High School Computer Class: Online vs. Face-to-Face Learning

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Introduction

Distance learning is growing (statistics?) and the demand for virtual learning among our youth in public K-12 school is overwhelming. As we expand into the 21st century we rely on technology for day to day living and the skills required in the workplace. This study will compare instructional design, academic achievement and perceptions of high schools students participating in a CTE(Spell out first time) high school computer course online vs. a traditional classroom educational setting. The main benefit that researchers found(Reference) in virtual schooling is that it does benefit students by providing additional courses that are not always readily available at their local school. Although the main focus of this study is not centered on learner’s outcome the results should parallel similar research of having no significance differences in the outcome for high school learners in learning at a distance. However, research has found significant differences in the instructional design, methods, and perceptions of the students in which the curriculum was delivered within this study.

Purpose of Study

The innovation of technology has transformed how one learns. This study will look at secondary students who are making those changes. The research found is limited among adolescents. The purpose of this study will provide the needed research in high school courses and provide a better understanding of how we can improve student’s ability to learn in both educational environments. This study is unique in that there is limited research on comparing the same two CTE courses at a high school level instructionally and academically. Quantitatively, the research will compare the mid-term and final exam grades of the same students of both learning environments. Qualitatively, the research will compare the instructional design and students perceptions of both learning environments.

Research Questions

1. To what extent does ~~Compare~~ the instructional design of a high school computer class online differ from a ~~vs~~. ~~traditional classroom~~ face-to-face class?
2. What are the student’s perceptions between learning a high school computer class online vs traditional classroom?
3. How does the CCC mid-term and end of course exam student achievement differ in both learning environments?

Significance

The most recent trend in distance learning has been to provide courses ~~the opportunity of providing distance learning~~ to K-12 students. The research will contribute to the design of both learning environments to improve high school academic achievement. The ~~As a part of~~ school reform / school choice option came about due to the decline in student achievement, reading scores, math scores, science scores and ready to work skills. School reform requires ~~that education needs~~ improvement in education. ~~and~~  Current research provides the theories that work to improve upon students staying in school and increasing student achievement by obtaining relevant real world skills. Distance education is designed for the desires of an individual to learn and want to be successful according to International Data. “Distance education is expected to grow at a compound annual growth rate 33 percent” (Oblinger, Barone, Hawkins, 2001).

Literature Review

Background

Distance education is learning at a distance through the use of a variety type of telecommunication delivery systems from an educational or training institution. Distance learning provides an alternative educational opportunity for people of all ages to learn at a distance. Where distance education is accessible to everyone through the convenience of method, time, and location. It can include, but is not limited to trainings, certificates and degrees that are desired in a particular field. It allows individuals a chance and an opportunity for a better way of life. Distance learning education has given a new meaning to the “American Dream” from what once was taught and learned in a little red one room school house to learning in your home. Much of our education has changed through the educational research theories: from teaching to facilitating; from mental discipline to motivation; from the 3 r’s of reading, writing, and arithmetic to today 3 r’s of rigor, relevance, and relationships; and from classroom learning to distance learning.

Although there are many definitions of distance education, none are perfect. ~~there is not one perfect definition.~~ Each institution creates their own definition that is unique to their mission and vision statement. Florida Virtual School is a middle and high school distance educational public school self described ~~describes their self~~ as “any time, any place, any path, and any pace”. Virtual public high schools were brought about by school reform as a K-12 school choice option for parents and students. The State of Florida was the first to establish distance learning through public education in 1997. (FLDOE, 2005) Within a postsecondary educational setting The Division of Continuing Education at Kansas State University, established in 1974, surprisely (why?)listed more delivery option choices than most other accreditated colleges and universities. The ~~many~~ types of delivery options included: postal mail, e-mail, e-mail lists, message boards, videotape, CD-ROM, audiocassette, guided study and videoconferencing. Although they are all still functional delivery methods, the most common today is the Internet, established in the early 1980’, and has become the most common method to distance learning.

The first accredited online university established was Jones International University in 1983 (USDLA, 2008). As of 2006-2007, 65% of 4200 institutions offered distance learning degrees (NCES, 2008). Education has come a long way since 1840 when the first method of distance learning was developed by Sir Issac Pitman as a correspondence shorthand course mailed through the postal system (Schlosser & Simonson, 2006). The most common delivery mode of distance learning in the 1800’s was postal mail, print, guided readings, and tests. It provided a way for individuals that were not financial well off to attend college. As the economy expanded after World War II so did the increased need of skilled workers and the need for more education. Correspondence courses grew into correspondence schools offering programs of studies that were included but not limited to liberal arts, mining, and Sunday school teachers (Schlosser & Simonson, 2006). The first distance correspondence course was offered at the University of Chicago in the early 1800’s (McIsaac & Gunawardena, 2004).

The delivery method of distance education changed when sound waves hit the air with the invention of the radio. In 1906 the first official United States radio broadcast was presented by R.A. Fessenden (WCBN, 2005). This expansion of technology allowed for correspondence courses reach more opportunities. Individuals could receive instruction and guided practice at a much faster rate than receiving printed materials by the postal mail. It created almost an immediate demand for learning in real–time, expanding the definition to distance learning. The delivery method of distance learning continued to remain the same for almost 40 years until the television was invented in 1945. It again changed the way we could learn or you could say how we “looked” at education. Although, there was little research in the 1940’s, today we know that it created a learning environment that included the instructional teaching strategies to include auditory and visual processes with the learning styles of each student to learn more effectively, as well as the interactivity of the classroom. Radio and television still continue to be an integral part of our educational system for the growing need to provide sound practices to the visually impaired. The American Federation of the Blind promotes distance education and offers many resources to help find those with disabilities online educational opportunities (AFB, 2009).

In 1980 the Internet changed our entire global world with technology enhanced education. It changed the way one could communicate almost immediately with anyone in the world in real-time. Although the Internet was slow in sending and receiving information, it was just as fast as picking up the telephone and saying, “Hi”. It allowed for the interchange of information faster than ever, considering the only way to deliver media such as print, cassettes or video tapes was only by postal mail before the Internet. The use of the Internet has truly redefined the definition of learning at a distance. The Internet has provided the interactivity closest to the classroom setting. By 1989 virtually all states in American were involved with promoting distance education. There was so much interest in distance learning of profit and non-profit institutions the Higher Education Act was reauthorized created The Bipartisan Web-based Education Commission in 1998 by Congress (McIsaac & Gunawardena, 2004).

Distance education has become a way to fit many different lifestyles, as well as all types of learners. Distance learning is not just about “any time, any place, any path, and any pace” (FLVS, 2009), it also means distance education is for a person of any age, gender, race, learning difference, or the technology savvy (Guide to Online Learning, 2000). Distance learning is a choice alternative to a classroom setting with four walls and chairs lined up in a row. The environment in distance learning is up to the learner. The convenience of distance learning can benefit a learner by providing them a safe, comfortable environment to help a students learn. In the article “Coming to Our Senses: Incorporating Brain Research findings into Classroom Instruction” by Wilmes, et.al. (2008) writes that the environment sets the stage for students to learn and that includes a safe, stress free environment. Distance learning offers that environment as students learn from the comfort of your own home. Making distance learning a choice for the learner is where the learner finds the method that is the best way for them to learn.

Distance education has many types of delivery methods and some institutions still provide a combination of methods that were used in the 1840’s, as well as today. It continues to take form in print, postal mail, email, cassette to interactive webcasts and asynchronous to synchronous group discussions such as Eliminate. The Internet has brought the most common form of delivery in distance learning education. The method of distance learning a person chooses is dependent on the institution, time, resources, and financial obligations. Deciding if distance education is right for you is not so easy. There are many steps one must take in choosing the right educational situation and setting that one might learn from and choosing career path that provides a better career path, after all it makes sense to go back to school for better pay not less. Depending on your life style, distance learning often is learned when it is convenient for you, whereas classroom setting on campus meets at a central location at a specific time.

The career and technical programs offered usually related to skill development through distance learning but CTE is making innovative strides to provide the same opportunities at a distance. Learning at a distance for career and technical education has approached the constructivism theory, the theoretical framework of Bruner. It is the active learning process where the learner constructs past knowledge and creates new skills, new knowledge and new ideas. The constructivism theory is also based on the study of cognition. A learner should be able to take the conditions of learning and constructively apply to similar situation in the constructivist theory.

Throughout, my review of literature, over the years on theory, Mohamed Ally has explained the most common theories the best. “Behaviorist strategies can be used to teach the facts (what); cognitivist strategies to teach the principles and processes (how); and constructivist strategies to teach the real-life and personal applications and contextual learning. (Nicely said!) There is a shift toward constructive learning, in which learners are given the opportunity to construct their own meaning from the information presented during the online sessions (Anderson & Elloumi, 2004). Each theory connects the learning of the next theory in terms of learning.

No matter what form of education, distance or traditional method of education technology brings a learner a variety of learning mediums to fit their own learning style by preferences the mode to which they want to learn. The mediums include the variety of delivery methods of abstracts, text, visual, sound, and social. The mediums are more frequently found in distance learning where a learner has a computer it front of them, whereas a classroom setting financially cannot provide the technology for each student in each classroom. Therefore, distance learning mediums combine more of the visual, auditory and kinesthetic learning styles of each learner (Oblinger, Barone & Hawkins, 2001). Chute, Thompson and Hancock (1999) describes the future teacher similar to that of an orchestra conductor of multimedia. “The attention span of teens often is between 30 seconds and five minutes” (NCCTE, 2004) states in focusing how teens learn. The web provides exploration, experience, engagement, ease of use, empowerment, and effectiveness. It provides a safe, environment that is conducive to learning. Similar to the constructivist theory of what learning is all about, allowing learners to construct their own meaning from disseminating the information processed. They process and store information that they find necessary to reach that goal.

There will be a need as distance education grows, for more online applications, campus based portals, online procurements, online course delivery, supplemental providers, content providers and online virtual libraries (Oblinger, Barone, Hawkins, 2001). Understanding that there are barriers to overcome such as not everyone has a computer let alone Internet, non-English learners, and international learners, disabilities, fair use, faculty issues, money, equipment, privacy and security, financial aid, accreditation, human resources, libraries, politics, processes, values, cultural, and teaching modalities. Barone (2001) stated there are 12 conditions for change for institutional that are essential characteristics in which higher education now operates are choices, commitment, courage, communication, cooperation, community, curriculum, consistency, capacity, culture/context, complexity/confusions, and creativity. Educause ranked teaching and learning number 5 IT technology issue.

(The review looks good. I think it would be stronger if you could reference a study on high school computer classes along with what is taught in the class. I hope my comments and edits help!)

Bill

Method

Approach

A mixed method of research will be used in the study. The two research groups will consist of MyDistrict Virtual students and Chiefland High School students enrolled in the computer course. The participations will vary depending on the amount of students enrolled. Students enrolled in MyDistrict Virtual School are currently 9 students and 99 students currently enrolled at Chiefland High School. Data will be collected this year and next year for validity purposes and because of the limited amount of current virtual students, however the amount of current traditional students is numerous. Students will be chosen on a volunteer basis to participate in the testing of both the virtual and classroom mid-term and final exam.

Data needs

A course assessment questionnaire, developed by the University of Michigan with permission, will be used to assess both courses. Students who volunteer to participate will be given the course assessment questionnaire and exam twice during the year. The course assessment questionnaire, mid-term, and final exam will be administered over the Internet. Students will take the both the online and traditional classroom mid-term and final exam.

Plan for interpreting results

The results of instructional design, academically, and perceptions of high school student in each learning environment will be discussed qualitatively in the findings. Student academic achievement will be statistically analyze student academic achievement based on both learning environments mid-term and final exam questions.

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