage of items included on the instrument. Poorly worded or poorly designed evaluations will not provide useful information to teachers or the universities using the

form. “Valid measurement requires interplay between theory, research, and practice” (Marsh, 2006, p. 3).

This researcher gained permission from Dr. Marsh to use the SEEQ survey in this study. The Students' Evaluation of Educational Quality survey is a validated instrument and used in universities throughout the world to evaluate teaching effectiveness of faculty as perceived by students. The SEEQ instrument is now in the public domain and has been extensively tested and used in more than 50,000 courses with over one million students at both the graduate and undergraduate levels (Purdy Crawford Teaching Centre, Mount Allison University, 2007).

Marsh’s 1984 original SEEQ survey has three sections: the first consists of 29 closed-ended statements grouped into nine dimensions of teaching, the second consists of an open-ended section providing participants the opportunity to add additional narrative or comments and the third focuses on demographics. The 29 closed-ended statements in the first section use a 9-point Likert scale ranging from Strongly Agree to Strongly Disagree. For the purpose of this study, only six dimensions of the nine were selected. Other modifications of the survey instrument are described in the next section.

SEEQ modifications and use. Marsh (1984) designed the SEEQ survey to evaluate teachers and effective teaching behaviors. This research study did not evaluate teachers but instead used a modified version of the survey to determine students’ perception of important teaching behaviors. The six selected dimensions are described below:

1. Learning and academic value –measures subjective feelings of success obtained through participation in a course and/or at the hands of a particular

teacher. Students challenged and stimulated consider their learning to have been worthwhile; their interest in the subject is increased, and students understand the subject matter better.

2. Staff member's enthusiasm – measures the minimum condition for learning which is to arouse attention: making the subject stand apart from the background to increase stimulation of interest. Teacher enthusiasm can induce student enthusiasm for the subject, which can enhance achievement.
3. Organization / clarity – measures structure and clarity, cueing learners about the organization of subject matter, scheduling exercises and assignments, inducing cognitive schemata to assist in memory retrieval, and form linkages between new and previously learned material.
4. Group interaction – measures verbal interaction in classrooms that include questions and answers facilitating the sharing of ideas and expression of knowledge.
5. Individual rapport – measures the allowance and acceptance of individual differences by the teacher and present knowledge and attitude of the students. It also includes instructor availability and making students feel welcome.
6. Breadth of coverage – measures the reflection of students' response to items concerning various theories, ideas, concepts, and presentation of different viewpoints.

Two versions of the modified SEEQ survey were used for this research: one for the classroom setting and one for the clinical setting. Because Marsh's (1984) original survey only targeted classroom settings, the clinical survey for this research substituted

the words ‘class, classroom, and class assignments’ with ‘clinic, clinical setting, and clinical assignments.’ Additionally, the 9-point scale descriptors were modified. Dr. Marsh granted permission to replace ‘strongly disagree to strongly agree’ with ‘no importance to very important’; herein, known as the modified SEEQ surveys.

Creswell (2009) stated that modification of a survey instrument might alter its original validity and reliability. In such cases, reestablishing validity and reliability may require consideration. The original SEEQ instrument has a high reliability and validity rating. This study used the original version of the SEEQ survey as a guide to determine students’ *perception* of effective teaching versus having students actually evaluate their instructors. The researcher believed that the change in terminology from class and classroom, to clinic and clinic setting, were minor and would not alter its validity or reliability. Therefore, a pilot study did not take place.

Validity of the instrument. Marsh (1997) stated that student evaluations of teaching (SETs) are difficult to validate because there is not a single criterion of effective teaching. Feldman (as cited in Marsh & Roche, 1997) conducted a “meta-analysis of correlations between students’ evaluation of teaching (SET) and teachers’ self-evaluations” (p. 1189). Across various studies, Feldman (1989) found mean correlations for the dimensions of the SEEQ SETs to range between .15 and .42, and the mean of correlations for overall ratings to be .29.

In an effort to establish validity of the SEEQ survey, researchers have conducted correlation analyses between its dimensions and other instruments used for students’ evaluation of teacher effectiveness. For example, correlation studies were reviewed between the dimensions of the SEEQ instrument and the Endeavor. The Endeavor

Instructional Rating Form is an instrument developed by P.W. Frey (1974) and uses seven components for measuring teaching effectiveness: presentation, clarity, workload, personal attention, class discussions, organization-planning, grading and student accomplishment (Watkins et al., 1992 & Marsh, 2006). Each of the seven components included three content items. A five-point rating scale (1 = very poor to 5 = very good) was used to measure content items in each category.

The obtained correlations between the SEEQ and the Endeavor ranged between .66 and 0.96 (mean $r = .83$) (Perry, 1997). Researchers such as Feldman (1989), Watkins (1992), Perry (1997), and Yang (2007) either conducted or researched the factor analysis studies between Marsh's (1984) SEEQ instrument and other student evaluation instruments for teaching effectiveness. The SEEQ survey is accurate for measuring teaching effectiveness. Therefore, the SEEQ is valid for the purpose of this study on perceived important teaching behaviors in classroom and clinical settings for the selected nursing and dental hygiene programs.

Reliability of the instrument. Using correlation analyses, Perry and Smart (1997) presented estimates that approximated .95 for reliability for SEEQ dimensions when used to evaluate educators and teaching effectiveness. They indicated that the reliability for an average response from 50 students to be .90, for responses from 25 students to be .74, for responses from 10 students to be .60 and for responses from five or less students to be .23. Thus, they found that as the number of responses from a class decreased the reliability decreased. Marsh (2006) reported similar findings:

The correlation between responses by any two students in the same class (i.e. the single rater reliability; Marsh, 1987) is typically in the .20s but the reliability of

the *class-average* response depends upon the number of students rating the class: .95 for 50 students, .90 for 25 students, .74 for 10 students, and .60 for five students. Given a sufficient number of students, the reliability of class-average SETs compares favorably with that of the best objective tests. (p. 237)

In a study on the quality of e-learning programs in Taiwan, Yang and Bright (2007) computed a reliability analysis to measure the internal consistency of the SEEQ survey. The Cronbach Coefficient Alpha value for Marsh's (1984) survey instrument was .97, indicating it was highly reliable (Yang & Bright, 2007).

Data Collection

Early in the fall semester, the researcher contacted nursing and dental hygiene instructors who were teaching second year courses. Permission was requested for the research assistant to enter the classroom at the beginning or the end of a lecture period to recruit participants and collect data. The research assistant entered three classrooms within a two-week period, met with participants and read a recruitment script (Appendix B). The script explained the purpose of the study, their role as participants, voluntary consent, participation through completion of the survey, and the ability to opt-out of participation. Any participant opting out was to keep his or her survey and submit it at the same time as those who opted to complete the document. This strategy intended to eliminate the potential to identify and link incomplete surveys to specific participants. Names of participants and faculty were not included on the surveys and the surveys did not identify the program (nursing or dental hygiene) to ensure the sample population remained homogenous. Exclusion of any option that allowed participants to add or include personal information addressed confidentiality.

The research assistant asked participants to complete two surveys. One survey focused on the classroom environment and the other on the clinical teaching environment. White-colored paper designated the classroom survey and the clinical survey was designated by blue-colored paper. The surveys were numbered, then paired (e.g., white #1, and blue #1) and stapled together. One-half of the survey packets (38) had the white classroom survey as the first page, and the other half (38) had the blue clinical survey as the first page. This strategy provided some randomness so that some participants would complete the classroom survey first and others would complete the clinical survey first. Participants took no longer than 20 minutes to complete both surveys.

The modified surveys consisted of 24 questions equally divided into the six selected dimensions to be answered using a 9-point Likert scale and one open-ended question. The open-ended question was included to allow students to elaborate on their perception that might not be reflected by the first 24 questions. During recruitment of participants, the research assistant verbally emphasized the importance and need to complete the open-ended question on the survey.

Data Analysis

Survey data was organized using a spreadsheet. Paired surveys were identified using numbers 1 through 55 (55 participants completed the surveys) and categorized as classroom or clinic. The six selected dimensions were placed in columns and the score for each subscale item (question) within each dimension and overall total SEEQ survey score was entered. Other demographics were listed, such as age and gender. The surveys were color-coded to identify the classroom survey (white) and the clinic survey (blue).

Data from each survey was entered using the number (e.g., 1, 2, 3) for each paired survey as the 'ID' and total SEEQ score entered as variables labeled 'classroom' or 'clinic'.

Fifty-five participants ranked the subscale items in each of the six dimensions by 'importance' using a 9-point Likert scale. The total score was determined by adding the ranked items in each of the six dimensions. Twelve participants turned in blank surveys.

Descriptive statistics. The Spearman's Rank Order Correlation (reported as r_s) was used to determine which teaching environment (classroom or clinical) was more strongly correlated to perceived effective teaching behaviors and to test the direction and strength of the relationship between two variables on an ordinal scale (Laerd Statistics, 2012). The Spearman's Rank Order Correlation Coefficient was also used to test each single subscale item within the same dimension to determine which had a stronger correlation to perceived effective teaching in each environment. Finally, frequency analysis was used for all subscale items in each dimension to determine the median of classroom and clinical scores, range of scores, and skewness.

Research questions one and two were analyzed using quantitative analysis as follows:

Research question 1. For the total scores, are there significant differences in mean SEEQ total scores of students' perception of important teaching behaviors for classroom environments, and students' perceptions of important teaching behaviors for clinical environments in nursing and dental hygiene programs?

Analysis of total SEEQ scores was conducted using the Wilcoxon Matched-Pairs Signed Ranks Test. This test determined whether students' perception about classroom teaching effectiveness was different from students' perceptions about effective

instruction in a clinical environment. The Wilcoxon Matched-Pairs Signed Ranks test, also known as the Wilcoxon Matched-Pairs test, tests the median difference in paired data. It is the non-parametric equivalent of the paired t-test (Crichton, 1998).

Unlike less robust nonparametric tests such as the sign test, the Wilcoxon Matched-Pairs test is used to determine the magnitude of difference between matched groups (MacFarland, 1999). The test compares one sample involving repeated measures. The null hypothesis used with this test is that the median difference between pairs of observations is zero (MacFarland, 1999). This is different from the null hypothesis of the paired t-test, which is that the *mean* difference between pairs is zero, and the null hypothesis of the sign test, which is that the numbers of differences in each direction are equal. The independent variable for the first question was the students, and the dependent variable was the mean SEEQ total scores.

Research question 2. For each subscale score, are there significant differences in SEEQ dimension scores of students' perception of important teaching behaviors for classroom and students' perceptions of important teaching behaviors for clinical environments in nursing and dental hygiene programs?

To address this research question, the Wilcoxon Matched-Pairs Signed Ranks Test was used to compare responses for clinical perceptions and classroom perceptions. The dependent variables were the SEEQ scores for the six selected dimensions: (1) learning /academic value; (2) instructor's enthusiasm; (3) organization / clarity; (4) group interaction; (5) individual rapport; and (6) breath of coverage. Thus, the analysis consisted of six comparisons: one comparison for each dimension.

Research question 3. How do dental hygiene and nursing students perceive teaching strength relative to classroom and clinical instruction?

An open-ended question was asked in order to answer research question three. The question narrative is as follows: “Please list behaviors and characteristics of (classroom or clinical) teaching that most benefits your own learning experience. (example: organized, empathetic, fair, etc.)” Content analysis was used to analyze the data for question three. Analysis focused on determining themes and frequency of common descriptive terms used by participants as it applied to teaching behaviors.

Researcher Qualifications and Bias

The researcher’s experience in the field of dentistry and dental hygiene spans forty-two years. After eighteen years of working with dentists in private practice, the researcher became licensed as a registered dental hygienist (RDH) in 1993. Three years of practicing dental hygiene led to entering education as an adjunct instructor teaching both didactic and clinic courses in a dental hygiene program. As a director of a dental hygiene program for the past twelve years and educator in both didactic and clinic courses for fifteen years, the researcher has interacted with well over 150 students in three different western educational programs at the community college level. Direct observation and evaluation of students and faculty have been included in the researcher’s responsibilities as program director along with being subject to both student and faculty evaluation.

The researcher has insight into all aspects of dentistry due to vast experience at all levels. Additionally, the researcher was an educator and administrator associated with the community college used for this study where the researcher interacted with all the

dental hygiene faculty and some of the nursing faculty over a six-year period. As a result, detailed measures have been designed to eliminate the ability of the researcher to link participants to completed surveys in both programs.

Ethical Issues

Ethical concerns for this study consist of anonymity of the participants, undue influence for positive responses versus constructive criticism, confidentiality of participants and data, data analysis, and interpretation. The study was designed to eliminate the possibility of entering any, and all, forms of personal identification on the survey instrument. Identification of the community college, other entities, places, or persons employed the use of pseudonyms or generic terminology. To avoid potential influence of participants, the research assistant who distributed the surveys was not affiliated with the community college or its programs used for the study. Confidentiality of data was attained through maintaining completed surveys in a locked file cabinet in the researcher's office until the end of the research project (approximately one year) at which time all data will be destroyed.

Summary

This chapter restated the purpose of the research and presented the research method. In addition, the Students' Evaluation of Educational Quality (SEEQ) survey instrument was described along with its reliability and validity and the modifications for its use. The data collection procedures were described along with response rates. Finally, the method for data analysis for each research question was presented. The next chapter will present data analysis and interpretation.

Chapter IV – Results

The purpose of this study was to compare students' perception about important behaviors of teachers in clinical settings with students' perception about important teaching behaviors of teachers in classroom settings in nursing and dental hygiene programs at the community college level. Using a modified version of the Students' Evaluation of Educational Quality (SEEQ) survey developed by Marsh (1984), 55 of 67 (82 % return rate) usable surveys were collected from nursing and dental hygiene students.

Within a ten-day span at the beginning of their third academic semester, the research assistant distributed paired surveys to three groups of students. One group completed the survey at the beginning of a regular 3-hour class period (8:00 AM), the second group completed the survey during a mid-morning break (9:15 AM), and the third group completed the surveys near the end of a 4-hour class period (11:30 AM). The research assistant electronically scanned and e-mailed all surveys to the researcher and original surveys were mailed by postal service. This chapter presents summaries of the data analysis.

Results of Data Analysis

The power of a statistical test is the probability that the test will reject the null hypothesis when indeed the hypothesis is false. It is the probability of avoiding a type II error ($1 - \beta$). For this study, a preliminary power analysis using the G Power calculator was computed (Park, 2010). The parameters used were a desired level of power at or above 80%, alpha at .05, and a moderate effect size of $d = .50$. The

calculated minimum sample size was 34. Thus, the 55 responses for this study exceeded the calculated minimum sample size.

Descriptive statistics. Descriptive statistics were computed for total scores submitted of responses for the classroom and clinical survey results and are presented in Table 4.1. The mean for the clinical responses was 192.30 and slightly higher than the mean for the classroom responses of 191.05. The range of responses was greater for the clinical setting. Medians show that clinical responses were also slightly higher than those for the classroom.

Table 4.1

Descriptive Statistics of Total Scores from Classroom and Clinical Surveys.

Descriptive Statistics						
	N	Mean	Std. Deviation	Minimum	Maximum	Median
Classroom	55	191.05	17.14	151	216	190
Clinic	55	192.30	18.50	133	216	192

Summary of Descriptive Statistics for Each Subscale

Each subscale included four items (questions) designed to measure a component of effective teaching. For this data set, medians for the 24 items ranged between 8 and 9. The 20 subscale items resulted in a median score of eight. All items were negatively skewed. Table 4.2 provides the medians and the variance for each item.

Table 4.2

Summary of Descriptive Statistics for Frequency Analysis of Participant Responses to 24 Subscale Items Designed to Measure Important Teaching Behaviors.

Dimension 1	Item	Class				Clinic			
		1	2	3	4	1	2	3	4
	Median	8	9	9	9	9	9	9	8
	Variance	.86	.29	.81	.72	.47	.22	.86	1.80
Dimension 2	Item	Class				Clinic			
		5	6	7	8	5	6	7	8
	Median	8	8	8	8	8	8	8	8
	Variance	.52	.83	3.25	1.95	.94	.90	2.54	.97
Dimension 3	Item	Class				Clinic			
		9	10	11	12	9	10	11	12
	Median	9	8	8	8	9	8	8	8
	Variance	2.39	2.09	2.32	1.97	1.37	1.69	1.22	1.21
Dimension 4	Item	Class				Clinic			
		13	14	15	16	13	14	15	16
	Median	8	8	8	8	8	8	8	8
	Variance	3.21	2.81	1.86	2.99	1.37	1.42	1.55	2.59
Dimension 5	Item	Class				Clinic			
		17	18	19	20	17	18	19	20
	Median	8	8	8	8	8	8	8	8
	Variance	.74	.87	1.77	2.22	1.11	1.16	2.41	2.02
Dimension 6	Item	Class				Clinic			
		21	22	23	24	21	22	23	24
	Median	8	8	8	8	8	8	8	8
	Variance	1.18	1.62	1.47	1.00	2.02	1.50	2.92	1.44

For total scores, Spearman's Rank Order Correlation Coefficient was computed to determine the relationship between important teaching behaviors in the classroom and the clinic environment. The computed value of the Spearman's Correlation Coefficient was $r_s = .819$ which indicated that students perceive teachers' behaviors to have a higher positive relationship in the classroom and clinical environments. Table 4.3 presents

results of the correlation analysis between the total SEEQ scores for classroom and clinic surveys.

Table 4.3

Results of Spearman's Rank Order Correlation Coefficient between Total SEEQ Scores of Classroom and Clinic Surveys.

Spearman's rho	Classroom	Clinical
Classroom	1.00	.819 **
Clinical		1.00

** Correlation is significant at the 0.01 level (2-tailed). N = 55

Summary of Correlations

A 6 x 6 Spearman's Rank Order Correlation Coefficient matrix was computed for the classroom dimensions. Correlations among dimensions of classroom opinions were all positive and significant, which indicated that the six dimensions are interrelated. The strongest relationship occurred between Dimension 3 '*organization and clarity*' and Dimension 5 '*individual rapport*' (N = 55, $r_s = .67, p < .01$). The next strongest relationship was between Dimension 5 '*individual rapport*' and Dimension 6 '*breadth of coverage*' (N = 55, $r_s = .67, p < .01$). The weakest relationship occurred between Dimension 1 '*learning and academic value*' and Dimension 4 '*group interaction*' (N = 55, $r_s = .30, p < .05$). The correlations are summarized in Table 4.4.

Table 4.4

Matrix of Spearman's Rank Order Correlation Coefficient Results for Six Classroom Dimensions.

		Dim1	Dim2	Dim3	Dim4	Dim5	Dim6
Spearman's rho	Dim1 Coefficient	1.000	.478**	.599**	.302*	.548**	.442**
	Dim2 Coefficient		1.000	.518**	.515**	.489**	.489**
	Dim3 Coefficient			1.000	.312*	.670**	.594**
	Dim4 Coefficient				1.000	.410**	.581**
	Dim5 Coefficient					1.000	.670**
	Dim6 Coefficient						1.000

** Correlation is significant at the 0.01 level (2-tailed). N = 55

* Correlation is significant at the 0.05 level (2-tailed).

Next, a 6 x 6 Spearman's Rank Order Correlation Coefficient matrix was computed for the clinic dimensions. Relationships for clinic opinions were all positive and significant indicating that the six dimensions were interrelated (Table 4.5). For the clinical environment, the strongest relationship occurred between Dimension 4 '*group interaction*' and Dimension 5 '*individual rapport*' (N = 55, $r_s = .71, p < .01$). Dimension 2 '*organization and clarity*' and Dimension 6 '*breadth of coverage*' showed the weakest relationship (N = 55, $r_s = .39, p < .05$).

Table 4.5

Matrix of Spearman's Rank Order Correlation Coefficient Results for Six Clinic Dimensions.

		Dim1	Dim2	Dim3	Dim4	Dim5	Dim6
Spearman's rho	Dim1 Coefficient	1.000	.552**	.583**	.505**	.532**	.412**
	Dim2 Coefficient		1.000	.537**	.621**	.627**	.396**
	Dim3 Coefficient			1.000	.686**	.695**	.536**
	Dim4 Coefficient				1.000	.709**	.659**
	Dim5 Coefficient					1.000	.590**
	Dim6 Coefficient						1.000

** Correlation is significant at the 0.01 level (2-tailed). N = 55

* Correlation is significant at the 0.05 level (2-tailed).

Next, the Spearman's Rank Order Correlation Coefficients were computed for responses between the six dimensions for classroom and clinic. The correlation coefficient and percentage of variance accounted for are presented in Table 4.6. The computed correlation between Dimension 1 '*learning/academic value*' within the classroom and '*learning/academic value*' in the clinic was .699 ($p < .01$). The computed correlation between Dimension 2 '*instructor's enthusiasm*' within the classroom and '*instructor's enthusiasm*' in the clinic was .317 ($p < .05$). The computed correlation for Dimension 3 '*organization and clarity*' within the classroom and '*organization and clarity*' in the clinic was .400 ($p < .01$). The correlations computed for Dimension 4 '*group interaction*' within the classroom and '*group interaction*' within the clinic resulted in .636 ($p < .01$). The correlations computed for Dimension 5 '*individual rapport*' within the classroom and '*individual rapport*' in the clinic was .635 ($p < .01$).

Finally, the computed Spearman's Rank Order Correlation Coefficient between Dimension 6 'breadth of coverage' within the classroom and clinic resulted in .512 ($p < .01$). When correlation coefficients are squared, the percentage of variance accounted for can be determined. As observed in Table 4.6 the range in variance accounted for is 10%-48%.

Table 4.6

Spearman's Rank Order Correlation Coefficient Results and Variance between Classroom and Clinic Dimensions for Important Teaching Strategies.

Dimension	Correlation	Coefficient of Determination
Learning/Academic Value	.699	48%
Instructor's Enthusiasm	.317	10%
Organization and Clarity	.400	16%
Group Interaction	.636	40%
Individual Rapport	.635	40%
Breadth of Coverage	.512	28%

Research Question 1

For the total scores, are there significant differences in mean SEEQ total scores of students' perception of important teaching behaviors for classroom environments and students' perceptions of important teaching behaviors for clinical environments in nursing and dental hygiene programs?

A Wilcoxon Matched-Pairs Signed Rank test was computed on the total scores of the survey responses to evaluate differences in the mean ranks between students' perception of important teaching behaviors in the classroom and students' perception of

important teaching behaviors in the clinic environment. No significant difference was found between classroom and clinical environments ($N = 55$, $z = -.830$, $p = .41$). The mean rank for positive and negative ranks is reported in Table 4.7. The mean rank for SEEQ total score for important teaching behaviors in the classroom was 22.20, and 23.64 for the clinical environment.

Table 4.7

Wilcoxon Matched Pairs Signed Ranks Test Results of Mean Total SEEQ Scores of Perceived Important Teaching Behaviors between Classroom and Clinical Environments.

Ranks		N	Mean Rank	Sum of Ranks
Clinic-Classroom	Negative Ranks	20 ^a	22.20	444
	Positive Ranks	25 ^b	23.64	591
	Ties	10 ^c		
	Total	55		

Note: a. Clinic < Classroom b. Clinic > Classroom c. Clinic = Classroom $p > .05$

Research Question 2

For each subscale score, are there significant differences in SEEQ dimension scores of students' perception of important teaching behaviors for classroom environments and students' perception of important teaching behaviors for clinical environments in the nursing and dental hygiene program?

The Wilcoxon Matched Pairs Signed Ranks test was used to compare responses for the six selected dimensions of the modified SEEQ survey for students' perception of important teaching in classrooms to students' perception of important instruction in a clinical environment. Each comparison will be presented in the following sections.

The first dimension, '*learning/academic value*', focuses on "measuring subjective feelings of success obtained through participation in a course and /or at the hands of a particular teacher" (Marsh, 1994, p. 2). Marsh (1994) pointed out that when students are challenged and stimulated, they consider learning to have been worthwhile. Students show more interest in the subject, are more successful at understanding subject matter, and tend to rate the course higher because they feel a sense of accomplishment (Marsh, 1994). The Wilcoxon Matched Pairs Signed Ranks test results for the '*learning/academic value*' dimension indicated no significant difference between classroom and clinic environments ($z = -1.944, p > .05$). The mean rank indicated that 10 participants ranked the classroom dimension higher. The mean rank showed that 26 participants ranked the clinic environment higher than the classroom. The range of scores for the classroom opinions on Dimension 1 was 23 to 36 with the median of 34. The range of scores for clinical opinions on Dimension 1 was 28 to 36 with the median of 36. Thus, the median for clinical opinions is at the top of the range. Results are summarized in Table 4.8.

Table 4.8

Wilcoxon Matched Pairs Signed Ranks Test Results for Perceived Important Teaching in the 'Learning/Academic Value' Dimension between Classroom and Clinical Environments.

Descriptive Statistics						
	N	Mean	Std. Deviation	Minimum	Maximum	Median
ClassDim1	55	33.16	3.10	23	36	34
ClinicDim1	55	33.95	2.33	28	36	36

Ranks		N	Mean Rank	Sum of Ranks
ClinicDim1-ClassDim1	Negative Ranks	10 ^a	21.05	210.50
	Positive Ranks	26 ^b	17.52	455.50
	Ties	19 ^c		
	Total	55		

Note: a. ClinicDim1 < ClassDim1 b. ClinicDim1 > ClassDim1 c. ClinicDim1 = ClassDim1 $p > .05$

For the second dimension, '*instructor enthusiasm*', Marsh (1994) explained the "minimal condition for learning is that attention be aroused" (p. 16). A crucial factor for this dimension is evoking student interest. Therefore, teachers have to impress students with humor, enthusiasm, and energy (Marsh, 1994). Student success is enhanced when teachers' enthusiasm is high, influencing the student's enthusiasm for the topic.

The Wilcoxon test for the '*instructor enthusiasm*' dimension resulted in $z = -.224$, $p = .82$, showing no significant difference. In summary, 19 participants ranked the classroom setting higher and 20 participants ranked the clinic environment higher. The range of scores for classroom opinions on Dimension 2 was 23 to 36 with the median of 32. The range of scores for clinical opinions on Dimension 2 was 22 to 36 with the median of 33. The median for clinical opinions was higher than the classroom median. The results are summarized in Table 4.9.

Table 4.9

Wilcoxon Matched Pairs Signed Ranks Test Results for Perceived Important Teaching in the 'Instructor Enthusiasm' Dimension between Classroom and Clinical Environments.

Descriptive Statistics						
	N	Mean	Std. Deviation	Minimum	Maximum	Median
ClassDim2	55	32.16	3.51	23	36	32
ClinicDim2	55	32.36	3.57	22	36	33

Ranks		N	Mean Rank	Sum of Ranks
ClinicDim2-ClassDim2	Negative Ranks	19 ^a	19.68	374
	Positive Ranks	20 ^b	20.30	406
	Ties	16 ^c		
	Total	55		

Note: a. ClinicDim2 < ClassDim2 b. ClinicDim2 > ClassDim2 c. ClinicDim2 = ClassDim2 $p > .05$

The third dimension used for this study addressed instructor 'organization/clarity'. According to Marsh (1994), this dimension measures teacher ability to structure course material so that it can be presented with organization to induce "appropriate cognitive schemata" (p. 24). This approach would assist in the students' ability to retrieve information and form "linkages between new material and material previously learned" (Marsh, 1994, p. 24).

The Wilcoxon test for the 'organization/clarity' dimension resulted in no significant difference ($z = -.219, p = .82$). In summary, 18 participants ranked the classroom environment higher and 20 participants ranked the clinic environment higher. The minimum score for classroom opinions on Dimension 3 was 0 to a maximum of 36 with the median of 32. The minimum score for clinical opinions on Dimension 3 was 22

to 36 with the median of 33. The median for clinical opinions was one point higher than the classroom median. Results are summarized in Table 4.10.

Table 4.10

Wilcoxon Matched Pairs Signed Ranks Test Results for Perceived Important Teaching in the 'Organization/Clarity' Dimension between Classroom and Clinical Environments.

Descriptive Statistics						
	N	Mean	Std. Deviation	Minimum	Maximum	Median
ClassDim3	55	31.78	5.56	0	36	32
ClinicDim3	55	32.38	3.51	22	36	33

Ranks		N	Mean Rank	Sum of Ranks
ClinicDim3-ClassDim3	Negative Ranks	18 ^a	19.75	355.50
	Positive Ranks	20 ^b	19.27	385.50
	Ties	17 ^c		
	Total	55		

Note: a. ClinicDim3 < ClassDim3 b. ClinicDim3 > ClassDim3 c. ClinicDim3 = ClassDim3 $p > .05$ N=55

Dimension 4, '*group interaction*', considers the fact that college education is a social phenomenon. College courses use group instruction within student groups that range from small to very large. Marsh (1994) described this dimension as addressing the verbal interaction in the classroom through facilitation of questions and answers, or sharing of ideas. Furthermore, when teachers gain higher ratings from students in this dimension, it suggests the potential of increased student motivation through social interaction with classmates (Marsh, 1994).

The results of the Wilcoxon test for the '*group interaction*' dimension indicated a significant difference between the classroom and clinical teaching environments of the

programs ($z = -2.173, p = .03$). In summary, 12 participants ranked the classroom dimension higher and 24 participants ranked the clinic environment higher. The range of scores for classroom opinions on Dimension 4 was 9 to 36 with the median of 32. The range of scores for clinical opinions on Dimension 4 was 16 to 36 with the median of 32. Thus, the median for clinical opinions is the same as for the classroom. The results are summarized in Table 4.11.

Table 4.11

Wilcoxon Matched Pairs Signed Ranks Test Results for Perceived Important Teaching in the 'Group Interaction' Dimension between Classroom and Clinical Environments.

Descriptive Statistics						
	N	Mean	Std. Deviation	Minimum	Maximum	Median
ClassDim4	55	30.31	5.90	9	36	32
ClinicDim4	55	31.85	4.43	16	36	32

Ranks		N	Mean Rank	Sum of Ranks
ClinicDim4-ClassDim4	Negative Ranks	12 ^a	16.25	195
	Positive Ranks	24 ^b	19.63	471
	Ties	19 ^c		
	Total	55		

Note: a. ClinicDim4 < ClassDim4 b. ClinicDim4 > ClassDim4 c. ClinicDim4 = ClassDim4 $p < .05$ N=55

The fifth dimension analyzed in this study focused on '*individual rapport*'. Students who have access to instructors, and who believe instructors are interested in their current knowledge, feel more welcome and encouraged (Marsh, 1994). This dimension measures the individual rapport each student may have with an instructor. The results of the Wilcoxon test for the '*individual rapport*' dimension indicated no

significant difference between classroom and clinical teaching behaviors ($z = -.285, p = .77$). In summary, 15 participants ranked the classroom dimension higher and 26 participants ranked the clinic environment higher. The range of scores for classroom opinions on Dimension 5 was 22 to 36 with the median of 32. The range of scores for clinical opinions on Dimension 5 was 23 to 36 with the median of 32. Thus, the median for clinical opinions is the same as those for the classroom. Table 4.12 summarizes the results.

Table 4.12

Wilcoxon Matched Pairs Signed Ranks Test Results for Perceived Important Teaching in the 'Individual Rapport' Dimension between Classroom and Clinical Environments.

Descriptive Statistics						
	N	Mean	Std. Deviation	Minimum	Maximum	Median
ClassDim5	55	31.87	3.87	22	36	32
ClinicDim5	55	31.96	3.91	23	36	32

Ranks		N	Mean Rank	Sum of Ranks
ClinicDim5-ClassDim5	Negative Ranks	15 ^a	15.57	223.50
	Positive Ranks	16 ^b	16.41	262.50
	Ties	24 ^c		
	Total	55		

Note: a. ClinicDim5 < ClassDim5 b. ClinicDim5 > ClassDim5 c. ClinicDim5 = ClassDim5 $p > .05$ N=55

The sixth dimension analyzed for this study deals with ‘*breadth of coverage*’. This dimension reflects how students respond to the “contrasting of implications of various theories, ideas and concepts, and the presentation of different points of view” (Marsh, 1994, p. 40). These applications increase student knowledge and understanding through facilitation of discussion beyond the confines of any specific topic.

The results of the Wilcoxon test for the ‘*breadth of coverage*’ dimension indicated no significant difference between classroom and clinical teaching behaviors ($z = -.103, p = .92$). In summary, 19 participants ranked the classroom dimension higher and 15 participants ranked the clinic environment higher. The range of scores for the classroom opinions on Dimension 6 was 21 to 36 with the median of 32. The range of scores for the clinical opinions on Dimension 6 was 17 to 36 with the median of 32. Thus, the median for clinical opinions is equal to those for the classroom. Table 4.13 summarizes the results.

Table 4.13

Wilcoxon Matched Pairs Signed Ranks Test Results for Perceived Important Teaching in the ‘Breadth of Coverage’ Dimension between Classroom and Clinical Environments.

Descriptive Statistics						
	N	Mean	Std. Deviation	Minimum	Maximum	Median
ClassDim6	55	31.22	4.11	21	36	32
ClinicDim6	55	31.11	4.41	17	36	32

Ranks		N	Mean Rank	Sum of Ranks
ClinicDim6-ClassDim6	Negative Ranks	19 ^a	15.97	303.50
	Positive Ranks	15 ^b	19.43	291.50
	Ties	21 ^c		
	Total	55		

Note: a. ClinicDim6 < ClassDim6 b. ClinicDim6 > ClassDim6 c. ClinicDim6 = ClassDim6 $p > .05$ N=55

Research Question 3

How do dental hygiene and nursing students perceive teaching strength relative to classroom and clinical instruction? An open-ended question allowed participants to write

in their responses. The question was worded as: “Please list behaviors and characteristics of (classroom or clinical) teaching that most benefits your own learning experience (example: organized, empathetic, fair, etc.)”.

Responses from the qualitative section were organized using a spreadsheet. Color-coding was used to differentiate between clinical and classroom interaction. Each pair of numbered surveys was listed and the full narrative of each response was typed verbatim onto the spreadsheet. The variety of terms and verbatim responses contributed by participants is presented in Appendix C.

Themes were identified from the statements submitted on each survey for each instructional setting. Data revealed the overarching themes were organization and teacher affect in both instructional settings. The strongest theme for the classroom was organization whereas the strongest for the clinical environment was teacher affect, which included the idea of student engagement, clear expectations, control of the teaching environment, and clarity in instruction.

The second portion of analysis consisted of tracking frequency of descriptive terms. Three columns were labeled: (1) comments by keywords/behaviors/characteristics, (2) frequency-classroom, and (3) frequency-clinical. Color-coding the columns was done as well to match the surveys. Descriptive terms were extracted from statements submitted on surveys. For the classroom environment, organization was identified at a frequency of 26 times; it was identified 20 times for the clinical environment. Participants identified ‘fair’ 13 times in the clinical setting and 14 times for the classroom setting. Table 4.14 presents the descriptive terms used most by students for important teaching behaviors in classroom and clinical environments.

Table 4.14

The Most Common Terms Listed by Nursing and Dental Hygiene Students Describing Important Teaching Characteristics that Most Benefit their Learning.

Descriptive Term	Frequency for Classroom	Frequency for Clinic
Organized	26	20
Fair	14	13
Clear expectations	6	6
Hands on Demonstration	0	6
Clear explanations	6	6
Encouraging	0	5
Visuals	5	1

Summary

This chapter presented the analysis results for the study. Two of the three research questions were analyzed using the Wilcoxon Matched-Pairs Signed Ranks test. Results for Dimension 4, '*group interaction*', was the only dimension indicating a significant difference ($p < .05$) in students' perception of important teaching behaviors between the classroom and clinical environments. For the five other dimensions, responses showed no significant difference between perceived important teaching behaviors in either of the nursing and dental hygiene instructional settings. For each analysis, the negative and positive mean ranks along with median scores were reported for each environment. Results from the Spearman's Rank Order Correlation Coefficient and frequency analysis showed that responses to the dimensions for classroom and clinical environments were highly interrelated and the distribution for each item was negatively skewed.

The third research question was open-ended in order to provide participants the opportunity to expand or support their choices on the first part of the survey through narrative comments. Themes included organization and teacher affect in both instructional environments. The final chapter will discuss the analysis results of this study as it relates to the literature and include recommendations for further study.

Chapter V - Discussion and Conclusions

The preceding chapter presented the analysis and results of the study. This chapter consists of five parts: (a) a summary of the study; (b) a discussion of the findings; (c) implications for practice in each of the learning environments for community college nursing and dental hygiene programs; (d) recommendations for further research in community college settings; and (e) conclusions of the study.

Summary of the Study

This study was conducted to determine if there was a significant difference in students' perception of important teaching behaviors of instructors in classroom and clinical settings used in nursing and dental hygiene programs. A modified version of Marsh's (1994) Students' Evaluation of Educational Quality (SEEQ) survey was used to collect data from 55 participants in a community college nursing and dental hygiene program. The survey used a 9-point Likert scale for the first 24 questions. The second section allowed qualitative comments and section three addressed demographics. Three statistical methods were used to analyze the data. First, the Spearman's Rank Order Correlation Coefficient measured the relationship between the two variables (perceived important teaching behaviors and the teaching environments). Second, the Wilcoxon Matched Pairs Signed Ranks test was used to test the magnitude of difference between the paired dimensions in each instructional setting. Third, frequencies were computed for each of the 24 subscales. For comments submitted by the participants, a qualitative approach was used to identify themes of perceived important teaching behaviors.

For the total instrument, the mean for the clinical teaching environment was higher at 192.30 than the classroom, which was 191.05. The range of scores was greater

in the clinical setting with a low score of 133 and the high of 216 as compared to a range of 151 to 216 for the classroom environment. Spearman's Rank Order Correlation Coefficient showed a strong positive relationship between the two teaching environments (.819, $p < .01$).

When the six selected dimensions were analyzed for the classroom environment, a moderate relationship was shown between Dimension 3 '*organization and clarity*' and Dimension 5 '*individual rapport*' ($N = 55$, $r_s = .670$, $p < .01$). A moderate relationship was also found between Dimension 5, '*individual rapport*' and Dimension 6 '*breadth of coverage*' ($N = 55$, $r_s = .670$, $p < .01$). The relationship between Dimension 1 '*learning and academic value*' and Dimension 4 '*group interaction*', ($N = 55$, $r_s = .302$, $p < .05$) was the weakest.

For the clinical environment, a moderate to strong positive relationship between Dimension 4 '*group interaction*' and Dimension 5 '*individual rapport*' ($N = 55$, $r_s = .709$, $p < .01$) was found. The weakest relationship was between Dimension 2 '*organization and clarity*' and Dimension 6 '*breadth of coverage*' ($N = 55$, $r_s = .396$, $p < .05$).

The Spearman's Correlation Coefficient comparing both teaching environments showed three dimensions with moderate relationships: Dimension 1 '*learning and academic value*' ($r_s = .699$); Dimension 4 '*group interaction*' ($r_s = .636$); and Dimension 5 '*individual rapport*' ($r_s = .635$). For the subscales comparing both instructional settings, only Dimension 4 '*group interaction*' showed a significant difference in perceived important teaching behaviors ($z = -2.173$, $p = .03$). There were no significant

differences in perceived important teaching behaviors between the two instructional settings in the other five dimensions.

Analysis of the narrative responses revealed themes for instructional environments, where the overarching themes for both classroom and clinical settings were *organization* and *teacher affect*. The strongest theme for the classroom environment was organization whereas the strongest for the clinical environment was teacher affect, which includes the idea of student engagement, clear expectations, control of the teaching environment, and clarity in instruction.

Discussion of the Findings

Both nursing and dental hygiene education programs require students to take didactic courses as well as to obtain clinical experience. Faculty in these programs must have the ability to teach effectively in both the classroom and the clinical environment. The diverse role of teaching in the two different settings requires a spectrum of knowledge and skills in order to be effective.

In this study, perceived important teaching behaviors in the classroom setting showed a moderate relationship between '*organization and clarity*' and '*individual rapport*' as well as breadth of coverage. Similar results were reported by Schwönwetter et al. (2006).

The weakest relationship occurred between '*learning and academic value*' and '*group interaction*'. Learning and academic value focuses on concepts and theories. The weak relationship may be a result of two factors or influences. First, as practitioners enter higher education as faculty, they are untrained in teaching methodologies and how to deliver concepts and theory. Because of their clinical background, they have an

understanding of what students need to know in the 'real world' of clinical practice.

Therefore, novice educators may believe they have to lecture in order to present as much content as possible to ensure students obtain all the information necessary for the real world. In a lecture format, there is not a substantial amount of group interaction.

A second factor that may contribute to the weak relationship between '*learning and academic value*' and '*group interaction*' is that when students begin their program of study they view the instructor as the expert. They want to obtain important facts from the instructor rather than be involved in group discussions. Additionally, at least in the first year, students may not feel comfortable discussing unfamiliar concepts with peers they do not know. They would prefer learning from the instructor whom they consider the expert.

A strong relationship was found between '*group interaction*' and '*individual rapport*' in the clinical setting. In the clinic, instruction is more facilitative and consultative versus in the classroom where the primary method of teaching is the lecture. It is reasonable to conclude that this interactive discussion and consultation between faculty and students enhance rapport and relationships.

The weakest relationship in the clinical teaching environment was between '*organization and clarity*' and '*breadth of coverage*'. This may be a result of the reversal of roles of students and faculty in the clinic. Instead of learning from an instructor's lecture, students learn by assessing and providing actual patient care. As a result, students must be organized and must take a leadership role in the process. It is more important for the student rather than the faculty member to have organizational skills in the clinic. In addition, '*breadth of coverage*' focuses on theories, ideas, and concepts; the

student, not the faculty member, must apply theory to patient conditions. Perceived important teaching behaviors for these dimensions are not as important to students since clinical processes are student driven versus faculty driven.

An open-ended question was asked in order for participants to enter their own comments associated with instructor characteristics they believed enhanced their learning: *“Please list behaviors and characteristics of (classroom or clinical) teaching that most benefits your own learning experience. (Example: organized, empathetic, fair, etc.)”* Participants indicated two general themes, organization and teacher affect. These two themes were both the most frequently mentioned, but they were revealed slightly differently for classroom and clinical instruction.

In the classroom environment, participants appeared to value organization higher than other behaviors or characteristics. In addition to the word organization, other aspects of classroom management were mentioned. Students indicated that they wanted the instructor to prioritize information to ensure that important topics were not forgotten due to “sidetracked” discussions. They also valued clarity of instruction, including PowerPoint handouts to facilitate their learning.

In the clinical instruction environment, participants identified teacher affect more highly than organization, although organization was also found to be important. Statements about teacher affect focused on fairness and consistency. Participants indicated that instructors who allow students to fail and retry in a “safe” environment was important to them.

One possible explanation for the nuanced difference between classroom and clinical instruction may be that classroom instruction tends to be based upon learning the

content (i.e. facts) associated with nursing and dental hygiene; whereas clinical instruction tends to be skill oriented. The participants in this study appeared to associate learning content in an organized fashion. They valued learning conditions that facilitated the acquisition of complex material in a structured and logical manner.

On the other hand, learning specific skills for their future profession was understood slightly differently. Participants appeared to value instructors who created a “safe” environment for trial and error. Indeed, teacher affect appeared to have many of the qualities of mentorship, rather than learning from a detached expert in the field of nursing or dental hygiene.

Similar themes were recognized by Onwuegbuzie et al. (2007) when students qualitatively described teacher behaviors they deemed effective. Themes found included: organization, clear objectives, fairness, content knowledge, and enthusiasm. Just as Schwönwetter et al. (2006), this researcher found that students identified organization as an important teaching behavior in both instructional environments.

Implications for Practice

Data revealed that students value organization in the classroom. They want instructors to prioritize information to ensure that the important topics are covered. They want information presented in a clear manner and want appropriate handouts to facilitate their learning. These findings should be incorporated in professional development workshops in order for faculty to learn those aspects of teaching that increase student learning. Instructors should be encouraged to be organized, develop lesson plans that are clear, and to provide handouts related to the materials covered.

Data also revealed a weak relationship between *'learning and academic value'* and *'group interaction'* in the classroom. This might imply that students do not believe that they learn because of working in groups. They would prefer to be taught by the instructor who is the expert in the field. However, in health education a greater emphasis is being placed on problem-based learning (Gerzina et al., 2003) and in particular using case studies as a teaching methodology. In fact, the National Dental Hygiene Board Examination has been revised whereby 50% of the exam is case-based (CODA, 2010). This puts a responsibility on the instructor to provide opportunities for students to learn through assignment of cases to groups in the classroom. This will require instructors to impart the value of group work to the students and to make sure that students are proficient in all the concepts and theories required to provide insight into the case at hand. In addition, as students may not feel comfortable discussing unfamiliar concepts with peers they do not know, instructors should be encouraged to develop class exercises that would ensure that students get to know one another and develop a trust and comfort level with their peers.

In clinical settings, data revealed that students identified teacher affect more important than teacher organizational skills. Teacher affect includes behaviors such as being fair and consistent, and providing a safe environment in which students are allowed to fail until they learn proper skills. Healthcare education programs should be encouraged to incorporate into teaching training methods of providing a safe environment for student learning without jeopardizing patient care.

A strong relationship was found between *'group interaction'* and *'individual rapport'* in the clinic. Instruction is more facilitative and consultative than in the

classroom, and good rapport between students and faculty increases learning. It might benefit faculty in healthcare education programs to examine relationships and faculty-student rapport to determine how influential it might be to the learning experience of students.

There was a weak relationship between a teacher's '*organization and clarity*' and '*breadth of coverage*' in the clinic. In a clinical setting, instructors do not lecture nor provide instructional handouts to students. Considering this, it is understandable that organization and clarity would be weakly related to coverage of material. The instructor does not provide traditional instruction as one does in the classroom. Instead, the student learns by assessing patient conditions and actual patient care. The faculty member is there as a consultant and a mentor to ensure that the student learns proper technique and that the patient is properly treated. As a result, it is more important for the student than the instructor to be organized. Healthcare education programs should place emphasis on teaching organizational skills.

Implications from this study may provide a baseline for educating nursing and dental hygiene faculty on experiential and problem-based methodologies. With little research on teaching methodology in dental hygiene education, results of this research contribute to this particular field, and contribute to a better understanding of important teaching behaviors deemed effective by students. Findings from this study also contribute to literature and research conducted on community college-based nursing programs.

Recommendations for Further Research

In addition to nursing and dental hygiene, community colleges offer a variety of health education programs, such as pharmacy technician, radiological technology, and dental assisting. A similar study using any of these programs will enrich the literature in perceived important or effective teaching behaviors in healthcare education. Second, repeating this study using the same survey instrument with both nursing and dental hygiene students would contribute to the strength of this research, and provide results for comparison. A third recommendation is to use Marsh's (1984) SEEQ survey as a guide in developing a new survey instrument that specifically measures effective teaching in clinical environments. By using an instrument targeting clinical settings, institutions can better evaluate teaching strengths and weaknesses of clinical faculty.

Another recommendation is to conduct research on two or more dental hygiene programs. All dental hygiene programs must meet the same CODA accreditation standards, yet all programs design their course sequencing and content differently. All instructors in dental hygiene programs are diligent in attempting to deliver core content to ensure student success in both the classroom and clinic. However, are there differences among different programs in those teaching behaviors perceived important by students in both teaching environments?

Additionally, nursing and dental hygiene educators tend to have varying levels of experience from novice to tenured faculty who are experienced in teaching methods. Because community college healthcare education programs are generally limited to two years in length, teachers have a shorter amount of time to develop effective teaching techniques before student cohorts graduate. A recommendation for further research is to

study differences in students' perception of important or effective teaching behaviors based on the number of years of experience the faculty member has as an educator.

The relationship and experience each student has with faculty during their program of study may influence how students' perceive important teaching behaviors. Students who have a positive experience and a good rapport with a faculty member who teaches in both the classroom and clinical setting may rank that instructor high in effectiveness. Yet, a negative experience or lack of rapport might influence low ranking for effective teaching strategies.

With little research on effective clinical instruction for dental hygiene education, this arena has great potential for research. Since nursing has more research literature addressing the clinical environment, published studies could guide research design for dental hygiene. However, because dental education and dental hygiene education are vastly different, more research in dental hygiene could help separate it from dentistry. Research in healthcare programs provides a vast amount of opportunity to develop any number of studies on effective teaching in classroom and clinical settings.

Conclusion

Nursing and dental hygiene learning environments include classroom and clinical settings. Practitioners are considered experts in their field (Schwönwetter et al., 2006). Yet, practitioners who enter higher education as faculty lack experience in teaching methodology and knowledge of adult learning preferences. A modified version of the Students' Evaluation of Educational Quality (SEEQ) survey was helpful as a guide to measure perceived important teaching behaviors in both instructional environments.

The expectation of this study was that results of the data analysis would indicate a

significant difference between students' perceptions of important teaching behaviors between classroom and clinical settings. This was not the case. In fact, the Wilcoxon Matched-Pairs Signed Rank Test showed only the '*group interaction*' dimension of the SEEQ survey to be significantly different between the classroom and clinical environments.

Students ranked the clinical environment more positively than the classroom. This may be due to the interaction and the rapport built between students and faculty. Qualitative results were similar to those reported in the literature where students prefer instructors who are organized, fair, competent, and clear. However, regardless of the instructional environment, students ranked all dimensions important to their learning preference.

Effective teaching remains essential to healthcare education. Determining which techniques are perceived by students as important to their learning style will better contribute to teaching effectiveness of practitioners entering higher education; it will also contribute to the knowledge and competency of graduates. This study contributes to research results reported by others and provides a foundation for additional research in healthcare education programs at a community college level and more importantly the field of dental hygiene education.

References

- Adelman, C., (2005). Moving into town and moving on: The community college in the lives of traditional-age students. U.S. Department of Education. Retrieved from <http://www2.ed.gov/rschstat/research/pubs/comcollege/index.html>
- Alfred, R.L., (1985). Social change and community college faculty: Is effective teaching becoming obsolete? *Community College Review*, Vol. 14, No. 1, 9-15.
- American Association of Community Colleges. (2012). Community Colleges Students. Retrieved from <http://www.aacc.nche.edu/AboutCC/Trends/Pages/studentsatcommunitycolleges>
- American Dental Association Commission on Dental Accreditation. (2011). *Standards of Education for Allied Health Programs* [Booklet]. Chicago, Ill.: American Dental Association.
- American Dental Educators Association. (2011). Annual report of dental education programs. *Journal of Dental Education*.
- American Dental Hygienists' Association. (2010). Dental Hygiene Education Fact Sheet. Retrieved from http://www.adha.org/downloads/edu/dh_ed_fact_sheet.pdf.
- Andrews, M., & Jones, P., (1996). Problem-based learning in an undergraduate nursing program: A case study. *Journal of Advanced Nursing*, Vol. 23, 357-365.
- ASHE-ERIC Higher Education Report, (2002) Vol. 29 Issue 3, 17- 47.
- Barrows, H. S. & Tamblyn, R. M., (1980). Problem-based learning. An approach to medical education. Springer Publishing Company: New York.
- Berg, C. L., Lindseth, G., (2004). Students' perspectives of effective and ineffective nursing instructors. *Journal of Nursing Education*. Vol. 43, No. 12, 565-568.

- Cashin, W. E., Downey, R. G., & Sixbury, G. R., (1992). Global and specific ratings of teaching effectiveness and their relation to course objectives: Reply to Marsh (1994). *Journal of Educational Psychology*. Vol. 86, No. 4, 649-657.
- Clark, D. (2011). Kolb's learning styles and experiential learning model. Retrieved from <http://www.nwlink.com/~donclark/hrd/styles/kolb.html>.
- Creswell, J. W. (2009). *Research Design: Quantitative, qualitative, and mixed methods approaches*. (3rd ed.). Thousand Oaks, CA: SAGE Publications, Inc.
- Crichton, N., (1998). Information point: Wilcoxon signed rank test. *Journal of Clinical Nursing*, 9, 574-584.
- Culatta, R., (2011). Experiential learning: Carl Rogers. Retrieved from <http://instructionaldesign.org/theories/>
- Daggett, C. J., Cassie, J. M., & Collins, G.F., (1979). Research on clinical teaching. *American Educational Research Association*. Vol. 49, No. 1, 151-169.
- Dalrymple, K.R., Wuenschell, C., Rosenblum, A., Paine, M., Crowe, D., von Bergmann, H.C., (2006). PBL core skills faculty development workshop 1: An experiential exercise with the PBL process. *Journal of Dental Education*, February, 249-259.
- Dubois, G., (1993). Hidden characteristics of effective community college teachers. *Community College Journal of Research and Practice*, Issue 17, 459-471.
- Easton, J. Q. (1985). National study of effective community college teachers. *Community & Junior College Quarterly of Research and Practice*, 9 (2), 153-163.
- Elias, J. L., & Merriam, S. B. (1995). *Philosophical foundations of adult education* (2nd ed.) Malabar, FL: Krieger Publishing Company.

Feldman, K. A. (1989). Instructional effectiveness of college teachers as judged by

teachers themselves, current and former students, colleagues, administrators, and

external (neutral) observers. *Research in Higher Education*, 30(2), 137-194.

Fincham, A.G., Schuler, C.F., (2001). The changing face of dental education: The impact

of PBL. *Journal of Dental Education*. Vol. 65, No. 5, 406-420.

G Power Calculator for Sample Size, (2011). Retrieved from

<http://www.psych.uni-duesseldorf.de/aap/projects/gpower/>

Gerzina, T. M., McLean, T., & Fairley, J. (2005). Dental clinical teaching: Perceptions of students and teachers. *Journal of Dental Education*, December, 1377-1384.

Gerzina, T.M., Worthington, R., Byrne, S., & McMahon, C. (2003). Student use and perceptions of different learning aids in a problem-based learning dentistry course. *Journal of Dental Education*. June, 641-653.

Haden, N.K., Morr, K.E., & Valachovic, R.W. (2001). Trends in allied dental education: An analysis of the past and a look to the future. *Journal of Dental Education*, Vol. 65, No. 5, 480-495.

Hamdy, H., Williams, R., Tekian, A., Benjamin S., Shazali, H.E., & Bandaranayake, R., (2001). Application of VITALS: Visual indicators of teaching and learning success in reporting evaluations of clinical educators. *Education for Health*. Vol. 14, No. 2, 267-276.

- Hammons, J. O. & Barnsley, J. R. (1996). The elusive search to define the effective community college teacher. *Community College Journal of Research and Practice*, 20(4), 311-323
- Henzi, D., Davis, E., Jasinevicius, R., & Hendrickson, W., (2006). North American dental students' perspectives about their clinical education. *Journal of Dental Education*. Vol. 70, No. 4, 361-377.
- Irby, D., (1994). What clinical teachers in medicine need to know. *Academic Medicine*. Vol. 69, No. 5, 333-342.
- Karuhije, H.F., (1997). Classroom and clinical teaching in nursing: Delineating differences. *Nursing Forum*. Vol. 32, No. 2, 5-17.
- Kolb, D.A., (1984). *Experiential learning: Experience as the source of learning and development*. Prentice Hall. Eastwood Cliffs, NJ.
- Kolb, D.A., Fry, R. (1975). Toward an applied theory of experiential learning. C. Cooper (ed). *Theories of Group Process*, London: John Wiley.
- Knowles, M. S. (1970). *The modern practice of adult education: Andragogy versus pedagogy*. New York: Association Press.
- Knowles, M. S., Holton III, E. F., & Swanson, R. A. (1998). *The adult learner* (5th ed.). Houston, TX: Gulf Publishing Company.
- Laschsinger, H.K., Boss, M.W., (1984). Learning styles of nursing students and career choices. *Journal of Advanced Nursing*. Vol. 9, Issue 4, 375-380.
- Laschsinger, H.K., Boss, M.W., (1989). Learning styles of baccalaureate nursing students and attitudes toward theory-based nursing. *Journal of Professional Nursing*. Vol. 5, Issue 4, 215-223.

- Laschinger, S., (1990). Review of experiential learning theory research in the nursing profession. *Journal of Advanced Nursing*, 15, 985- 993.
- Laerd Statistics, (2012). Spearman's rank order correlation using SPSS. Retrieved from <http://www.laerd.com/spearman's-rank-order-correlation-using-spss-statistics.php>
- Levitz, N. (2008). The 2008 National Adult Student Priorities Report. Noel-Levitz, Inc.
- Lichtman, M., (2010). *Qualitative Research in Education, A User's Guide*. SAGE, Los Angeles.
- Lindeboom, G.A., (2007). *Herman Boerhaave, a man and his work*. Erasmus Publishing, Rotterdam, Netherlands. Retrieved from http://www.erasmuspublishing.nl/ep/Book.jsp?id_book=137.
- Loyens, Sofie, M., Magda, J. & Rikers, R. (2008). Self-directed learning and its relationship with self-regulated learning. *Educational Psychology Review*. Vol. 20, 411-427.
- MacFarland, T. W. (1999). Statistics tutorial: The Wilcoxon matched pairs signed ranks test. Retrieved from <http://www.nyx.net>
- Marsh, H.W., & Overall, J. U., (1980). Validity of students' evaluations of teaching effectiveness: Cognitive and affective criteria. *Journal of educational Psychology*. Vol. 72, No. 4, 468-475.
- Marsh, H. W. (1984). Students' evaluations of University teaching: Dimensionality, reliability, validity, potential biases, and utility. *Journal of Educational Psychology*, Vol. 76, 707-754.
- Marsh, H. W., & Roche, L. A. (1992). *The use of student evaluations of university teaching in different settings: The applicability paradigm*. Australian

Association for Research in Education

<http://www.aare.edu.au/92pap/marsh92449.txt>

- Marsh, H. W., & Roche, L. A. (1993). The use of students' evaluations and an individually structured intervention to enhance university teaching effectiveness. *American Educational Research Journal*, Vol. 30, No. 1, 217-251.
- Marsh, H. W., & Roche, L. A. (1994). The use of students' evaluations of University teaching to improve teaching effectiveness. *American Educational Research Journal*, Vol. 30, 217-251.
- Marsh, H. W., & Roche, L. A. (1997). Making students' evaluations of teaching effectiveness: The crucial issue of validity, bias, and utility. *American Psychologist*, Vol. 52, No. 11, 1187-1197.
- Marsh, H. W. (2006). *Students' evaluation of University teaching: Dimensionality, reliability, validity, potential biases and usefulness*. Manuscript submitted for publication.
- McCarlie, M.A., Orr, D. (2010). Health science education: Reviewing a framework for problem-based learning. *Journal of Dental Education*. Vol. 74, No. 5, 480-488.
- McGrath, C., Yeung, R. W., & McMillan, A.S., (2005). Development and evaluation of a questionnaire to evaluate clinical dental educators (ECDT). *British Dental Journal*. Vol. 198, No. 1, 45-48.
- Moore, T. S., (2007). Implementation of problem-based learning in a baccalaureate dental hygiene program. *Journal of Dental Education*. Vol. 71, No. 8, 1058-1069.

- Murray, H.G., (1983). Low-inference classroom teaching behaviors and student ratings of college teaching effectiveness. *Journal of Educational Psychology*, Vol. 75, No. 1, 138-149.
- National Center for Education Statistics. (2008). *Community Colleges Special Supplement to the Condition of Education 2008*. Retrieved from <http://www.nces.ed.gov/programs/coe/2008/analysis/2008033.pdf>
- National Center for Education Statistics. (2011). Indicator 5: University Enrollment. Differences in programs offered across education levels. Retrieved from <http://nces.ed.gov/pubs/eiip/eiip5s01.asp>
- National Center for Education Statistics. (2011). Indicator 7: Participation in Adult Education (Indicator 10-2007). Retrieved from http://nces.ed.gov/programs/coe/indicator_aed.asp
- National Nursing Accrediting Commission, (2008). Retrieved from <http://www.nlnac.org/home.htm>
- Ngware, M.W., Ndirangu, M. (2005). An improvement in instructional quality: Can evaluation of teaching effectiveness make a difference? *Quality Assurance in Education*. Vol. 13, No. 3, 183-201.
- Onwuegbuzie, A. J., Witcher, A. E., Collins, K. M., Filer, J. D., Wiedmaier, C. D., & Moore, C. W. (2007). Students' perceptions of characteristics of effective college teachers: A validity study of a teaching evaluation form using a mixed-methods analysis. *American Educational Research Journal*, Vol. 44, No. 1, 113-160.
- Outcalt, C.L., (2000). ERIC review: Community college teaching-toward collegiality and community. *Community College Review*. Vol. 28, No. 2, 57-70.

- Park, H.M., (2010). *Hypothesis Testing and Statistical Power of a Test*. Working Paper. The University Information Technology Services (UITS) Center for Statistical Computing, Indiana University.
<http://www.indiana.edu/~statmath/stat/all/power/index.html>
- Patterson, C.H., (1977). *Foundations for a theory of instruction and educational psychology*. Chapter 5. Harper & Row, NY.
- Perry, R. P., Smart, J. C., (1997). Editors. *Effective teaching in higher education: Research and practice*. Agathon Press, New York.
- Purdy Crawford Teaching Centre, (2007). What is SEEQ? Mount Allison University.
Retrieved from http://www.mta.ca/pctc/TONI_SEEQ/what_is_seeq.htm.
- Ralph, E.C., (2003). *Effective college teaching: Fresh insights and exemplary practices*. Nova Science Publishers, New York.
- Rich, S. K., Keim, R. G., & Shuler, C.F. (2005). Problem-based learning versus a traditional educational methodology: A comparison of preclinical and clinical periodontics performance. *Journal of Dental Education*, June, p. 649-662.
- Rogers, C., (1994). *Experiential learning*. Retrieved from
<http://www.instructionaldesign.org/theories/experiential-learning.html>
- Schönwetter, D. J., Lavigne, S., Mazurat, R., & Nazarko, O. (2006). Students' perceptions of effective classroom and clinical teaching in dental and dental hygiene education. *Journal of Dental Education*, Vol. 70, 624-635.
- Snyder, C.W., Hekelman, F.P., & Carter, J.R., (1998). Congruence of faculty and learner evaluations of internal medicine attending teaching behaviors. *Medical Teacher*. Vol. 20, No. 3, 1-4.

- Sperling, C.B., (2003). How community colleges understand scholarship of teaching and learning. *Community College Journal of Research and Practice*. Vol. 23, 593-601.
- Thoms, K. J., (2011). They're Not Just Big Kids: Motivating Adult Learners. Retrieved from <http://frank.mtsu.edu/~itconf/proceed01/22.html>.
- United States Department of Labor, (2011). Occupational Outlook Handbook 2010-11 Edition Retrieved from <http://www.bls.gov/oco/ocos097.htm>.
- Watkins, D., Akande, A., (1992). Student evaluations of teaching effectiveness: A Nigerian investigation. *Higher Education*. 25, 453-463.
- Wilkins, E. M., (2010). *Clinical Practice of the Dental Hygienist*. Lippincott Williams & Wilkins. Baltimore, MD.
- Williams, B., (2001). The theoretical links between problem-based learning and self-directed learning for continuing professional nursing education. *Teaching in Higher Education*, Vol. 6, No. 1, 85-98.
- Wilson, R. (1998). New research casts doubt on value of comparing adult college students' perception of effective teaching with those of traditional students. *Chronicle of Higher Education*, Vol. 44, No. 19, 12-14.
- Wynne, E. (1981). Looking at good schools. *Phi Delta Kappa*, 62, 377-381.
- Yang, F. J., Bright, L. (2007). Assuring quality in e-learning programs in Taiwan. In K. McFerrin et al. (Eds). Proceedings of Society for Information Technology & Teacher Education International Conference 2008 Chesapeake, VA: AACE, 1308-1311)

APPENDIX A

Student Evaluation of Educational Quality SEEQ Survey- CLASSROOM VERSION

Student Evaluation of Educational Quality (SEEQ), permission granted 2010 Herbert W. Marsh

University of Nevada, Reno

College of Education, Department of Educational Leadership

This survey is being conducted for research purposes on *perceived instructional effectiveness* in allied health programs at Truckee Meadows Community College. You are being asked to voluntarily participate in rating effective teaching research will not analyze any instructor's teaching behavior. DO NOT enter your name on the survey.

Each participating student will complete TWO (2) surveys ONE for the classroom and ONE for the clinical setting.

IMPORTANT: Participation in this research project is completely voluntary. You may opt out of participation. If so, please leave the survey blank, and submit it to the drop box. DO NOT enter your name on the survey.

Instructions: Use a blue/black pen or #2 Pencil, do NOT use red pen or felt tip pen
Erase mistakes fully and avoid making stray marks in other areas of the survey document

Please indicate the **EXTENT** of what you believe is **IMPORTANT** regarding the following statements as descriptions of classroom teaching behaviors by using this scale

No Importance		Little Importance		Some Importance			Very Important	
1	2	3	4	5	6	7	8	9

NOTE: Leave blank any items that do not apply to important classroom teaching behaviors.

CIRCLE

LEARNING / ACADEMIC VALUE

- | | |
|---|-------------------|
| 1. The class is intellectually challenging and stimulating | 1 2 3 4 5 6 7 8 9 |
| 2. You learn something which you considered valuable for your program of interest and career | 1 2 3 4 5 6 7 8 9 |
| 3. Your interest in the subject increases as a result of the way content is taught | 1 2 3 4 5 6 7 8 9 |
| 4. You learn and understand the subject materials in this class based on teaching methods used by instructors | 1 2 3 4 5 6 7 8 9 |

INSTRUCTOR'S ENTHUSIASM

- | | |
|--|-------------------|
| 5. Instructor shows enthusiasm about teaching the class | 1 2 3 4 5 6 7 8 9 |
| 6. Instructor is dynamic and energetic in conducting the class | 1 2 3 4 5 6 7 8 9 |
| 7. Instructor enhancing presentations with the use of humor | 1 2 3 4 5 6 7 8 9 |
| 8. Instructor's style of presentation holds your interest during class | 1 2 3 4 5 6 7 8 9 |

ORGANIZATION / CLARITY

- | | |
|---|-------------------|
| 9. Instructor's explanations were clear for your learning preferences | 1 2 3 4 5 6 7 8 9 |
| 10. Class materials are well prepared and carefully explained | 1 2 3 4 5 6 7 8 9 |
| 11. Proposed course objectives being in agreement with those actually taught so you know where the class is going | 1 2 3 4 5 6 7 8 9 |
| 12. Instructor giving presentations that facilitate taking notes enhancing your learning process | 1 2 3 4 5 6 7 8 9 |

GROUP INTERACTION

- | | |
|---|-------------------|
| 13. Encouragement to participate in class discussions | 1 2 3 4 5 6 7 8 9 |
| 14. Being invited to share your ideas and knowledge | 1 2 3 4 5 6 7 8 9 |
| 15. Encouragement to ask questions and getting meaningful answers | 1 2 3 4 5 6 7 8 9 |
| 16. Encouragement to express your own ideas and / or question faculty | 1 2 3 4 5 6 7 8 9 |

INDIVIDUAL RAPPORT

- | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| 17. Instructor being friendly toward individual students | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
| 18. Instructor having genuine interest in individual students | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
| 19. Instructor making students feel welcome in seeking help / advice in or outside of class | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
| 20. Instructor being accessible to students during office hours or after class | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |

BREADTH OF COVERAGE

- | | | | | | | | | | |
|--|---|---|---|---|---|---|---|---|---|
| 21. Instructor using and contrasting various theories/evidence or case based examples | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
| 22. Instructor presenting background of origin of ideas / concepts developed in class | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
| 23. Instructor presenting points of view other than his/her own when appropriate | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
| 24. Instructor adequately discussing current developments in the field as they apply to course content | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |

ADDITIONAL NARRATIVE / COMMENTS

Please list behaviors and characteristics of (classroom) teaching that most benefits your learning experience. (Example: organized, empathetic, fair, etc.)

BACKGROUND

Your gender: Male Female

Age (circle category): (20 – 24) (25 – 30) (31 – 35) (36 – 40) (41 – 45) (46 – 50)
(51 +)

THANK YOU FOR PARTICIPATING IN THIS RESEARCH PROJECT

Student Evaluation of Educational Quality SEEQ Survey –CLINIC VERSION

Based on Student Evaluation of Educational Quality (SEEQ), permission granted 2010 Herbert W. Marsh
University of Nevada, Reno

College of Education, Department of Educational Leadership

This survey is being conducted for research purposes on *perceived instructional effectiveness* in allied health programs at Truckee Meadows Community College. You are being asked to voluntarily participate in rating effective teaching behaviors that are important to you in the clinical setting. You are NOT evaluating any single instructor and this research will not analyze any instructor's teaching behavior. DO NOT enter your name on the survey.

Each voluntary participant will complete TWO (2) surveys ONE for the classroom and ONE for the clinical setting.

IMPORTANT: Participation in this research project is completely voluntary. You may opt out of participation. If so, please leave the survey blank, and submit it to the drop box. DO NOT enter your name on the survey.

Instructions: Use a blue/black pen or #2 Pencil, do NOT use red pen or felt tip pen
Erase mistakes fully and avoid making stray marks in other areas of the survey document

Please indicate the **EXTENT** of what you believe is **IMPORTANT** regarding the following statements as descriptions of clinical teaching behaviors by using this scale

No Importance		Little Importance		Some Importance			Very Important	
1	2	3	4	5	6	7	8	9

NOTE: Leave blank any items that do not apply to important clinical teaching behaviors.

LEARNING / ACADEMIC VALUE

- | | | | | | | | | | |
|--|---|---|---|---|---|---|---|---|---|
| 1. The clinical rotation is intellectually challenging and stimulating | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
| 2. You learn something which you considered valuable for your program of interest and career | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
| 3. Your interest in the clinical setting increases as a result of the way content is taught | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
| 4. You learn and understand the materials pertinent to the clinical setting/rotation based on teaching methods used by instructors | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |

INSTRUCTOR'S ENTHUSIASM

- | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| 5. Instructor shows enthusiasm about teaching in the clinical setting | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
| 6. Instructor being dynamic and energetic during the clinical course | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
| 7. Instructor enhancement of clinical instruction using humor | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
| 8. Instructor's style of teaching in the clinic holds your interest | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |

ORGANIZATION / CLARITY

- | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| 9. Instructor explanations being clear for your learning preferences | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
| 10. Clinical materials being prepared and carefully explained | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
| 11. Proposed clinical objectives being in agreement with those actually taught so you know what is expected | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
| 12. Instructor giving information that facilitates your own clinical strategies / techniques | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |

GROUP INTERACTION

- | | | | | | | | | | |
|--|---|---|---|---|---|---|---|---|---|
| 13. Encouragement to participate in clinical discussions regarding procedures / patient care | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
| 14. Inviting you to share your ideas and knowledge with faculty | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
| 15. Encouragement to ask questions and getting meaningful answers | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
| 16. Encouragement to express your own ideas and / or question faculty | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |

INDIVIDUAL RAPPORT

- | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| 17. Instructor friendliness toward students | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
| 18. Instructor having genuine interest in individual students | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
| 19. Instructor making students feel welcome in seeking help / advice in or outside of clinic | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
| 20. Instructor being accessible to students during office hours or after clinical assignments | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |

BREADTH OF COVERAGE

- | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| 21. Instructor using and contrasting various theories/evidence or problem based examples | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
| 22. Instructor presenting a background of ideas / concepts developed in clinical settings | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
| 23. Instructor presenting points of view other than his/her own when appropriate | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
| 24. Instructor adequately discussing current developments in the field as they apply to clinic learning | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |

ADDITIONAL NARRATIVE / COMMENTS

Please list behaviors and characteristics of (clinical) teaching that most benefits your learning experience. (Example: organized, empathetic, fair, etc.)

BACKGROUND

Your gender: Male Female

Age (circle category): (20 – 24) (25 – 30) (31 – 35) (36 – 40) (41 – 45) (46 – 50)
(51 +)

THANK YOU FOR PARTICIPATING IN THIS RESEARCH PROJECT

APPENDIX B

Research Study:

Students' Perception of Teaching Effectiveness in Community College Nursing and Dental Hygiene Education Programs

SCRIPT for Researcher's Assistant

Good Morning/Afternoon,

My name is Jennifer Alt and I am assisting Vickie Kimbrough-Walls with a research project on Students' Perception of Teaching Effectiveness in Community College Nursing and Dental Hygiene Education Programs.

The purpose of the study is to determine which teaching techniques, strategies, or behaviors in clinical and classroom settings are perceived, as effective by you, in both lecture and clinical courses.

You have been invited to participate in this study because you are second year students in the nursing or dental hygiene program at TMCC. If you choose to participate in this study, you will be asked to complete two surveys; one for the classroom and one for the clinic environment. Completing the surveys will take approximately 15 to 20 minutes. You will need a pen or pencil.

There may be no direct benefits to participants, yet we hope to learn what teaching behaviors are effective for you as a student in a healthcare program. Risks may include inconvenience to you by taking class time to complete the surveys, and/or the possibility of an instructor seeing a completed survey.

Confidentiality is maintained, because you will not place your name on the surveys. This eliminates the potential for any survey to be linked to any student. You are not evaluating any of your instructors. It is your perception of effective teaching behaviors that are important for this study. Please be honest and accurate in your responses. A very important piece to the survey is the comments section on the back of each survey. Your descriptions or comments are needed. Again, please be honest in your responses.

You can also opt-out of participating in this study. If you choose not to participate, please take a survey packet and leave them blank. This is designed to eliminate the potential to determine who chose to opt out of participation. You can place your surveys in the box at the door as you leave along with the others.

If you have any questions about this research project, you are invited to contact the UNR Social Behavioral Institutional Review Board at (775) 327-2368, the project supervisor Dr. Rita Laden at 775-682-9082, or the researcher Vickie Kimbrough-Walls at 775-722-1307.

In appreciation for participating in this study, those who would like a chocolate bar are invited to take one when submitting in the completed surveys.

Do you have any questions?

Thank you.

APPENDIX C		
Comments by keywords/characteristics/behaviors	Frequency	Frequency
	Classroom	Clinical
hands on/demonstration	2	6
visuals	5	1
share personal experience		1
compassionate	1	3
organized	26	20
clear expectations	6	6
friendly	2	2
fair	14	13
availability	1	2
humor	4	3
respect	1	2
clear explanations	5	5
calm-collected	1	3
professional	1	1
encouraging	1	6
empathetic	3	4
understanding/patient	1	2
energetic/enthusiasm	4	2
positive attitude	2	3
non-intimidating	1	1
good time management/efficient	2	1
approachable	2	2
consistency	2	4
non-judgmental		4
supportive	1	2
willingness to listen		1
reasonable	1	
truthful/honest	1	1
helpful	1	
preparedness	3	3
constructive criticism		1
knowledgeable	1	
interest in student learning		1
prioritizes	1	1
accountability		1

APPENDIX D	
Survey #	Verbatim Submissions
51	Valuable prep time without busy work. Often busy work impacts the clinical experience Negatively by reducing sleep with little value to experience. Ensure instructors have working experience in the discipline they are teaching in clinical.
51	Organize lecture. Effective classroom control/management. Uses time wisely.
47	Compassion, understanding, be able to explain in different styles, organized
47	organized, being able to use different medias to teach, clearly explaining ideas/concepts.
53	Fairness, positive behavior versus negative behavior
53	Fairness
44	patient, understanding
44	no comments listed
60	no comments listed
60	I feel that it is important for an instructor to let you know that they are there to help you and they don't expect you to know everything, we are still learning. Instructors need to treat students with respect and be able to point out strengths along with weaknesses and offer ways to help students improve. Positive attitude.
59	more visualized, hands on techniques and learning. Organization makes it feel less intense and all over the place.
59	no comments listed
38	Make sure to walk through procedures instead of calling students out. Give constructive criticism and how students could better but remember that it's nice to be told good job. Oftentimes students get nervous around instructors and tend to freeze up so just remind the students that instructors are there to help.
38	Keep it fun while teaching. Also students love fun facts
33	I have been to several clinical setting within the community with multiple instructors. My experience with each instructor and in each setting has been extraordinary.
33	I believe the nursing program to be the most challenging, thought provoking, and rewarding set of classes I have ever taken.
52	ability of instructor to correct mistakes without belittling the student or making student feel stupid
52	No comments listed
56	organization. Sympathy for how nervous we are. Ability to stay calm and supportive; no condescension. Allowing students to prep in their own way; whatever helps them to retain information regarding their particular clinic and that client's disease process
56	No comments listed
46	organized, clear and concise, fair, good communication
46	organized, able to keep on track, answers questions well (thoroughly), fair
41	organized, fair, empathetic
41	organized, fair, empathetic

Survey #	Verbatim Submissions
57	organized, clear, prioritization
57	organized, clear on what's important, clear on what they're teaching, prioritizes
45	not sure this survey is accurately measuring how well the course works. All things listed are very important to us as students.
45	No comments listed
37	being able to ask questions of the instructor knowing they will give/provide me the information I can use. Having all the information about how to complete work to each instructors standards
37	I enjoy having PowerPoint's to follow along and take notes on as well as additional visual aids as I am a visual learner. I also enjoy the ability to record lectures to go back and listen again
35	organized, demonstrations
35	organized, fair, some games, demonstration
1	I like to hear about experiences and personal input of instructors in order to further knowledge of the clinical setting
1	I enjoy having a lot of hands on and visual things to keep me focused on the material
39	clinical prep day before, concept maps, different hospitals, pre-conference, post-conference
39	You tube videos, in-class activities to get points across, teamwork, self-learning modules, organized
49	organized, patient, available, interested in our learning
49	Keep it fun while teaching. Also students love fun facts
55	No comments listed
55	No comments listed
58	No comments listed
58	No comments listed
54	No comments listed
54	humor, organization, visuals, hands on learning, group work
27	organized, fair
27	organized, structured
32	(XXXX teacher name left out) rocks
32	organized, humor, power packed PowerPoint's like (XX's). Recording lectures is very helpful in reinforcing notes. Class consisted of four instructors, no two were alike. Survey compromised because not answered according to one instructor, but all four as an average

Survey #	Verbatim Submissions
20	No comments listed
20	No comments listed
65	some characteristics are organized and each instructor can agree on one thing and not try to override other instructors
65	instructor can display information in more than one way for all different types of learners
15	good attitude helps with clinic as takes some stress off of the students. Humor helps as well. Clear explanations and demonstration of procedures also aid the learning process.
15	organized, well developed format helps to follow material and thus facilitates learning. Teacher with good attitude that encourages and helps students rather than intimidate them makes the better learning environment.
19	fair, organized, approachable, caring, light-hearted
19	fair, energetic, approachable, organized
17	the clinic session is structured well so that all the students are able to get adequate time with an instructor. Instructors are readily available to help students
17	classes are very organized and structured, concepts and reading and assignments are straight forward, you always know what is expected of you
18	a daily routine, time management, not spending too much time with one specific student
18	a routine. Organization and fairness to all students. Notes that are available to print and follow along with
67	organized, patient, available, interested in our learning
67	reviews that actually prepare for tests are very helpful. Pretesting is helpful to be prepared for test questions. Fun and new ways of learning material. Variety
66	compassion, consistent, organization, humor, accountability (personal), flexibility, fair
66	organized, efficient, well spoken, approachable, honest
68	I think organization of syllabus and learning expectations for the students is extremely helpful. Also empathy helps along with encouragement to make a safe feeling learning environment.
68	No comments listed
69	I tend to learn the hard way in clinic by making mistakes. It's not a fun way to learn but it seems to be the most effective for me.
69	the classes were very organized. Instructors attempted to hold our interest by dividing us into small groups to perform education activities rather than taking notes from a PowerPoint everyday
14	firmness, but still friendly professional, encouraging, not mean or put down student, complimentary but still point out areas that need improvement, empathetic and understanding
14	sticking to the schedule, staying on topic, encourage questions and classroom interaction, friendliness, energetic

Survey #	Verbatim Submissions
13	same as previous. Instructors should be calm, cool, and collected, they should know what they're doing (not all do). Clinic should be very well organized (it never was first year)
13	instructors need to be very well organized and have a level head, students are nervous and need an instructor that has a good head on their shoulders and isn't all flighty. Also instructors should let their egos get in the way - often too much hostility with this
16	visual learning, examples, hands on. Be able to make mistakes without getting in trouble /errors
16	visual learning, examples, hands on. Be able to make mistakes without getting in trouble /errors
5	No comments listed
5	No comments listed
3	No comments listed
3	instructors class time experience seems important, then their office hours or availability, instructors having humor, but also treating you like adults very important
21	consistent, non-judgmental, supportive, fair
21	organization, punctuality, visual aids, fairness
26	organized, fair, reasonable, willing to listen to reasoning, ability to explain information
26	organized, fair, reasonable, positive attitude
30	enthusiasm, value in material
30	if the teacher does not convey importance or value on material, neither will students. Enthusiastic, professional
24	demonstration of techniques, fair, calm, organized, non-judgmental
24	PowerPoint's, demonstration, organization
31	consistent, friendly, passionate, organized, involved, respectful, helpful, truthful
31	organization, empathy, fairness, consistency, willingness to help, passion, praise (when earned)
22	discussion with peers. Obtain different point of views and ways to do new technique
22	powerpoints are helpful because I follow the lecture and is a good study material
29	organized, explain what is expected for their preferences
29	organization in all aspects. Be respectful of students time, fairness
2	compassionate, organized, communicate in writing what to bring to clinical
2	organized, communicated expectations of assessments (written better), friendly, fair in testing
4	taking my own initiative to learn what I needed
4	organized, fair, humor, case studies, breaks