IMPACT OF TEACHING IN COMMUNICATION SCIENCES AND DISORDERS

By

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A DISSERTATION PRESENTED TO THE GRADUATE SCHOOL
OF THE UNIVERSITY OF FLORIDA IN PARTIAL FULFILLMENT
OF THE REQUIREMENTS FOR THE DEGREE OF
DOCTOR OF PHILOSOPHY

UNIVERSITY OF FLORIDA

2010

Dedicated with all my gratitude and love to my parents, Dr. Ahmad and Ramzia AlBustan, who gave me birth, and to Futoh and Sarah AlQattan, my daughters whom I gave birth to.

ACKNOWLEDGMENTS

In the name of God, most Beneficent, most Merciful.

Years of hard work and effort have finally paid off! I would first like to praise Almighty God for giving me the patience and perseverance to withstand all obstacles encountered since the years I first commenced my PhD program. I greatly thank Dr. Scott Griffiths, my guidance advisor, mentor, and friend who was not only a great influence and driving force behind my research, but was also a great support in helping me cope with leaving behind my family and country. I will never forget how he was always there for me, and making sure that I succeeded in my academic life. I would also like to extend my gratitude to Dr. Kenneth Logan for his guidance and advice and his in-depth revisions of the stuttering module, tests and taking the time to grade the tests for reliability. I would like to thank Dr. James Hall and Dr. Bridget Franks, for their continuous support. It gives me great honor to have graduate coordinators, and prominent researchers serving on my PhD committee. Once again, I would like to thank Dr. Griffiths, Dr. Logan, Dr. Franks, and Dr. Hall for being part of my success. I am also grateful to the staff and students at the University of Florida for their constant advice and assistance in helping me complete my research.

Family is at the heart of all our actions and I can honestly say that this accomplishment would have been impossible without the love and support of my family. I will forever be indebted to my mother Ramzia, who in 2006, travelled thousands of miles and left behind my father, siblings and her own job as an Assistant Principle, to help take care of me and my premature baby, Futoh, when I was most in need of emotional and physical care and support. She sacrificed her own happiness and

relaxation, once again in 2008, when I had my daughter Sara. With my loving and caring mother by my side, this accomplishment was made possible. No words can describe my gratefulness to, and great love for my father, Professor Ahmad AlBustan. I would not have been able to complete my dissertation without his continuous advice, support, and encouragement. I would also like to thank my siblings Dr. Suad, Tariq, Dr. Suzanne, Dr. Lamees, Khalid, and my nephew Samer for their continuous support and for always believing in me. Unfortunately my Grandmother, Fakhria, and Uncle Professor Mahmoud are not here to help me celebrate my accomplishment today, but they were always a constant force behind my persistence and I truly hope I have made them proud. I would also like to thank all my brothers- and sisters- in –laws, nieces, and nephews for their support and encouragement.

My children had to cope with a mother who was busy studying, researching, or working on the computer. I hope my own experience will teach them the importance of education and that hard work, effort and sometimes having to sacrifice will help them achieve their goals and ambitions. My father and mother-in-law, Abdul-Hameed and Futoh and the whole AlBustan and AlQattan clans have been great pillars of support and I thank them sincerely for their encouragement. Finally yet importantly, I would greatly like to thank my loving husband Nael for always being there for me.

I have been privileged enough to have been awarded a full scholarship from Kuwait University as the State of Kuwait encourages education, and individuals who have proved themselves as committed and dedicated, and greatly thank God and my country for this opportunity.

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LIST OF ABBREVIATIONS

AR	Abstract/Random
AS	Abstract/Sequential
CFW	College for Women
CSL	Department of Communication Sciences and Languages
CR	Concrete/Random
CS	Concrete/Sequential
GPA	Grade Point Average
GSD	Gregorc Style Delineator
IT	Information Technology
KTS-II	Keirsey Temperament Sorter
KU	Kuwait University
MBTI	Myers-Briggs Type Indicator
MI	Multiple intelligences
PBL	Problem Based Learning

Abstract of Dissertation Presented to the Graduate School
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December 2010

Chair: Scott Griffiths
Major: Communication Sciences and Disorders

Living in today's world requires that one be up to date on the technological advances that have made knowledge more accessible; and being up to date on knowledge is crucial. However, what are the optimal methods for conveying knowledge, and is there one method that will work best for each individual? This study centers on comparing two teaching methods in the context of a short term educational module: a passive lecture method in which the instructor lectures and the students listen and take notes, and an active lecture method in which the instructor includes "hands-on" experiences, discussions and interactive presentations using modern media designed to encourage the students and instructor to interact directly. The study was conducted among Kuwaiti students enrolled in communication sciences to see if there is a significant difference in how they learn in the two different methods. Close attention was also paid to the participants 'personality types to see if that would be a factor in how they learn.

Both groups performed significantly higher on content tests following instruction. No significant results were observed between the two groups. Ties between personality types and learning methods, while not significant, were noticed. The study shows that success of learning is not just dependent on the learning method. The interaction

between personality type and teaching methods still require further investigation, and it is the hope of the facilitator of this study that it serves to aid further studies into how best to teach individuals.

CHAPTER 1
INTRODUCTION

Teaching is a profession with deep historical roots that plays a substantial role in preparing and creating a well-educated society with the ability to communicate and reason effectively. Many teaching philosophies and instructional delivery models have been proposed and modified by those who study the learning processes in pursuit of the optimal transmission of knowledge and thinking skills. This dissertation investigates the possible benefits of using active lecture engagement methods in teaching a college level course and examines the impact on student performance compared to that of the time-tested passive lecture method or teacher-directed lecture-based instructional methodology. The dissertation also attempts to draw conclusions concerning the correlations among educational content, instructional methodology, individual student characteristics, and student achievement.

The methodologies that this dissertation employs are well known and include a definition of the passive lecture method and other instructional delivery models introduced throughout the United States of America during the later part of the 20th century. A study of instructional delivery models should consider individual styles of learning, learning style preferences, varieties of giftedness (the theory of multiple intelligences), characteristics of human development, and models of instructional delivery. Some teaching models rely heavily on the instructor as the one who possesses the skills and talents required to disseminate information in a teacher-directed fashion. Other teaching models are designed to emphasize interaction between the instructor and the students, where students are directed to research answers or solve problems and draw conclusions in a team fashion and the instructor

serves the students as a facilitator. This more active role ought to enable students to develop skills for knowledge development that can be applied to other content in future learning opportunities. Certainly, the presence and the availability of technological devices such as the computer and technological media devices in the past thirty years have affected instructional strategies. The introduction of technological devices in the instructional process has served to benefit both instructors and students by providing the teaching and learning processes with additional tools designed to enhance instruction (McCarthy, 2006).

Background of the study. The focus of this dissertation is to observe the impact of teaching methodology at Kuwait University (KU) in the College for Women (CFW) in the Department of Communication Sciences and Languages (CSL). The CSL department at KU is chosen because it is the place of my future employment, as I will be granted a faculty position to teach in this facility upon my graduation from the PhD program. The rationale behind doing my dissertation in this department is to explore new teaching methods that will utilize the technological discoveries in the past thirty years, such as the advent of the personal computer. To this end, this study aims at using the technology to advance and enhance students' understanding in this ever-changing modern world. More specifically, the target is to observe the undergraduate students and how they engage in the study of human communication disorders. One of the primary concerns is the interaction of instructional delivery method with the characteristics of individual learners. It is possible that varied instructional approaches would optimize the educational outcomes for undergraduate students completing the communication disorder program at KU. These outcomes would include both

documented mastery of specific content and thinking skills, but also the translation of these methods into the instructional services, which they will subsequently provide for individuals with communication disorders.

CHAPTER 2
REVIEW OF THE LITERATURE

2.1 Importance of E-Learning

The technological advances of today's world, in all areas of life, have made it imperative that education also makes those leaps in advancement. This is best done by the application of new technologies into education, such as e-learning. There are many definitions of e-learning but the one used for the purpose of this dissertation is the one used by Hodgins and Conner (2000) as "technology-enabled learning, which covers various concepts, including digital collaboration, virtual classrooms, web-based learning, and computer based learning." This makes e-learning perceived as any learning skill that is available on a computer, with or without connecting the computer to the internet. As for the content presented in order to deliver this technology in learning, it can be in several techniques such as "the Internet, Intranets, Extranets, satellite broadcasts, WebTV, e-books, and CD-ROMs" as presented by Chew (2003) (as cited in Aldhafeeri, Almulla, & Alraqas, 2006, p. 2). WebCT and Blackboard are also e-learning environments that can be included to the list since Kuwait University (KU) adopts them. It is necessary that technologies such as the ones just mentioned become a part of a developing country's educational system, as it will provide an avenue for that country to achieve the same advances as developed countries when it comes to education and educational instruction. E-learning environments also allow students to overcome geographical barriers. The problems of limited teaching personnel, limited space, etc., are all also solved via e-learning environments. This is especially relevant in Kuwait's case since it is rapidly on its way to becoming a developed country, and the implementation of these technologies will only help it along its way.

E-learning is a necessity that needs to be taken into deep consideration in order to implement it in Kuwait. Kuwait has acknowledged this need to make its students competent in all measures of education, and has studied, since 2006, the adoption of e-learning systems in K-12 to do that (Aldhafeeri et al., 2006). Stevens (2000) points out that since this task of changing education systems will be shocking to teachers, they need to realize that this system of learning is a revolution that will create significant changes in the way people not only learn, but live, work and play. E-learning is the future of learning that can be used as a new system for continuous education (Aldhafeeri et al., 2006). This is because this system focuses on the needs of the learners as opposed to the teachers, making the students motivated to learn by using different tools at their disposal and thus feel privileged (Aldhafeeri et al., 2006). In a 2004 study, Luck and Norton concluded that those who were exposed to problem based learning via e-learning developed a stronger sense of self-efficacy as students than they did in their previous face-to-face instructional experiences. They also reported that their literacy skills were improved through e-learning because of the need to communicate online clearly with others (Luck & Norton, 2004). Researchers at the University of Central England in Birmingham report that

> online problem-based learning is proving useful for learners where the multimedia case studies can make subjects ‘come alive’ and simulate situations that they may not have had an opportunity to experience for real. In solving the problems, learning must become more independent and learners must collaborate and participate in discussions. Research often suggests that this approach can lead to a deeper understanding than the coverage of a content-driven approach. (Niall & Stale)

Eustace’s (2003) study investigating the educational value of e-learning in computing education also supports the view that e-learning has a lot to contribute to conventional

learning methodologies. Evidence for the usefulness of problem-based learning will be expounded upon later on in this dissertation.

2.2 The Learning Models

As mentioned earlier, the study explores instructional delivery methods and teaching styles as they relate to the known ways that such methods and styles impact student learning outcomes. This exploration will draw from work on: 1) the multiple intelligences theory of Gardner (1983), 2) Personality type/learning style, as measured by the Keirsey Four Types Sorter, and 3) the three domains of learning in Bloom's taxonomy (1956). All of these theories, which are considered in detail below, take into account the variability of students' learning styles and the importance of choosing a teaching approach that will enhance learning through creativity and self-involvement, both of which are embodied in the active method utilized in this study. This active method stands in contrast to the passive teaching method, which typically does not take into account students' own optimal learning style due to its rigidity, the result of the inherent passive approach that it employs.

2.3 Bloom's Taxonomy

Benjamin S. Bloom of the University of Chicago developed a model of learning known as Bloom's Taxonomy. Bloom's Taxonomy was borne out of Bloom's attempt to find "the development of specifications through which educational objectives could be organized according to their cognitive complexity" (Eisner, 2000, p. 2) and is a classification of the different learning objectives that educators can utilize when teaching and assessing students. Bloom's Taxonomy (1956) classifies learning models into three main categories: cognitive, affective, and psychomotor.

2.3.1 Cognitive

The first category of Bloom's Taxonomy is called cognitive (i.e., mental skills). This involves knowledge and the development of intellectual skills. It includes the recall or recognition of facts, procedural patterns, and concepts that serve in the development of intellectual abilities and skills. Six major domains, which are listed below, ranging from the simplest behavior to the most complex or as he further explains, they can be thought of as degrees of difficulty. Bloom (1956) emphasized that each domain must be mastered before one can continue the learning process. The validity and practicality of Bloom's Taxonomy will be reviewed after a brief description of the six domains. Bloom's six domains were applied to the Communication Sciences and Languages (CSL) field (Table 2.1).

A brief description of each domain is provided below:

1. Domain of Knowledge: Recall of information. Knowing something with familiarity gained through experience or association. Various modes of knowing include perceiving, remembering, imagining, conceiving, judging, and reasoning.

2. Domain of Comprehension: Understand the meaning, translation, interpolation, and interpretation of instructions and problems. State problems in one's own words. Knowledge or understanding of an object, event, situation, or verbal statement. In speech, understanding spoken utterances, as distinguished from producing the utterances.

3. Domain of Application: Use a concept in a new situation or unprompted use of an abstraction. Generalizes and applies what was learned in a treatment or therapy session into novel, everyday situations.

4. Domain of Analysis: A method of study that separates the object of study into smaller units, so that its organizational structure may be understood. Distinguishes between facts and inferences.

5. Domain of Synthesis: Builds a structure or pattern from diverse elements. Put parts together to form a whole, with emphasis on creating a new meaning or structure. Combining elements of a separate entity into a single or unified entity.

6. Domain of Evaluation: Make judgments about the value of ideas or materials. Global review of the significance and implications of a diagnostic assessment; includes both formal and informal procedures. (Bloom, 1956).

2.3.2 Affective

The second category of the Taxonomy, Affective domain, identifies how human beings learn with respect to feelings, values, appreciations, enthusiasm motivations, and attitudes. There are five stages described for the Affective domain in the Taxonomy (Bloom, 1956):

1. Receiving Phenomena: listening to others with respect
2. Responding to Phenomena: Active participation on the part of the learners by participating in class discussions, giving presentations;
3. Valuing: The worth or value a person attaches to a particular object or behavior.
4. Internalizing Values: Development of a value system that controls individual behavior.
5. Organization: Prioritizes values and organizes them into different systems.

2.3.3 Psychomotor

Finally, Bloom's Taxonomy describes the psychomotor domain. This domain includes perception and what is termed as 'set.' A set is "the readiness to take a particular course of action. This includes physical and emotional set as well as mental" ("Appendix B- Bloom's Taxonomy," p. B-5). The ability to use sensory clues and a readiness to act would determine a person's response and readiness to act such as when a learner touches or is touched by a flame or other extreme stimuli. The response that is learned in this example is to retreat with a motor response. This domain is central to the application of this dissertation and it will be mainly used in the teaching/learning process of students enrolled in the communication disorders curriculum at Kuwait University.

2.3.4 Bloom's Taxonomy in Practice

Bloom's Taxonomy has been put into practice by many involved in instruction and education, be it in a school or workplace setting. Research has shown that putting the Taxonomy into practice has yielded varied results; some researchers have found that the Taxonomy is accurate, (Odhabi, 2007) while others have discovered that it can be misapplied, and/or it needs to be modified to fit a certain circumstance (Booker, 2007). This section will explore some literature concerning the utilization of Bloom's Taxonomy, and the findings.

2.3.5 Bloom's Taxonomy and the Use of Laptop Computers

In an article investigating the affect of laptops on the learning of students in developing countries found that "learning with laptop will provide students with opportunities to develop their knowledge as well as being able to practice what they are learning through the use of educational technology" (Odhabi, 2007, p. 1131). The study used the laptops to assess the use of the different learning domains (as outlined in Bloom's Taxonomy) involved when learning through this technology. The focus was on the learning process rather than the actual technology involved and was more focused on investigating whether the learning with laptops actually supported the theory that the different complexities found in Bloom's Taxonomy would be utilized. Although the students did have better opportunities to improve their knowledge and put to practice the knowledge they were learning, there was no achievement or progress in the affective domain. There needs to be other learning methods and/or tools put into effect in order for any improvement in the affective domain to occur. The significance of the paper to this dissertation's investigation is the ability for researchers to apply Bloom's Taxonomy in evaluating the benefits of a teaching medium (which is also the focus of

this dissertation as well). It has allowed the present author to know which areas still need to be developed to provide a 'rounded' learning experience. According to the Taxonomy, the objectives should be to teach students in all the domains, and not just focus on one while ignoring the other two. Bloom and colleagues have definitely helped make the process of setting up a teaching curriculum and objectives a lot easier by developing the taxonomy – one that can be used to measure and set learning objectives in almost any field where learning is happening.

2.3.6 Bloom's Taxonomy Gone Wrong

Bloom's Taxonomy, when used properly, helps to identify the different areas that should be addressed when teaching and learning to be able to get the full effect of an education. When misused, the affect of the Taxonomy becomes null, as it is not being used for the intention it was created. The misuse of the Taxonomy is the subject of Booker's paper (2007) in which he contends that the misuse of Bloom's Taxonomy in the American education system has made American students unable to compete on an international level with other students. His argument is that the Taxonomy has been used in the K-12 school system and expected too much from students who cannot deliver. The expectation that these students should overlook facts and only operate on a "higher-thinking" level has led to a misappropriation of Bloom's Taxonomy to the detriment of the students' education. Booker set out to show how Bloom's Taxonomy "was co-opted to serve ends for which it was not originally intended" (Booker, 2007, p. 349). What was meant to be one part of a three-part system, Booker says, was also meant for higher education students, not elementary and middle school levels. He even goes as far as saying that Bloom's Taxonomy has "underwhelming data supporting it" (Booker, 2007, p. 351). One of his main critiques of the Taxonomy is that it "fuels the

belief" that thinking of a higher level does not need specific content, and can function on its own. It is also implied that Bloom "denigrates" what is referred to as "mere knowledge." Booker makes the argument that Bloom's Taxonomy must be looked at in the area and sphere in which it was intended – for post-secondary education – because to do so otherwise means that one will be neglecting the "lower-order thinking" which is the foundational basis for higher-order learning. His arguments are valid and his criticism of Bloom's Taxonomy is credible because as he says "the roof won't stay up without walls" (Booker, 2007, p. 355): education is knowledge, as well as understanding.

The comparison between different learning styles has been an issue of research and investigation for a time now, and researchers have compared different learning styles and teaching methodologies in light of Bloom's Taxonomy. Bloom's Taxonomy was the "litmus paper" with which the comparisons were made. This can be seen in Stephenson, Brown and Griffin (2008) in which they compare virtual and e-lectures against 'traditional lectures.' Using Bloom's Taxonomy, they were able to measure the efficacy of the different teaching styles to see which was more effective. Their study consisted of having three groups of participants taught by the same instructor via three different methods: "virtual" and "e-" lectures, and the traditional method of in-class lectures. The same information was delivered to the participants in each group by the group's specific delivery method. Class discussion was eliminated in order to retain accuracy and fairness throughout the teaching styles (i.e. because discussion could not have been an option via one of the methods, it was eliminated in the other two methods). Using paper-based multiple-choice questions, the researchers compared the

efficacy of the virtual and e-lectures with the efficacy of traditional lectures. Questionnaires were also used to obtain information on the efficacy of the different teaching methods' success. What Stephenson et al. (2008) concluded was that "differing modes of delivery can affect the different depths of learning as classified by Bloom's Taxonomy…" (Stephenson et al., 2008, p. 648). Although, as Booker says the Taxonomy was intended simply for post-secondary education, and its acceptance by instructors in all fields was a surprise, it is of great use still when assessment is needed. Without the Taxonomy, it would be harder for teachers and instructors to measure conveniently the achievement students and learners have made in the different levels (domains).

2.3.7 Revised Taxonomy Better than Original Taxonomy

Of importance to this dissertation is an article describing a Turkish study which tested Bloom's Taxonomy compared to one that was revised by a group of educators and psychologists decades later based on more recent developments in psychological and educational literature (Bümen, 2007). Bümen's (2007) objective was to evaluate the impact of the Taxonomy on participants' ability to compose lesson plans. The facilitators of the study gave the experimental group of pre-service teachers information on the two Taxonomy versions, through slide shows and other active lecture methods (utilizing different mediums) and the participants were asked to match objectives and cognitive categories together. They were also asked to "write at least one question related to every sub-category in the cognitive process dimension" (Bümen, 2007, p. 446). The different sub-categories of the taxonomies were also explained and different activities were done, and the teachers were shown how to use the taxonomy table. They then composed lesson plans based on their new knowledge of the two different

taxonomies. The control group was instructed in the traditional method of teaching via lectures, question and answer, and discussion, but the method of the instruction was given via the standards and traditional method. They were asked to examine different lesson plans and, and questions were posed to assess the participants' understanding.

Both groups were asked to compose lesson plans and the lesson plans were scored by experts with Ph.D. degrees in Curriculum and Instruction. The results of the study showed those teachers who were able to apply the different focuses and information gleans from Revised Taxonomy were able to devise lesson plans that deviated from the "best practice" approach, and actually centered providing teaching lessons/method which were concerned with what students actually learned. Because it is said that the Revised Taxonomy provided a "turning point in developing the metacognitive skills, emphasizing the reflective teaching, and providing internal consistency of instructional planning" (Bümen, 2007, p. 451), it has been concluded that the Revised Taxonomy contains important advantages to curriculum and lesson plan formations.

2.4 Multiple Intelligences

Not all students enter the classroom with the same talents, strengths, or mental habits. The participants in this dissertation will vary in many ways and this variability and the impact it may have on the outcomes must be considered. A look at Howard Gardner's (1983) theory of multiple intelligences (MI) will be of great use in this dissertation to prove the need for variety in instructional methodology. *In his Multiple Intelligences: The Theory in Practice* (1993), Gardner said that he and his group had set out to define what intelligence is and in doing so, they defined seven intelligences. His

work on MI has had a profound impact on thinking and practicing in field of education (Smith 2002; Willingham, 2004).

Gardener's theory is based on viewing intelligence as "the capacity to solve problems or to fashion products that are valued in one or more cultural settings" (as cited in Christion, 1996, p. 6) and the categorization of the intelligence into seven different intelligences, resulting in the multiple intelligences (MI) theory. The following are the MI identified by Gardner:

1. Linguistic intelligence deals with the ability to utilize words. People with linguistic intelligence include poets, lawyers, and writers.

2. Logical-mathematical intelligence is intelligence that deals with logic, mathematics, and science. Mathematicians, physicist, and chemists are some examples of people who have logical-mathematical intelligence

3. Musical intelligence involves skill in the performance, composition, and appreciation of musical patterns. It encompasses the capacity to recognize and compose musical pitches, tones, and rhythms. According to Gardner, musical intelligence runs in almost structural parallel to linguistic intelligence.

4. Bodily-kinesthetic intelligence utilizes the body to solve problems. Athletes and dancers are among the class of people who have a firm grasp of this form of intelligence. Fashion designers are also a good example as they have skill in fashioning products using the body.

5. Spatial intelligence involves the ability to manipulate and use space, engineers, designers, sculptors and sailors are an example of those with spatial intelligence.

6. Interpersonal intelligence involves understanding others' needs, intentions, motivations, and desires. Salespeople, politicians, and therapists have a keen interpersonal intelligence.

7. Intrapersonal intelligence is "the knowledge of the internal aspects of a person: access to one's own feeling life…range of emotions" and be able to categorize those feelings accordingly.(Adapted from Gardner, 1993, pp. 17-25).

Gardner's description of seven intelligences seems to pose quite a challenge for an educator considering how hard it is to instruct a person assuming a less complex model of intelligence, let alone attempting to design and implement educational experiences to

engage students in a multifaceted fashion. Gardner believes that by identifying and knowing the seven different intelligences would allow for more freedom, despite the challenges. He posits that seven different intelligences can be viewed as seven different ways to teach; the constraints that exist in the mind can then be activated to consider a concept or system in the best way suited for that person of that form of intelligence (Gardner, 1993, xxiii).

Gardner in practice. As with all theories and concepts researched, the validity and viability of a concept must be examined and put into practice. Gardner's MI is no exception. There has been much written about MI by people who have put the concept into practice and proven its validity, and by others who question and analyze it. The question of whether Gardner's theory of multiple intelligences has any validity and credibility is an easy one to answer – yes. There are different intelligences that different people possess; does his theory ring true in the description of 'seven intelligences'? That question is harder to answer with a simple yes or no. To answer such a question, one must look at the critiques facing Gardner's theory. Although it is researched far and wide and one can find references to Gardner's theory of multiple intelligences in any book studying intelligence (Morgan, 1996) , it still has a few 'holes' so to speak that must be patched up.

Morgan (1996) stated, "the theory that multiple factors contribute to what is generally considered intelligence is not new" (Morgan, 1996). He also says that there is evidence to suggest that what is labeled as intelligences in the MI theory are actually cognitive styles – that intelligence is one thing, but there are different styles in which it manifests itself. Morgan's assertion stems from the fact that there was much literature

in the period before Gardner came up with his categories on cognitive styles, and that the descriptions in the literature is very similar to the description of MI by Gardner and his associates. Morgan's main contention is that what was termed Gardner's 'new' theory of Multiple Intelligences was merely a reworded categorization of cognitive styles into intelligences (Morgan, 1996). The suggestion that Gardner merely reshaped the research and theories that were already published is too clear not to miss. Morgan, however, is not the only one to criticize Gardner's work on MI.

The University of Western Ontario's (London, Canada), Klein (1998) criticizes Gardner on what he calls is a tautological theory. To illustrate his point, Klein puts forth the example of the circular manner in which Gardner explains MI by defining each intelligence with respect to a domain, and then defining that domain with respect to intelligence (Klein, 1998). Despite the critiques and the arguments against, Gardner's MI is not devoid of benefit to education. MI allows for the identification and clarification of multiple cognitive styles, and allows educators to be able to devise learning goals that will allow all students to succeed. In the current study, the flexibility of the active teaching approach should enable greater accommodation to the different intelligences that MI holds undoubtedly exist among the students, potentially yielding a higher success rate in instruction.

2.5 Gregorc Style Delineator

Anthony Gregorc (1984) developed a theoretical model of the learning styles of human beings with reference to how human beings learn and conduct tasks. It includes the Gregorc Style Delineator (GSD) instrument. The Gregorc Style Delineator is an instrument that aids individuals in discovering the channels through which they receive, process, and express information (Gregorc, 1984). The basic premise of Gregorc's

theory of learning styles divides learners into two initial groups based on their learning characteristics (Taylor, 1997). The first group includes those termed ‘sequential’. Sequential learners are likened to clocks in that they learn and consequently work in a set-by-step fashion predictably. Sequential learners start at the start and end at the end. The second group’s learning characteristics are termed ‘random’. Random learners are likened to a stopwatch, starting and stopping work at will based upon what is important to them at the time. Random learners gather information by skipping around, taking short cuts, and viewing learning stimuli more holistically. It is not atypical for a random learner to work backwards. Metaphorically, sequential learners are likened or compared to a straight line and random learners are compared to a circle (Gregorc, 1984; Taylor, 1997).

Additionally, Gregorc’s theory adds the dimension of how humans are most likely to learn. He defines ‘concrete’ learners as those who rely upon the physical senses – what can be touched, seen, smelled, and heard. The other groups are termed ‘abstract’ learners and prefer to learn based upon ideas to gain an understanding of environmental stimuli. Abstract learners spend significant amounts of time attempting to gain understanding by experimentation, using their ideas and feelings as it relates to reason while sequential learners rely upon process and the physical world to accomplish learning.

Based upon Gregorc’s work, learners can have one of four learning styles. These learning styles are Concrete/Sequential (CS), Concrete/Random (CR), Abstract/Sequential (AS), and Abstract/Random (AR) (Gregorc, 1984; Taylor, 1997).

These styles are characterized relative to the school or university environment as follows (Gregorc, 1984; Taylor, 1997):

Concrete/Sequential learners are practical, predictable, and appear well organized. Their thinking process is logical and deliberate, building knowledge based upon previously gained information. These learners prefer an environment that is ordered, practical, quiet, and stable. Their creativity lies not with originality but by using what exits more effectively. In the classroom, they are considered model students. Their materials are organized; their instructional preference is best suited to situations that are teacher-directed.

Concrete/Random learners are practical but like experiment, and rather than follow a strict plan they desire options. As learners, their thinking process is typically instinctive, intuitive, and impulsive. Their creativity is original and it is this group of learners that are often considered to think ‘outside of the box’. These learners prefer an environment that is stimulus-rich and competitive. These learners appear messy and nonlinear and prefer learning environments that allow for exploration and interaction.

Abstract/Sequential learners like to develop ideas in a logical way. Their thinking processes are intellectual, analytical, correlative, and associative. These learners gain a great deal from reading books and focusing upon knowledge, concepts, and ideas. Their creativity lies within models, theories, and synthesizing information. These learners prefer learning environments that are ordered, independent, and mentally stimulating.

Abstract/Random learners are learners who work from the emotions, and not from an intellectual standpoint. To these learners how someone feels makes a great

difference in their learning. Their thinking processes are based on feelings and these learners typically develop a rapport with others. They make sense of the world using feelings and emotions and they focus upon emotional attachments, relationships, and memories. Their creativity is highly imaginative and is often expressed through music and the arts. These learners prefer an environment that offers emotional experiences, active and colorful stimuli, and physical freedom.

The importance of Gregorc's work concerning learning styles lies in the extent to which style delineators create awareness of and sensitivity to the varied learning styles in one's self and others. For educators, this information is basic and crucial in relation to the environmental needs in any given classroom because any given sample of students will represent a mixture of learning styles.

Ross, Drysdale and Shultz's (2001) study used the GSD to investigate the effects of cognitive learning styles on academic performance. The effects were studied on two university-level computer application courses (Computer Science (CPSC) 203: Introduction to Computers and Teacher Education and Supervision (EDTS) 325: Computer Applications in Education) at a Canadian institution. The study consisted of about 1,000 participants over a period of 4 years; there were different instructors involved throughout the 4 years and for the almost 1,000 participants. Results showed that in CPSC 203, the dominant AS learners performed much better than other learning-style groups, and the results of the EDTS 325 course showed that learning styles played a much more significant role in determining student performance; CS learners outperformed the other learning-style groups.

As the researchers maintain, finding were consistent with research which showed that “a significant negative correlation between level of AR and achievement and a significant positive correlation between level of AS and achievement” (Ross et al., 2001, p. 409) were found, since in this study dominant AR performers had the lowest scores in both courses. The results of the study were in line with the descriptions of GSD, which state that those who score high in random dimensions, CR and AR learners, tend to work/learn better in environments that afford more flexibility and have opportunities for multidimensional thinking. Those who score higher in the sequential dimensions, the CS and AS learners, work/learn better with computers because they are like “an extension of the sequential person’s mind” (Ross et al., 2001, p. 409).

Watson and Thompson (2001) conducted a study of learning styles among students in undergraduate interior design courses. The study included 147 participants in undergraduate interior design courses from schools in Arkansas, Colorado, Oklahoma, Texas, and Louisiana. The participants were asked to complete the GSD. Approximately 50% (74) of the participants were found to have one of the Gregorc styles as their dominant learning style. Once again, the study substantiates theories and claims that learning styles and preferences do exist, and when teachers and students know these preferences and styles, the learning experience can be optimized.

The implications of the Gregorc theory for instructional delivery methods are significant and compelling as one considers both the advantages as well as the necessary accommodations associated with different student learning styles and learning modalities. The passive lecture method delivery model relies heavily upon reaching learners through the auditory learning channel and, based upon the

information just reviewed concerning learning styles, appeals to students who style is predominantly concrete sequential. Instructors who rely upon the passive lecture method oral/aural instructional delivery model do not as effectively address all other learning styles. Learners who seek and succeed in learning experiences that require strong attention to detail such as the scientific method most probably possess learning styles that are less random and sequential.

To conclude, the theory of MI joins the other theories as they relate to the process of the human mind in acquiring knowledge. Bloom's Taxonomy classified how learning may be acquired and used. Gregorc's theory of learning styles and learning modalities provides a framework of understanding the ways in which human beings acquire knowledge. These theories provide significant findings concerning the process by which human beings gain information purposefully through instructional contexts such as schools and particularly with respect to the instructional delivery systems employed by instructors.

2.6 Learning Style

Examining learning style and modality is important in understanding which learning style is most suited for any one individual. Learning styles can be defined as "different approaches or ways of learning" (Learning Styles and Multiple Intelligence, 2008). Everyone has a preferred learning style, which reflects the outcome in the context of education, and how they perceive the instructional delivery and learn more productively and efficiently (Learning Styles and Multiple Intelligence, 2008). An understanding of the range of different learning styles will aid the instructors at the CSL College at KU to be able to help their students better in dealing with people with varying abilities and cognitive styles once embarking into the real world.

There are three types of highly predominant learning styles: visual learners, auditory learners, and tactile/kinesthetic learners. Individuals may possess a blend of these sensory learning styles. Each human being has a dominant style through which they learn best (Dunn & Dunn, 1978).

Visual learners learn through seeing and these learners comprise as much as 75% of all learners (Dunn & Dunn, 1978). Visual learners need to see, in the context of the classroom, the teacher's body language, and facial expression to understand fully the content of a lesson. They tend to prefer sitting at the front of a classroom. Visual learners think in pictures and learn best from visual displays and visual stimuli. Visual students often prefer to take detailed notes during a lecture or classroom discussion to absorb the information under study. Visual learners rely heavily on technology of a visual nature such as computer screens and text messaging.

Auditory learners learn through listening and these learners comprise about 35% of all learners (Dunn & Dunn, 1978). They learn best through verbal lectures, discussions, and by talking things through as well as by listening to what others have to say. Auditory learners interpret the underlying meaning of spoken communications by listening to tones, pitches, speed, and other characteristics of spoken language. Written information may have little meaning for auditory learners until it is heard. These learners often benefit from reading aloud and listening to taped books. Many auditory learners, not surprisingly, have musical talents and are adept learners of foreign language(s).

Tactile/Kinesthetic learners learn through moving, doing, and touching. These learners comprise approximately 25% of all learners (Dunn & Dunn, 1978).

Tactile/Kinesthetic persons learn best through what is considered a hands-on approach where active exploration of the physical world is essential for learning success. These learners find difficulty in sitting still for long periods and tend to become distracted by their need to move around and explore by touch, feel, and particularly need to be engaged by spatial stimuli.

2.7 Personality Type

To explore one other potentially important factor in the outcomes of the different educational methods, looking at the different types of personalities that are found among people becomes imperative. Carl Jung, in the early 1920s identified four different personality types, and while he was not, by any means, the first to do so, his work has been elaborated on. As a result, many different "indicators" have been developed to help educators, employers, instructors, and anyone else, identify, understand and accommodate different individuals' personalities.

Among the most popular of these indicators is the Myers-Briggs Type Indicator (MBTI). A mother, Katherine Briggs, and her daughter Isabel Briggs Myers developed the Myers-Briggs Type Indicator. They created the MBTI in the 1940s to be used for personnel selection (Pittenger, 1993). Since that time, its use has expanded in many different fields, particularly in assessing employment potential. The foundational basis of the test is that certain personality orientations are better suited for certain occupations and that "Jung's theory provided a theoretical link between personality and job performance" (Pittenger, 1993, p. 49). Briefly, the MBTI works on the presumption that a person's personality can only fit into one of sixteen types, which are based on four features of a personality. Each one of these features has two opposite preferences. As Pittenger explains, the four different groups are:

I. Extroversion (E) vs. Introversion (I)
II. Sensing (S) vs. Intuition (N)
III. Thinking (T) vs. Feeling (F)
IV. Judgment (J) vs. Perception (P)

The Myers-Briggs Type Indicator, while enjoying wide use, has also come under considerable criticism and speculation. Some, like Pittenger (1993), question its validity and suggest that it does not measure what it sets out to measure. Alternatively, Wall (2008), Carskadon (1994), and Marrapodi (2004) among others, believe that the administration of the MBTI is the most accurate one can get when assessing personality.

2.7.1 Advantages of MBTI

Stephanie Wall (2008) claims that:

> Our personality type determines how we interact with our world, how we gather information, how we make decisions, and how we orient our lifestyles. It is who we are and dictates how we communicate with others (Wall, p. 68).

This conveys the importance of personality factors in the learning process. It suggests that a tool like the MBTI could help an instructor know her students better and be able to fashion a more appropriate instructional design. While a classroom can be taught as a collective group, knowledge into the individual personality traits of each student will allow the instructor to implement different strategies while teaching so that all the students' needs are catered. This might be achieved by adapting the lessons with audio-visual, kinesthetic, or other experiences.

According to Carskadon (1994), the MBTI has many advantages for its use, which include "relatively modest expense; an intuitive appeal to a great many students and teachers; key concepts that are readily understood, communicated, and applied: abundant availability of supporting resources; relevance to and use in abroad range of

fields, including education…" (p. 69). The test's outcome also does not peg one personality type as being any better than any other type, therefore there is no harm to a person's self-esteem, and s/he will think that the outcome type is the best type. The test can be completed in a span of a half hour, and this is very convenient for college students and adult learners; it does not consume too much time and therefore those with full schedules and trying to balance school and social life are not too inconvenienced. While the MBTI can be complex and needs to be understood properly by both administrators and those taking the test, it is very helpful in aiding in communication between individuals (Carskadon, 1994, p. 71). Carskadon makes the point that many teachers plan their lessons for students that they wish they had, as opposed to the type of students they will have in reality. By utilizing the MBTI, the teachers are better able to construct lessons, and modify their objectives, so that they are able to include all students, regardless of their personality types, into the lesson, ensuring that it is educational and beneficial to all. Carskadon also makes the claim that using MBTI may be beneficial because

> When differences among students are understood as naturally occurring, possibly inborn, preferences, behavior that may have been attributed to stupidity, obnoxiousness, or obstinacy, suddenly becomes vastly more acceptable and constructive – at best, something to be appreciated and utilized, and at worse, something to be taken with humor rather than resentment (p. 78).

Carskadon's work is supported by other literature on the subject. Wicklein and Rojewski (1995) show that there are cases in which the instructor and students' personalities do not match at all, therefore it helps to know how the personalities can be reconciled in the classroom.

Felder and Brent (2005) claim that MBTI profiles have strong indications on learning styles of individuals and that studies on the different learning styles can tell much about the effects on student performances and attitudes. They go on to claim that, based on studies of MBTI being administered to 116 students by Felder, the MBTI proved to be effective at characterizing differences in the way engineering students approached learning tasks, how they responded to different forms of instruction and classroom environments, and how they formulated career goals.

One must not overlook Marrapodi's (2004) paper on MBTI in Education. Marrapodi claims that there is a very strong case for the MBTI to be used in education since its "bisecting quadrants measure how information is received (perception) and used (judging)" (Marrapodi, 2004, p. i). The paper reviewed the difference style preferences that are used in MBTI and how they created temperaments and types. Marrapodi's justification gets even more detailed:

> Generally, the focus of the MBTI test results is personality style but there are also some clear indicators regarding learning preferences, since learning is largely taking in new information, a type of perception, and using that information, requiring judging and decision making to determine how to use it (p. 3).

Of note is the fact that Lemire (2001) found about 4000 articles dealing with MBTI and which showed its reliability and validity.

2.7.2 Disadvantages of MBTI

The disadvantages of the MBTI are the possible risks it presents of forever categorizing a student into one personality and learning type. When taking a test of any kind, one has to remember that there are emotional, external, and other factors that affect the individual being tested and they may have a "bad test day" in which their result will vary if they were to take the test at another time. In other words, on the first

day of the course, Robert may take the MBTI test and based on the answers he gives because of his mood, experiences that day, etc., the results may say that he is an introvert. If he takes that same test on the third day of the course, his answers may be different and the result would be that he is actually an extrovert that has some characteristics of an intuitor.

Williamson and Watson (2007) state that some studies have shown that MBTI results can be affected depending on whether the student chooses to pick stronger preference indicators that will in turn give a more meaningful result. This makes the results of the MBTI unhelpful because the testing itself is subjective. MBTI also has the potential for the personality type to become a label that is then used as an excuse by teachers, administrators or the student for poor performance. Any students that take the MBTI and get a result that has them in one personality type can risk the possibility of thinking that their skills and abilities are just those defined by the MBTI and their performance will be restricted only to the skills found within that group. MBTI, like the Jungian theories before it, has given birth to more theories and personality tests. One of those theories is the Keirsey Temperament Sorter, a personality test developed by David Keirsey.

2.7.3 The Keirsey Temperament Model

The MBTI has had its advantages and while it is still very widely used, it has spawned the creation of another personality test: the Keirsey Temperament Sorter (KTS-II). The Keirsey Temperament Sorter is based on the Keirsey Temperament Theory that was put forth by Dr. David Keirsey. The initial Temperament Sorter was established in 1978 in Keirsey's book, *Please Understand Me*, but it was later revised in

1998 and published as the Keirsey Temperament Sorter II (KST-II). This short 70-question test can be administered online and provides much analysis on personality.

Keirsey Four Types Sorter. The Keirsey Temperament Sorter has been modified into what is referred to as the Keirsey Four Types Sorter. The difference between the two Keirsey Sorters is that the KST-II is 70 questions long, while the Keirsey Four Types Sorter only has 16 questions. The Four Types Sorter still adheres to the 16 different temperament types, however, it generally describes the four major types, as well as allowing one to be able to rank his/her second, third and fourth choices. In other words, when someone takes the Keirsey Temperament sorter, s/he will have a detailed explanation of what personality/temperament type s/he is because the result will fall within one of the 16 types. When taking the Keirsey Four Types Sorter, one will have the result of which of the four temperaments one is, as well as a ranking of which of the other three s/he is most like besides their actual type. An artisan may be surprised to find out that s/he has more rational traits than idealist traits, and would be identified more as an idealist, instead of a rational as a second temperament. This helps one when analyzing their learning style because one may be faced with a learning style that does not work too well and that person can call on their innate traits of their secondary temperament to be able to deal/work with the learning style.

Dr. Keirsey's theory feeds off the MBTI, but he adds temperament to the different preferences introduced by Myers and Briggs. Keirsey is careful to mention in his book, Please Understand Me II (1998) the fact that he takes the "guesswork" out of the temperament theory by basing his analysis and definitions on people's skilled actions. In other words, he uses their skills which are "observable, and which thus can be

defined more objectively" in order to properly define their role (p. 30-31). He believes that being smart is not about how well one can think, but how well one acts when one is in a certain situation – one's intelligence is also measured by action, not just intangible thought. This method of defining temperaments, in correlation to intelligent action, is very important when assessing a person's learning style and will prove valuable to any study dealing with pedagogy.

Keirsey Four Temperaments: Keirsey hypothesized that there are four temperaments:

1. Artisans are observant and pragmatic. Composers, Crafters, Performers, and Promoters are the role variants contained within this temperament. Their greatest strength is tactical variation. Their most developed intelligence operations is either expediting or improvising.

2. Guardians are observant and cooperative. Protectors, Inspectors, Supervisors, and Providers are the role variants contained within this category. Guardians seek membership or belonging and are concerned with responsibility and duty. Their greatest strength is logistical intelligence. They excel at organizing, facilitating, checking, and supporting.

3. Idealists are introspective and cooperative. Healers, Counselors, Champions and Teachers are the role variants contained within this category. Idealists seek meaning and significance and are concerned with finding their own unique identity. Their greatest strength is diplomatic intelligence. They excel at clarifying, unifying, individualizing, and inspiring.

4. Rationals are introspective and pragmatic. Architects, Masterminds, Inventors and Fieldmarshals are the role variants contained within this category. Rationals seek mastery and self-control and are concerned with their own knowledge and competence. Their greatest strength is strategic intelligence. They excel in any kind of logical investigation such as engineering, conceptualizing, theorizing, and coordinating ("Keirsey Temperament Sorter").

The temperaments are then broken down into variants, referred to as "character." According to David Keirsey:

> Temperament is a configuration of inclinations, while character is a configuration of habits. Character is disposition, temperament pre-disposition. Thus, for example, foxes are predisposed-born-to raid hen

> houses, beavers to dam up streams, dolphins to affiliate in close-knit schools, and owls to hunt alone in the dark. Each type of creature, unless arrested in its maturation by an unfavorable environment, develops the habit appropriate to its temperament: stealing chickens, building dams, nurturing companions, or hunting at night. ("Temperament vs Character")

These temperaments are supposed to help people gain a better idea about their personalities, just as the MBTI is supposed to do; the difference is that the KTS-II focuses more on behavior instead of thought and feeling. There has been much confusion between the KTS-II and the MBTI, although for the one who has does the research, their differences can be seen. Wicklein and Rojewski state that

> "[p]sychological type has been shown to affect how students learn, how teachers teach, how leaders lead, and how everyone works and communicates," and that it has been "asserted that teachers with distinct personality types were predictably attracted to different levels of teaching and to different subject matter" (Wicklein & Rojewski, 1995).

The literature on the Keirsey Temperament Sorter is replete with studies demonstrating the importance, or invalidity, of the test in the work place and how it can help employees and employers determine the type of personality each has and how it benefits the workplace environment. The benefits of it are very similar to the MBTI, and one can apply the literature findings of the Keirsey Temperament Sorter to education as well. Suzanne Stokes (2001) investigated the experience of college students with digital learning and found the majority of the participants to be satisfied with the digital learning environment in higher education. The different characteristics such as age, grade point average, etc. did not make a difference in the study and those with different temperaments all expressed satisfaction. Stokes says this shows that

> college students with diverse temperaments are suitable candidates for learning in the digital instructional environment, and the recommendation that students considering enrolling in courses that incorporate digital learning, but who may be reluctant to register because of perceived mismatches between personal traits and the digital environment, should be

> reassured that the environment is not restrictive in terms of learner temperament (Stokes, 2001, p. 41).

Interestingly, Dueck (2001) states that the different temperaments make a difference in Knowledge management (KM) (how a person absorbs knowledge). Actually, the term knowledge management is an on-going stage of description in that, as Dueck states, “a person’s temperament plays a critical role in how that person defines KM” (p. 886) and therefore it can have a different meaning for each person depending on his/her temperament. Dueck goes on to claim that people tend to think that their view of KM is the only view. Thus, the inclusion of an assessment of temperament in the present study may predict success in the class, with some participants finding it more difficult to broaden their view of how one can learn.

Daughenbaugh, Ensminger, Frederick, & Surry (2002) studied the effect of personality type on satisfaction in online verses in-class courses. They embarked on the study with the following three thoughts in mind: i) that since online courses are becoming increasingly popular, it would be useful to know which personality group best benefits from the online course; ii) it will also be useful for instructors to know because they can identify and modify areas of the online course that scored low so that they are more appealing to the students; and iii) the study would be a good basis for other researchers endeavoring to find out the satisfaction with online courses (Daughenbaugh et al., 2002, p. 3). Among their findings was that there were statistically significant differences between extroverts and introverts in 10 course satisfaction factors, with the extroverts expressing stronger preference for online courses. The results supported the general theory: introverts and extroverts do differ in their learning styles and preferences. This general thought/theory is at the heart of this study. Any differences

observed between teaching methods will derive at least in part from the ability to address different learning styles. Not everyone has the same personality or learning style, so therefore, knowing how to identify the differences will be a great asset to the administrator when attempting to teach adult learners who have already ingrained ideals, personalities, preferences, and "ways."

Mills (2006) states that while it is dangerous to stereotype and assume that there are no exceptions whatsoever, the Keirsey model holds true, in the case of faculties at schools:

> One can easily imagine school principals coming out of guardian or combination artisan group, science and math teachers emerging from the rationals type, physical education teachers, and coaches as artisans and counselors as idealists (Mills, 2006, p. 515).

Knowledge of the different roles that students and teachers have in a learning environment and of the personality types that they are would definitely be an asset. When it comes to this study, specifically, the Keirsey Types Sorter given as a pre-test questionnaire would be extremely beneficial to explain why students perform better in one condition or another. It puts value to explain the differences that may derived in students' performances.

Personality types, as assessed by the Keirsey Sorter, predict student performance in principles of microeconomics (Ziegert, 2000). The Keirsey model has also shown that there is a link between personality types and the number of class absences, the value of class participation, as well as results on final exams and homework completion (Lawrence & Taylor, 2000). This suggests that when studying class outcomes, one should consider not only instructional methods but personality types as well.

All the literature seems to suggest that Keirsey Temperament Sorter, as well as MBTI, link personality types and behavior and/or outcome in some way, shape, or form. In terms of education, the Keirsey models and MBTI help in gaining an understanding of the role of learner diversity in instruction, be it active or passive. For this author, the conclusion is that it will be harder to accommodate for different personality types with the often “one-dimensional” passive instruction method, and can only envision active instruction as the key to reaching all the personality types in the classroom.

2.8 Teaching Methods

Schulte (1996, p. 25) offers one of the best definitions of a traditional classroom as “one whereby students await the teacher to explain the lesson with reference to textbooks, and are in turn assigned various exercises, or homework, in an effort to reinforce the student's learning. The students are passive receivers.” By contrast, instruction that includes innovative methods, such as e-learning, instruction using multi-media, and student-oriented methods can engage the students so they become active learners, participating in their own education; the focus would no longer be on mere regurgitation but on understanding facts/concepts and applying them. Part of the active engagement condition mode in teaching is problem-based learning.

2.8.1 Problem-Based Learning

Problem-based learning (PBL) is an aspect of active learning methods; it can best be described as a strategy where students have a lot of input, jointly solving their problems and reflecting upon experiences. PBL consists of open-ended problems designed to facilitate learning and students work together to achieve answers and results. It is a unique way of learning in which students learn as they are learning. A large body of literature on PBL attests to the fact that PBL is an effective new way of

teaching that allows the teacher to still have a prominent role while giving the students room to take ownership with their learning as well (NASA).

Not only is the literature numerous on PBL, but also there has been much interest in this teaching method. According to Rhem (1998), the "Pew Charitable Trusts gave over $600,000 to the University of Delaware and a similar grant to Samford University in Alabama to investigate restructuring traditional instruction along problem-based lines." Replacing passive instruction methods with the more active PBL may mean that students acquire a more functional, useful education, as they learn to utilize comprehension skills, and not just merely rote memory-based skills. Rhem states that the nature of the PBL allows the students to "achieve higher levels of comprehension, develop more learning and knowledge-forming skills." In addition, through the group work, their social work will also be improved. There is a larger opportunity for the students to participate in a PBL classroom environment as opposed to the passive instructor-oriented approach.

2.8.2 Advantages of PBL

Some of the advantages of PBL have been mentioned above, and the purpose of this section is to relate the conclusion of surveys and studies in relation to what students themselves have said about PBL. Baig, Habib & Mansuri (2006) have found that 79% of the 104 fourth year students surveyed in 2004 and 2005 (52 each year), liked PBL sessions. Overall, the students found that PBL was not only a good and affective method of teaching, but it also helped them with their "interpersonal relationships," "problem solving capacity," and "communication skills.

Ware (2008) in the Kuwait Medical Journal was critical of the existing curriculum offered by the Faculty of Medicine at Kuwait University as too passive and too basic; a

method that needed to be upgraded and enhanced. His reasons are that the old curriculum is full of non-essential content that is hardly even retained through lecture delivery (Ware, 2008, p. 1). He stresses the importance of updating the way the curriculum stands in order for the medical students to become doctors of the new age, and able to keep with the times. He does mention, however, how that will be hard at the post secondary level to teach via PBL when, at the high school level, educators continue with the lecture-based form of teaching. He calls for a change of curriculum, with an introduction to e-learning and catching up with the rest of the world's educational advancements, but also points out it has to happen at all educational levels, and it has to also start with the mindset of those problem-based learning experts who are supposedly clamoring for the change (Ware, 2008).

One of the advantages of PBL is that it can be adapted to different individuals, even in fields where changes and modifications in teaching methods happens at a slow pace. Rounds and Rappaport (2008) report that in nursing, teaching methods are slow to change, and that even with new online learning, "teacher-centered methodologies" (Rounds & Rappaport, 2008, p. 12) still remain as the primary techniques. As they state, nursing students' demographics and characteristics have been changing over the years and there is a need to emphasize the teaching techniques to cater to the older student with more life experiences. Problem based learning aids in this transition because it is a student-centered learning technique that can be modified and applied to students of all demographics and characteristics, in any field. Rounds and Rappaport (2008) discuss cases in which PBL was implemented and the resulting affects on students. Of note is what the authors say about the unexpected outcomes; faculties

which were examined have noted that because the students worked through cases together in groups, it created close ties and these students were able to have a closeness that lasted after graduation. In times when consultation is needed, these graduates had a network already in place from which to elicit assistance.

2.8.3 PBL in Today's Classroom

Today's classrooms utilize a myriad of techniques and media tools to help aid in teaching. Elementary schools already utilize computers, and cable TV programs, among other active tools to engage students in PBL. The emergence of the Internet in both the home and classroom settings has broadened the educational horizon enormously. E-learning and distance learning have now become commonplace, and are as affective, if not better, than the conventional passive lecture methods.

In Kuwait, e-learning is a new advent in the educational field. E-learning can support PBL approaches to education as a tool that can be employed with a focus on the independent learner. In fact, e-learning is likened to a quality service of which the student is a customer (Aldhafeeri et al., 2006). Aldhafeeri et al. (2006) argued that the Kuwaiti education system needs to be updated to add e-learning, among other things, in order to bring its students up to international standards. In their conclusion, they state: implementing E-learning in the schools of Kuwait makes students competent in the following areas: 1) basic operations and computer concepts, 2) ethical and human issues in use of technology, 3) use of productivity tools, 4) use of research tools, 5) problem-solving and decision-making tools, 6) use of communication tools. (Aldhafeeri et al., 2006)

The results are evident if one does more research on problem-based learning. The time for lecture-only and one-dimensional learning methods is over. In order to

keep up with the rest of the world academically, all countries must adopt active teaching methodologies, because the evidence shows that more is needed than just a lecture from a teacher/instructor. Problem based learning is not without its disadvantages, however.

2.8.4 Disadvantages of PBL

Whenever changing from one concrete and conventional system to a new system that has not been as established, there will be quite a few snags along the way. With PBL, the snags come in the form of inexperience on the part of both the instructor and the student. Because for many this way of instruction may be new, the expectation of each person's role may be unfamiliar and if not understood may affect the effectiveness of the method. If the instructor is not clear about his/her role in PBL, s/he may end using too much of a lecturer role in the process, which would still stifle the students' academic freedom allowed by the PBL method

Albanese and Mitchell (1993) in their meta-analysis claimed that in some cases PBL was not as successful as it had been previously thought it would be. Instead, they claim that students of PBL have scored lower in some cases and do not think of themselves as well prepared as their counterparts. The students' thinking is backward, instead of the forward thinking needed, and that there are gaps in their thinking. Of course, these are all very bad disadvantages and would make a very bad case for PBL, however, these are outcomes only in some cases, and the authors do mention that caution be taken when implementing PBL, and do not say that it should not be done. They warn that caution must be exercised because of the cost of establishing PBL. Implementing PBL can be costly in terms of staff (there will be a need for more facilitators and instructors), as well as potentially being financially costly in terms of

materials needed (i.e. computers, whiteboards, electronic equipment). The opponents of PBL would rather wait until the 'snags' of PBL are ironed out first – they do not think it worth the risk if nothing has been done to improve the cognitive-processing weaknesses that they have seen in PBL students. Basing his opinion on the work of Albanese and Mitchell (1993), and Vernon and Blake (1993), Wolf (1993) stated that there was no concrete proof (at the time of his writing the article in 1993) that PBL is better than traditional educational methods. He claims the evidence only shows that it is better used for certain things, and not others.

Donner and Bickley (1993) do not form any opinion as they say that the jury is still out on whether PBL is better than the conventional passive methods of teaching. They did not think that there was enough evidence and material to judge the success of PBL in 1993. Since the writing of their commentary, there has been much more study and review of PBL. It is normal to see PBL being part of the teaching curriculum in today's classrooms, especially at post-secondary levels (Finucane, Johnson & Prideaux, 1998).

Hemker (1998) has many reservations about PBL. Even though in 1974 he was all for the idea of this revolutionary new way of teaching, he states that he soon began to see the drawbacks of the PBL method. According to him, the objections to PBL are:

- PBL makes it very difficult for students to identify with a good teacher
- PBL does not motivate staff to share knowledge with the students
- The knowledge acquired through PBL tends to remain unorganized.

Hemker defends his objections by claiming that the distance that is acquired between student and teacher in PBL makes it hard for the relationship of a good teacher –good student to develop and, therefore, the student missed out on seeing a "master at work"

and learning real skills – especially people skills. In short, his first objection is that “PBL makes identification with a teacher almost impossible” (Hemker, 1998, p. 74).

His second objection is defended with the idea that once teachers at universities/medical colleges, etc., are required to teach via PBL, it de-motivates them to actually teach since they can step back and allow the students to work in groups and come up with their own solutions. There is no longer the same “teaching” that goes on but a guiding of processes and groups of people.

His third objection is defended just as staunchly, if not more so, as it may be the most important. He contends that students who learn using PBL lose their ability to organize knowledge properly, and therefore, cannot distinguish between essential and accessory knowledge. If a student is aspiring to become a medical doctor, this could be, of course, extremely dangerous!

His objections are helpful for the purpose of this dissertation because they allow the facilitator a view of what type of problems may come up during the study. To ensure that an objective study with as little a margin for error as possible takes places, it is important to be able to hypothesis the problems that may occur and formulate possible solutions before even beginning so that one is all prepared. Knowing that these objections could indeed become a reality for this study, preventative steps can be prepared ahead of time. Some of those steps could include ensuring that the teacher is available on a “teacher” basis and not such facilitator/instructor basis. Maybe adding a few lectures in the active learning modules will ensure that real information is disseminated.

PBL is a form of active learning which can be effective in having students both gain information on specific topics and develop learning skills and independence. However, with the length of time it takes to implement PBL techniques, teachers may find that they are not able to completely cover all the planned material for that class period. To deal with this possible inconvenience and inhibition in PBL, an allocated time can be set aside for such activities as discussion so as not to over extend the PBL instruction time.

2.8.5 The Role of Discussion

Brookfield and Preskill's book *Discussion as a Way of Teaching; Tools and Techniques for Democratic Classrooms* (2005) investigates in depth the notion of using discussion as a way of teaching. The authors further stated that discussion helps to open the doors to a new outlook on the same topic as different students can speak up their opinion; one ends up having a diversity of opinions and outlooks of a certain topic and is not restricted to just one view. Discussion will allow the participants the chance to go outside their own thinking process; they may never have known that they liked a certain way of thinking until they hear someone else express it, or they reach it through discussion sessions. Unorthodox thinking is sometimes the key to finding the solution of a problem and that sort of thinking is best elicited from discussion courses. As the authors indicated, discussion forces the student to use his/her thought processes quickly, to be able to speak extemporaneously. In so much as a text or reading material may be skimmed over, or ignored, the discussion brings the topic to the forefront, it stimulates the student to be aware of perhaps a new issue, taking time to think it through which may not have occurred otherwise. In discussion sessions, students are

able to take more ownership on their own learning and the development of their thoughts.

The present study will not eliminate the possibility of discussion as an added medium to the two different methods of teaching. Observations will be made as to whether discussion becomes a factor in the different methods. Discussion is an imperative part of the learning process, and while the passive lecture method may seem like a method that may lack discussion, discussion can still be a big part of the lecture. Many times, professors will broach a topic within a lecture that will spark questions and/or comments that will start a discussion. For those who need to be involved in their own learning, this form of education is key because it forces the learning to go beyond just a lecture, and involves those who need a direct involvement. It becomes a new tool in the learning process while requiring very little in terms of preparatory equipment, tools, etc. The case is made for discussion being a form of learning because it allows for free and unique thoughts and exchanges of ideas to flourish.

After interviewing instructors throughout the United States, MacGregor and colleagues (2000) found that teachers who used active learning activities while teaching their students found that those students were better able to retain course concepts resulting in long-term learning, engage in meaningful discussions, and further promoted student formation within the community. Similarly, Davis' (1993) research supported the positive impact of active learning, concluding that it resulted in better retrieval of knowledge and retention by students who had actively engaged in practice, discussion, and application.

2.9 The World of Academia: Academic Institutions

The use of technology in instructional methodology is new in Kuwait, and due to this newness, there is a risk that teachers, students and parents alike will find it challenging to adapt to this new way of learning (Aldhafeeri et al., 2006). Other challenges that arise from using this technology is the simple fact that some school administrators remain unconvinced that technology can augment learning (Al-Ali, 2006).

Student's qualities. A thorough evaluation of students' qualities needs to be demonstrated to profoundly comprehend why the lack of active learners is evident at Kuwait University. To do this, the educational background of students and how they are taught in high schools need to be explained in order to understand why and how students turned out the way they are once admitted to university.

Undoubtedly, the aspect of culture is a fundamental point that one needs to acknowledge before any assumptions are demonstrated. This is vital due to the presence of inactive learners is bound to have the aspect of culture relevant to its presence in the first place. Chen, Mashhadi & Ang, (1999) state that culture should be considered as a prominent concern in designing active lecture engagement method learning systems. Furthermore, one of the five essential foundations of effective student-centered learning environments is the aspect of active lecture engagement method (Chen et al., 1999); the other four foundations are pedagogical, pragmatic, technological, and psychological.

There are some common characteristics of Arab learners that prevail in the Kuwaiti culture, and the Arab world as a whole. Abdel Bary, (2007) examined the common characteristics of Arab learners and the approach to e-learning in the Arab world. Eight hundred individuals participated in the survey and the determination of the

learners' characteristics was undertaken by quantitative and qualitative analysis. The results were grouped into categories such as personal and social characteristics; in these areas, Arab learners felt free to express themselves while using the Internet for learning. Different learning styles (visual, auditory, and kinesthetic) were observed in the learning situation and styles categories. The results of this survey based on students' characteristics showed that building an interactive learning environment helped them to verbally exchange their experience (Abdel Bary, 2007). This is important because the Arab student voice is not heard, as the teacher is the more dominant personality. Therefore, it is important to raise the fact that a well-structured tutoring course needs to be facilitated to produce communication and collaboration, which is effective in online learning where the students will feel appreciated and hence will become more willing to take online courses (Abdel Bary, 2007). The survey also addressed the fact that well-structured e-learning courses will encourage productive communication and motivate the learners in an interactive environment.

2.10 How Students will Benefit from E-learning and Become Active Learners

It has been proven that a students' active involvement in the process of learning enhances their learning retention significantly (Smart & Csapo, 2007). This finding has shown why it is important that teachers need to look for different strategies in order to actively involve students while simultaneously learning to gain a positive learning outcome (Smart & Csapo, 2007). Active learning can be defined as variations referred to as interactive instruction, experiential learning, or "learning by doing" (Smart & Csapo, 2007). Most experts agree that students learn better when they are exposed to an active role in the process of education and learning by "discussing what they read, practicing what they learn, and applying concepts and ideas" (Smart & Csapo, 2007, p.

400). Studies have proven that active learners who are exposed to various activities play a decisive role in the education and learning process. Pedagogical exercises that facilitate active learning and define 'active learners' include extracurricular activities, additional in-class activities, and experiments among others (Smart & Csapo, 2007).

Activities that students can engage in are numerous. Shahatah (1992) (as cited in Al-Ali, 2006, p. 1-2) defines these activities as "practice that affects the students' mental, kinetic, psychological, and social performance. This practice satisfies the student' physical, psychological and social needs. It, therefore, helps with the development of the student's personality." These activities, therefore, assist students into enriching their bank of knowledge and experience, and help them in acquiring the necessary skills and attitudes into developing their personalities. This development of personality reflects themselves and their inner confidence, helping them to grow and thus reflect on the country's progress (Al-Ali, 2006).

2.10.1 Computers

Computers have become a vital device in the learning process and concurrently to students' learning, accomplishments, and performance. Lockrad, Abrams, and Many (1997) believed that "the computer is an inescapable component of changes now facing education in the United States, indeed throughout the world." Moreover, Bright (1987) believed that teaching and learning are difficult goals to achieve and that the computer opened new ways for resolving these goals. The computer is a medium that allows the student to learn virtually, but in a real life situation – the educational environment has now become virtual with a reality-based setting (Almahboub, 2000). These claims have proven to be true, even two decades after Bright's assertion as computers have become commonplace in classrooms and online/e-learning is now available worldwide. The

underlying question in this regard would be how can students learn and benefit from using computer technology and learning and how schools can or educational organizations implement them specifically at KU.

KU is making an effort into integrating e-learning to help students and educators themselves. Yet sadly, the e-learning courses offered by the university do not include any in the CSL department. KU defines e-learning as acquiring computer-related skills for success and learning (About E-learning, 2008) rather than educating students into specific learning mediums, CSL in this case. The e-learning courses that KU provides are categorized into four ranges that are listed as follows:

1. Information Technology (IT) provides courses to develop (IT) skills such as programming.
2. Certifications consist of courses that provide skills for particular courses, (but not yet in CSL).
3. Desktop and Office Productivity provides courses on how to apply desktop fundamentals into graphic design.
4. Business and Professional Development provides courses on business related subjects such as management and leadership (About E-learning, 2008).

Goodman (2001) also sheds light on wireless networking, which is currently widely used, especially on university campuses.

2.10.2 The Learning Environment

While there is still some skepticism when it comes to converting a traditional classroom into a technology-based one utilizing Microsoft PowerPoint™ or video conferencing, it has to be remembered that it is impossible to neglect these methodologies in today's technologically advanced climate. Instructors are faced with students who are well-introduced to the diversified technological advanced from computers, cell phones, on-line classes, and text messaging; they download music on

MP3 players, they watch TiVo television shows, burn copies of DVDs all in which have changed and further advanced the manner in which human communications are conducted (McCarthy, 2006).

The generation beginning in 1980-81 is often referred to as Generation Y (Arhin & Johnson-Mallard, 2003), and it is this Generation Y that makes up the majority of undergraduate students in today's colleges and Universities. These Generation Y learners have played video games long before attending school. In the 21st century, college students could not work, play or study without computer and online facilities. Therefore, these learners should expect courses to be delivered online and to find materials there as well. Arhin and Johnson-Mallard (2003) suggest that these students will learn best when professors change from the passive lecture, face-to-face instruction to more innovative instructional methodologies.

The technology of today has greatly influenced the current college student, and often many professors are intimidated as they are not familiar with the fast changing world of electronic communication capabilities that has been the life experience of the current generation of college students but not that of many of the professors teaching Generation Y students.

The characteristics of Generation Y students have been described in the literature. For example, Chester (2002) described Generation Y students as being technologically perceptive, impatient, adaptable, ‘‘street smart,’’ needing regular reinforcement, working well in teams, valuing diversity and questioning everything. To Faust, Ginno, Laherty, Manuel (2001) a Generation Y student is described as being a "holistic learner" who is less examining and linear, yet more logical and efficient while still being engaged and

competitive. Generally, the Generation Y student is a holistic learner, with lucid behavior, active and kinesthetic, graphic and visual, with a variety of learning styles and skill levels that are based in real-world tasks and strategies (Faust et al., 2001)

It has been recommended that these students must be actively involved in the learning experience. Five suggestions are as follows (Caudron, 1997):

1. Role-playing and cooperative experiences.
2. Allow students to have more control in their own learning.
3. Highlight key points to utilize the fact that students prefer to surf and scan over reading.
4. Challenge the students to construct knowledge from their own experiences.
5. Questions to and by the students/instructor can greatly enhance a lecture lesson.

In a passive lecture method delivery system, the professor fashions the course and derives the assigned readings (often in the form of handouts), the textbook(s), assembles the data that is to be presented in the lectures, and assemble materials to support the lecture. The educator then delivers his stockpile of knowledge and research to the learner; this methodology establishes the professor as the discussion moderator who assists with the understanding of the material, and is the proctor for administrating the exams, and finally the decision maker ascertaining the levels (A, B, C, D) to which the student has comprehended the subject (Young, 1997). Quoting John T. Moseley, Provost at the University of Oregon, "there is no evidence that the lecture model of teaching is the most effective model for the most students," and goes on to say in an interview with J.R. Young, "faculty members spend much of their time conveying information. The faculty member's time can be better used," he says, and the technology can be used for basic teaching (Young, 1997, p. 26).

The passive lecture method instructor adopts a teacher-focused strategy with the intention of transmitting information to students or one with the intention that students acquire the concepts of the discipline (Trigwell & Prosser, 1996). One can only conclude that in order to bring about innovation to the way instructors approach their teaching styles, these same instructors must look to alter their concept of learning and teaching. Karagiorgi and Symeou (2005) argued for a change from autocratic and dictatorial classroom instructional methodology, with abstract conceptual approaches to learning, to classroom settings in which learning is achieved through research, practice, and exposure relevant to today's world. In this setting, teachers need to be able to appeal and develop learner's cognitive, analytical, and logical skills. Despite the call for change and the development of instructional delivery systems that require active learning on the part of students, a move from the passive lecture method or teacher-directed instruction methodology has been slow to be accepted by the majority of college level instructors. Often professors are still using old lecture notes, some as much as ten years old, and some of these same instructors hold the position. The question now is: should university teaching change again. Should this change be enacted, just how much change (Young, 1997).

The proper environment for active educational approaches is key. Goodman (2001) stresses, "it [active lecture engagement method] is a concrete thing such as videoconference or Web-based course" (p. 159). The use of technology in aiding in the formation of active learning instruction is a necessity in the CSL program because it will surely aid in the learning process and will help the professors do their jobs better. Another reason why this is important at the CSL program at KU is the fact that this

program has a limited number of faculty staff, only two professors to be exact, and therefore students are in need to find other means of learning and that is through technology (Kuwait University, 2008). One might argue that active learning is only fulfilled when dealing with small classroom sizes, but Yazedjian and Kolkhorst (2007) emphasize "regardless of classroom size, active-learning strategies transform the student from a passive recipient to an active participant in the transmission of information" (p. 165).

In conclusion, e-learning concentrates on making the individual learner the center of attention along with the learning content (Aldhafeeri et al., 2006). Eventually, e - learning is not necessarily about technology, rather about teaching and learning. In a nutshell, as said above, active learning is more than mere activities that students engage in, it is more in regards to focusing on learners' experiences, intervention and qualities.

2.11 Adult Learners

Using learners' experiences, intervention, and qualities is a big part of teaching adult learners. Adult learners differ from children and teens because they have different needs and learn differently (Lieb, 1991). In order to properly conduct an experiment assessing their learning success, these differences should be taken into consideration. Lieb credits Malcolm Knowles as the pioneer of the field of adult learning, or andragogy (a term actually first used in the 19th century). Knowles identified six different characteristics of adult learners. Adult learners:

1. are autonomous and self-directed – adults need to be able to direct themselves. They are not like children in that they need an instructor, but rather a facilitator. Facilitators need to let the adult learners know what areas will be covered and then allow them the freedom to do the work on their own.

2. have accumulated a foundation of life experience and knowledge – their learning has to connect with their knowledge and experience because it allows them to relate to topics and realize the value in learning.

3. are goal-oriented – their goals are usually well known to themselves, if not to others, and they will appreciate classes that would help them achieve those goals.

4. are relevancy-oriented – adults want their education to be relevant to their lives. Whether they are taking courses to obtain a degree, for a job and/or for their own interest, the course material should be relevant to them and help to draw out the relevancy of their experiences and knowledge to the topic.

5. are practical – adults seek to sight the practicality of the material, or its aspect, in regards to the purpose of their goals

6. must be shown respect – of course as with all people, adults want to be shown respect, especially considering they are equal in terms of experience and knowledge, although not in the material at hand, as the facilitator. Adults, unlike children, bring a lot of experience to the classroom that will help a great deal in instruction and learning as well (adapted from Lieb, 1991).

Despite being more than a decade old, Lieb's article on Knowles' characteristics still rings true, and is especially relevant to this study. As mentioned before, the majority of the participants will be adult learners, with the only difference being that they are post-secondary students, as opposed to adults returning to school, and therefore, although they are not exactly adult learners by definition, they retain those six characteristics, which must be taken into account in this study. For the sake of this dissertation, the terms adult learners and young adult learners will be used together to mean the group which will make up the participants of the study, as all the participants are post-secondary students.

It is important while conducting this study that the facilitator keep in mind that the students still have lives outside of the classroom and do bring experiences and knowledge with them, even though it may not be about the subject matter at hand. The students' need for autonomy and self-direction is very important, and must always be

remembered, as they are not children to be ‘bossed’. There is no need to modify the study to reflect the relevancy, practicality and goal orientation of the students, since all students present are there to obtain the same goal, and the material is all relevant to that goal. Studies governing adult learning provide much information but they do not give the whole picture needed for the proper conduction of the study that is relevant to this dissertation. Examining how young adults, in particular, learn and which methods are best to utilize will go far in ensuring that this study is as conclusive as possible. The concern in regards to this dissertation lies in how young adult students learn when taught in both the advanced teaching method, and the old, traditional passive teaching methods. This dissertation has focused a section on the concept of problem-based learning, which falls under the larger topic of active learning. Problem based learning can include many new teaching technique mediums, such as power points presentation, but its primary objective is to lead students to be able to think freely and on their own – this, of course, accommodates one of the Knowles’ six characteristics of adult learning. The characteristic of being able to rely on the self and be self-directed affects very much the success of an adult student’s academic process. As the following will show, another characteristic that Knowles has identified also plays a large part in the adult’s, and consequently young adult’s learning process. Lieb (1991) also discussed the motivations behind adult learning and identified six key factors. All of the six factors listed deal with emotions, either directly or indirectly: social relationships, external expectations, social welfare, personal advancement, escape/stimulation, and cognitive interest (Lieb, 1991). Evoking any sort of emotional response, be it positive or negative, affects the learning of an adult, as it does in children, but in different ways.

Dirkx (2001) contends that “dominant views on the relationship [emotions in relation to learning experiences] suggest that emotions are important in adult education because they can either impede or motivate learning” (Dirkx, 2001, p. 63). He is of the personal belief that any personal learning is grounded in and derived from the “adult’s emotional, imaginative connection with the self and with the broader social world” (Dirkx, 2001, p. 64). Dirkx goes on to explain that emotions and imagination lead to attaching meanings to certain ideas, thinking and people, which colors interpretation and affects learning. An example of this would be if one felt very strongly about dissecting frogs and therefore felt apprehension at the prospect of doing so in biology class. This reaction of apprehension may lead to a sense of disillusionment with biology altogether and affect the student’s ability to gain knowledge in that class. After stressing the importance and role that emotions and the imaginations have in adult learning, a key point of the study highlights the disregard that is shown in adult learning towards emotion and imagination. It is automatically assumed that to “feel” and “imagine” anything in the learning environment is weakness and one must “suck it up and ignore the “baggage” that s/he has brought to the situation (Dirkx, 2001, pp. 66-67). However, the truth is just the opposite: it is the emotions and imaginations of experiences that add value and meaning to adult learning and allow adults to either succeed, or fail, in an academic setting. As mentioned before, respect must be shown to the adult learners for the experiences they do have and bring to the table, and in order to show such respect, emotions must be acknowledged. The enthusiasm and emotional state of the instructor begs mentions, as the instructor too affects the overall success of the learner. Dirkx (2001) concludes that:

> By approaching emotionally charged experiences imaginatively rather than merely conceptually, learners locate and construct, through enduring mythological motifs, themes, and images, deep meaning, value and quality in the relationship between the text and their own life experiences (Dirkx, 2001, p. 70).

Keeping the six characteristics of adult learning in mind, using PBL to teach adult learners seems to be the most ideal approach as studies and research have shown that active instruction, specifically PBL and other self-oriented methods are most successful.

Adult learners and PBL/active instruction teaching. Lozada (2002) states that Adult Workforce Development professionals have discovered that when instructing and teaching adults, thinking outside the box and being prepared to utilize anything is the key to facilitating proper and successful instruction. The article also states that educators need to work together with students to make sure that all the learning goals are being met and that both parties, the educators and students, are on the same page. While the article relates the best ways to teach adults who are working full time jobs, it has relevance to this dissertation's study because the participants of the study may have jobs themselves, and if they don't, their lives, which will undoubtedly be busy, will have to be taken into account as well. Gleaning how to set up a curriculum around an already fixed schedule, such as a job schedule, would greatly help this study to run smoothly. Northwood, Northwood & Northwood (2003) make a point in their article that PBL is the "curricular answer to meet the needs of the changing global workforce" (Northwood et al., 2003, p. 157), and that professors in fields like engineering should recognize that their teaching methods must be analyzed and rectified accordingly to ensure that their students are ready for anything that may arise. This point, of a teaching method that allows the student to be ready for any anything that may come their way, increasingly popular, and for post-secondary instruction of adults, PBL is the

best way to meet the criteria. Northwood et al.'s (2003) conclusion is very concise; they state that

> based on the evidence from over 30 years of experience in engineering programmes in Europe and North America, the answer to this question [how to teach engineers to be problem solvers?] appears to be: using a PBL- approach (p. 162).

This insistence that the best pedagogical approach to teaching adults is through active learning, and most notably PBL, is echoed in literature and studies found throughout the academic world. Boulden (2008) has found that in a two-year study involving students aged 16-24 years old (young adults) who were obtaining their General Education Diploma; there was better success when the program combined different teaching strategies. This shows that even among the lower end of the age scale, adult learners fare better with active instruction, than traditional, lecture-based instruction. The study also makes note of the fact that teachers and facilitators need to make note of students' want of self-directed learning and building students' assets which would provide "opportunities for joint problem solving, discussion, and meaningful interaction with peers and teachers" (Boulden, 2008, p. 10) which would enable the students to make the best of the information and knowledge that they gain.

2.12 Rationale and Purpose

The topic of the dissertation was chosen because of the nature of the courses being taught at KU at the CFW at the Department of CSL. There is a need to have varied teaching approaches. The exploration of the study of the best teaching methodologies that are correlated to the achievement of desired learning outcomes while allowing students choices in determining their course schedules has been prompted by the experiences of the dissertation's author.

The focus of this dissertation was to investigate whether the passive lecture method is as effective as other more interactive instructional models. Through the examination of the theories put forth by Bloom, Gardner, Gregorc, and others, it has been concluded that any instructional delivery model must be sensitive to the needs of the learners based upon their learning styles, learning modalities, and intelligences in order to have the greatest instructional effect possible. Given that Bloom's taxonomy and Gardner's theory of multiple intelligences suggest learning is multifaceted, occurring in multiple domains, a more interactive approach to teaching incorporating discussion and problem-based learning should produce a greater degree of learning than a passive lecture approach. Finally, the Keirsey Four Types Sorter is used to identify personality type and it will be used to reflect learning style.

This study is designed to examine the impact of passive lecture and active engagement teaching methods on student learning and student impressions of the learning experience. Unique features of this study include the examination of effects over a shorter term that has been previously employed and in a content area within communication disorders (stuttering) not previously investigated. In addition, this study was conducted in a unique situation in which there are only female participants studying this module in the English language, which is not their native language, as the course was in the English-medium college, where English is the language of instruction.

2.13 Research Questions

This study attempts to investigate the possible benefits of using interactive instructional methods and technological devices in teaching a college level course and compare the results of student performance with that of the time-tested passive lecture method, or teacher-directed lecture-based instructional methodology, in order to

produce active learners. The study attempts to draw conclusions concerning the correlation of student achievement based upon instructional methodologies. This study will also investigate whether students learn more effectively if they are engaged and are active learners, as well as whether they do, or do not, become active learners if instruction is technologically enhanced. The impact of instructional method on subjective student impressions and the potential relation between personality type and learning outcomes in each of the teaching methods will also be explored.

2.14 Hypotheses

It is expected that the utilization of more interactive instructional methodology with supporting technology will affect the students' grades and turn them into active learners in a more positive manner than the passive lecture methods. Exposing students to technology in the classroom will make them engage better in classroom activities by practical assignments and retention of main theories in the CSL majors. Pre-instruction and post-instruction assessments will include a questionnaire and tests composed of true/false, multiple-choice, and short answers items. The primary hypotheses to be tested in this experiment include:

1. That in both instructional conditions, post-instruction scores will be higher than pre-instruction scores.
2. That the scores on the post-instruction assessment procedures will be higher for the interactive instructional condition than for the passive lecture method.

Table 2-1. Bloom's Six Domains

Domains	Use	Key Words
Knowledge	Demonstrating an understanding of various language components including pronouns, verbs, and nouns, function of objects, part/whole relationships, and categorization. Making inferences about a situation.	defines, describes, identifies, labels, lists, names.
Comprehension	Explaining in one's own words sequence of an everyday event or task. Following single and multiple step verbal directions.	comprehends, converts, defends, distinguishes, estimates.
Application	Apply the rules of conversation, taught during a treatment session, in a real life situation. Completing verbal analogies.	applies, changes, computes, predicts, prepares, solves, uses.
Analysis	Language sampling and phonological analysis, to determine areas to target during treatment. Breaking down a communicative act into individual components or steps.	analyzes, compares, contrasts, diagrams, infers, selects.
Synthesis	Taking the different parts of speech and combining them to form a complete and grammatically correct statement.	categorizes, explains, modifies, relates, summarizes, writes.
Evaluation	Select the most effective solution. Accurately assess and diagnosis a speech and language disorder. Identifying a disease, abnormality, or disorder by analysis of the symptoms presented and the results of various assessments.	appraises, compares, explains, interprets, justifies, relates.

Adapted from Bloom's Taxonomy (1956)

CHAPTER 3
METHODOLOGY

This study investigated the impact of active participation by students- dubbed the active lecture engagement method in comparison to a passive lecture method and then tied it to assessments of their learning and to their impressions of the learning experience. In addition, the study aimed at measuring student's acquisition of factual knowledge and their ability to generate coherent short answers to questions that pertained to stuttering, a type of speech disorders .

3.1 Participants

Fifty students from the College for Women (CFW) at Kuwait University (KU) participated in this study and were randomly divided into one of the two study groups. All participants completed the informed consent form (Appendix A). All the participants were female, and were enrolled at KU. The mean age of the participants ranged from 18 to 22 years old. To control for potential differences in academic abilities, participants were required to hold a GPA of 2.5 and above and were in the Speech Pathology major or were interested in this major. As a point of reference, KU uses a criterion for "good standing" for upper division students of at least a 2.0 GPA. KU probation policy begins in the second semester and students are placed on probationary status with graded criteria: < 45 credits, minimum GPA =1.67; 45 to 60 credits minimum GPA = 1.87; > 60 credits minimum GPA = 2.0. Students on probation have two semesters to raise the GPA above the minimum. Otherwise, the student will be expelled from the Kuwait University. (Dean of Admission and Registration Office. Kuwait University Student Handbook 2008-2009.)

All participants were native speakers of Arabic from Kuwait; therefore, English was their second language. This was a crucial issue since the study material, teaching methods, and all testing within the CSL department CFW is in English. Kuwaiti students study English from grades 1 through 12. Students' proficiency in English was important for the purpose of this dissertation to assure that they were able to understand the lecture and therefore participate in the tests.

A qualified PhD-level female speech-language pathologist who has experience teaching courses related to speech disorders in English to both native speakers of English and speakers of English as a second or foreign language, served as instructor for this experiment. She is experienced in using both teaching techniques that were implemented in this study (passive lecture method and active lecture engagement method). She has repeatedly implementing these teaching methods in college level courses at both the University of Florida, USA, and the University of Jordan, in Jordan.

3.2 Setting

All teaching and assessments took place at the CFW. This college was chosen because it is the only college with a CSL program in Kuwait. The approval from the "Institutional Review Board (IRB)" at the "University of Florida" was obtained for the study to be conducted at KU in the CSL department (UFIRB # 2008-U-1014).

3.3 Teaching methods

A stuttering module (Appendix D) was taught to two groups of students. The instructor delivered the lecture topics to one of the two groups using the passive lecture method and delivered the lecture topics to the other group using the active lecture engagement method. Within both versions of the module, the topics that were covered were:

- Definition and general description
- Facts about stuttering
- Theories about etiology
- Available treatments for stuttering

Teaching of this module took place over a course of two weeks. Fifty students were randomly divided into two groups (25 subjects in each group). The first group (Group A) was taught using the passive lecture method. With this approach, the primary instruction activity was to have students listen to a lecture. The second group (Group B) was taught using the active lecture engagement method, which incorporates teaching activities for which they were required to actively participate.

During the course of the experiment, students assigned to each method (passive versus active) were instructed not to have any contact with each other in order to minimize any peer influence that might confound the results of the study. In addition, to control for experimenter influence, the principle investigator of this study was not to have contact with students at any time during the course of this study. Finally, the first and final session of both methods was videotaped for review by a panel of eight professors and graduate students in the communication disorders discipline who were not affiliated with the study (Appendix G).

Layout of teaching methods. The module on stuttering was taught over six 50-minute sessions over a two week period for each group passive lecture method. Each class consisted of 25 female students who were randomly assigned to one of the two groups. This number of subjects was chosen because previous studies that utilized this sample size have yielded sufficient statistical power (Akinoglu, 2007). As noted above, Group A was taught the passive lecture method teaching approach, and Group B was

taught using the active lecture engagement method (Table 3-1 for more information about the teaching method).

3.4 Variables and Statistical Analysis

The independent variable in this study is the teaching method (passive lecture method versus active lecture engagement method). Additionally sampled independent variables include a personality type (as determined by the Keirsey Four Types Sorter, administrated as a part of the pre-instruction battery [Appendix B]) and the demographic/academic data collected in the first three questions of the Participants Feedback Questionnaire at the end of the study (Appendix F). Attendance was also measured, but served as an inclusion/exclusion variable, not an independent variable.

The dependent variables are the scores on the pre-and post-module tests (Appendix C and E) and the Participants Feedback Questionnaire at the end of the study (Appendix F Questions 4-25). The Participants Feedback Questionnaire was used to gather each participant's impressions of his or her learning experience was also administered to evaluate possible impact of the teaching method.

The Participants Feedback Questionnaire statements items were categorized into the following five subsets:

Uniqueness: The participants' uniqueness of the course instructor was measured by the following statement:

- Item 22: The instructor in this module was very much like the instructors in my other classes

Overall impression: The participants' overall impression of their learning experience was measured by the following four statements:

- Item 4: I feel like I understand stuttering better,

- Item 9: I felt comfortable in classes in this module,
- Item 10: I feel like I understood the lectures in this module, and
- Item 25: I would like to have other classes with this style of teaching.

These statements did not directly elicit opinions of the active or passive nature of the learning environment. They were regarded as reflecting the participants' impressions of their learning experience. Thus, it was hypothesized that there would be no significant difference in item responses between the two groups.

In class preference: Items in the questionnaire categorized as reflecting a preference for in class activities included:

- Item 6: I learned the most from the lectures
- Item 8: I learned the most from my fellow students
- Item 12: I prefer to learn in a group
- Item 16: I think that in class video activities helps me better understand the topic
- Item 21: I feel confident doing a presentation in class
- Item 24: I think in-class discussions helped me better understand the topics

These in class preference statements did not necessarily elicit opinions of the active or passive nature of the learning environment. They were regarded as reflecting the participants' preference for learning through in class activities.

Outside class preference: Items thought to reflect a preference for learning experiences outside the classroom included:

- Item 5: I learned more from the textbook than from the lectures
- Item 11: I prefer to learn independently
- Item 15: I think reading the assigned chapter prior to the lecture helps me better understand the discussed topic
- Item 19: Doing activities outside class helps me better understand the topic
- Item 20: Extra reading assignments help me better understand the topics
- Item 23: The homework assignments helped me better prepare for the class

These outsides class preference statements did not necessarily elicit opinions of the active or passive nature of the learning environment. They are regarded as reflecting the participants' preference for learning activities outside of the classroom.

Technology: Questionnaire items related to the use of technology in the learning environment included:

- Item 7: I learn better when the lecture topic is presented through power point data show than when it is presented only through handouts
- Item 13: I am comfortable using a computer
- Item 14: I think that the internet could be a good source for finding information about topics discussed in my classes
- Item 17: I feel confident using PowerPoint
- Item 18: I feel confident submitting my assignments electronically

These technology statements did not necessarily elicit opinions of the active or passive nature of the learning environment. They were regarded as reflecting the participants' comfort with the use of technology in their learning experience.

Statistical analyses were undertaken starting with tests of normality and equal variance to insure that assumptions of the inferential statistical tests were not violated. Independent two Sample t-Test, Wilcoxon rank sum test, One-Sided Paired t-Test, and Linear Regression were used in subsequent analyses in this dissertation. Comparisons of the two groups were undertaken in order to find out if either method yields greater understanding of key concepts from the course. The α-level chosen for all statistical tests in this experiment was 0.05. All statistical testing was conducted in a one-tailed format. The null hypothesis was that there is no difference between the two methods. It was expected that students in the active group would perform better on the post-tests, particularly on the post-test questions requiring greater integration and reflection.

Further, it is expected that students in the active group will view it as a more creative approach, and demonstrate their positive impressions on the questionnaire items.

The lessons for the active lecture engagement method included activities that were related to the theories of learning presented in the review of the literature. Incorporating Bloom's taxonomy (1956) in the lesson plans required student participation in order to modify cognitive, affective, and psychomotor learning domains to fit the individual student. For example, in the cognitive domain, students were asked to define, describe, list, name, analyze, synthesize, evaluate, or explain facts and concepts in order to develop their intellectual skills and abilities (Bloom, 1956). Before presenting the topics, students were asked the following two questions: What is stuttering? And what do you think might cause stuttering? At the end of the fourth lecture, and as a homework assignment, students were asked to read a story from "Living with Stuttering" and answer questions at home about the material they read pertaining to:

- The effect of stuttering on the person's life choices, and
- The strategies used to deal with stuttering.

Students were asked to discuss their answers in class. As for students' affective domain, they were asked to work in pairs or groups and learn to listen to others and understand and respect their opinions. The teacher also presented a number of videos of speakers who stutter (both native and non-native speakers of Arabic), and asked the students to work in pairs to discuss what they just saw in the videos and then answer the following question: What speech disfluencies did the speakers produce? What secondary behaviors did the speakers exhibit? What advice did the children in the videos give other children about the management of stuttering? Students in the active

lecture engagement method class also needed to actively participate during class discussion. The purpose here would be to teach students to respect others' feelings and to show appreciation and gratitude in order to motivate their peers.

Using Blooms' taxonomy when teaching classes to students at the CSL department at KU helped develop their knowledge, attitude, and skills positively. It was thought that this would assist them in dealing with situations related to their field. They need to possess these qualities in order to react positively in situations in the CSL field and not freeze under pressure.

Finally, Gardner's (1983) seven types of multiple intelligences were also incorporated to suit students' needs in the classroom. However, the aspect of culture needs to be taken into consideration with the seven intelligences for it will influence the teaching methods and philosophy. Although there many educational principles and designs that the principle investigator in the present study has been exposed to in the US, not all theories and educational strategies can be used due to cultural issues. Reading about Gardner's seven types of Multiple Intelligences, the principle investigator wanted to try to incorporate them and introduce them to students in Kuwait. Yet sadly, the principle investigator has to leave out two of the seven, which are body/ kinesthetic and musical/rhythmic. The author might find problems asking students to sing or play music in class because of the Kuwaiti conservative society.

Activities given to students based on Gardner's five intelligences were presentations to see the student's spoken language, logical thinking, interpersonal and intrapersonal skills. Students were asked to speak more, analyze given problems by applying logical answers, and work with each other to help motivate peers within the

same team. Students in this group were also asked to apply the information they learned during class to real life situations (i.e. stuttering for a whole day to gauge people's reaction) and then to share their experiences with the other students in class through a short presentation.

In contrast, in the passive lecture method, the same topics were presented by the same teacher, and lessons and exercises that the teacher provides were ones that required little or no feedback. The teacher was the one in control of the class and the students' voices were not deliberately elicited. Therefore, the teacher gave reading assignments and homework.

3.5 Assessment

To assess the student's extent of learning of the two-week course, students in both groups, passive and active, were given twenty five-item pre- and post-tests, consisting of multiple choice, True/False, and short answer questions. These tests examined the acquisition and integration of major concepts of the course by the students. The tests were also designed to support the assessment of the relationship between individual student learning styles, and the accuracy of their answers to the questions on the post-test. Questions in the pre and post-tests targeted student's preferable learning style. The pre and post- test scores consisted of 10 T/F questions, 10 MC questions, and 5 short answer questions. Each T/F question was worth one point, and each MC question was worth 1.5 points. The short answer questions were variably weighted to correspond with the level of content/degree of mastery required, with one question worth 40 points, one worth 20 points and three questions worth 5 points. Thus, the highest score one could obtain is 100.

Scoring of the test was carried out by a qualified content area expert who was given the correct answers to all questions. This approach was used to minimize the potential for experimenter bias in this experiment.

To summarize, participants were randomly assigned to one of two groups undergoing a two-week educational module on a topic in communication disorders, stuttering. One group received a set of lectures (the passive lecture group), while the other group was taught using an active engagement approach (the active lecture group). Pre- and post-tests assessed the acquisition of specific knowledge relating to the topic as well as student attitudes and feelings about the topic and opinions on the teaching method.

Table 3-1 Layout of experimental design

	Pre-test	Stuttering Lectures	Post-test
Group A	Keirsey Four Types Sorter True/False Multiple Choice Short Answers	Active Module	Participant Questionnaires True/False Multiple Choice Short answers
Group B	Keirsey Four Types Sorter True/False Multiple Choice Short Answers	Passive Module	Participant Questionnaires True/False Multiple Choice Short answers

CHAPTER 4
RESULTS

In this study, 50 participants drawn from the undergraduate population at Kuwait University College for Women were distributed randomly into two categories. The first group of 25 students was taught using a passive lecture method and the second group of students was taught using an Interactive engagement method. Both groups underwent six sessions over a period of 14 days. Differences between their pre-test and post-test performance were calculated. The aim of the study was to investigate whether there is a difference in learning within the two teaching methods as measured by participants' performance in their post-test scores vs. pre-test scores. The Keirsey Four Types Personality test was used to evaluate whether the participant's personality influenced the learning experience, i.e., the personality categories were included in the present analysis as a covariate. A questionnaire to gather each participant's impressions of his or her learning experience was also administered to evaluate possible impact of the teaching method.

A few participants provided incomplete information, and their data have been excluded from analysis as described here. One participant in the active engagement group did not complete (did not mark) the year of school (grade level) answer in the questionnaire; therefore we will exclude this information from our analysis. Two participants in the passive group did not mark any answers in the questionnaire for age, year of study and GPA. Therefore, we will exclude this information from our analysis. The following results are derived from the various questionnaires and tests used in this study.

4.1 Description of Participant Data In Each Of The Two Groups:

4.1.1 Age

The mean age reported by the 50 participants recruited for this study, as reported using the questionnaire (Appendix F) was 19.1875 (SD = .79) (range = 18 to 21 years). The distribution of ages across the sample of 50 participants is displayed in Table 4-1. The mean age for the active group is 19.24 (SD = 0.723). The mean age for the passive group is 19.13 (SD = 0.87). Because the distribution of age for the active group was not normal, a non-parametric test was used to test for equivalence between groups. Results of the Wilcoxon rank sum test indicate the two groups do not differ significantly in age (p = 0.63).

4.1.2 Year of Study

All of the participants were college students somewhere between their freshman and senior years. The distribution of reported year of study was as follows: 0 (0%) participants were freshmen, 32 (64%) participants were sophomores, 11 (22%) participants were juniors, and 4 (8%) participants were seniors. Converting freshman as 1, sophomore as 2, etc., the active group mean year of study is 2.375 (SD = 0.647) and the passive group mean year of study is 2.435 (SD = 0. 662). Results of the non-parametric Wilcoxon Rank Sum Test indicate the year of study for both active and passive group are homogenous (p = 0.716).

4.1.3 GPA

Current grade point averages (GPA) reported by the participants ranged from .2.5 to 4.0. It is worth noting that 72% (36) of the participants had GPAs below 3.00. For the active group the mean of the GPA is 2.9284 and variance of the GPA is .106 with standard deviation .326. For the passive group the mean of the GPA is 2.9 and

variance of GPA is .065 with standard deviation .255. Results of the Wilcoxon Rank Sum Test indicate both active and passive groups are homogenous (p = 0.9897) for GPA.

4.1.4 Participants As Per Keirsey Four Types Sorter

The personalities of all the 50 participants are classified in the following four categories as per the Keirsey Four Types Sorter Pre-test Questionnaire (Appendix B). The distribution of the Keirsey Four Type Sorter questionnaire results for all fifty participants (Appendix B) is as follows: the most common types were the Idealist (n = 21, or 42% of the sample) and the Guardian (n = 13, or 26% of the sample). Ten of the participants scored as Rational (20% of the sample), and 6 scored as Artisan (12% of the sample).

4.1.5 Keirsey Personality Type Sorter Yields Categorical Data

This tool yields four different types of personalities: Artisan, Idealist, Guardian, and Rational. From the frequency distribution shown in Table 4-2, we can observe that the active group and passive group have similar distributions of Keirsey types. The most common types among the active and passive groups were the Idealist (44 and 40%, respectively), Guardian (20% and 32%, respectively), and Rational (24% and 16%, respectively). The least frequent type was the artisan, which occurred in 3 participants in each group (12% of the active group, and 12% of the passive group).

4.2 The Teaching Sessions

4.2.1 Sessions

For sessions we gave exactly 6 sessions to both active and passive groups. Therefore, we can consider both group are homogenous in term of sessions being taught.

4.2.2 Attendance

Average attendance per session for the active group is 21.3 participants (variance = 10.267; SD = 3.2). For the passive group the average attendance per session is 21.17 participants (variance = 1.77; SD = 1.33). No participant missed more than 3 sessions. The Wilcoxon Rank Sum Test indicates the attendance for both active and passive group is homogenous ($p = 0.402$) (Figure 4-1).

Based on the preceding results, it can be concluded that the sampling and test conditions for both active and passive groups are homogenous. Thus, we can proceed to perform the analysis on test scores.

4.2.3 Videotaped Sessions

Several educational sessions were videotaped to evaluate the teacher's style in the classroom. Eight judges viewed the videoed sessions and provided their feedback in terms of 10 statements assessed on a 5-point Likert scale (Appendix Questionnaire F). For example, statement number 9 stated the following: "The instructor used technology to supplement the lecture presentation." Responses were all scaled from a rating of 5, strongly agree to 1, strongly disagree. Results delineated a clear distinction between the two teaching styles. The judges rated the active sessions as consisting of less lecture time, encouraging discussion, less tense, more enjoyable, and using technology to a greater extent than the passive sessions. In addition, the active sessions were rated as entailing greater give and take, including more student presentations, and encouraging critical thinking. Finally, judges evaluated the active sessions as less passive and involving greater interaction.

We can observe that in the distribution of the judges' rating of the videotaped sessions, the judges tended to agree that the passive sessions consisted of mostly

lecture, and disagree with this statement for the active sessions. The results also show that the judges strongly agreed that the passive sessions encourage less discussion in most sessions than active sessions. The judges agreed that the passive sessions appeared to produce less student enjoyment than active sessions (Figure 4-2). Technology usage was apparent in the active sessions and not as much in the passive sessions. The passive sessions had greater tension than the active sessions (Figure 4-3). The judges agreed more often that the participants were passive in the passive sessions and had less interaction than the active sessions (Figure 4-4). Judges agreed that the passive sessions consist of less student presentations than active sessions and they strongly agreed that the passive sessions use less extensive giving in most sessions than active sessions. We can observe that the judges strongly agreed that the passive sessions encourage less critical thinking in most sessions than active sessions (Figure 4-5).

4.3 Participant Feedback Impression Questionnaire/Comparing Teaching Methods

4.3.1 Participant's Questionnaire

The questionnaire was administrated in order to evaluate the participants' subjective impressions of the learning experience. Participants provided their feedback on a 5-point Likert scale to 22 statements. Responses were all scaled from a rating of 5, strongly agree to 1, strongly disagree. For example, statement number 9 stated the following: "I felt comfortable in classes in this module." The student responses to this item are displayed in Figure 4-8. Item 22 was excluded from the analysis because the statement "The instructor in this module was very much like the instructors in my other classes," was not pertinent to the study.

Items on the questionnaire included some that might be hypothesized to correlate more strongly with teaching method and others that can be expected to be less affected by teaching method. Comparisons were undertaken for specific subsets of questionnaire items. We labeled these subsets as: 1) overall impression, 2) in-class preference, 3) outside class preference, and 4) technology.

4.3.1.1 Overall impression

The participants' overall impression of their learning experience is measured by the four statements:

- Item 4: I feel like I understand stuttering better,
- Item 9: I felt comfortable in classes in this module,
- Item 10: I feel like I understood the lectures in this module, and
- Item 25: I would like to have other classes with this style of teaching.

These overall impression statements did not necessarily elicit opinions of the active or passive nature of the learning environment. They are regarded as reflecting the participants' impressions of their learning experience. Thus, it is hypothesized that there would be no significant difference in item responses between the two groups.

Since the maximum score for each statement is 5, the total score the maximum is 20. For the active group, the mean of the summed scores from the overall impression items is 16.7 (SD = 2.42). For the passive group, the mean of the questionnaire is 15.826 (SD = 2.1246). Both groups' data follows normal distribution therefore, we will use parametric analysis only since nonparametric analysis will normally have less power than parametric analysis. Both groups also have equal variance ($F(23, 22) = 1.2999$, $p = 0.5415$).

Two sample t test shows the two groups are not different. The active group had a slightly higher (but non-significant t (45) =1.3252, p = 0.096) sense of satisfaction and understanding, as measured by these four items from the questionnaire.

4.3.1.2 In-class preference

Items in the questionnaire categorized as reflecting a preference for in class activities included:

- Item 6: I learned the most from the lectures
- Item 8: I learned the most from my fellow students
- Item 12: I prefer to learn in a group
- Item 16: I think that in class video activities helps me better understand the topic
- Item 21: I feel confident doing a presentation in class
- Item 24: I think in-class discussions helped me better understand the topics

These in-class preference statements did not necessarily elicit opinions of the active or passive nature of the learning environment. They are regarded as reflecting the participants' preference for learning through in class activities.

For in-class preference items, the mean values of the participants who were taught using the interactive engagement method is 21.76 (SD = 4.41) and mean value for the passive lecture method is 21.783 (SD = 2.354). Both active and passive data do not follow normal distribution therefore, we decided to use nonparametric test for the hypothesis testing for equality. The scores from the in class preference items for active and passive groups were not significantly different (Wilcoxon rank sum test; P = 0.8353). This shows that the participants in the active and passive groups had similar preferences with regard to learning through in-class activities.

4.3.1.3 Outside class preference

Items thought to reflect a preference for learning experiences outside the classroom included:

- Item 5: I learned more from the textbook than from the lectures
- Item 11: I prefer to learn independently
- Item 15: I think reading the assigned chapter prior to the lecture helps me better understand the discussed topic
- Item 19: Doing activities outside class helps me better understand the topic
- Item 20: Extra reading assignments help me better understand the topics
- Item 23: The homework assignments helped me better prepare for the class

These outside class preference statements did not necessarily elicit opinions of the active or passive nature of the learning environment. They are regarded as reflecting the participants' preference for learning activities outside of the classroom.

For outside class preference items, the mean values of the participants who were taught using the interactive engagement method is 21.36 (SD = 5.21) and mean value for the passive lecture method is 20.609. (SD = 2.726)). Both active and passive data do not follow normal distribution therefore, we decided to use nonparametric test for the hypothesis testing for equality. There is no significant difference between the active and passive groups for the outside class preference ($p = 0.201$). This shows that participants in each group have similar preferences for learning activities outside the classroom.

4.3.1.4 Technology

Questionnaire items related to the use of technology in the learning environment included:

- Item 7: I learn better when the lecture topic is presented through power point data show than when it is presented only through handouts
- Item 13: I am comfortable using a computer

- Item 14 :I think that the internet could be a good source for finding information about topics discussed in my classes
- Item 17: I feel confident using PowerPoint
- Item 18: I feel confident submitting my assignments electronically

These technology statements did not necessarily elicit opinions of the active or passive nature of the learning environment. They are regarded as reflecting the participants' comfort with the use of technology in their learning experience.

For technology items, the mean values of the participants who were taught using the interactive engagement method is 19.96 (SD = 4.53) and mean value for the passive lecture method is 19.174 (SD = 1.723). Both active and passive data do not follow normal distribution therefore, we decided to use nonparametric test for the hypothesis testing for equality. The Wilcoxon rank sum test indicated that the active group displayed a significantly higher ($p = 0.0485$) degree of comfort with technology usage than the passive group.

For the distribution on all four subsets, greater agreement reflects the subjective judgment of the participants regarding the impact of the educational sessions on their overall impression, preference for outside or in class activities and usage of educational technology. Both groups tend to agree more often than they disagree on those four categories. However, more participants show that they strongly agree in the active group than in the passive group in all four item subsets (Figure 4-6).

The following describes the distribution of responses on overall impression statements. Greater agreement on Item 4 reflects the subjective judgment of the participant regarding the impact of the educational sessions on her understanding of the content area. Both groups tended to agree that they understood the content area better

following the educational sessions (Figure 4-7). Greater agreement on Item 9 reflects the subjective judgment of the participants regarding their comfort in the educational sessions. Both groups tended to agree that they feel comfortable in the educational sessions (Figure 4-8). Greater agreement on Item 10 reflects the subjective judgment of the participants regarding the impact of the educational sessions on their understanding of the content area. Both groups tended to agree that they understood the content area better following the educational sessions (Figure 4-9). Greater agreement on Item 25 reflects the subjective judgment of the participants regarding the impact of the educational sessions on their preference of the teaching style. Both groups tended to agree that they would like to learn in a similar educational style in the future (Figure 4-10).

4.3.2 Comparing Teaching Methods

The Pre-test Scores for all the 25 questions (Appendix C) and post-test scores for all the 25 questions (Appendix E) of all the fifty participants have been evaluated according to their total score. From part one (Description of participant data) and from part two (the teaching methods), we have concluded that for age, year of study, GPA and personality type are similar in both groups and we can believe if the test results are different between groups it should come from the teaching method not from the influence of these factors. We need to answer these following questions:

1. For both groups, is the post-test higher than pre-test? In other words, do students improve with either teaching method?
2. Is there a difference between each group's post-test results? In other words, at the end of the sessions, after having been taught by two different teaching methods, does one group obtain a better result?

The active group pre-test mean score is 35.44 (SD = 13.07226). The active group post-test mean score is 39.1365 (SD = 14.9364). The observed mean of the post-test is about 10.4% higher than the pre-test mean. The pre- and post-test scores were compared using one-sided paired t-test which shows that there is no significant difference (t (24) =-.9455, p=.8231). The active group participants' knowledge about the fluency disorder (as measured by the pre- and post-tests) was not significantly impacted by the instructional sessions.

For the passive group pre-test, the mean score is 28.02 (SD = 12.58683) and the post-test the mean score is 35.57 (SD = 16.43760). Results of one-sided paired t test shows that the passive group scored significantly higher (p = 0.0336) on the post-test than the pre-test. This shows that on average the participants' knowledge about fluency disorders increased from before the short-term course to after it. Thus, the students' knowledge about fluency disorders was increased after taking the course.

Comparing the post-test scores across groups, the active group averaged 39.1365 (SD = 14.9364), while the passive group averaged 35.57 (SD = 16.43760). The post-test scores for the active group were not different significantly different (t (24) =-1.04, p=.3087) from the scores of the passive group despite findings that active group's post-test score is about 10% higher than passive group's post-test score.

The test score is formed by two parts, objective questions and subjective. Objective questions consist of True/False questions and multiple choices. Subjective questions consist of short answers. We will evaluate each part separately.

4.3.2.1 Objective questions

For objective questions, we need to evaluate the active group to see if post-test scores are higher than the pre-test scores. For active group pre-test, the mean score is

10.54 (SD= 2.4534). For active group post-test, the mean score is 12.52 (SD = 4.4). The observed mean of the post-test is about 18.6% higher than the pre-test mean. Results of one-sided paired t test shows that for the active group data is significantly different (t (24) =-2.305, p =0.0151).

For the passive group pre-test, the mean score is 9.82 (SD = 2.85). For the passive group post-test the mean score is 14.72 (SD = 3.778). Results of one-sided paired t test shows that for the passive group data is significantly different (t (24) =-5.2259, p = < 0.0001). For the passive group, the students do perform better than before the teaching modules on the objective portion of the test. The post-test scores for the active group (12.52 {SD = 4.4}) were not different significantly different (t (48) =-1.8966, p= 0.0639) from the scores of the passive group (14.72 {SD = 3.778}).

4.3.2.2 Short answers

For short answers, the active group pre-test the mean score is 24.9 (SD = 12.72). For active group post-test the mean score is 26.6 (SD = 13.39). Results of one sided paired t test shows that for the active group, post-test performance on the subjective questions is not significantly different than the pre-test performance (t(24)=-.4908, p = 0.3140). For the passive group subjective pre-test, the mean score is 18.2 (SD = 12.86). For the passive group post-test the mean score is 20.85 (SD = 14.41). Results of one sided paired t test shows that for the passive group data is not significantly different (t (24) =-.6792, p = 0.2518).

The post-test scores for the active group were not different significantly different (t (48) =1.4658, p= 0.1492) from the scores of the passive group despite findings that active group's post-test score is about 27.6% more than passive group's post-test score.

4.3.2.3 Interaction effect between personality on the change between the pre- and post- test scores

We also tested for the interaction effect between personality and group (active vs. passive) on the change between the pre- and post- test scores. The test was conducted using linear regression models in which we created three indictor variables to represent the four personality types, treating the type “Rational” as the reference category. Three product terms between the indicator variables and the group covariate were included in the model to test for possible interactions between group and personality types. We were not able to find significant interaction effects ($p = 0.8981$, 0.2621, and 0.9648 for overall scores, objective questions, and subjective questions, respectively).

4.3.2.4 Keirsey personality types and scores

Keirsey was used to identify personality type that was then utilized to reflect learning style. The results have shown that the total post-test scores and sub-groups questionnaire varied across the four Keirsey personality types in the active and passive groups. There are eight different categories of participant (each of the artisan, idealist, guardian and rational personality types in the active and passive groups, respectively). On average, the active groups show a more positive experience in the lectures. They also showed a stronger preference for learning through in-class activities, outside class activities, and usage of technology than the passive groups across all four personality types. There are no real significant interactions between personality type and overall score.

In examining the overall impression sub-group data, we can clearly see that passive artisan has the lowest mean values among all of the eight groups and, on

average, the active groups have greater self-perceived understanding and comfort than the passive groups, which is consistent with our study hypothesis. The active idealist had the highest mean value for overall impression preference (Figure 4-11).

The in-class learning preference sub-group shows greater homogeneity across personality types. On average, the active groups show a slightly stronger mean preference for learning through in-class activities than the passive groups across all four personality types, which is consistent with our experiment's hypotheses articulated with the experiment. The active idealist had the highest mean value for in class preference. The active rational had the lowest mean value for in class preference (Figure 4-12).

On average, the active groups have greater preferences with regard to learning through outside-class activities than the passive groups among all of the eight groups. The active idealist had the highest value for outside class preference. It is interesting to note that the passive group's artisan personality types showed a stronger mean preferences for learning experiences outside the classroom (Figure 4-13).

On the use of technology sub-group, the active groups show stronger mean preferences than the passive groups. The active idealist had the highest value for use and comfort of technology. It is interesting to note that this was reversed among the guardian personality types, among whom the passive group showed a slightly stronger preference for or degree of comfort with the use of technology. The guardians in the active group showed the lowest value for use of technology items (Figure 4-14).

There is a tendency for the active group to score higher than the passive groups within each personality type. The active guardian had the highest mean value for post-

test scores. We can clearly see that active artisan has the lowest mean post-test score values compared to the passive artisan (Figure 4-15).

Table 4-1 The distribution for age

Age (Years)	Number from Passive Group	Number from Active Group	Total Number
18	6	3	9
19	9	14	23
20	7	7	14
21	1	1	2

Table 4-2 Frequency of Keirsey Personality

	Active	Passive
Artisan	3	3
Idealist	11	10
Guardian	5	8
Rational	6	4

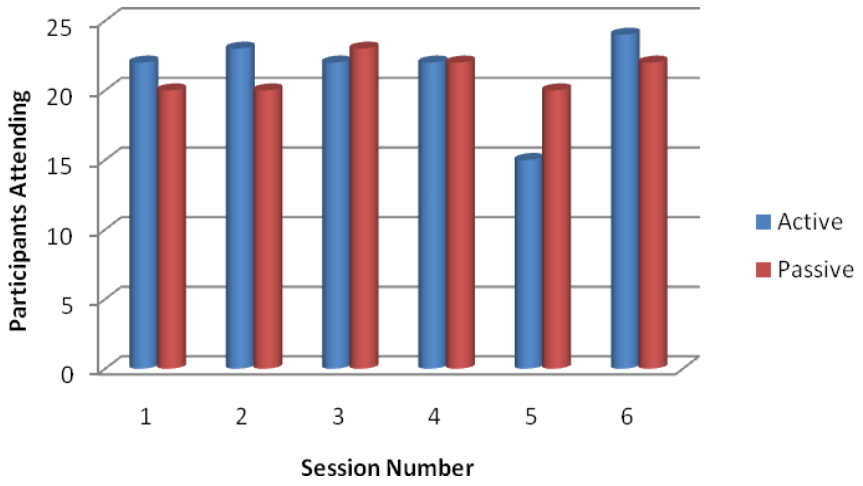

Figure 4-1 Attendance Plot

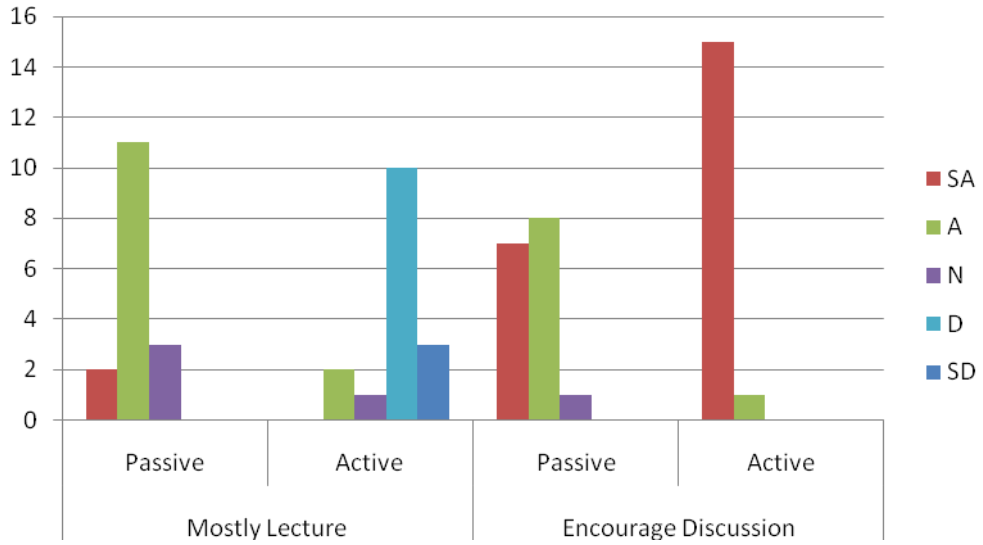

Figure 4-2 Lecture Content and Discussion Encouragement

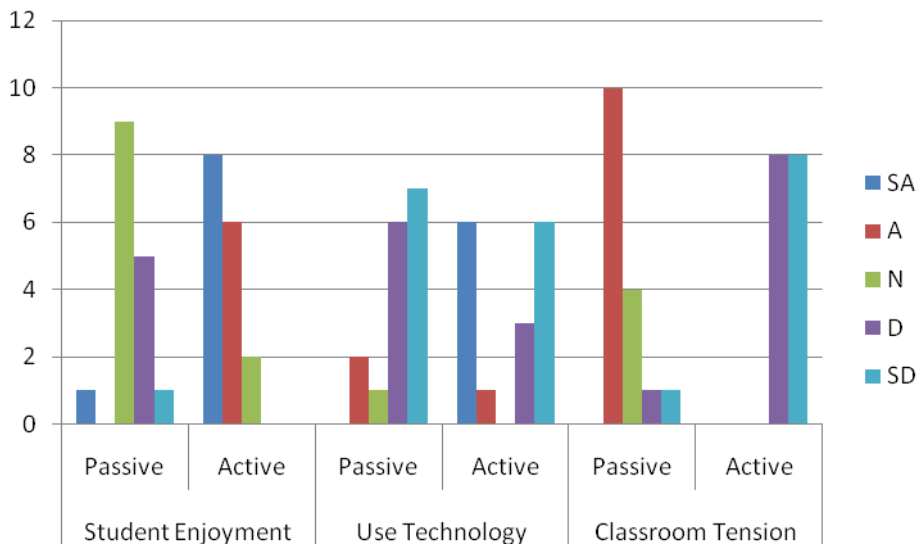

Figure 4-3 Student Enjoyment, Technology, and Classroom Tension

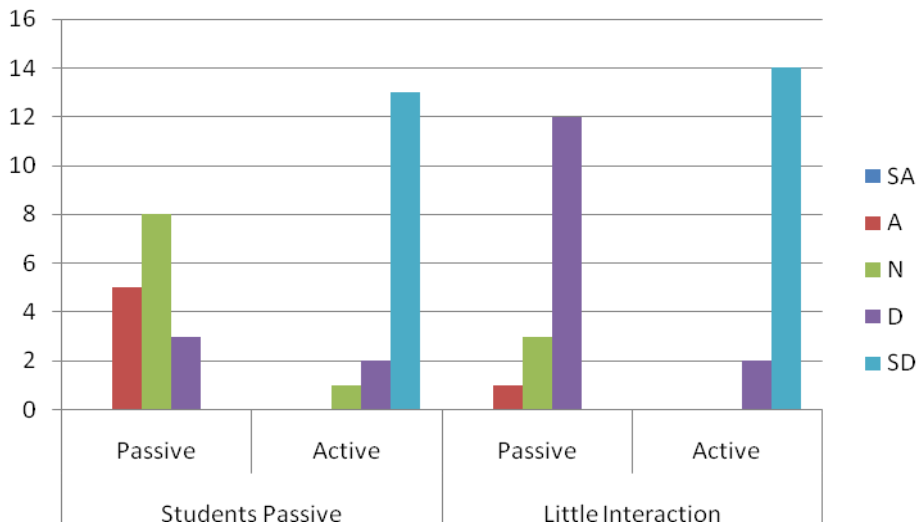

Figure 4-4 Passivity and Interaction

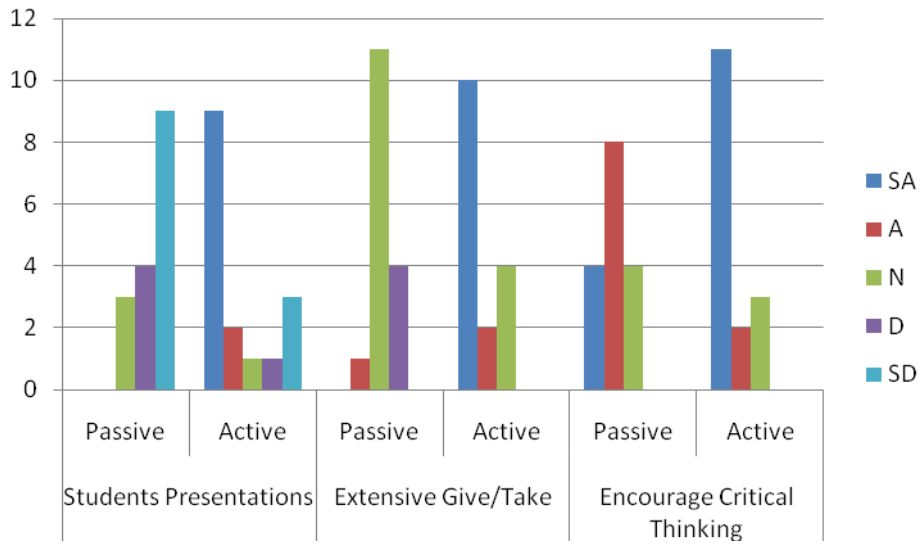

Figure 4-5 Student Presentations, Extensive Give/Take and Critical Thinking

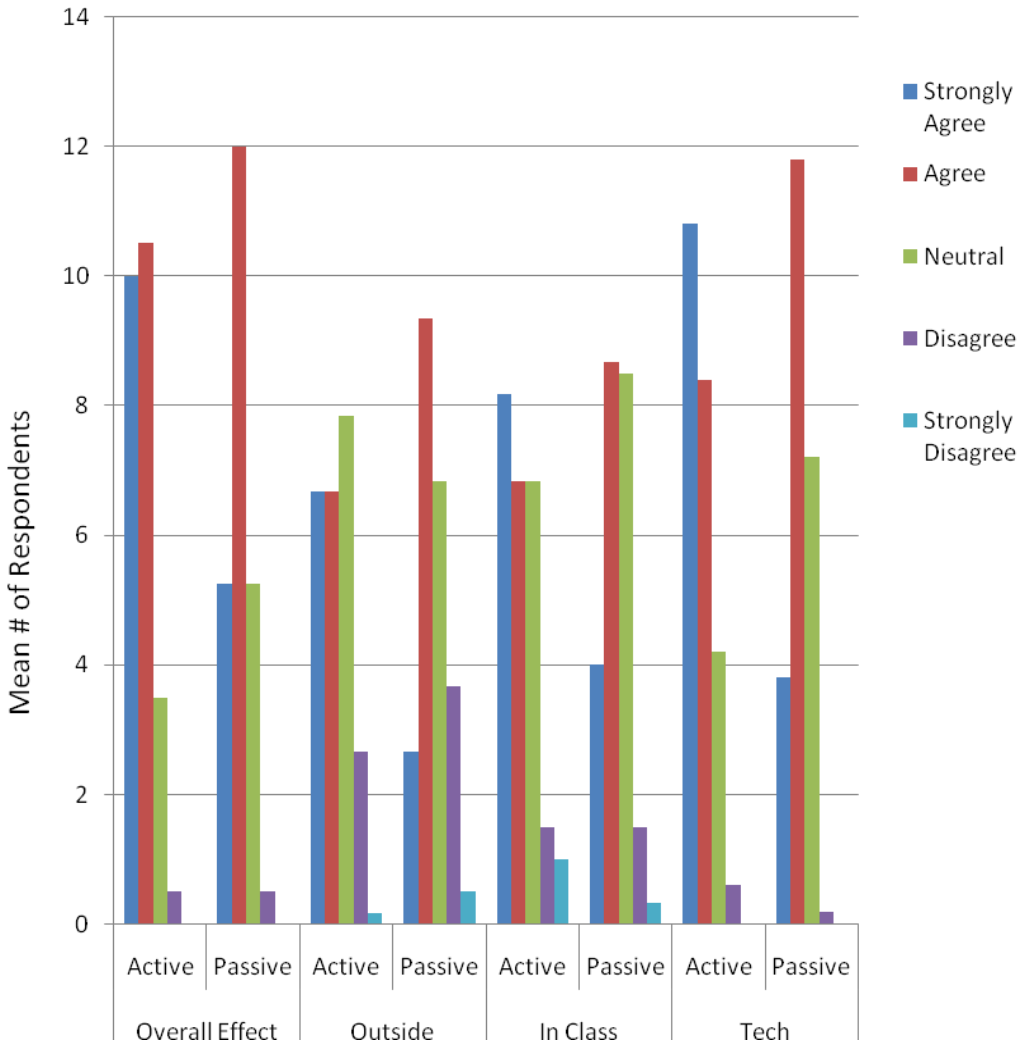

Figure 4-6 Distribution of Responses on All Four Subsets

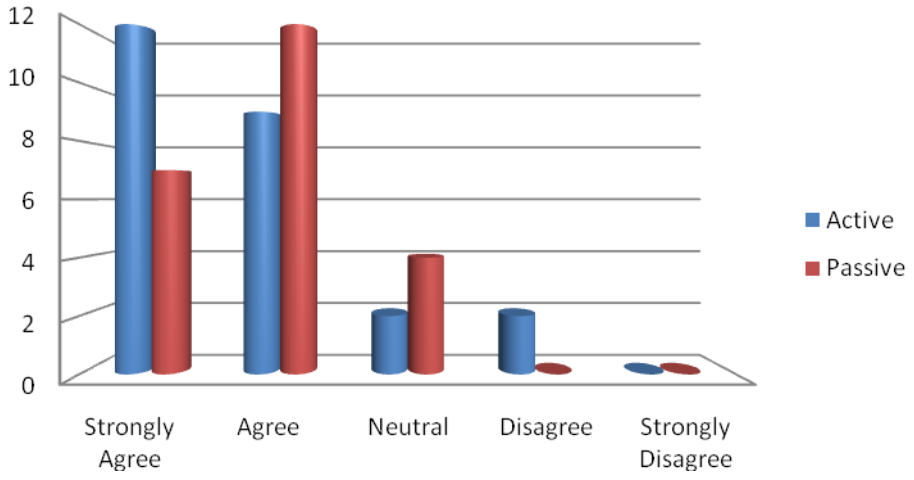

Figure 4-7 Response to item: "I feel like I understand stuttering better”

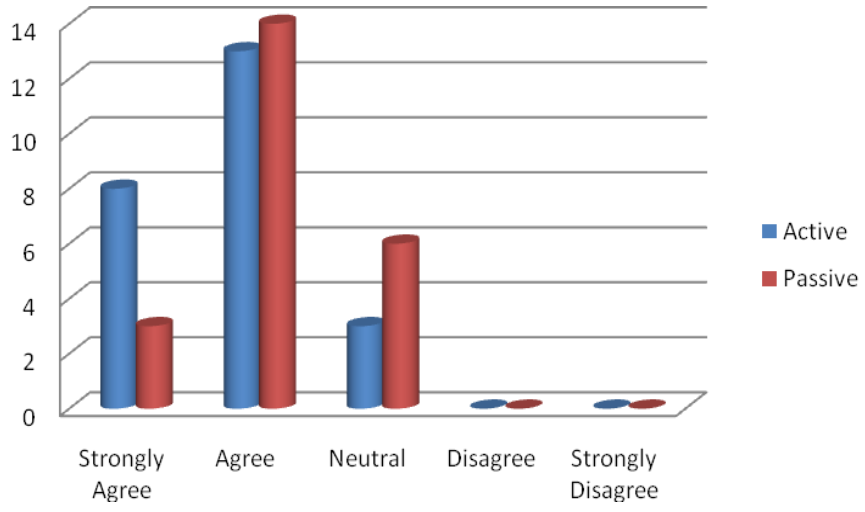

Figure 4-8 Response to item: "I felt comfortable in classes in this module**"**

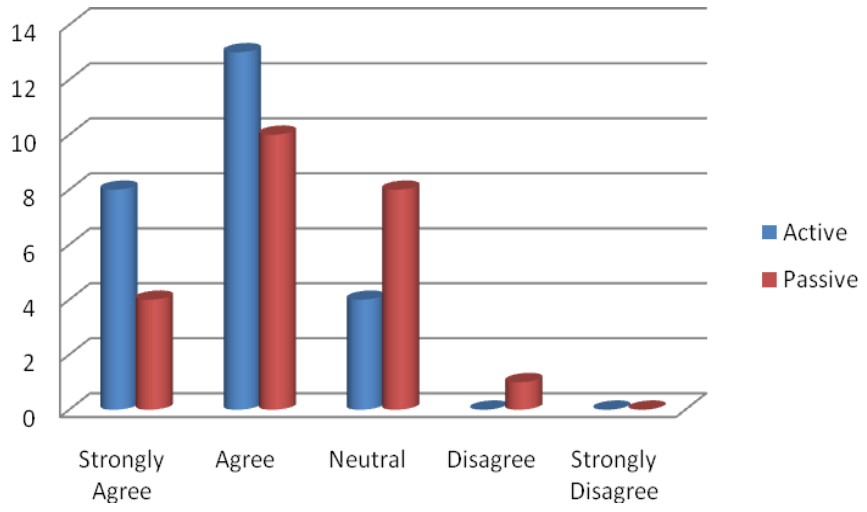

Figure 4-9 Response to item: "I feel like I understood the lectures in this module"

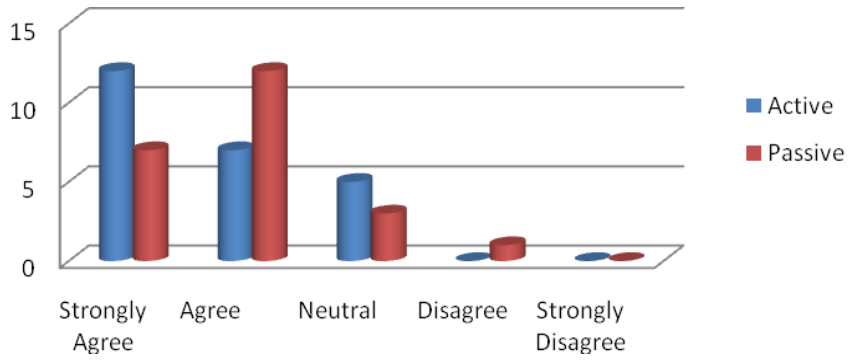

Figure 4-10 Response to item: "I would like to have other classes with this style of teaching"

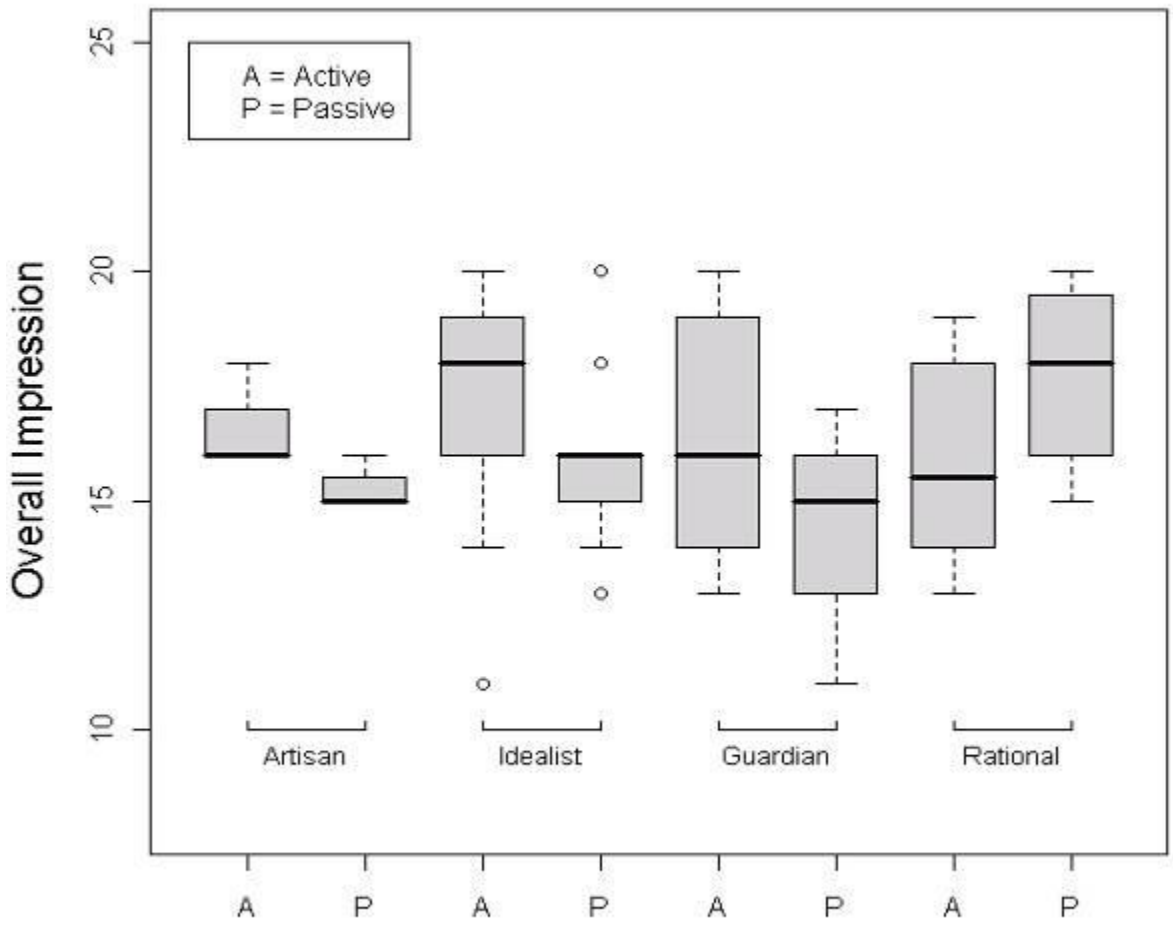

Figure 4-11 Keirsey personality type and overall impression sub-items

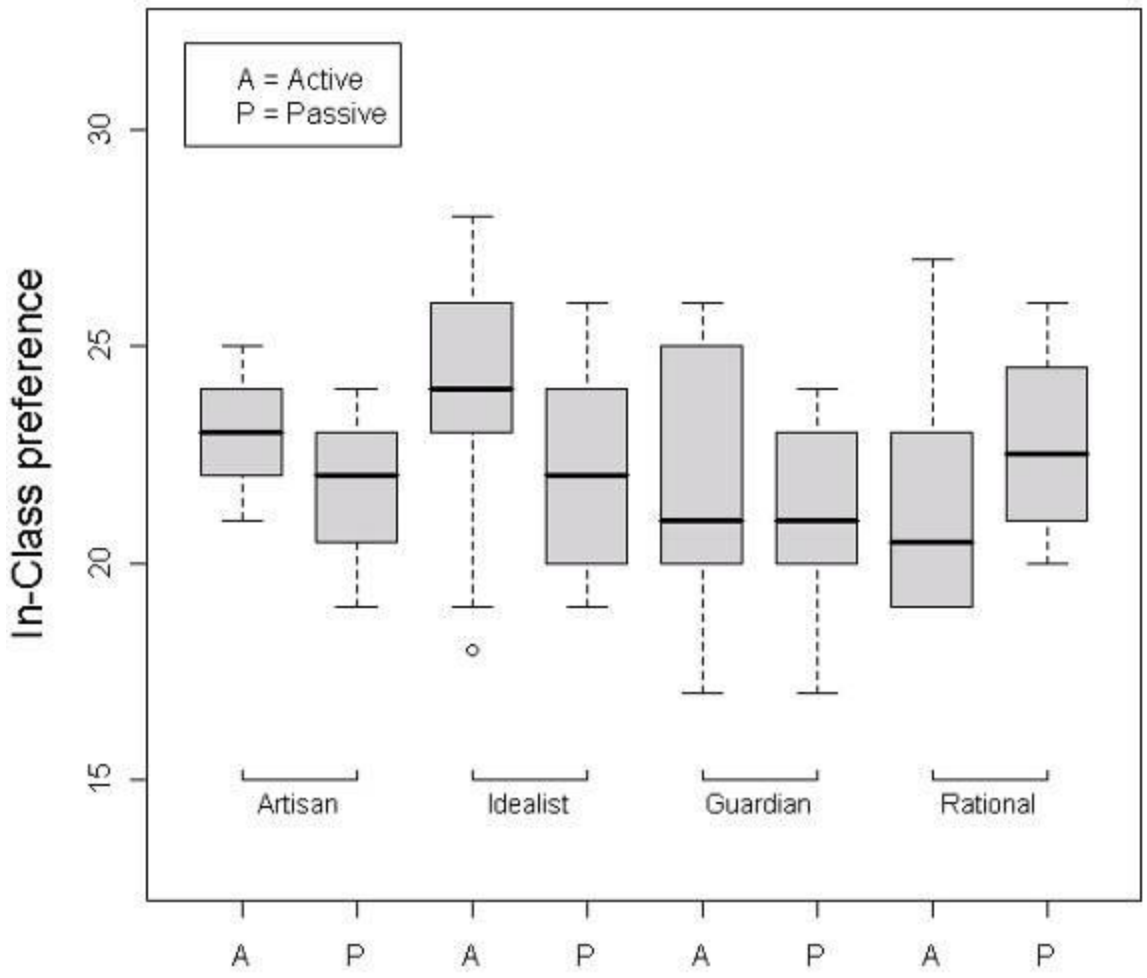

Figure 4-12 Keirsey personality type and in-class preference sub-items

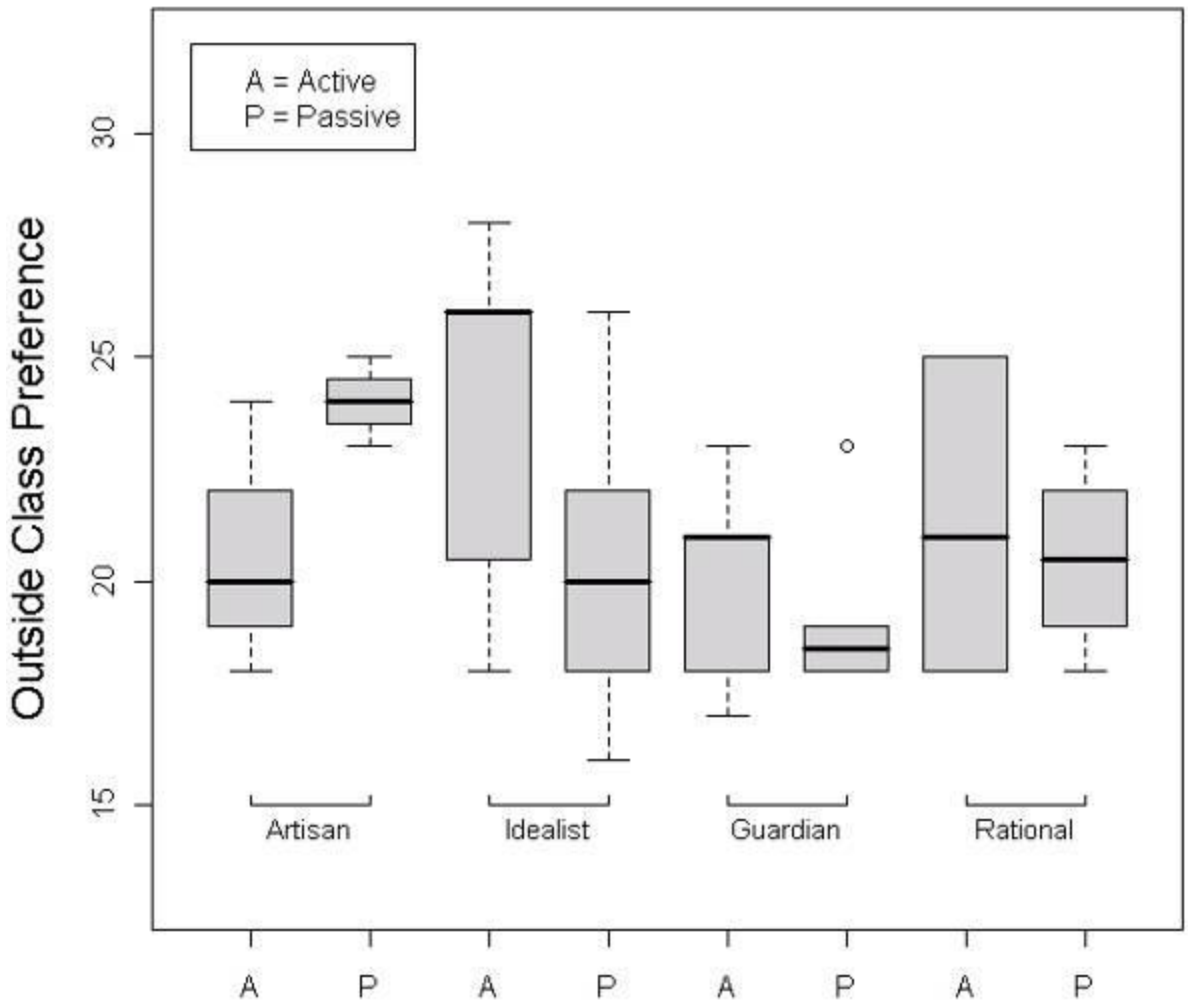

Figure 4-13 Keirsey personality types and outside class preference sub-items

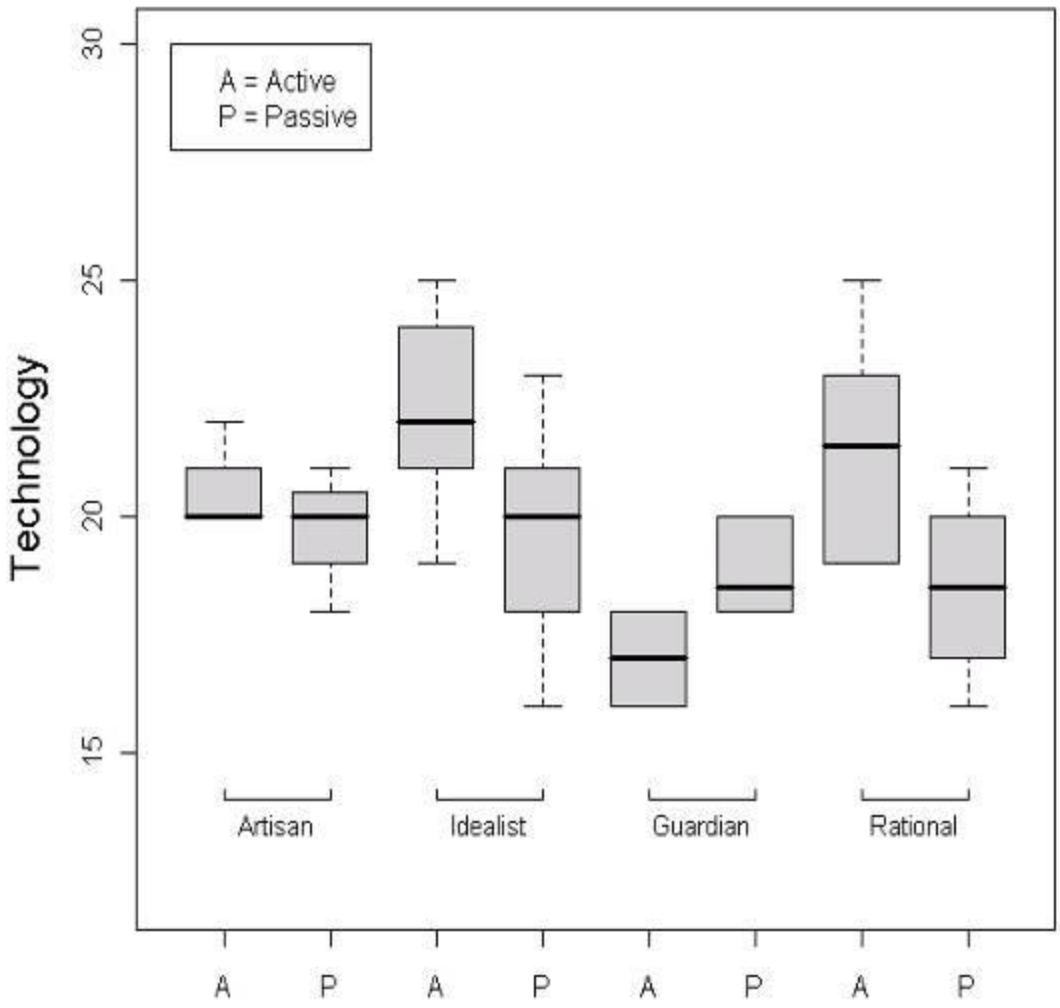

Figure 4-14 Keirsey personality types and technology sub-items

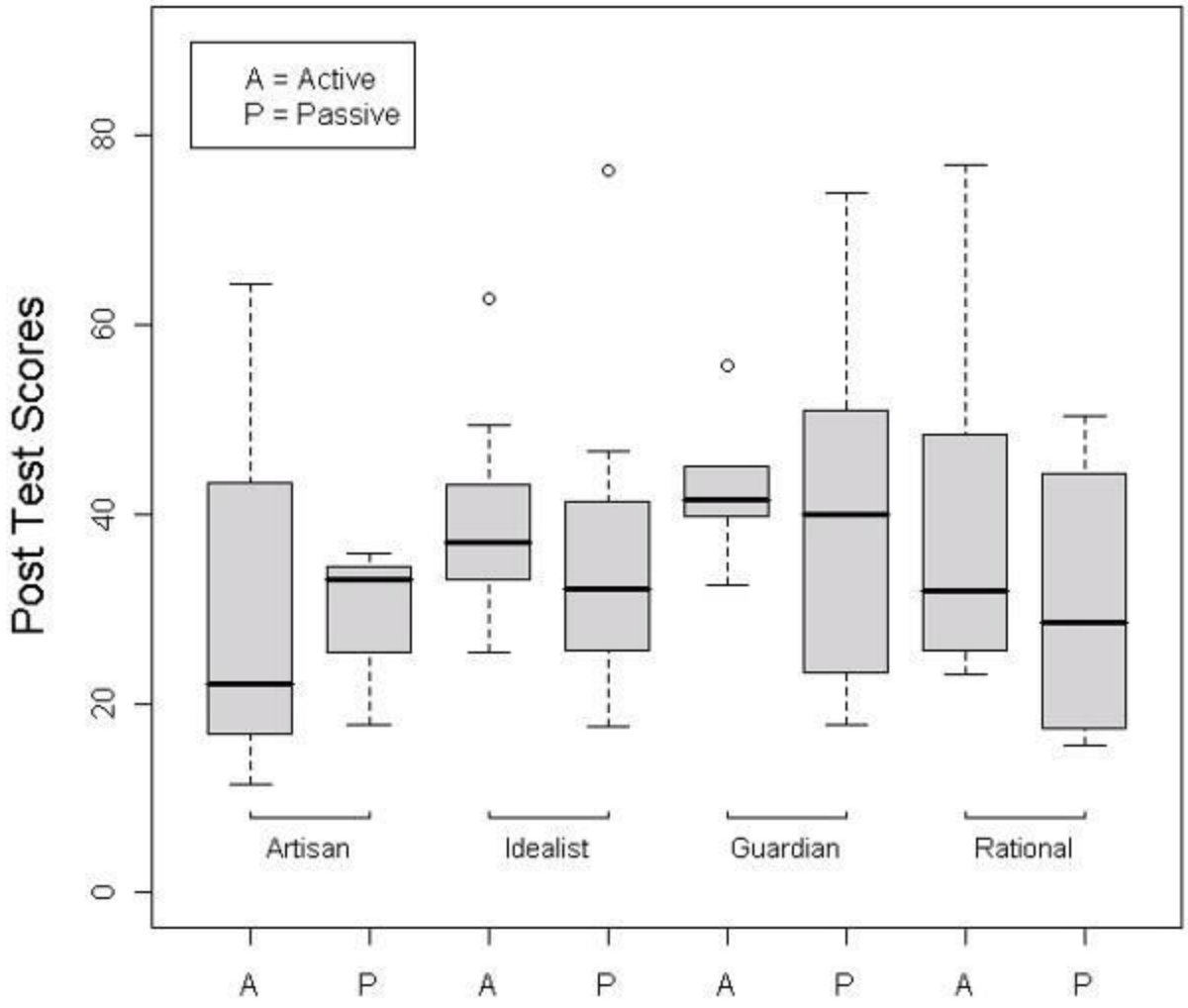

Figure 4-15 Keirsey personality types and post-test scores

CHAPTER 5
DISCUSSION

The optimization of pedagogical methods is important in today's society because educational institutions must now compete with other media in terms of keeping a student's attention. Whether it is best to use active engagement or passive lecture teaching methods is a subject of frequent research in education (Hundley, 2007; Roschelle, 1999; Lee et al., 2008; Savitz, 1999). The present study has examined the question using two groups of college-level participants working in a specific content area within communicative disorders to determine if either teaching method is more effective in the context of a short-term module. To examine the impact of each teaching module, tests were given before and after the set of educational sessions. The results have shown that there is no significant difference between passive and active lecture methods in this sample. For both the passive and active groups, the post-test scores were significantly higher than the pre-test scores for the objective items, which suggests that each group was able to learn from the randomly assigned lecture method.

The Keirsey Four Types Sorter was used to evaluate whether the participants' personality influenced the learning experience. There was no significant interaction between personality and teaching condition. The effect was measured on overall score, objective question scores, and subjective question scores. This lack of any significant interaction may be because, as discussed later, personality type may not be the strongest factor affecting how or how well a person learns. It could be that the Keirsey instrument may be sensitive to learning styles. We did not have a large number of participants in each category of each personality type. Finally, the short duration of the experiment may not be long enough to produce a large enough learning effect to be

able to see the influence of personality type/ learning style and the interaction between personality type and teaching method.

Information on the participants was gathered to see the similarities and differences between the participants so that the results given can be properly categorized and analyzed. The analyses have shown that all analyzed factors, mean age, year of study and GPA, are homogenous between the active and passive groups. Both groups of students improved after studying the materials. It has also been shown that the active group's post-test score is higher than the passive group's score. Because the other factors have been shown to not differ between the two groups, these test results may be attributed to differences in the actual teaching method experiences of the students.

5.1. Personality Type

Results of the study's Keirsey Four Types Sorter showed that the distribution of personality types (Figure 5-1) differs from that described on the Keirsey website (April 2010) which estimated the distribution of temperaments in the general population as Guardian 40-45%, Artisan 35-40%, Idealist 5-10%, and Rational 5-10% ("Frequently Asked Questions"). These data do not take into account factors such as age, gender, or occupation. Our results may reasonably be expected to differ from the general population because our sample was restricted to a small sample (n=50 participants) of female Kuwaiti college students between the ages of 18-21.

The relation of personality to the test scores and four questionnaire sub-categories were evaluated using ANOVA and no significant effects were identified for any of the outcome variables. This is consistent with the results of Schultz, who found no relationship between preferred learning strategy and personality style, as measured by the Myers-Briggs/Keirsey Type Indicator (MBTI) (Schultz, 2001, p. 116). In contrast,

Ott, Mann & Moores (1990) found a significant interaction between personality type and method of instruction in the learning outcomes. Their experiment, however, dealt with the difference between lecture and computer-assisted instruction. It was observed that the sensing-intuitive and thinking-feeling scales of the personality indicator showed stronger results than all personality types, and they each showed stronger results for the computer assisted instruction learning technique. The intuitive type did better when working in the computer assisted lecture method, and the sensing type did better in the lecture method. In terms of our study with Keirsey Four Types Sorter, if the results were to be the same, we should find that the Rational and Idealist types should do better in the computer assisted lectures (active method) and the Artisans and Guardians should score better on the lecture method (passive method). As the authors of the study state, educators and instructors should "vary [our] teaching styles as much as possible to reach the broad spectrum of learning styles" (Ott, Mann, & Moores, 1990, p. 30). This seems to be good advice as the studies in this area have yielded conflicting or inconclusive results – sometimes certain learning styles/personality types did better in certain areas, but were weak in others. Practicing varied teaching styles increases the likelihood that any given learning style can be accommodated and all the various student strengths can be encouraged. Different studies have yielded different results, and it seems that differences such as nature of content and length of study are likely to explain the differences in outcomes.

This is supported by Jessee, O'Neill & Dosch (2006), whose study using the MBTI, had consistent results with similar studies that also used the MBTI and similar participant and data information, but still differed on some aspects. They rationalized

such a difference by stating that sample size, age, gender distribution, etc., could have been the factors that made the studies yield different results. Jessee et al. (2006), mention that the differences may have occurred because their study involved students who were entry-level, and came from a very different generation with different cultures, societal standards, and education. Therefore, the differences are likely to arise from cultures, social standards and education, as they did not have a unique sample. The distribution of personality type was not different in their sample. Our study faced the same situation where our results may have differed from similar studies because our students had different factors such as cultural, social, and educational factors, among others. Felder, Felder, & Dietz (2002) also did a study on the different personality styles and learning methods, and they concluded that although different individuals have different learning styles, all individuals can learn in all styles. They claim the purpose of the studies is not just to see which learning methods are best suited for what personality types and then teach according to each type, but to be able to “teach around the circle,” (Felder et al., p. 12) and in doing so, each learning style and personality type is addressed and taken care of.

However, it was expected that some trends might be found in how the participants with different personality types learn and whether they would do better in one teaching method than the other. The only trend that was found shows that the active group idealists scored higher on all sub-items except for the post-test scores, where the guardians of the active group had the highest scores. When going into the classroom, instructors need to know that individuals learn differently, thus instructors need to try to allow for the different preferences by adapting their teaching style to teach in multiple

modalities, which will maximize the performance of each learner. As Hundley (2007) states, “when the lesson becomes meaningful to the student the personal interest level will increase, having a positive effect on learning” (p. 68).

5.2 Videotape of Sessions

During the study, several of the educational sessions were videotaped. The videotapes were made to evaluate the instructor’s style in the classroom. Based on 10 statements assessed on a 5-point Likert scale, eight judges viewed the videotaped session and they rate the active lecture sessions as: 1) having less lecture time; 2) encouraging more discussion; 3) less tense; 4) more enjoyable; 5) using technology to a larger extent; 6) having more give and take; 7) including more student presentations; and 8) encouraging critical thinking than the passive lecture sessions. It can be concluded that the judges perceived that the active lecture participants were more positively engaged in the learning environment.

5.3 Participant Feedback Questionnaire

Participants were also surveyed as to their impressions related to their experiences in the instructional modules. We categorized items from the questionnaire into sub-groups relating to the overall effect of the educational sessions, the participants’ preference for learning outside the classroom, the preference for learning inside the classroom, and the comfort with and use of technology. Both groups tended to agree on items in these four categories, although more participants in the active group showed that they strongly agree. The active group felt that they benefited from the use of technology and were more comfortable with technology in the learning environment than the passive group. The student feedback questionnaire was administrated in order to evaluate the participants’ subjective impressions of the

learning experience. Participants provided their feedback on a 5-point Likert scale to 22 statements. The questionnaire included some items that might be hypothesized to be more strongly affected by the teaching method and others that can be expected to be less affected by teaching method. Comparisons were undertaken for specific identified subsets of questionnaire items. We labeled these subsets as: 1) overall impression, 2) in-class preference, 3) outside class preference, and 4) use of technology.

5.3.1 Overall Impression

Two sample t test show that the two groups are not different. The active group had a slightly higher but non-significant, sense of satisfaction and understanding when measured by the four questionnaire items.

5.3.2 In-Class Preference

The scores from the in-class preference items for active and passive groups were not significantly different. This shows that the participants in both groups had similar preferences when it came to learning through in-class activities.

5.3.3 Outside Class Preference

The results do not show a significant difference between the active and passive groups for the outside class preference. This shows that participants in each group have similar preferences for learning activities outside the classroom.

5.3.4 Comfort With Technology

The Wilcoxon rank sum test indicated that the active group displayed a significantly higher degree of comfort with technology usage than the passive group. In terms of the Keirsey personality types, the only trend seen was that the idealists of the active group scored the highest. This does not necessarily have a significant impact on

the study except to show that there was a particular sub-group in the active group that was more satisfied with all sub-items than the passive group.

5.4 Comparing Teaching Methods

From our analysis, we can conclude that the age, year of study, GPA and personality type are similar in each group, and therefore any difference in the group tests is a result of the teaching method assessment and from the participant data information. In comparing the teaching methods, we hypothesized that the overall scores on the post-instruction assessment procedures would be higher for participants in the active group than for those in the passive group.

Although the observed mean of the post-test is about 10.4% higher than the pre-test mean, the post-test results are not significantly different from the pre-test results. The active group participants' knowledge about the fluency disorder (as measured by the pre- and post-tests) was not significantly impacted by the instructional sessions. Results of one-sided paired t test shows that the passive group scored significantly higher on the post-test than the pre-test.

There was a significant difference between pre- and post-tests for total scores for the participants taken as a whole. This shows that on average the participants' knowledge about fluency disorders increased after the short-term course. This does not necessarily imply that the observed difference reflects a realistic and relevant difference in the educational setting. In addition, this does not necessarily imply that there would be meaningful differences for the individual students. The result is simply a difference between groups and not individuals, and as such, should be carefully interpreted.

Post-test scores were not significantly different between the active and passive groups despite findings that the active group's post-test score is about 10% higher than the passive group's post-test score.

The test score was formed of two parts: objective, and subjective questions. The objective questions consist of True/False and Multiple-Choice questions. The subjective questions consist of short answer questions. The answers to the true/false and short answer questions were analyzed separately.

Post-test scores for the active group are higher than the pre-test scores for the objective items. Results of one-sided paired t test show that for the active group performed significantly higher on the post-test than the pre-test. For the active group, the students do perform better after the teaching module.

The passive group's post-test scores are higher than the pre-test scores for the objective items. Results of one-sided paired t test show that for the passive group performed significantly higher on the post-test than the pre-test. For the passive group, the students do perform better after the teaching module.

The scores for the objective items (e.g. multiple choice) are equivalent for both the active lecture engagement method and the passive lecture method. The post-test scores for the active group were not different significantly different from the scores of the passive group despite findings that the active group's post-test score is about 17.6% higher than the passive group's post-test score.

For the subjective items (short answers), both the active and passive group performance did not differ between the pre- and post-test conditions.

When both groups' subjective (short answers) post-test scores were evaluated, there were no significant differences between the active and passive group scores, despite findings that the active group's post-test score is about 27.6% more than the passive group's post-test score. The study has shown that teaching method did not influence participant performance. Both the traditional passive lecture method and the active teaching method produce small increases in test scores. No significant results were seen, and although personality was also taken into account, the results remained insignificant. In contrast, the data obtained here appear to support a difference in the experience of students in the active versus passive teaching methods, as described in the participant questionnaire items and in the judges' evaluation of the videotaped sessions. The observed effect of personality type on learning was not as hypothesized. The fact that there were no significant results between the active and passive teaching method coincides with other studies where these methods have been compared and no significant result has been observed, although the methodology participants were different from this study (Hundley, 2007; Nottingham & Verscheure, 2010).

One factor that has been demonstrated to play a key role in student learning is the development of situated learning, or as it has also been described, "communities of learning" (Lave & Wenger, 1990). This learning theory has been strongly impacted by studies of computer-based and distance learning educational programs. Ubon and Kimble (2004) studied the social presence and participation of students in an online long-distance course showed how important effective communication is at the beginning of the course to develop a sense of community. The study also showed that as a group gets comfortable together, they are better able to communicate in a less formal way, to

show more emotion, and to develop a group morality that determines reactions and responses to questions. This has a big implication for how people learn, and the impact of communication with other participants based on emotion and moral values. This is the same in our study, proper community and class building is essential so that the participants feel comfortable in participating and being part of the classroom so that accurate results are collected. It is a starting point of this type of learning.

Distance education had caused rethinking and revisiting our education theory. Thus, we have new experiences in educational learning. Students learning in a group and finding their place makes a great impact on how the students learn. Student performance in learning is based on factors on engaging material in social practice. Thus, situated learning yields new approaches to active learning.

Discussion is a large part of active learning. In the study, there were a few sessions in which participants engaged in discussions, it was especially apparent from the active lectures judged by the evaluators that the discussion had a positive impact in encouraging the participants . Discussion, according to Brookfield and Preskill (2005), adds much to the learning experience of an individual and opens the doorways to a different way of thinking. Opinions and thoughts that were never thought of before become available to a person that is engaged in the discussion. Discussion livens up learning and allows for variety in thought, and not just textbook thoughts, and facilitates the process of brainstorming. The quality of a discussion is important as well, since the livelier the discussion, the more creative, and intriguing the ideas and opinions presented.

5.5 Uniqueness of Study

5.5.1 Short Term – Unlike Full Semester College Experience

The semester in which this study took place was not a full term semester as is the usual college experience. This was a short term course, and hence, the likelihood that these students were not ready or unprepared to take on the active role demanded of them in the active learning group right away. Thus the short-term nature of this study made it unique in that there have not been previously published studies using short term modules to investigate the effects of teaching methods. In addition, these results may differ if future studies employ longer terms.

5.5.2 Only Female Subjects

The study participants were only female students. This adds to the value of the study because active and passive teaching methods in such a population have not been studied before.

5.5.4 Only Kuwaiti Subjects

The study participants were only Kuwaiti. No other nationalities were included for this study. While having such unique subjects might restrict the extent to which the results could be generalized, it also supports conclusions regarding an understudied population. This is an area of significant need.

5.5.5 Educational Experience

The fact that they are all Kuwaiti students also makes this study unique because they are products of the Kuwaiti educational system and have been consistently exposed to passive methods of teaching – this may have biased the results towards the passive method over the active because the passive method was the method they were

used to. Once again, these results may not be repeated in other studies since they may have students of varied/difference educational experiences/backgrounds.

5.6 Limitations of the Study

While we have tried to make the study as thorough as possible, there are some limitations. These limitations include the following:

5.6.1 No Long Term Follow-Up Assessment

There is no long term follow-up assessment to see how much of the knowledge and information was retained and whether the perceptions and affects of the teaching methods were short lived or not. Thus, without any knowledge of whether the things taught were retained, the actual success of each teaching method cannot be measured. If those data could be collected, it would give even more concrete results as to whether one teaching method produces better overall, long-term educational results.

5.6.2 Working in Second Language

The participants were all Kuwaiti subjects who spoke English as a second language. The results may have differed had some of the participants been native English speakers, as they may have understood the lectures or activities more readily, and thus performed better.

5.6.3 No Monitoring of Discussions/Activities Outside of the Class Session

There were no evaluations/assessments done on how discussions within the study's class sessions, or the subsequent activities outside of the classroom affected the overall learning of the students. There was no grading given to the discussion and therefore it was not in the assessment results. If it had been added, the results may have been different.

5.6.4 The Lack of a Problem-Based Learning (PBL) Style Question on the Pre-And Post-Test Assessment

The pre and post-test assessments did not have any PBL questions on them and therefore did not get a true measure of how PBL introduced in the active method made a difference in the results and on the overall study.

5.7 Implications for Future Studies

Supplementary research using improved design and methods is needed to garner results that are more accurate. The number of participants should be increased, and both male and female subjects used to better represent the student population. In addition, future investigations should employ various periods of study in both passive and active lecture methods. The short span in which this study was done does not allow some factors to be considered, such as familiarity with the content. It may take a longer period for some participants to get used to a certain teaching method. This study itself was only a couple of weeks in length and thus, could not allow for that contingency.

PBL has become a very important and often used method of learning in today's educational environments and more emphasis on the problem-based clinical thinking activities to potential assessment items for future studies is needed. Having students watch a video, for example, may have resulted in them being able to learn a certain concept better and would have had a different impact on their impression of what they learned in the session. However, this kind of research will need more time. Following the method proposed in our current research, and once we determine whether a significant difference exists or not between the two teaching methods, studies can become more detailed and we can assess those types of lectures/lessons that are

6more conducive in each learning method. We can also investigate the impact of different teaching methods on learning in different types of material (e.g. anatomy and physiology of speech, normal language development, phonological systems, acoustics, etc.).

Future studies can also be done which look at the prevalence of Keirsey personality types among speech pathology majors and practitioners. Results may help to formulate a better grasp on how personality types as described and evaluated by the Keirsey Four Types Sorter apply in all fields of and among all those involved in communication disorders.

Furthermore, for subsequent studies, we should investigate having more than one instructor so we could compare the methods with several sections with different instructors. In this way, one could compare the differences between methods to the differences among instructors. The implications for future studies are, in a way, endless because there is always something that can be delivered in both passive and active teaching methods. In her study, Beldarrain (2006) mentions how distance education tools are becoming more advanced technologically; there are now different teaching methods to cater to students in distance learning courses. These tools can now also be applied in the classroom and new mediums used to teach the same information. The successfulness of such methods can be seen in distance learning courses, as her paper contends, but have not been measured completely in the classroom. Studying these methods in the classroom can open up new avenues for active teaching methods that may not have been applied before. Learning under these conditions can be assessed in different ways that ideally can help make educational instruction better.

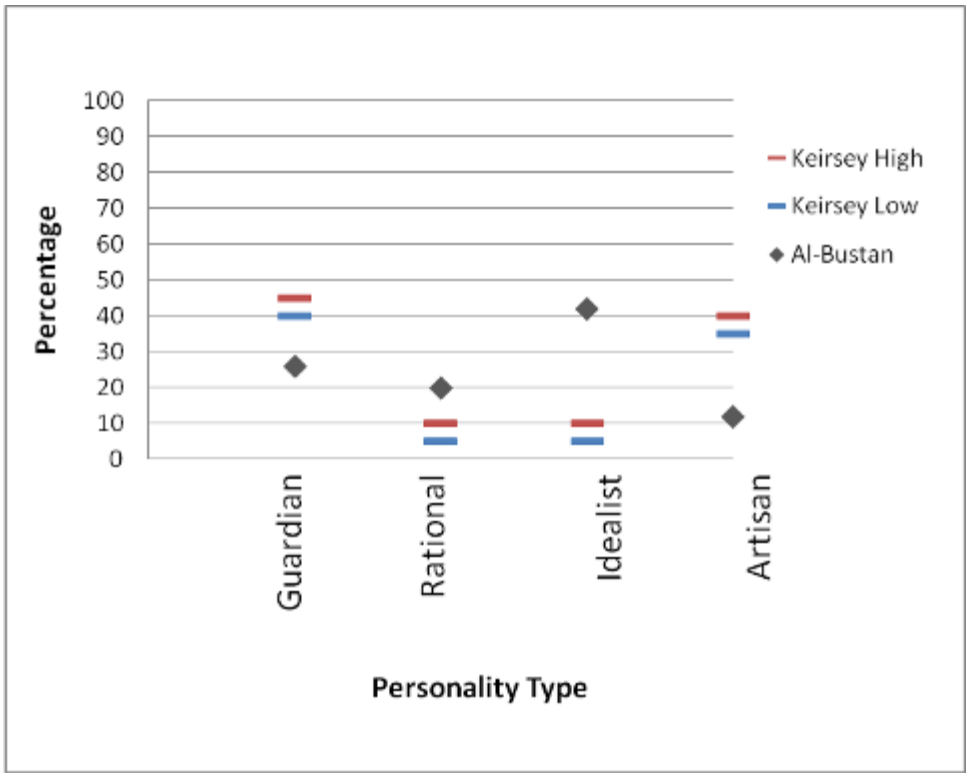

Figure 5-1 Personality Distributions of Types

APPENDIX A
LETTER OF CONSENT

UNIVERSITY OF FLORIDA

Department of Communication Sciences & Disorders

336 Dauer Hall
P.O. Box 117420
Gainesville, Florida 32611-7420
(352) 392-2113
Fax (352) 846-0243

Informed Consent:
Impact of Teaching in Communication Sciences and Disorders

Please read this consent document carefully before you decide to participate in this study.

Purpose of the research study:

I am a PhD Student in the Department of Communication Sciences and Disorders at the University of Florida, conducting research on how to improve student's understanding at the college level.

What you will be asked to do in the study:

In this study you will be asked to participate in a mini-class for 2 weeks on the topic of stuttering. Some of the class lectures will be videotaped. You will have 6 classes to attend, some readings and other assignments to complete. You will also be asked to take two examinations and to complete some questionnaires.

Time required:

The class time will be nine hours. In addition you will need to spend another 6 to 9 hours over the two weeks of the course on reading and other class activities. The amount of time you spend on the reading and other activities may vary, but should not exceed 9 hours.

Risks and Benefits:

There are no known risks associated with participating in this study. The only potential benefits included a greater understanding of communication disorders in general and/or stuttering in particular and perhaps a greater understanding of your learning style

Compensation:

You will not be paid any compensation for participating in this research.

Approved by
University of Florida
Institutional Review Board 02
Protocol # 2008-U-1014
For Use Through 11-12-2009

APPENDIX B
KEIRSEY FOUR TYPE SORTER

Pre-Test Questions

Student Code #: ____ Fall 2008

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The Keirsey FourTypes Sorter

For each item, rank-order the four choices. Mark the response most like you as #1; less like you, #2; still less like you, #3; & least like you, #4. Put your numbers next to the corresponding letters.

1. I'd rather study
__ (a) arts & crafts
__ (b) literature & humanities
__ (c) business & finance
__ (d) science & engineering

2. I feel best about myself when
__ (a) I'm graceful in action
__ (b) I'm *en rapport* with someone
__ (c) I'm rock-solid dependable
__ (d) I exercise my ingenuity

3. In mood I'm more often
__ (a) excited & stimulated
__ (b) enthusiastic & inspired
__ (c) cautious & prudent
__ (d) calm & detached

4. I keep coming back to
__ (a) perfecting my craft
__ (b) helping others affirm themselves
__ (c) helping others do right
__ (d) figuring out how things work

5. Coming right down to it I tend to be
__ (a) practical & opportunistic
__ (b) compassionate & altruistic
__ (c) dutiful & diligent
__ (d) efficient & pragmatic

6. I respect myself more for
__ (a) being bold & adventurous
__ (b) being kind-hearted & of good will
__ (c) doing good deeds
__ (d) being autonomous & independent

7. I'm more inclined to trust
__ (a) impulses & whims
__ (b) intuitions & intimations
__ (c) customs & traditions
__ (d) pure reason & formal logic

8. I'm sometimes eager to
__ (a) make an impression & have impact
__ (b) lose myself in romantic dreams
__ (c) be a valued & legitimate member
__ (d) make a scientific breakthrough

9. I'm in a life-long search for more
__ (a) thrills & adventures
__ (b) self-understanding
__ (c) safety & security
__ (d) efficient methods of operation

10. In facing the future
__ (a) I bet something lucky will turn up
__ (b) I believe in people's innate goodness
__ (c) you just can't be too careful
__ (d) it's best to keep a wary eye

11. If it were possible I'd like to become
__ (a) an artistic virtuoso
__ (b) a wise prophet
__ (c) a chief executive
__ (d) a technological genius

12. I'd do best in a job working with
__ (a) tools & equipment
__ (b) human resources development
__ (c) materiel & services
__ (d) systems & structures

13. As a guide to action I look primarily at
__ (a) immediate advantages
__ (b) future possibilities
__ (c) past experience
__ (d) necessary & sufficient conditions

14. I'm most self-confident when I'm
__ (a) adaptable & flexible
__ (b) genuine & authentic
__ (c) honorable & respectable
__ (d) strong-willed & resolute

15. I appreciate it when others
__ (a) surprise me with generosity
__ (b) recognize my true self
__ (c) express their gratitude
__ (d) ask me for my rationale

16. When thinking about misfortune
__ (a) I usually laugh it off
__ (b) I often wonder why
__ (c) I try to make the best of it
__ (d) I view it from a wide perspective

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16		
a																		A
b																		I
c																		G
d																		R

Scoring Directions: First, in the numbered columns above, record your rankings (1 to 4) for each of the 16 items. **Second**, add the numbers across each of the four rows (**a, b, c, d**) & place the sums in the boxes at the far right. **Third**, circle the letter (**A, I, G,** or **R**) beside the *lowest* sum. **Fourth,** A stands for Artisan (SP), I for Idealist (NF), G for Guardian (SJ), R for Rational (NT).

APPENDIX C
STUTTERING PRE-TEST QUESTIONS

Student Code #: _____ Fall 2008

PART A

<u>True/False Questions:</u> Circle you choice of answer (Total 10 points).

1. Disfluencies are sometimes "good". **T/F**
2. Heredity does not play a role in stuttering. **T/F**
3. The onset of stuttering is most often sudden. **T/F**
4. Sound/syllable repetitions and sound prolongations are examples of normal disfluencies. **T/F**
5. Stutter-like disfluencies are mostly accompanied by physical effort. **T/F**
6. The main cause of stuttering is anxiety. **T/F**
7. It is believed that environmental demands might play a role in childhood stuttering. **T/F**
8. Stuttering is more common in boys than girls. **T/F**
9. Preschoolers who stutter may benefit more from stuttering treatment than persons who have a longer history of stuttering. **T/F**
10. Relaxation is the main technique to manage stuttering. **T/F**

PART B

<u>Multiple Choice Questions:</u> Circle your choice of answer (total 15 points).

1. Developmental stuttering usually occurs:

   A. In preschool years
   B. In early school years
   C. Between ages 7 and 12
   D. In adolescence

2. Factors that may contribute to stuttering in children include:

   A. Excessive parental speech rates
   B. Parents' use of linguistic structures that are too sophisticated for the child
   C. Frequent parental interruptions
   D. All of the above

3. Which of the following is true:

   A. Most researchers agree that stuttering is a learned behavior.
   B. Between-word disfluencies include revisions and interjections.
   C. Stuttering is more common in girls than boys.
   D. Acquired stuttering is usually observed in childhood.

4. Stuttering therapy is recommended if which of the following behaviors is observed:

   A. Sound prolongations are the prominent form of disfluency produced by the child
   B. Loss of eye contact by the child on of her utterances
   C. Excessive use of interjections
   D. Both A and B

5. Eye blinking and physical tension are examples of:

   A. Main stuttering behaviors
   B. Main typical/normal behaviors
   C. Secondary stuttering behaviors
   D. Secondary typical/normal behaviors

6. Which of the following are not examples of *stutter-like* disfluencies?

   A. Interjections
   B. Inaudible sound prolongations
   C. Syllable repetitions
   D. Audible sound prolongations

7. Which of the following is not a measure of stuttering severity?

   A. Percentage of disfluencies produced by speaker
   B. Duration of disfluencies produced by speaker
   C. Speaking rate measured in words per minute
   D. Presence and intensity of physical concomitants

8. Reported incidence data about stuttering in adults revealed that it is about:

   A. 1%
   B. 10%
   C. 5%
   D. 15%

9. Which of the following <u>is not</u> a technique used in *indirect* stuttering therapy approaches:

    A. Facilitation of fluency through environmental manipulation
    B. Identification of “hard” and “easy” speech
    C. Reducing physical tension of speech movements
    D. Both B and C

10. Which of the following <u>is not</u> a technique used in *direct* stuttering therapy approaches:

    A. Facilitation of fluency through environmental manipulation
    B. Identification of “hard” and “easy” speech
    C. Reducing physical tension of speech movements
    D. Both B and C

PART C

<u>Short Answer Questions:</u> Please make your answers brief and concise and to the best of your knowledge (total 15 points).

1. If a parent of a child who stutters asks you “What is the cause of stuttering?” what would you tell her?

_____
_____
_____
_____
_____
_____

2. How do you think stuttering might affect a person’s daily life activities?

_____
_____
_____
_____
_____
_____

3. If you were approached by a mother of a seven year old who stutters asking you for general information about stuttering, what sources of information and /or support could you direct her?

4. Describe the two most common forms of behavioral interventions to be used with children who stutter, and indicate the extent to which each approach can be supported by research evidence

5. What common advice about stuttering would you give a teacher of a school age child who stutters about how to react to a child who stutters in the classroom?

APPENDIX D
STUTTERING MODULE

Stuttering

Lectures One and Two

What are stuttered disfluencies?

- Interruptions to the forward flow of speech in the form of sound/syllable repetitions, sound prolongations, whole-word repetitions (or a combination/cluster of these disfluencies), or hesitations.

What is fluency?

- The production of continuous speech with few or no hesitations and interruptions, at a normal rate and with no effort.
- What is disfluency?

Types of normal disfluencies

- Whole-word repetitions
  - "I saw a lion (at) at the zoo."
- Whole phrase repetitions
  - "(I want) I want to the toy store."
- Interjections (hesitation)
  - "I like water and (ehhh) milk."
- Revisions (hesitation)
  - "The (picker truck) pick up truck is carrying a car."

Normal disfluencies (cont.)

- Who produces normal disfluencies?
- Are normal disfluencies bad?

The development of stuttering

- Developmental stuttering
  - Stuttering beginning at an early age in the child's life (preschool years usually between ages 2 and 5).
  - The onset is gradual for most children
- Acquired stuttering
  - Stuttering associated with a neurological disease or head trauma
  - The onset is sudden

Types of stuttered disfluencies

Within word disfluencies:

- Sound/syllable repetition
  - "[Wh]y[wh]at are you doing?"
- Sound prolongations
  - "I was [ssssscared of the cat"
  - "The [f]ppolice office gave me a ticket"

Within word disfluencies (cont.):

- Monosyllabic whole-word repetitions
  - (The) the man asked me for directions."
- Disfluency cluster
  - "(WWW) where what hurt you?"

Developmental versus acquired stuttering

Developmental stuttering:	Acquired stuttering:
• Disfluencies usually occur on nouns, verbs, adjectives, or adverbs (content words)	• Disfluencies usually occur on conjunctions and prepositions (function words)
• Secondary symptoms might be present	• Secondary symptoms are not present
• Anxieties about speaking might be observed	• Anxieties about speaking are not present
• Usually occurs on the initial syllables of words	• Widely spread within the utterance

Stuttered disfluencies

Other behaviours may accompany moments of stuttered disfluencies and are called secondary or accessory symptoms/accessory behaviours.

Examples:

- Eye blinking, facial grimaces, facial tension, exaggeration of movements of head, arms, shoulders.
- Interjections

Check page 258 for a table comparing stuttered and normal disfluencies

Facts about stuttering

- Prevalence: How wide the disorder (at a given point in time) is.
  - ? How many people stutter now?
- Incidence: Index of how many people have had a disorder at any point in their lives.
  - ? How many people have stuttered at any point in their lives (does not necessarily mean that they still stutter).

Fluency-Inducing Conditions

- Marked decrease in stuttering:
  - Speaking:
    - alone
    - when relaxed
    - In unison with another speaker
    - To animal or infant
    - Singing (in time with rhythmic stimulus)
    - In different dialect
    - While simultaneously writing

Prevalence and incidence

Prevalence:

- **In kindergarten children = 2.4%**
- **Adults (suggestion) = less than 1%**

Incidence

- Only cases stuttering lasting longer than 6 months = about 5%

Fluency-Inducing Conditions (cont.)

- Marked decrease in stuttering:
  - In slow prolonged manner
  - Under loud masking noise
  - While listening to delayed auditory feedback
  - Shadowing another speaker
  - When reinforced for fluent speech
- Explanations for induced fluency under those conditions?

Variability and predictibility

Anticipation:

- Predicting that some words are more difficult than others

Consistency:

- Same words could be stuttered on in repeated reading of same text

Adaptation:

- Reduction of number of disfluency with repeated readings

- Word length effect
  - Number of syllables per word
- Sentence position effect
  - Beginning versus end of sentence
- Word frequency
  - Frequent versus less frequent
- Phonetic structure
  - Consonant vs. vowel initial
- Stress properties
  - Stressed vs. unstressed syllables and words
- Word class
  - Content vs. Function

Male:female ratio

- Near the onset of stuttering:
  - 2 to 3 year olds 1:1; 2.1:1 (boys:girls)
- School-aged children:
  - 3:1 ratio 1st graders
  - 5:1 ratio 5th graders

Theories of Stuttering

Lectures 3 and 4

Genetic Psychological Theory

- "When stuttering occurs in one set of identical twins it is likely to occur in the other."
- Higher incidence in monozygotic twins than dizygotic twins.

Organic Theory

- Stuttering is a result of physical causes
  - Weak tongue muscles
  - Cerebral dominance
  - Discoordination between the muscles used for phonation and other muscles that are used during muscle production

Activity

- Video viewing activity

Behavioral Theory

- Stuttering is a learned response.
- Conditions in the person's environment might trigger this response
- Johnson's diagnosogenic theory of stuttering:stuttering began in the parent's ear not in the child's mouth.

Psychological Theory

- Persons who stutter have 'psychological issues' such as neuroses.

Stuttering Therapy

Lectures 5 and 6

Current Models of Stuttering

- Stuttering might result from disruptions during language processing.
- Covert repair hypothesis of stuttering: stuttering results from problems that occur during speech preparation, specifically in the phonetic plan of speech. Speakers might detect and try to correct the problems/errors and disfluencies reflect this error correction process.

Identifying factors that might contribute to stuttering in children

- Excessive parental speaking rates
- Parents use of linguistic structures that are too complex and sophisticated for the child
- Frequent interruptions by the parents

Remember: these factors did not cause the problem; they most probably keep it going

Current Model of Stuttering (cont.)

- Demands and capacities model of stuttering: stuttering might be a result of environmental demands that exceed the child's abilities/capacities.

Components of evaluation in children

- Observation of interaction between the child and her parents
- Detailed parental interview:
  - Can you describe your child's stuttering when it first began?
  - Has it changed over time?
  - Does he or she avoid speaking situations?
  - Have you done anything to help your child stop stuttering?

See table 8.3 page 268 for more examples of questions you can ask.

Indicators of a fluency problem in young children

- Child produces 3 or more within word disfluencies
- Child produces more within than between word disfluencies and more sound prolongations than other types of within word disfluencies
- Child produces long disfluencies or multiple repetitions of sounds/syllables
- Child may exhibit secondary behaviors such as loss of eye contact on 50% or more of her utterances

Principles underlying direct stuttering therapy with children

- Directly attempts to modify child's speech and speech-related behaviors
- Child first identifies differences between "easy" and "hard" speech, next child is taught strategies to modify speech ((increase easy speech)

Indirect and *Direct* stuttering therapies

- Indirect therapy: mostly used with children who are just beginning to stutter and who do not show awareness or do not seem to be bothered by stuttering.
- Direct therapy: used with children who have been stuttering for a while (about a year).

Principles underlying therapy with older children and adults

- May have developed negative reactions to speech
- May have been to stuttering therapy before
- Two main techniques:
  - Fluency shaping
  - Stuttering modification

Principles underlying indirect stuttering therapy

- Does not directly attempt to change child's speech
- Focus is on the child's parents and environment
- Goal: facilitate fluency through environment manipulation
- Parent counseling is important: advised to reduce communicative pressure on child, use slow and relaxed speech when talking with the child
- Delivered mainly through play activities

Classification of therapeutic techniques

- Those that focus on modifying the timing of speech movements. Techniques include:
  - Using prolonged speech
  - Pausing and phrasing
  - Gradual increase of length and complexity of utterances
  - Cancellations, pull-outs, preparatory sets

Fluency shaping techniques

- Changing overall speech timing
  - Lengthening the duration of sounds and words
  - Slowing down overall rate of speech

Efficacy of intervention across the life span

- Most preschoolers who stutter who receive stuttering therapy maintain fluency
- Many school age children show improvement
- Teenagers might be difficult to manage, but many show improvement
- Many adults show improvement

Stuttering modification

- Involve the stuttering behaviors
- Involve modifying speech segments on which stuttering has occurred

Efficacy of intervention across the life span (cont.)

- "….. Stuttering intervention across all age groups results in an average improvement for about 70 percent of all cases, with preschool-age children improving more quickly and easily than people who have a long history with stuttering."

page 276

Classification of therapeutic techniques (cont.)

- Those that focus on modifying the physical tension that might be present in speech muscles before and during moments of stuttering. Techniques include:
  - Light articulatory contacts
  - Gentle voicing
  - Speaking after exhalation has begun

APPENDIX E
STUTTERING POST-TEST QUESTIONS

Student Code #: _____ Fall 2008

PART A

<u>True/False Questions:</u> Please circle your choice of answer (10 points).

1. The main cause of stuttering is anxiety. **T/F**

2. Acquired stuttering usually occurs in childhood. **T/F**

3. The onset of stuttering is most often sudden. **T/F**

4. Many persons who stutter report that other persons in their families also stutter. **T/F**

5. Around 5th grade, the reported ratio of male: female children who stutter is around 5:1. **T/F**

6. Most children who stutter recover on their own without formal treatment. **T/F**

7. The onset of stuttering symptoms in adults can be caused by organic and/or emotional trauma. **T/F**

8. Reported prevalence data about stuttering in adults revealed that it is about 5% **T/F**

9. Clinicians who teach stuttering modification work indirectly on moments of stuttering. **T/F**

10. It is believed that environmental demands might play a role in childhood stuttering. **T/F**

PART B

<u>Multiple Choice Questions:</u> Please Circle your choice of answer (15 points).

1. Developmental stuttering usually occurs between the ages of:

   A. Four and seven
   B. Two and four
   C. Four and six
   D. Two and five

   Core stuttering behaviors include:

A. Repetitions, prolongations, revisions, and interjections
B. Eye blinking and physical tension
C. Negative feelings and attitude
D. Between word disfluencies

2. The reduction of speech disfluencies as a result of repeated readings of the same paragraph is an example of_____:

A. Adaptation effect
B. Consistency effect
C. Generalization effect
D. Spontaneous recovery

3. Which of the following is not an example of a fluency inducing condition?

A. Reading alone
B. Talking to a group
C. Masking another person's speech
D. Singing

4. Stuttering therapy is recommended if which of the following behaviors is observed:

A. Sound prolongations are the prominent form of disfluency produced by the child
B. Loss of eye contact by the child on of her utterances
C. None of the above
D. Both A and B

5. When choosing between direct and indirect approach to treatment, we mainly depend on:

A. Whether the child was a girl or a boy
B. Awareness about the problem
C. None of the above
D. Both A and B

6. Which of the following is not an example of a fluency shaping technique:

A. Slowing down speaking rate
B. Canceling moments of disfluency
C. Initiating sounds with gentle onset
D. Initiating speech using soft articulatory contact

7. Which of the following are not examples of stutter-like disfluencies?

A. Interjections
B. Inaudible sound prolongations
C. Syllable repetitions
D. Audible sound prolongations

8. All of the following is true about the location of disfluency within a sentence except:

A. Words in the middle of a sentence than words at sentence initial position
B. Consonants than vowels.
C. Stressed syllables than unstressed syllables
D. Longer and more complex sentences than short and less complex ones

9. Which of the following recommendation to parents would be appropriate for a child who was experiencing a period of normal disfluency?

A. Help the child by finishing her sentences
B. Be calm and provide an unhurried speech model
C. Ask the child to use slow speech rate
D. Don't ask the child to talk

PART C

Short Answer Questions: Please make your answers brief and concise and to the best of your knowledge (Total 75 points).

1. Why are some disfluencies characterized as normal and other disfluencies as stuttered?

_____
_____
_____
_____
_____

2. List 3 questions you would ask during the assessment interview to learn more about the stuttering problem presented by the client.

_____
_____
_____
_____
_____

3. Why could stuttering treatment be more effective with children than adults

_____
_____
_____
_____

_____

4. Stuttering modification and fluency shaping are two techniques used in the treatment of stuttering. What is the difference between the two techniques?

_____
_____
_____
_____
_____

5. What would you say to a client who asks you “What is the cause of stuttering?"

_____
_____
_____
_____
_____

APPENDIX F
PARTICIPANT FEEDBACK QUESTIONNAIRE

Student Code # _____ Fall 2008

For questions 1 and 2, please write the number of the item that reflects your answer.

1. How old are you? _____

   a) 18 b) 19 c) 20 d) 21+

2. Which year are you in? _____

   a) Freshman b) Sophomore c) Junior d) Senior

3. What is your GPA? _____

   a) 2.5-2.99 b) 3.0 – 3.32 c) 3.33 – 3.66 d) 3.67+

Please mark X in the appropriate space to which extent you agree or disagree with each of the following statement items.

Item		**Strongly Agree 5**	**Agree 4**	**Neutral 3**	**Disagree 2**	**Strongly Disagree 1**
4	I feel like I understand stuttering better					
5	I learned more from the textbook than from the lectures					
6	I learned the most from the lectures					
7	I learn better when the lecture topic is presented through power point data show than when it is presented only through handouts					

Item		Strongly Agree 5	Agree 4	Neutral 3	Disagree 2	Strongly Disagree 1
8	I learned the most from my fellow students					
9	I felt comfortable in classes in this module					
10	I feel like I understood the lectures in this module					
11	I prefer to learn independently					
12	I prefer to learn in a group					
13	I am comfortable using a computer					
14	I think that the internet could be a good source for finding information about topics discussed in my classes					
15	I think reading the assigned chapter prior to the lecture helps me better understand the discussed topic					
16	I think that in class video activities helps me better understand the topic					
17	I feel confident using PowerPoint					

Item		Strongly Agree 5	Agree 4	Neutral 3	Disagree 2	Strongly Disagree 1
19	Doing activities outside class helps me better understand the topic					
20	Extra reading assignments helps me better understand the topics					
21	I feel confident doing a presentation in class					
22	The instructor in this module was very much like the instructors in my other classes					
23	The homework assignments helped me better prepare for the class					
24	I think in-class discussions helped me better understand the topics					
25	I would like to have other classes with this style of teaching					

APPENDIX G
JUDGES EVALUATION

Evaluator # _____ Session # _____/Fall 2008

Please evaluate the videotaped session with regard to the following ten statements. Please mark the extent to which you agree or disagree with each of the statements.

Statement No.		**Strongly Agree 5**	**Agree 4**	**Neutral 3**	**Disagree 2**	**Strongly Disagree 1**
1	The session included mostly instructor lecture					
2	The instructor encouraged student involvement and discussion					
3	The students were mostly passive listeners in this session					
4	There was little student-teacher interaction in the session					
5	There were student presentations in the session					
6	There was extensive give and take in this session					
7	The instructor encouraged critical thinking in this session					
8	The students appeared to enjoy the topic in the session					
9	The instructor used technology to supplement the lecture presentation					
10	The classroom setting was tense.					

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BIOGRAPHICAL SKETCH

Sana Ahmad AlBustan was born in Muncie, Indiana, as her father, Professor Ahmad was completing his postgraduate studies. She was raised in a household where the importance of education was constantly emphasized as the top priority. Her own mother, Ramzia, was awarded a principal position of a high school after having her six children and studying alongside her son, Tariq. Sana graduated from the American School of Kuwait in 1989 and enrolled in the Department of English Language and Literature. She was awarded her Bachelors of Arts Degree from the English Department, Faculty of Arts at Kuwait University in 1994 and graduated among the top ten of her peers. In 1996, Sana received her Master's in Teaching English to Speakers of Other Languages (TESOL) from the University of Maryland, College Park, USA and returned to Kuwait where she taught English as a second language in the College of Commerce, later renamed the College of Business Administration, from September 1996 until August 2004. Sana greatly enjoys teaching and did voluntary work for the community, as well as provided free tutoring sessions for various colleges at Kuwait University, institutions and companies in Kuwait. She has received many letters of appreciation and merits from the Student Union, Graduate Studies and the Language Centre at Kuwait University. Sana was awarded and honored the Distinguished Teacher Award for her successful teaching strategies from the late Crown Prince of Kuwait and Kuwait University rector at that time during the graduation ceremony in June 2002.

Sana commenced her PhD program at the University of Florida in Gainesville in 2004. During her graduate studies, Sana was privileged to gain her clinical experience at different locations such as the Speech, Language and Hearing clinic at University of

Florida, Shands Hospital in Gainesville, Florida, St Joseph's Hospital in Tampa Florida, private clinical setting and public school settings. Upon completion of her program, she will return to Kuwait and teach at the Department in Communication Sciences and Languages, College of Women, Kuwait University. Sana is married and has children.