

WHAT ARE THE EFFECTS OF USING INTERACTIVE ONLINE ASSIGNMENTS
PRIOR TO CLASS OR CLINIC EXPERIENCE ON MEDICAL ASSISTANT
STUDENTS' UNDERSTANDING OF THEIR ROLES IN ASSISTING
VARIOUS TYPES OF PHYSICIANS?

by

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of

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TABLE OF CONTENTS

1. INTRODUCTION AND BACKGROUND	1
2. CONCEPTUAL FRAMEWORK	3
3. METHODOLOGY	7
4. DATA AND ANALYSIS.....	12
5. INTERPRETATION AND CONCLUSION	16
6. VALUE	17
REFERENCED CITED.....	20
APPENDICES	23
APPENDIX A MSU Institutional Review Board.....	24
APPENDIX B Student Assessment Questions	26
APPENDIX C Timeframe.....	32
APPENDIX D Student Interview Questions	34
APPENDIX E Student Survey Questions	36

LIST OF TABLES

1. Data Triangulation Matrix 11

LIST OF FIGURES

1. Post-test vs. Pre-test Nontreatment Concepts Related to Medical Assistant12
2. Post-test Non-treatment Scores Versus Post-test Treatment Scores.....13
3. Student Responses from Christianson Survey14

ABSTRACT

Two-year college level Medical Assistant students participated in an online interactive podcast lecture based learning to assess the effectiveness of student motivation and learning of the material prior to Clinical Procedures I course. Participation of the students decreased with the online interactive podcast compared to that of the tradition lecture base. The online interactive podcast did not show a greater learning of the material as compared to lecture format, although students reported having more motivation and learning while viewing the online interactive podcast prior to class.

INTRODUCTION AND BACKGROUND

A Medical Assistant works under the supervision of a physician. Medical Assistants are cross-trained to perform administrative and clinical duties in an outpatient setting. However, 10% of Medical Assistants are known to work in hospitals, private laboratories, or as traveling healthcare screeners. The primary duties of a Medical Assistant vary from clinic to clinic depending on the size of the office, location, state laws, and specialty. The duties involved, but are not limited to, taking medical histories, vital signs, appointment scheduling, patient education, and overall keeping the clinic flow smoothly.

I have taught courses in the Medical Assistant Program in a public postsecondary two year educational institution for last five years. These courses consisted of Medical Office Procedures, Clinical Procedures I and II, and Laboratory Procedures I and II. The Medical Assisting Clinical Procedures I course is the first part of a two part course and the beginning of the Medical Assistant training. The Clinical Procedures I course provided an introduction to the medical assistant career and the duties and responsibilities within the clinical area of an ambulatory setting. The course included theory and practice in the maintenance of equipment and supplies. The course had also emphasized the techniques of medical asepsis, preparation and maintenance of exam rooms, assessing vital signs, assisting with various routine and specialty examinations and performing respiratory testing.

My goal was to get all my students eager about becoming a Medical Assistant. My previous style for instilling this eagerness in students about the Medical Assistant

field was to utilize traditional strategies of learning in a lecture-based classroom. I also provided guidance and advice to them on their journey to complete the Medical Assistant program and succeed in their career. However, last year I found a group of students that appeared to struggle with this style of learning. They appeared to want a method other than my traditional strategies. One of the students stated that it was not their style to read the chapter ahead of time and thought that I should go over the chapter in more detail during class time. Their concerns and questions caused me to consider that perhaps, the old way of teaching is not effective as it once was. It was then that I decided to see if I could find a way to break away from the traditional styles of teaching to better serve the age range of the Medical Assistant students.

After much research and reflection, I decided that a slight change in pedagogy, rather than a complete change, would be the best way to begin. Much of this decision was based on the wide age range in the classroom, I wanted a style of learning that would connect with the older students that grew up with the traditional style of a lecture-based classroom as well as one that would still address the style of learning of the younger age students.

The Medical Assistant Clinical Procedures I course was taught in a hybrid fashion. Hybrid is one that is partial online and partial face-to-face. With the right information, all students could benefit from hybrid courses because these hybrid courses provide some technological background in the learning process. The hybrid course could be designed and taught in a manner that allows students with little or no technical background to be successful. This was done by creating games, completing group work,

or doing projects on the internet. Creating assignments online allowed students a chance to review the concepts in a different way before they arrive to their face- to- face class.

Great Falls College MSU is a public postsecondary two year educational institution affiliated with Montana State University located in Great Falls, Montana. The school offers a variety of two year associate and certificate programs. There are approximately 1500 full time students. The Medical Assistant Program at Great Falls College MSU is an Associates of Applied Science Certificate. The students in this study were part of the Great Falls College MSU Medical Assistant Program, taking the first course in the Medical Assistant Program, Medical Assisting Clinical Procedures I.

The focus questions of my capstone project was: *What are the effects of using interactive online assignments prior to class or clinic experience on medical assistant students understanding of the skills necessary to be proficient in assisting various types of physicians?* My project considered the following subquestions: 1) What are the effects of using interactive online assignments prior to class or clinic experiences on student interest and motivation; 2) what are the effects of using interactive online assignments prior to class or clinic experience on attendance in their Medical Assisting Clinical Procedures I courses at Great Falls College MSU; and 3) what are the effects of using interactive online assignments prior to class or clinic experience on my thoughts about my role as a health science instructor and my motivation to improve instruction?

CONCEPTUAL FRAMEWORK

Two-year community colleges, four-year private and public colleges and universities, and even Ivy League universities offer hybrid courses. According to the New

York Times, universities with financial loss of support from the government have implemented hybrid courses to create a new stream of revenue. Hybrid courses were also created to attempt to increase retention in courses that have a large number of students. Hybrid courses were taught using a combination of online learning and face-to-face classroom instruction (Lemons, 2013). A hybrid course allowed the students much more flexible scheduling, while maintaining a face-to-face contact with their instructor and classmates. A hybrid course can be done by assigning an assignment online to the student and have it due the day before coming to lecture, then assign an additional online assignment to be due several days after the lecture. These actions turn the lecture into an active learning environment. The instructor lectured for 5-15 minutes in the beginning of class, assigned students a critical thinking problem to be worked out in groups, then lectured on the results for another 5-15 minutes. This active learning environment was done out in a 50 minute class period that consisted of two lectures and two critical thinking problems. Students then turned in their own work on the group discussion as part of the critical thinking problem. The results from this study showed active-learning attendance was 88% in a traditional courses compared to 81% in the hybrid course. However, active learning environment there was 78% in a traditional course compared to that of 93% for a hybrid course. The study results showed that students were more likely to do their assigned homework online than in the classroom (Riffell & Sibley 2004).

Resendes, Mroz, and Campbell (2013) completed a study to determine the effects of a hybrid course versus traditional classroom. Resendes, Mroz, and Campbell performed this study at a small liberal college. They determined that students who took

the hybrid course were able to analyze information better than those students who were in the traditional classroom. This study was done in a small liberal arts college with a class size of less than 24 students. An additional study found that introducing a hybrid course to students who come from a large public university increased student interest with a noticeable increase in attendance (Riffell & Sibley 2004). Hybrid courses helped 50 Computer Networks and Communications students read the text and converse in study groups more often than those students who were not in a hybrid course. Studies have shown that student achievement was higher when the class was conducted as a hybrid course (Delialioglu & Yildirim, 2007).

Online education is convenient and has the flexibility for students to do their work off campus (Gould, 2014). In the state of Hawaii, whose geography was comprised of many different islands, the local colleges had to find a way to reach out to their potential long distance students, who were from different parts of the Hawaiian Islands, to see if they would benefit from a hybrid course. Gould's study had a very positive feedback from the students on the different Hawaiian Islands and could see the benefits in using technology to reach out to the college professors especially when distance and transportation become a factor.

Attendance with a hybrid course had a negative impact in the face-to-face learning portion of the classroom when providing high quality materials online. A hybrid course was introduced to upper level students and found that these students showed an increase in attendance for the interactive online assessment portion. However, when it came time for the face-to-face learning, there was a lack of attendance among the upper

class level students, it was not self-reported to state why this was the case (Yudko, Hirokawa, Chi, 2008).

Motivation is the drive to accomplish a task and interest is the desire and curiosity to try new things (Dictionary.com, 2014). It was important to look at studies that indicated the motivation of the instructor. Motivation in a hybrid course comes from the instructors understanding they are more than just a designer, which is someone to just sets up the course and allows the computer to be the tutor. Hybrid instructor are the modeler, demonstrator, and moderator. It is the understanding that online tools can affect the roles, engagement and teaching practices of the instructor. Providing instructors with training and professional development in a hybrid class to learn to encourage student engagement led to motivation of the instructors (Drewelow, 2013).

As the education system continues to shift towards online courses, the use of hybrid course will continue to grow. Hybrid courses are found to increase student motivation, interests, attendance, and help the students be better prepared for the material presented in the face-to-face learning environment as well as their clinical experiences (Yudko, E., Hirokawa, R., & Chi, R. 2006).

Designing a hybrid course, such as a podcast, can affect the roles and engagement in the learning process of the instructor as well as the student (Sauter et al. 2013). An added benefit of a hybrid course and using tools such as a podcast, is that students were able to review the material several times compared to students who were shown a set of lecture slides in a face-to-face learning environment. Some students needed to reevaluate new information in order to fully understand the material (Gould, 2014).

METHODOLOGY

The 11 students who participated in the treatment were first year students in the Medical Assistant Clinical Procedures I course. Of the 11 students in my class, two were males, ranging in ages from 18-30 years old. The women, who made up a majority of the course age in ranges of 18-65. The semester ran from January 8, 2015 to May 2, 2015. The study took place at Great Falls College MSU, MT a public two-year college with an enrollment of approximately 1,837 students. The college serves small and rural communities in central Montana with a population of over 81,000. The two-year college is affiliated with the Montana State University. The Great Falls College MSU student population is 71% female. Fifty percent of the Great Falls College students are older than 25, with an average age of 29. The Medical Assistant students taking Clinical Procedures I course were currently in their second semester of a five semester Medical Assistant Program. Because of the average age range, the students come in with different learning styles and expectations of the course. The research methodology for this project received an exemption by the Montana State University's Institutional Review Board and compliance for working with human subjects was maintained (Appendix A).

The Christianson Study was designed to determine if giving an interactive online assignment prior to class or clinic experience would give Medical Assistant students a better understanding of their roles in aiding various types of physicians. Data collection for The Christianson Study, based upon the action research model, looked at the understanding of the material covered in each chapter using three separate instruments.

These instruments included pre- and post- unit quizzes, pre- and post- unit surveys/interview questions, and attendance.

One way of measuring student understanding of the material, was to use the pre and post chapter quizzes. During the first three weeks of the study, class was conducted in normal manner. The project began with the nontreatment chapters that focused on Infection Control, Patient Assessment and Patient Education. Students learned to instruct patients according to their needs to promote health maintenance, disease preventions, as well as develop a current list of community resources related to patient's healthcare needs. Students also learned to perform proper hand washing, sterilization procedures, patient screening, and item preparation for the autoclave using established protocols. The quizzes covered infection control, patient assessment, and patient education. Student were taught the basic concepts through the use of PowerPoint presentations, workbook assignments, videos, and procedural skills. Students were presented new material through a lecture, videos on how to perform the lab skills, and discussion. Notes were presented on the board for the most important parts of the chapter. Videos were presented in the lecture to show the students how to perform the necessary skills in the chapter for the lab. Workbook assignments were assigned to help students understand the materials covered in both chapters. The non-treatment chapters were taught using a set of slides to learn the information from the chapters. Students completed the Non-treatment Pre and Post Unit Chapter Quizzes to show their level of understanding of the procedures (Appendix B). The quizzes were analyzed by comparing the means of each test against

last year's students' mean scores. A general timeline for the implementation of these chapters can be found in Appendix C.

The treatment chapters focused on chapters in nutrition and health promotion, and assisting with ophthalmology and otolaryngology. Students learned to respond to issues of confidentiality, develop a plan for separating personal and professional ethics, and educate patients to understand food labels. Students learned to assist the physician with patient care and perform patient screening using established protocols. The treatment consisted of podcasts of the content lecture with embedded quizzes. Students were required to watch the podcasts and complete the quizzes out of class. Class time was then devoted to reviewing hands-on skills, application, and lab procedures. The content included nutrition, health promotion, and assisting with ophthalmology and otolaryngology. Treatment Pre and Post Chapter quizzes were administered to all students and the mean scores were compared to the Pre and Post Non-treatment Chapter Quizzes' mean scores for the non-treatment unit.

Data were collected from three sources for each of the project questions to allow for triangulation. Therefore, no single data collection method was fully responsible for any conclusions (Table 1).

The Christianson Pre and Post Chapter Interview Questions looked at individual students understanding of their roles in aiding various types of physicians and comprehension of the material being covered (Appendix D). The interview questions asked the students if they knew what was expected of them in the reading and the hands on skills and if the material covered in the chapters relates to clinic experience and if they

were able to remember the information presented to them from the traditional lecture.

Interview data was analyzed for themes and used to support claims from other data.

The Christianson Student Survey was administered both pre- and post-treatment to measure the effects of podcasts on student learning (Appendix E). The same questions were used in both settings. The data was analyzed by comparing pre and post results.

Only four students were picked for the interview part of the study because of time restraint. The students chosen for the interviews were from both sides of the spectrum to see if their learning style and expectations make a difference in their motivation of doing an additional assignment prior to attending the course. The students involved in the interview questions were two female students who were under 25. These students were not married and currently unemployed. The additional two female students were over the age of 25 and were considered non-traditional students married with children.

Attendance was determined by measuring the number of students who participated in the Non-Treatment Pre- and Post- Chapter Quizzes and the Treatment podcast with embedded quiz.

Motivation was measured by the Christianson Student Surveys. The surveys consisted of questions on how students felt about the online interactive assessment and if they learned the material well. The survey asked students if they felt motivated by the online assessment. The interviews were conducted individually in the staff office to elicit student concerns, understanding of the material, motivation and attitude. These interviews and survey questions yielded both quantitative and qualitative data to compare

the effects of the treatment on student learning, interests, motivation and attendance

(Appendix D and E).

Table 1 Triangulation *Matrix*

Focus Questions	Data Source 1	Data Source 2	Data Source 3
<p><i>Primary Question:</i> 1. What are the effects of using interactive online assignments prior to class or clinic experience on medical assistant student understanding of their roles in assisting various types of physicians?</p>	Non-treatment Pre and Post unit Chapter quizzes	Treatment Pre and Post Chapter Quizzes	Christianson Student Survey
<p><i>Subquestions:</i> 1. What are the effects of using interactive online assignments prior to class or clinic experience on student interest and motivation</p>	Non-Treatment Pre and Post Chapter Quizzes	Treatment Pre and Post Chapter Quizzes	Christianson Student Survey
<p>2. What are the effects of using interactive online assignments prior to class or clinic experience on attendance</p>	Taking Attendance	The Christianson Online Interactive Podcast	Christianson Student Surveys
<p>3. What are the effects of using interactive online assignments prior to class or clinic experience on my thoughts about the role as a health science teacher and my motivation?</p>	Treatment Pre and Post Test Chapter Quizzes	Christianson Student Interview Questions	Christianson Student Surveys

DATA AND ANALYSIS

The results of the Non-treatment Pre and Post Chapter Quizzes indicated that 52% of the students had scores under 75%. The Nontreatment Pre Chapter Quiz scores showed students average score of 74.4%. The Nontreatment Post Chapter Quiz scores showed an average of 81.96%. In the area of understanding the concepts related to the chapters, 89% of the student showed gains in their overall score, and 11% showed a decrease in posttest scores. The Nontreatment Pre Chapter Quiz results ranged from 40% to 96%, with an average score of 74.4%, and the Nontreatment Post Chapter Quiz showed an average 81%, in which there was a 7.5% increase in test score on the post-test (Figure 1).

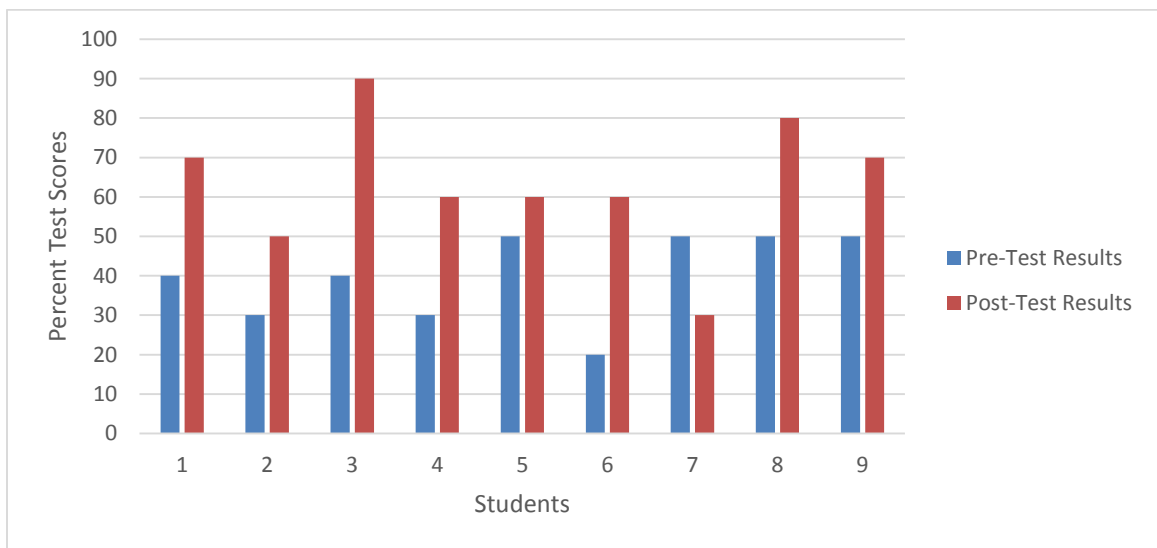


Figure 1. Non-treatment Pre-Post Chapter Quiz Scores related to the chapter quizzes, ($N = 9$).

The Non-treatment Post-test Chapter Quiz scores were compared to the Treatment Post-test Chapter Quiz scores to see if there was an increase in student knowledge of the material. The students' ability to understand the material showed an increase from 66% in posttest scores using the non-treatment study to an increase of 70% in the posttest

scores followed by the treatment study. Eighty-six percent of the students showed improvement in understanding the material when being presented with an online interactive podcast (Figure 2).

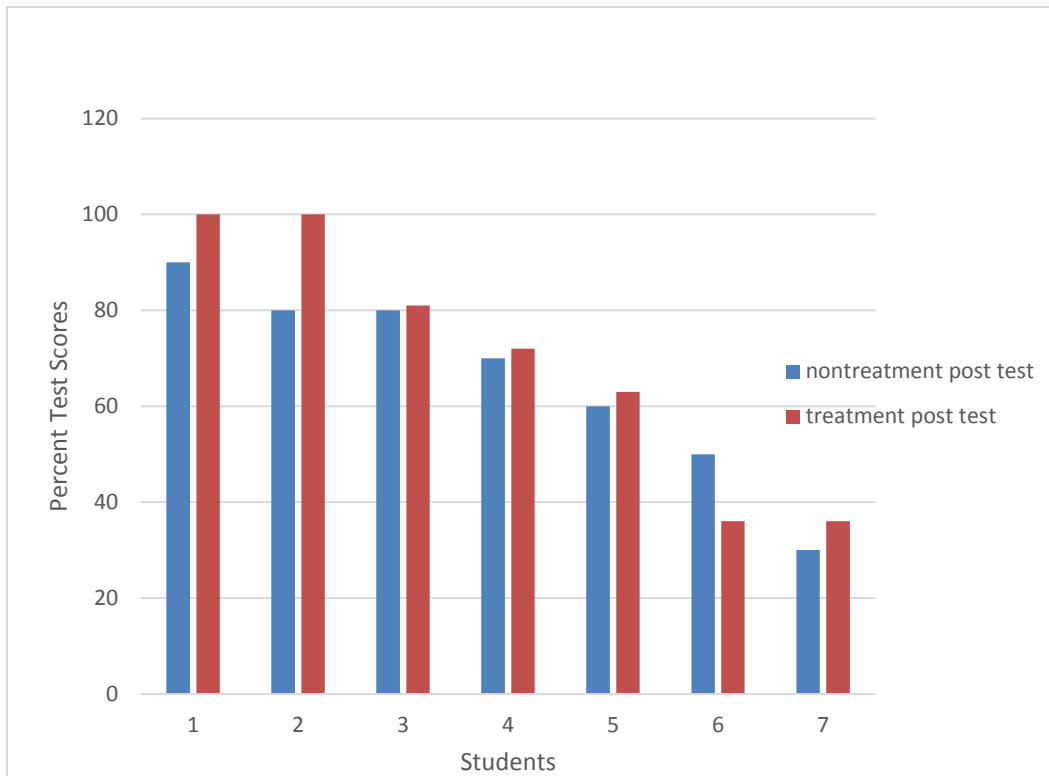


Figure 2: Non-treatment Post Test Chapter Quiz scores versus Treatment Post Test Chapter Quiz scores, ($N=7$).

The next portion of the data, Christianson Student Survey showed that over 87% of the students agreed in their understanding of the material and objectives after watching the online podcast with embedded quizzes ($N=8$). While 50% of those students *strongly agreed* with the statement. The student's understanding of the material in relation to real world scenarios showed that 87% students of the students *strongly agreed* with that statement. The survey indicated 12% of the student's *agreed* that they had confidence in understanding the learning objectives was only about. While only 50% of the students

strongly agreed with the statement. The next survey question asked the students if the interactive podcast helped cover the material better than reading it on their own, 87% of the students *agreed*. The Post-Unit survey question showed 87% *agreed* or *strongly agreed* that the online interactive podcast helped them to understand the objectives and better understand the procedures in lab (Figure 3).

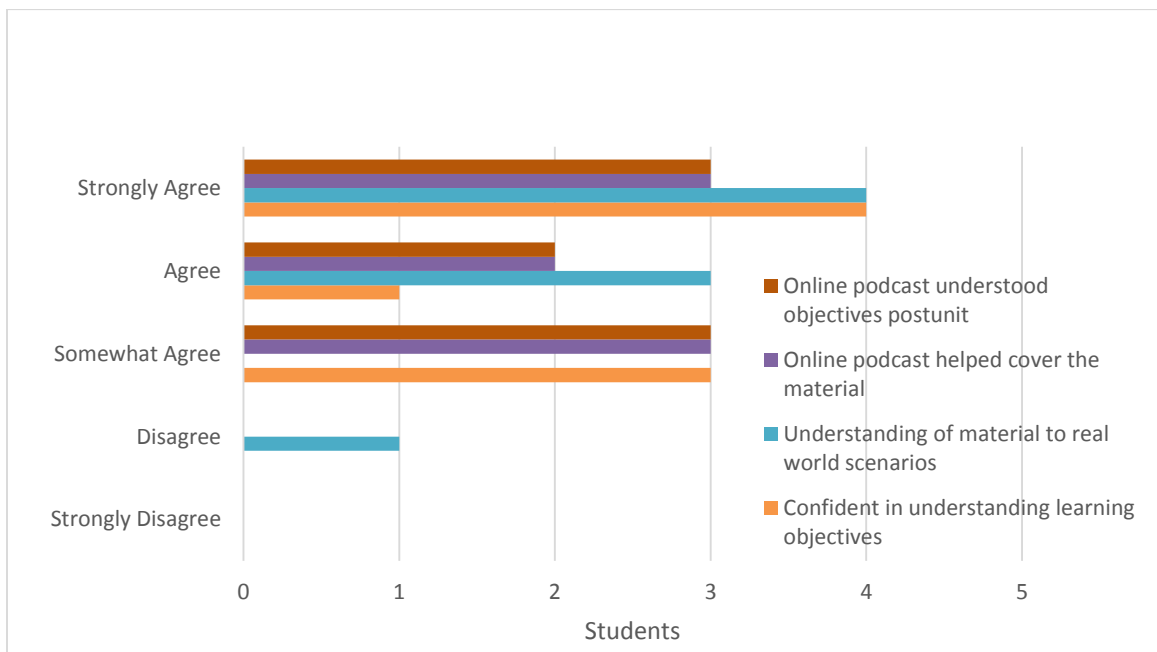


Figure 3. Student responses from the Pre and Post Treatment Christianson Survey regarding understanding the material and objectives, ($N=8$).

The student survey consisted of three open ended questions. The students gave a variety of answers evaluating the impact of the traditional lecture based course versus the online interactive podcast. The first question asked the students about what motivates them to learn new procedures. One student stated, “The way the body works and how all its parts work together,”, another student stated that “I love learning new things, anything medical interests me...”. The next question asked was to find out if the students were motivated to read the chapter further or their level excitement of learning the chapter after

a traditional lecture. One student stated the motivation came from “Applying skills to the real world”. While another student stated her motivation was to “Learn more about what I can do in the medical profession”, and “....experience of knowing how it feels.....”. The last question asked the students if the online interactive podcast was effective in helping them learn. One student thought the online interactive podcast gave her the opportunity “to stop and pause it and take notes as needed”. Another student stated, “I was able to do it when I needed to”.

The attendance revealed that 91% of the students participated in the Non-Treatment Pre and Post Chapter Quizzes and 64% of the students participated in the Treatment podcast with embedded quiz, indicating low participation rate. However the percentage of quiz scores increased by 15%.

Student motivation was determined through interviews. The interview questions can be seen in Appendix D. The interview was done pre-unit and post-unit of the treatment chapters. The interview was conducted with four students. All four students when interviewed individually knew what the chapter was called, main learning objectives, and patient education expectations based on the reading. The next question was asked the students about what helped them understand the information and procedures from the chapter. All four students stated that taking notes, viewing slides, hands-on activity, and reading the chapter helped them understand the chapters. The feedback received when asked about what would helped the students remember the key points of the chapters was “handouts...”, “...seeing and hearing information”, “explaining medical terms at the middle school level”, and “.....worksheets.”. The last

question that was asked during the interview was their confidence level on how successful they believe they will be in completing and understanding the chapters. On a scale of 1 being least confident and 10 being most confident, all four scored themselves an 8 or above.

INTERPRETATION AND CONCLUSION

Even though the students and I ran into some problems with the online interactive podcast, The Christianson Study was a great experience. Some of the problems included lack of time, issues with the closed captioning, incorporating the quizzes, and not being able to watch the podcast. Throughout the project we compared the problems to real world challenges of working with technology in the medical field. The success of the project was the students understanding of the importance of the material for their successful career as a Medical Assistant. Time was an issue mostly for myself as the instructor. This was due to having no knowledge of creating a podcast, working full-time as a program director for four programs and instructing five courses while furthering my education. The interactive podcast transcribed the information into closed captioning. The transcription was very poor and had to be edited completely. In the first treatment there was difficulty incorporating the quizzes in the podcast. Through research I found the MSU relay did not support quizzes inside the podcast. A relay is a media hosting solution to share multimedia content on the web. Relay allowed me to share the video with my student over the web. For the second part of the treatment I incorporated a different relay system from screencast.com that supported quizzes. However, the transcribing was still a problem. Lastly some of the student were not able to view the

podcast due to the different types of computers, fire wall settings, and inability to download the podcast.

The data in Figure 1 indicated the student's Non-treatment Pre-test and Post-test Chapter quiz scores. This was done to assess the students to see if they were reading the material prior to lecture. The post-test scores are the results after a traditional based lecture was given. Eight out of 9 students showed improvement in post-test scores. (Figure 1). This could be an indication that lecture is an important part of student learning and obtaining the main objectives from the chapter.

The online interactive podcast based lecture showed improvement in student learning of the material prior to class. In Figure 2 there was an average increase of 7% in test scores when students were able to hear the lecture through an online interactive podcast. Students stated the advantage to the online interactive podcast was they were able to view and review the podcast on their own time.

The Pre and Post Treatment Survey indicated that only 38% of the students learned the objectives and material covered in the online podcast with embedded quizzes. Based on the survey answers, the online podcast with embedded quizzes that covered the information on Nutrition, Health Promotion, and assisting with Ophthalmology and Otolaryngology indicated that 50% of the students did not have an understanding of the material as it relates to real world scenarios.

VALUE

The values of this study was that I could determine what was most effective for my medical assistant students in terms of strategies for learning new material through

actual data. This is my fifth year of teaching medical assistant courses at Great Falls College MSU. I had started out teaching through PowerPoint lectures and over the years have tried to introduce technology as well as other types of interactive engagement, but I never knew how to bring technology into the classroom learning environment or how to gauge whether student were more or less motivated with the new learning strategies.

This capstone project allowed me to measure student insight on the idea of changing the learning strategies in the classroom. This process forced me to overcome my fear of trying a new learning strategy that included technology and using a new software program. My students as well as I have become “bored” by lectures using just PowerPoints slides. Since I instruct at a community college, a majority of my students like “hands-on” activities versus being lectured about the material. Creating the interactive online podcast has opened up opportunities to have further interactive engagement about the material in a way that they would have not have had before.

I feel at this point, I’m in the beginning stages of using technology correctly to create an online interactive podcast. My goal is to research more information on using technology and software correctly to engage students at a higher level of understanding and to motivate about learning through online interactive assignments. I felt even though this was a huge time commitment on my part, the students benefitted from the online interactive podcast and I benefitted because I can now find ways to break from the overused PowerPoint lectures and use the classroom time for interactive engagement activities.

I have grown from this experience and am grateful to have taken the courses through the MSSE program. The program has helped me break the concept of using PowerPoint slides to try something different. I feel that through the MSSE program I have become a better instructor because I have learned a variety of teaching tools, have a solid way of gauging my teaching methods, and learned effective ways of helping my students.

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APPENDICES

APPENDIX A
ALB DOCUMENT

**COLLABORATIVE INSTITUTIONAL TRAINING INITIATIVE (CITI)
STUDENTS CURRICULUM COMPLETION REPORT**

Printed on 04/21/2014

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DEPARTMENT Health Science
PHONE 4067714411
EMAIL pamela.christianson@gfmsu.edu
INSTITUTION Montana State University
EXPIRATION DATE 04/20/2017

STUDENTS - CLASS PROJECTS: This course is appropriate for students doing class projects that qualify as "No More Than Minimal Risk" human subject's research.

COURSE/STAGE: Basic Course/1

PASSED ON: 04/21/2014

REFERENCE ID: 12841558

REQUIRED MODULES	DATE COMPLETED
Belmont Report and CITI Course Introduction	04/21/14
Students in Research	04/21/14
History and Ethical Principles - SBE	04/21/14
Defining Research with Human Subjects - SBE	04/21/14
Informed Consent - SBE	04/21/14

For this Completion Report to be valid, the learner listed above must be affiliated with a CITI Program participating institution or be a paid Independent Learner. Falsified information and unauthorized use of the CITI Program course site is unethical, and may be considered research misconduct by your institution.

Paul Braunschweiger Ph.D. Professor, University of Miami
Director Office of Research Education
CITI Program Course Coordinator

APPENDIX B
STUDENT ASSESSMENT QUESTIONS

Nontreatment Pre and Post- Chapter Assessment Questions**Chapter 27 Infection Control and Chapter 28 Patient Assessment**

Pre and posttest: Answer these questions prior to covering this chapter to understand where you stand in relation to the content.

1. Any disease caused by the growth of pathogenic microorganisms in the body falls into the category of _____.
2. _____ are unable to destroy viral invaders that enter a normal cell and multiply within the cell.
3. Fungi grow best in warm, _____ environments.
4. When trauma occurs to the body, it alerts protective mechanisms, and the body responds in a predictable manner, called the _____ response.
5. Employers of workers who are at risk for occupational exposure to _____ or other infectious materials must implement an Exposure Control Plan that details employee protection procedures.
6. Barrier protection, or PPE, includes specialized clothing or _____ that prevents blood or other potentially infectious material from passing through to reach the healthcare worker.
7. Linens soiled with blood or body fluids should be double-bagged and transported in labeled, leak proof _____ bags.
8. Hepatitis B _____ is administered by intramuscular injection in three doses.
9. The most effective barrier against _____ is the unbroken skin.
10. Proper hand washing depends on two factors: running water and _____.
11. The first step in treating a disease is for the physician to determine the patient's medical _____.
12. Documentation of information gathered while taking a medical history is included in the _____ section of the medical chart.
13. Hereditary and/or familial _____ and disorders are recorded in the family history section of the medical history.

14. Demonstrating respectful patient care is extremely important when working with a _____ patient population.
15. _____ Listening techniques encourage patients to expand on and clarify the content and meaning of their messages.
16. Consider the patient interview as a form of _____ between you and your patient.
17. The closing of the interview should clarify the patient's _____ complaint, the purpose of the visit, and the patient's expectations of care.
18. Always remember that when interviewing a patient, you should _____ more than talk.
19. Children fear the unknown, so it is important to explain all procedures with _____ the child understands.
20. Privacy is an important issue to consider with older children, especially _____.

*Participation is voluntary, and you can choose to not answer any question that you do not want to answer, and you can stop at any time. Your participation or non-participation will not affect your grade or class standing.

Nontreatment Pre and Post- Chapter Assessment Questions.**Chapter 29 Patient Education**

Pre and posttest: Answer these questions prior to covering this chapter to understand where you stand in relation to the content.

1. Many factors or patient _____ may affect the patient's ability to learn.
2. A vital part of patient education is encouraging patient ownership of the _____ process.
3. Many times the key to patient understanding and compliance is the involvement of _____ members.
4. Frequently, patients will use _____ mechanisms to protect themselves from the reality of a serious illness.
5. Some patients can learn from _____; others must act or do something with the material to learn it.
6. Start your teaching intervention by asking your _____ how he or she prefers to learn new material, and pattern your teaching interventions along those lines.
7. A hearing or speech impairment may require the use of sign language with supplemental _____ instructions.
8. Use the _____ room as a place for learning by providing up-to-date educational materials on a wide variety of health issues.
9. All patient instruction should include a handout or some type of printed material that _____ information and that can be used as a patient resource.
10. Hospitals and many community agencies provide patient education opportunities, _____ groups for specific problems or diseases, and learning materials.

*Participation is voluntary, and you can choose to not answer any question that you do not want to answer, and you can stop at any time. Your participation or non-participation will not affect your grade or class standing.

Treatment Pre and Post- Chapter Assessment Questions**Chapter 30 Nutrition and Health Promotion**

Have the students answer these questions prior to covering this chapter to understand where they stand in relation to the content.

1. A poor _____ and risky lifestyle behaviors are directly related to multiple health problems.
2. The medical assistant should be able to answer basic questions on healthy nutrition and should have a fundamental knowledge of the _____ that physicians prescribe most often.
3. Nutrients include carbohydrate, fat, protein, vitamins, _____, and water.
4. Metabolism is the process in which _____ are used at the cellular level for growth and energy production as well as excretion of waste.
5. Dietary deficiencies result in malnourishment and may lead to a variety of _____.
6. Insoluble _____, which is found in whole grains and beans, promotes regular bowel movements.
7. A triglyceride molecule is created when _____ fatty acids attach to a molecule of glycerol.
8. Proteins are composed of units known as amino acids, which are the materials that our bodies use to _____ and repair tissues.
9. Minerals must be supplied by the diet or from _____.
10. Calorie intake must be balanced with energy _____ to maintain a healthy body weight.

*Participation is voluntary, and you can choose to not answer any question that you do not want to answer, and you can stop at any time. Your participation or non-participation will not affect your grade or class standing.

Treatment Unit 31 Pre and Post- Chapter Assessment Questions**Chapter 37 Assisting in Ophthalmology and Otolaryngology**

Have the students answer these questions prior to covering this chapter to understand where they stand in relation to the content.

1. Ophthalmology is the science of the _____ and its disorders and diseases.
2. Many subspecialty areas within the eye, ear, _____, and throat (ENT) medical practice arena are available for medical assistants to enter.
3. Any damage to the _____ has the potential for causing partial or complete blindness, because it is where the neurologic center of vision is located.
4. Defects in the _____ of the eyeball may cause a refractive error.
5. A(n) _____ is a cloudy or opaque area in the normally clear lens of the eye that blocks the light into the retina, causing impaired vision.
6. Distance _____ acuity is frequently part of a complete physical examination.
7. The eye is _____ to relieve inflammation, remove drainage, dilute chemicals, or wash away foreign bodies.
8. Hearing _____ occurs because of two problems: either a conduction problem or a sensorineural impairment.
9. A tympanogram may be done to determine the air pressure of the middle ear and the _____ of the tympanic membrane.
10. An audiometric test may be done in an otology or family practice and is performed by _____ who have received additional training.

*Participation is voluntary, and you can choose to not answer any question that you do not want to answer, and you can stop at any time. Your participation or non-participation will not affect your grade or class standing.

APPENDIX C
TIMEFRAME

Timeline:

Project Start: 1/08/2015
Project End: 02/28/2014

Start Project Implementation: 01/08/2015

1 week- Inform the Students of the research being done, surveys, assessments, and online interactive assessment. Give students nontreatment pretest.

1 week- Infections control and patient assessment (nontreatment chapter)

1 week- Office Environment, Daily Operations and Patient Education (nontreatment posttest)

1 week- Medicine, Ethics, and Nutrition and health Promotion. (Treatment chapter)

2 weeks- Vital signs (treatment chapter)

1 week- treatment posttest and post interviews

End Project Implementation: 02/28/2014

APPENDIX D
STUDENT INTERVIEW QUESTIONS

Pre-t and Post- Interview Questions

1. The chapter is called _____, and the main learning objective of this chapter is to_____. What does this chapter imply the duties of a medical assistant are?
2. Based on the title of this chapter and the reading what things do you need to know from this chapter to help you understand what is expected and do the procedures? (pre- interview)
3. Explain patient education from this chapter?
4. What helps you to understand information and procedures in this course? Explain
5. How do you think this chapter relates to the clinic experience of a doctor's office?
6. How well do you remember the information from the course lessons? Explain (post unit interview)
7. What would help you to remember the key points in this chapter? Explain
8. On a scale of 1 to 10, 1 being the least confident and 10 being the most confident, how successful do you believe you will be in completing and understanding this chapter?

APPENDIX E
STUDENT SURVEY QUESTIONS

Survey Questions:

After doing the online Interactive Assignment:	Strongly Disagree 1	Agree 2	Somewhat Agree 3	Disagree 4	Strongly Agree 5
1. I feel/felt like I confident in my understanding the Learning Objectives of the chapter					
2. I feel/felt I can apply my understanding of this chapter to real world scenarios.					
3. I feel/felt the online interactive podcast helped cover the material rather better than reading it on my own.					
4. Post-: The online interactive podcast helped me understand the objectives covered in lecture course and better understanding of the procedures in lab.					

Open Ended Survey Questions:

5a. Preunit: What motivates you to learn new procedures? Explain.

5b. Post unit: After going over the chapter, completing the workbook, and performing the skills, what motivated or excited our about learning? Explain.

6. Post unit: In what ways was the online interactive podcast effective and lessons on the chapter effective in helping you learn? Explain.

7. Post unit: If you scored yourself as a disagree or strongly disagree for any questions 1-3, please explain why you scored yourself in that category.