

ATHLETIC TRAINING EDUCATION PROGRAM STUDENTS' PERSPECTIVES
OF ONLINE AND TRADITIONAL FACE-TO-FACE COURSES

A THESIS

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by

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THESIS APPROVAL

Graduate Athletic Training Education

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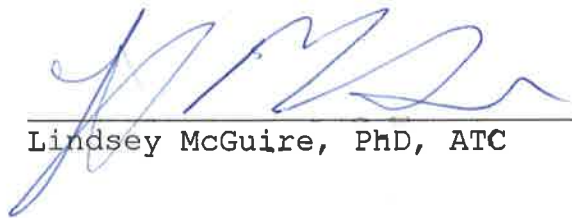
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INTRODUCTION

Since the emergence of online and distance education in the 1980's, online courses have become more prevalent in higher education with each passing year. There are a number of advantages for students taking online courses. Online courses are considered convenient for students because students can complete course work at anytime from anywhere they have access to a computer and the Internet.¹ Online courses allow students to complete courses from anywhere at any time. Online learning is defined as any form of learning that takes place on an electronic device such as a computer, tablet, or smart phone and is delivered via the internet.²

The purpose of conducting this research study was to examine professional athletic training students' perspectives of online and traditional face-to-face courses. The following paragraphs will go into brief detail on previous studies conducted that relate to the students' perceptions of online education.

Ruiz, Mintzer, and Leipzig compared e-learning to traditional learning in an article written in 2006. The authors found students' approval rates are higher with online courses compared to traditional face-to-face

courses. Also they feel that online courses are easier to use, explore, and interact with others.³ To accommodate students and enhance learning, professors are looking for other ways to reach their students who are unable to make it to the classroom for various reasons. Today, online courses play a major role in many universities' programs. However, there is paucity in the research as to how athletic training students perceive online courses. According to Ruiz et al they found that, "studies in both the medical and nonmedical literature have consistently demonstrated that students are very satisfied with e-learning."³ Other researchers found that online students who can learn as much in online courses as traditional face-to-face courses, are similarly as satisfied, and earn the same grades.⁴⁻⁶

According to Henriksen et al, several universities have started offering doctorate degrees solely online to better meet the needs of the non-traditional students.⁴ Henriksen et al examined two hybrid courses and found, the students respected the hybrid learning environment and appreciated the instructors' commitment to both online and traditional face-to-face learning opportunities with results scored as being superior to above average for professor involvement, student interest, faculty-student

interaction, demands of the course, and course organization.⁴

As the popularity of the athletic training field increases, there will be a higher demand for athletic training courses. This may lead to more courses being taught online. It is essential for the students to receive the best education possible. The results of the athletic training research may also play a crucial role in how the Commission on Accreditation of Athletic Training Education (CAATE) now requires within the next 7 years that to obtain an athletic training degree a minimum of a Master's degree must be completed.⁷ With the new changes coming to the athletic training education program there will need to be adjustments made to the students' education. It is also important to ensure Master's degree programs offer either traditional face-to-face or online courses dependent upon which type of athletic training courses students perceive that they are learning the most in.

George et al performed a systematic review to determine the effectiveness of eLearning in health care professionals' education. The systematic review analyzed 59 studies. In the studies there were 6,750 students enrolled in medicine, dentistry, nursing, physical therapy and pharmacology. "They found that 29% of the studies showed

significantly higher knowledge gains, while 40% showed significantly greater skill acquisitions.”⁵ Additionally, “67% of the studies showed no difference in attitude and 14% of the studies showed higher satisfaction with online eLearning than traditional learning.”⁵ According to the authors, “the current evidence base suggests that online eLearning is equivalent, possibly superior to traditional learning.”⁵

The studies mentioned above are closely associated to the proposed research of professional athletic training students’ perspectives of athletic training online courses and traditional face-to-face courses. Henriksen et al, George et al, and Jhang et al, have found that both undergraduate and graduate students have a positive perception of online courses.⁴⁻⁶ Currently, there is a lack of research in the athletic training field regarding online courses. In the present study, the researchers seek to determine the professional athletic training students’ perspective of online and traditional face-to-face courses.

METHODS

The primary purpose of this study is to examine the athletic training education program (ATEP) student's perspective of online courses (ONL) and traditional face-to-face (F2F) courses. This section includes the following subsections: research design, subjects, instruments, procedures, research questions, and data analysis.

Research Design

A descriptive design was utilized as this research design, employing an online questionnaire. The researcher designed the questionnaire for electronic distribution using SurveyMonkey®. The independent variable was mode of instruction; (online (ONL) and traditional face-to-face (F2F) delivery). The dependent variable was the ATEP students' perception regarding academic challenge, active and collaborative learning, student-faculty interaction, campus environment, and satisfaction.

The strength of this research was that 1,000 non-certified professional ATEP students from the United States were surveyed randomly from a national database maintained by the National Athletic Trainers' Association.

Subjects

The participants for this survey were comprised of professional athletic training education program students randomly selected by the National Athletic Trainers' Association (NATA) from its national database. According to the NATA as of December 8, 2014, there were 7,324 undergraduate members in the organization.⁸

The survey was created on SurveyMonkey® and distributed via email. The participants received an email that requested participation and informed participants of their rights prior to beginning the survey. After the first distribution of the survey by the NATA, the participants received an email reminder one week later.

A total of 1,000 participants were invited to participate in the online survey via a cover letter (Appendix C1). Each participant's identity remained confidential and was not included in the study.

Preliminary Research

A panel of experts reviewed the survey before any research was conducted. The panel members were faculty

members at California University of Pennsylvania (CalU), who added to the content validity of the survey and made suggestions for any necessary changes. The panel consisted of certified athletic trainers and a licensed physical therapist with experience and knowledge of both online and traditional face-to-face courses, and survey construction.

The panel members were sent a draft of the cover letter (Appendix C3) explaining the design and the experts' responsibilities, in this study. The panel of experts also received the researcher's problem statement and a copy of the Athletic Training Education Program Students' Perspectives of Online and Traditional Face-to-Face Courses survey (Appendix C4).

The panel members reviewed the survey instrument and added to the content validity by adding any recommendations for improvement. After reviewing the survey, the panel members provided critiques and changes that were reviewed for revision. Necessary changes were made to the survey based on critiques by the panel of experts.

After the review by the panel, a preliminary research study was administered to a class of undergraduate ATEP students from California University of Pennsylvania to test the reliability of the survey. The surveys were sent out

electronically via CalU email individually to a senior Clinical Education class of ATEP students.

The researcher asked permission to go into a class to obtain the students' emails. The researcher then emailed the students the cover letter and link to the survey. Next, the researcher asked the students to complete the same survey, one week after the first administration. All responses were gathered via SurveyMonkey®. There were 9 students that participated in the pretest and 7 that participated in the post-test. The data was compiled and analyzed with SPSS 22.0 analysis software. The preliminary study took two weeks to complete. The purpose of the preliminary study was to establish overall stability and reliability of the survey. The researchers found that the survey questions proved to be reliable and stable.

Instruments

The survey (Appendix C4) was created by the researcher using SurveyMonkey® (www.surveymonkey.com). First, the demographic portion of the survey asked questions that included age, sex, class standing, and National Athletic Trainers' Association (NATA) district.

Next, the subjects were asked to answer questions regarding their perceptions of online courses and traditional face-to-face courses. Questions included how many online classes they have completed, which they prefer, which they feel they learned the most in, which they perceive as being most convenient, and which they feel their grades are highest in. The survey contained 39 questions and took approximately 15 minutes to complete.

Questions utilized a Likert scale of agreement ranging from strongly disagree, disagree, neither agree nor disagree, agree, to strongly agree. Points were awarded to each answer from low to high indicating amount of agreement. A value of "1" indicated the survey participants strongly disagreed, a value of "2" indicated the survey participants disagreed, a value of "3" indicated the survey participants neither agreed nor disagreed, a value of "4" indicated the survey participants agreed, and a value of "5" indicated the survey participants strongly agreed. The preference of the students was determined based upon the way the question was worded to determine whether the students preferred online courses or if they preferred traditional face-to-face courses. If the question favored online courses, the closer the subject's score was to zero the more likely he/she preferred traditional face-to-face

courses, while the closer to five, the more likely he/she preferred online courses. If the question favored the traditional face-to-face courses, the closer the subject's score was to zero the more likely he/she preferred online courses, while the closer to five, the more likely he/she preferred traditional face-to-face courses. Once the data was collected, the researcher reversed the data so all of the questions that were answered "4" or "5" were scored favoring the traditional face-to-face learning environment, while questions that scored a "1" or "2" were scored favoring the online learning environment.

Procedures

The primary tool that was used to conduct the study was the ATEP Students' Perspectives of Online and Traditional face-to-face Courses survey. The study was granted approval by the California University of Pennsylvania Institutional Review Board (IRB). Following approval, the classroom survey was conducted. After validity was tested the researchers then proceeded with the survey distributed through the National Athletic Trainers' Association.

The subjects received an email distributed electronically by the NATA requesting their participation in the survey. The 1000 participants were randomly selected from the NATA member database from members in the non-certified student category and an invitation email (Appendix C1) was sent directly from the NATA. The email included a brief explanation of the research including the purpose, significance, and cover letter. The email contained a link to the researcher's survey. Consent was implied when the subject entered the survey site. The survey, ATEP Students' Perspectives of Online and Traditional face-to-face Courses, included two sections: Section I: Demographic Information, and Section II: Perceptions Questions.

When beginning the survey, the subject was asked to complete demographic questions about age, sex, National Athletic Trainers' Association (NATA) district, and how many online (ONL) and traditional face-to-face (F2F) courses they have completed. These courses could range from Care & Prevention, Introduction to AT, Pharmacology, Emergency Procedures / Response, First Aid, Basic Life Support, Organization / Administration of AT,

Athletic Taping / Bracing / Wrapping, Psychosocial Intervention & Patient Care, Ethics, Therapeutic Modalities, General Medical, Anatomy & Physiology, Nutrition, Exercise Physiology / Physiology of Exercise, Orthopedic Assessment, Evaluation Measures / Diagnosis, Kinesiology / Motor Behavior / Biomechanics, Therapeutic Exercise, Exercise Prescription / Testing / Assessment, and Ergonomics. After completing Section I, the subject was directed to Section II.

Section II included the perceptions questions. The perception questions examined convenience, study time, reading text, and retaining information. There were also questions regarding asking for help, the instructors help, online discussion, and communication with classmates. Other questions pertained to students' perceptions of learning, grades, course exams, which classes are more beneficial, which the student's prefer, and overall satisfaction.

The risk was minimal in this study. The data was then compiled into SPSS 22.0 and was analyzed according to the data analysis protocol.

Hypotheses

The following hypotheses were based on previous research and the researcher's knowledge based on a review of the literature.

1. Professional athletic training education program students will indicate:

- a greater level of academic challenge
- more active and collaborative learning
- greater student-faculty interaction
- a more supportive campus environment
- greater satisfaction

in the traditional face-to-face learning environment compared to the online learning environment.

Data Analysis

All data was analyzed by SPSS version 22.0 for this research. The research question was analyzed using descriptive statistics, the mean, standard deviation, and

average of score of each question and each category overall.

The reliability for the students' perception of online and traditional face-to-face courses was determined by the test and retest methods during the preliminary research.

The questions were analyzed and broken down into the following five categories based upon the National Survey for Student Engagement: academic challenge, learning with peers, experiences with faculty, campus environment, and satisfaction and perception. Using SPSS, the researcher then analyzed the mean and standard deviation for each question.

RESULTS

Demographic Information

A total of 102 (N=102) professional athletic training education program students randomly selected by the National Athletic Trainers' Association (NATA) from its national database completed the survey. The respondents consisted of 64 female (63%) and 38 male (37%) students (Table 1). The sample consisted of both undergraduate (n=92) and graduate professional athletic training education program students (n=10). The age range for this sample was 19 to 60 years of age (22.81 ± 5.58).

The number of participants that completed the current class standing portion of the survey was 98. There were 9 (9.18%) graduate students that took this portion of the survey. The majority of participants included 44 (44.90%) seniors. The second most frequent number of participants was students with a junior class standing (n = 30, 30.61%). (Table 2).

Table 1. Participants' Current Class Standings

Current Class Standing	Frequency	Percent
Graduate Student	9	9.18%
Senior	44	44.90%
Junior	30	30.61%
Sophomore	13	13.27%
Freshman	2	2.04%

There were 98 participants who answered which district they are currently attending school. These results can be found in Table 3. The majority was 28 (28.57%) participants in District Four: Illinois, Indiana, Michigan, Minnesota, Ohio, and Wisconsin.

Table 2. Frequency and Percentages of Participants' Districts

District	Frequency	Percentage
District One: Connecticut, Maine, Massachusetts, New Hampshire, Rhode Island, Vermont	8	8.16%
District Two: Delaware, New Jersey, New York, Pennsylvania	8	8.16%
District Three: District of Columbia, Maryland, North Carolina, South Carolina, Virginia, West Virginia	7	7.14%
District Four: Illinois, Indiana, Michigan, Minnesota, Ohio, Wisconsin	28	28.57%
District Five: Iowa, Kansas, Missouri, Nebraska, North Dakota, Oklahoma, South Dakota	7	7.14%
District Six: Arkansas, Texas	10	10.20%
District Seven: Arizona, Colorado, New Mexico, Utah, Wyoming	5	5.10%
District Eight: California, Hawaii Nevada	14	14.29%
District Nine: Alabama, Florida, Georgia, Kentucky, Louisiana, Mississippi, Tennessee	8	8.16%
District Ten: Alaska, Idaho, Montana, Oregon, Washington	3	3.06%

There were a total of 98 survey participants who answered the question whether or not they have ever

participated in an online course. The total number of participants who have participated in an online course were 73 (74.49%). Twenty-five (25.51%) of the participants have never participated in an online course. The participants who never participated in an online course did not continue through the rest survey (Table 4). For those participants, the survey was ended and they were thanked for their time and participation. The survey participants were also asked how many general education courses they have participated in online. The survey participants that have had one online course was 16 (16.33%). The number of students who had two online general education courses was 16 (16.33%). The students who had participated in three online general education courses was 13 (13.27%). The number of students that have participated in 4 or more online courses was 27 (27.55%).

The survey participants were also asked to choose which athletic training courses that they have had online and which ones that have had in the traditional face-to-face method. Of the Courses Listed (Table 4), Athletic Taping / Bracing / Wrapping had the highest response rate (100%) of the courses were delivered in the traditional face-to-face method. The highest response rate for the online course delivery method was Nutrition (31.96%).

Table 3. Participants' Course Method of Delivery

	Traditional Courses	Online Courses	Not Applicable
Care & Prevention, Introduction to AT	97 (98.98%)	2 (2.04%)	0 (0%)
Pharmacology	63 (64.29%)	12 (12.24%)	26 (26.53%)
Emergency Procedures / Response, First Aid, Basic Life support Organization / Administration of AT	96 (97.96%)	3 (3.06%)	1 (1.02%)
Athletic Taping / Bracing / Wrapping	74 (75.51%)	14 (14.29%)	13 (13.27%)
	98 (100%)	1 (1.02%)	0 (0%)
Psychosocial Intervention & Patient Care	72 (73.47%)	6 (6.12%)	22 (22.45%)
Ethics	57 (59.38%)	12 (12.50%)	30 (31.25%)
Therapeutic Modalities	91 (92.86%)	1 (1.02%)	7 (7.14%)
General Medical	71 (73.20%)	8 (8.25%)	18 (18.56%)
Anatomy & Physiology	97 (98.98%)	5 (5.10%)	0 (0%)
Nutrition	69 (71.13%)	31 (31.96%)	8 (8.25%)
Exercise Physiology / Physiology of Exercise	91 (92.86%)	4 (4.08%)	5 (5.10%)
Orthopedic Assessment	86 (88.66%)	1 (1.03%)	12 (12.37%)
Evaluation Measures/ Diagnosis	89 (90.82%)	2 (2.04%)	8 (8.16%)
Kinesiology / Motor Behavior / Biomechanics	90 (91.84%)	5 (5.10%)	8 (8.16%)
Therapeutic Exercise, Exercise Prescription / Testing / Assessment	86 (88.66%)	1 (1.03%)	11 (11.34%)
Ergonomics	37 (38.14%)	4 (4.12%)	59 (60.82%)

*Note: Some of the data in this table may be over 100% because the survey participant selected more than one response.

Hypothesis Testing

Hypothesis testing was performed from the results of the 102 subjects who participated in the study. The hypothesis was based on the National Survey for Student Engagement's five benchmarks.

Hypothesis: Professional athletic training education program students will indicate:

- a greater level of academic challenge
- more active and collaborative learning
- greater student-faculty interaction
- a more supportive campus environment
- greater satisfaction

in the traditional face-to-face learning environment compared to the online learning environment.

One of the benchmarks for the National Survey for Student Engagement is the level of academic challenge. The researcher developed six questions that were appropriate for this category. The questions were then scored and the researcher determined the mean and standard deviation of

each question. The average mean for the six questions related to academic challenge was 3.66 ± 0.987 (Table 5). The survey participants' who perceived that they either "Agree" or "Strongly Agree" that they took more notes in the traditional face-to-face learning environment was 84.52%. There was also a greater response rate for students who perceived that they studied more for traditional face-to-face courses which was 80.96%. The survey participants' average score was closest to "Agree" which means that they found traditional face-to-face courses more academically challenging.

Table 4. Frequency, Percentage, Mean, and Standard Deviation of Perceptions of Academic Challenge

	Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree	Mean	SD
I take more notes in traditional face-to-face learning environment than in the online learning environment.	1 (1.19%)	3 (3.57%)	9 (10.71%)	24 (28.57%)	47 (55.95%)	4.35	.898
I spend more time studying for courses in the traditional face-to-face learning environment than the online learning environment.	1 (1.19%)	6 (7.14%)	9 (10.71%)	34 (40.48%)	34 (40.48%)	4.12	.949

I read more of the course text in the online learning environment than in traditional face-to-face learning environment. (*)	5 (5.95%)	23 (27.38%)	21 (25%)	31 (36.90%)	4 (4.76%)	3.07	1.03 9
I believe the traditional face-to-face learning environment is more academically challenging than the online learning environment.	1 (1.19%)	9 (10.71%)	29 (34.52%)	27 (32.14%)	18 (21.43%)	3.62	.981
I believe that my grades are better (higher) in the traditional face-to-face learning environment than the online learning environment.	2 (2.38%)	16 (19.05%)	30 (35.71%)	23 (27.38%)	13 (15.48%)	3.35	1.03 5
The online learning environment course exams are easier for me than the traditional face-to-face learning environment. (*)	4 (4.76%)	11 (13.10%)	22 (26.19%)	37 (44.05%)	10 (11.90%)	3.45	1.02 3
Average	2.33 (2.78%)	11.33 (13.49%)	20 (23.81%)	30.4 (34.92%)	15.8 (25%)	3.66	0.98 7

*The results in this section were reversed to be able to accurately compare traditional face-to-face courses and online courses.

Another benchmark of the NSSE is active and collaborative learning. The researcher developed six survey questions based on learning with peers that fit into this category. When analyzing the results, the students' who "Agree" or "Strongly Agree" that their perception of feeling a greater sense of community was stronger in traditional face-to-face courses was 88.09%. However, the survey participants' perceived that they "Disagree" or "Strongly Disagree" (79.6%) that communication with peers is better in the online courses. On the contrary, the response rate was higher for students who "Agree" or "Strongly Agree" (86.90%) that there is more opportunity for teamwork and group projects in the traditional face-to-face learning environment. The average mean for the collaborative learning category was 3.17 ± 0.874 (Table 6). The results indicate that the survey participants perceived that they "Neither Agree nor Disagree" when it comes to learning with peers in either traditional face-to-face or online courses.

Table 5. Frequency, Percentage, Mean, and Standard Deviation of Perceptions of Learning with Peers

	Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree	Mean	SD
I feel a greater sense of community in traditional face-to-face learning environment than in the online learning environment.	1 (1.19%)	1 (1.19%)	8 (9.52%)	24 (28.57%)	50 (59.52%)	4.44	.812
I participate more in discussions in the online learning environment than in traditional face-to-face learning environment. (*)	11 (13.10%)	35 (41.67%)	18 (21.43%)	15 (17.86%)	5 (5.95%)	2.62	1.108
The quality of communication with my peers is better in the online learning environment than traditional face-to-face learning environment. (*)	20 (23.81%)	47 (55.95%)	12 (14.29%)	2 (2.38%)	3 (3.57%)	2.06	.896
The online learning environment provides a greater opportunity to interact with diverse populations (ie., race/ethnicity, economic status, religious beliefs, political views,	8 (9.52%)	22 (26.19%)	45 (53.57%)	8 (9.52%)	1 (1.19%)	2.67	.826

etc.) other than
your own
compared to the
traditional
face-to-face
learning
environment. (*)

There is more opportunity for teamwork and group projects in the traditional face-to-face learning environment compared to the online learning environment.	0 (0%)	1 (1.19%)	10 (11.90%)	44 (52.38%)	29 (34.52%)	4.20	.690
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There is a greater opportunity for peer reviewed feedback in the online learning environment than the traditional face-to-face learning environment. (*)	3 (3.57%)	20 (23.81%)	36 (42.86%)	21 (25%)	4 (4.76%)	3.04	.911
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Average	7.17 (8.53%)	21 (25%)	21.5 (25.59%)	19 (22.62%)	15.33 (18.25%)	3.17	0.874
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*The results in this section were reversed to be able to accurately compare traditional face-to-face courses and online courses.

The next aspect the researcher examined based on the benchmarks of the NSSE was greater student-faculty interaction. The researcher developed six questions based on this category. Overall, the participants' "Agree" or "Strongly Agree" (78.57%) that if they need help, the instructor better answers their questions in the traditional face-to-face learning environment. Also, the

survey participants either "Agree" or "Strongly Agree" (73.81%) that their individual learning needs are better met in the traditional face-to-face learning environment. The average mean for experience with faculty was 3.64 ± 0.991 (Table 7). These findings indicated that the students perceive their experiences with faculty are better in the traditional face-to-face learning environment than compared with the online learning environment. A majority of the participants 35.17 (41.86%) that "Agree" that their perception of experiences was stronger in traditional face-to-face courses.

Table 6. Frequency, Percentage, Mean, and Standard Deviation of Perceptions of Experiences with Faculty

	Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree	Mean	SD
I am more likely to ask for help from my instructor in online courses compared to my traditional face-to-face learning environment. (*)	6 (7.14%)	7 (8.33%)	22 (26.19%)	34 (40.48%)	15 (17.86%)	3.56	1.103
I believe I receive more prompt and detailed feedback on tests or completed assignments in	5 (5.95%)	22 (26.19%)	12 (14.28%)	26 (30.95%)	19 (22.62%)	3.38	1.260

the traditional face-to-face learning environment than the online learning environment.								
If I need help, my question(s) are better answered by the instructor in a traditional face-to-face learning environment compared to the online learning environment.	0 (0%)	4 (4.76%)	14 (16.67%)	45 (53.57%)	21 (25%)	3.99	.784	
Instructors explain course goals and requirements more clearly in traditional face-to-face learning environment compared to the online learning environment.	2 (2.38%)	10 (11.90%)	28 (33.33%)	30 (35.71%)	14 (16.67%)	3.52	.988	
My individual learning needs are considered more in the traditional face-to-face learning environment compared to the online learning environment.	3 (3.57%)	2 (2.38%)	17 (20.24%)	40 (47.62%)	22 (26.19%)	3.90	.939	
The online learning environment provides for a greater opportunity to discuss course topics, ideas, or concepts with faculty members outside of class compared to the traditional	1 (1.19%)	10 (11.90%)	29 (34.52%)	36 (42.86%)	8 (9.52%)	3.48	.871	

face-to-face
learning
environment. (*)

Average	2.83 (3.37%)	9.17 (10.91%)	20.33 (24.21%)	35.17 (41.86%)	16.5 (19.64%)	3.64	0.991
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*The results in this section were reversed to be able to accurately compare traditional face-to-face courses and online courses.

The next NSSE benchmark the researcher examined was a supportive campus environment. Students perform better and are more satisfied at colleges that are committed to their success and cultivated positive working and social relations among different groups on campus.⁹ The researchers examined the students' perception of their social life, academic services, financial aid services, and free time outside of college. The researcher developed six questions in this category. The researcher compiled the data and examined the results. Most of the survey participants (82.14%) felt that the online learning environment leaves more time for work, family, and other non-academic responsibilities. However, many participants (79.76%) perceive that they feel more involved with campus life when they are taking courses in the traditional face-to-face learning environment. The results indicated that the average mean for campus environment was 3.21 ± 0.117 (Table 8). These results indicated that the survey participants were more likely to "Neither Agree nor Disagree" about the

effects of campus environment when completing either online or traditional face-to-face courses.

Table 7. Frequency, Percentage, Mean, and Standard Deviation of Perceptions of Campus Environment

	Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree	Mean	SD
I can get the same amount of learning support services (tutoring, writing center, etc.) in my online learning environment that I get in my traditional face-to-face learning environment. (*)	4 (4.76 %)	28 (33.33%)	19 (22.62%)	27 (32.14%)	6 (7.14%)	3.04	1.069
The Online learning environment offers a supportive environment encouraging contact among students from differing backgrounds (social, racial/ethnic, religious, etc.) (*)	1 (1.19%)	20 (23.81%)	32 (38.09%)	27 (32.14%)	4 (4.76%)	3.15	.885
The Online learning environment leaves more time for work, family, and other non-academic responsibilities compared to traditional face-to-face learning environment. (*)	18 (21.43%)	51 (60.71%)	11 (13.09%)	4 (4.76%)	0 (0%)	2.01	.736
The traditional face-to-face learning environment offers students greater access to administrative staff and offices (registrar, financial aid, etc.) compared to	0 (0%)	10 (11.90%)	21 (25%)	29 (34.52%)	24 (28.57%)	3.80	.991

the online learning environment.

I have a quality connection to my academic advisors while taking courses in the online learning environment. (*)	1 (1.19%)	19 (22.62%)	32 (38.09%)	26 (30.95%)	6 (7.14%)	3.20	.915
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I am more involved with campus life when I am taking courses in the traditional face-to-face learning environment	0 (0%)	5 (5.95%)	12 (14.28%)	41 (48.81%)	26 (30.95%)	4.05	.835
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Average	4 (4.76%)	22.17 (26.39%)	21.17 (25.20%)	25.67 (30.55%)	11 (13.09%)	3.21	0.905
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*The results in this section were reversed to be able to accurately compare traditional face-to-face courses and online courses.

The last NSSE benchmark the researcher examined was greater satisfaction. The researcher developed six questions related to the students' satisfaction and perception of online and traditional face-to-face courses. Many survey participants "Strongly Disagree" or "Disagree" (82.14%) indication that they feel their individual learning needs are considered and better met in an online learning environment. Also, the response rate was 78.57% for students who perceived that they either "Disagree" or "Strongly Disagree" indicating that they prefer the online learning environment more than the traditional face-to-face learning environment. A majority of the students (90.47%) perceive that they feel like they were able to develop a

deeper professional relationship with their professor during the traditional face-to-face learning environment. The survey participants perceived that they learn best in classes which are offered in the traditional face-to-face learning environment (72.62%). The average mean was 3.063 ± .888 (Table 9). These results indicate that the students who participated in the survey were satisfied with their perceived experiences in both online and traditional face-to-face learning environments as "Neither Agree nor Disagree" when comparing online and traditional face-to-face courses.

Table 8. Frequency, Percentage, Mean, and Standard Deviation of Perceptions of Overall Academic Experience

	Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree	Mean	SD
The online learning environment is more convenient for me than traditional face-to-face learning environment. (*)	13 (15.48%)	24 (28.57%)	29 (34.52%)	14 (16.67%)	4 (4.76%)	2.67	1.079
I feel my individual learning needs are considered and better met in a traditional face-to-face learning environment compared to the	28 (33.33%)	41 (48.81%)	11 (13.09%)	4 (4.76%)	0 (0%)	1.89	.807

online learning environment. I feel like I was able to develop a deeper professional relationship with my professor during the traditional face-to-face learning environment than during the online learning environment.	0 (0%)	1 (1.19%)	7 (8.33%)	30 (35.71%)	46 (54.76%)	4.44	.700
I learn best in classes which are offered in the online learning environment. (*)	2 (2.38%)	2 (2.38%)	19 (22.62%)	40 (47.62%)	21 (25%)	3.90	.887
I prefer the traditional face-to-face learning environment more than the online learning environment.	32 (38.09%)	34 (40.48%)	12 (14.28%)	5 (5.95%)	1 (1.19%)	1.92	.934
Overall, I am more satisfied with the online learning environment. (*)	0 (0%)	13 (15.48%)	23 (27.38%)	36 (42.86%)	12 (14.28%)	3.56	.923
Average	12.5 (14.88%)	19.17 (22.82%)	16.83 (20.04%)	21.5 (25.59%)	14 (16.67%)	3.06	0.888

*The results in this section were reversed to be able to accurately compare traditional face-to-face courses and online courses.

The average number of participants whose total scores indicated they "Agree" or "Strongly Agree" more toward

traditional face-to-face courses was 40.874 (36.24%) (Table 10). The average number of participants who indicated they "Strongly Disagree" or "Disagree" and favored the online courses was 22.334 (19.42%) (Table 10). An average of 19.966 (17.36%) (Table 10) of the participants selected that they "Neither Agree nor Disagree" with traditional face-to-face and online courses. The average mean for the survey was 3.3486 (Table 10) with a standard deviation of (± 0.274).

Table 9. Overall Average of Frequency, Percentage, Mean, and Standard Deviation of Tables 5-9

Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree	Mean	Standard Deviation
5.766 (6.86%)	16.568 (19.72%)	19.966 (23.77%)	26.133 (31.11%)	15.567 (18.53%)	3.3483	0.929

DISCUSSION

This study focused on Professional Athletic Training Education Program students' perspectives of online and traditional face-to-face courses. The researcher examined the students' perspectives based on a series of questions to determine how they perceived academic challenge (Table 4), learning with peers (Table 5), experiences with faculty (Table 6), campus environment (Table 7), and satisfaction and perception (Table 8) in both traditional face-to-face courses and online courses.

The majority of the respondents 64 (63%) to the survey were females. Most of the survey participants were professional undergraduate seniors (44.90%). NATA District 4 (28.57%) had the greatest number of respondents. The majority (74%) of the survey participants stated they had taken an online course.

The survey also found that most of the participants have had more of their athletic training courses in the traditional face-to-face format. The courses that were found to be predominately delivered in the traditional face-to-face format was Care & Prevention, Introduction to AT (98.98%), Emergency Procedures / Response, First Aid, Basic Life Support (97.96%), Athletic Taping / Bracing /

Wrapping (100%), Therapeutic Modalities (92.86%), Anatomy & Physiology (98.98%), Exercise Physiology / Physiology of Exercise (92.86%), Orthopedic Assessment (88.66%), Evaluation Measures / Diagnosis (90.82%) Kinesiology / Motor Behavior / Biomechanics (91.84%), and Therapeutic Exercise, Exercise Prescription / Testing / Assessment (88.66%). These findings could play a major role in the students' perspectives of both traditional face-to-face and online courses. Since athletic training students courses are typically delivered in the traditional face-to-face format they may favor the traditional face-to-face courses because they may not have had much experience with online courses other than in their general education courses.

The hypothesis stated professional athletic training education program students will indicate a greater level of academic challenge, more active and collaborative learning, greater student-faculty interaction, a more supportive campus environment, and greater satisfaction in the traditional face-to-face learning environment compared to the online learning environment. After analyzing the results, the average results for the mean of academic challenge was a 3.66 ± 0.987 for the six questions. The average number of students who "Agree" or "Strongly Agree" that traditional face-to-face courses were more challenging

was 59.92%. Students' believed that they took more notes in traditional courses (84.52%), and also spent more time studying for traditional face-to-face courses (80.96%). This means most students are more likely to agree that academic challenge is higher in traditional face-to-face courses. These findings indicate that the hypothesis for academic challenge is correct. Athletic training student have had more experiences with traditional face-to-face courses therefore this may have played a role in these findings.

The average mean for learning with peers was 3.17 \pm 0.874. The average number of students who "Agree" or "Strongly Agree" with their perception of learning with peers is better in traditional face-to-face courses (40.87%). Students felt that there was a greater sense of community in the traditional face-to-face learning environment (88.09%). However, students also perceived that they participated more in discussion in the online learning format (54.77%), and they felt that the quality of communication with their peers was better in online learning environment (79.76%). Also, the survey participants "Neither Agree Nor Disagree" that online and traditional face-to-face learning environments provided a greater opportunity to interact with diverse populations

(53.57%). This result concluded most students' perception of their experiences with peers was "Agree" with the traditional face-to-face learning environment. The typical athletic training education program requires that the students participate in several hands on labs. Since most lectures also involve labs, this could play a major role in why athletic training students felt that they learn more with peers in the traditional face-to-face setting.

The average mean for experience with faculty was 3.64 \pm 0.991. The average number of students who "Agree" or "Strongly Agree" that their experience with faculty is stronger in traditional face-to-face environment was 61.51%. Students' perceived that in the traditional face-to-face learning environment, the instructors were better at answering their questions if they needed help (78.57%). The survey participants also felt that the traditional face-to-face learning environment better met their individual learning needs (73.81%). The results showed the majority of students agree they have better experiences with faculty in the traditional face-to-face the learning environment. Since many athletic training programs require students to be admitted and only allow a certain number of students into the program, this could play a role into why the athletic training students perceive that they have

greater experiences with faculty in the traditional face-to-face learning environment. Many students develop a strong bond with their classmates and professors because of the smaller class sizes. These factors could play a role into why the students perceive that they have a better experience with faculty in the traditional classroom.

Additionally, the average mean for campus environment was 3.21 ± 0.905 . The average number of students who "Agree" or "Strongly Agree" that the traditional face-to-face courses provided a better campus environment was 43.65%. The survey participants felt that they were more involved with campus life when taking traditional face-to-face courses (79.76%). However, the students felt that the online learning environment left more time for work, family, and other non-academic responsibilities (82.14%). These results showed most students "Agree" that their perception of the campus environment is better when they are taking traditional face-to-face courses. Since athletic training courses are mostly offered in the traditional face-to-face setting, the students may be more involved in other campus activities than those who do not commute to campus. Every athletic training student must complete clinical rotations and most athletic training students have the opportunity to complete a rotation on campus with their

college's sports teams. Most athletic training students are more involved with on campus activities and sports. This could be a reason why the students perceived that the campus environment is better in the traditional face-to-face setting.

The average mean for overall satisfaction and perception was 3.063 ± 0.888 . The average number of students who "Agree" or "Strongly Agree" that their overall satisfaction is better in traditional face-to-face courses was 42.26%. The students found that they were able to develop a deeper professional relationship with their professor in the traditional face-to-face learning environment (90.47%). They also felt that they learned better in courses that were offered in the traditional face-to-face format (72.62%). On the contrary, the survey participants' preferred the online learning environment more than the traditional face-to-face learning environment (78.57%). The students also perceived that their individual learning needs were considered more in the online learning environment (82.14%). The students perceived that overall they are more satisfied with the online learning environment (57.14%). Most of the students "Agree" that their perceived satisfaction and perception of traditional face-to-face courses was higher.

When compared to similar research, George et al, performed a systematic review to determine the effectiveness of eLearning in health care professionals' education. The systematic review analyzed 59 studies. In the studies there were 6,750 students enrolled in medicine, dentistry, nursing, physical therapy and pharmacology. According to the study approximately 29% of the studies analyzed showed that the students had a greater gain of knowledge, and 40% had better skill acquisitions. Additionally, 67% of students reported that there was no change in attitude but 14% were more satisfied with online learning compared to traditional face-to-face learning. According to the authors, the existing research suggests that the online learning environment is equal or might slightly exceed the traditional face-to-face learning environment.⁵

Conclusions

The results of this study revealed the following major conclusion:

Most students perceived there is a greater level of academic challenge, there is more active and collaborative learning, a greater student-faculty

interaction, a more supportive campus environment, and overall greater satisfaction in the traditional face-to-face learning environment. The greatest perception for academic challenge was that the students "Agree" or "Strongly Agreed" (59.92%) (Table 4) that traditional face-to-face courses are more academically challenging. The participants' highest response rate for learning with peers was determined to be "Agree" or "Strongly Agree" with (40.87%) (Table 5). The athletic training students' highest response rate for experiences with faculty was "Strongly Agree" or "Agree" (61.51%) (Table 6) which implied they feel that their experiences with faculty in the traditional face-to-face learning environment was of higher quality. Likewise, the students also "Strongly Agree" or "Agree" (43.65%) (Table 7) the campus environment was more supportive and committed to their academic success while they were taking traditional face-to-face courses. The students' response rate for perception of overall academic experience was highest for "Strongly Agree" or "Agree" (42.26%) (Table 8) meaning the survey participants are more satisfied and they perceived

traditional face-to-face courses were more satisfying and academically challenging than online courses.

Recommendations

Based on the results of this study, the following research recommendations were made.

1. Future studies should contain a larger sample size.
2. Future studies should contain a sample from a variety of different majors/professions programs.
3. Future studies could analyze the use of blended courses.
4. Future studies could analyze a class-by-class comparison.

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APPENDICES

APPENDIX A
Review of Literature

REVIEW OF LITERATURE

The purpose of this Review of Literature is to analyze published literature examining the athletic training education programs' professional students' and to determine the difference between online and traditional face-to-face courses. This was accomplished in the following sections: an Introduction to the Athletic Training Education Program, Online learning and Traditional Classroom. The literature review concludes with a Summary of the research performed to date.

Athletic Training Education

The formation of athletic training education is precisely associated with the history and progression of the National Athletic Trainers' Association (NATA).¹ The National Athletic Trainers' Association plays a major role in the athletic training education and career field. In 1959 the NATA approved an initial athletic training academic curriculum model.¹ Since there was a high demand for athletic trainers at the high school level, the academic curriculum was developed to prepare students for both athletic training duties and teaching physical education and health classes.¹ Athletic trainers play an

important role in health care especially for high school students.

Ten years later in 1969 is when the National Athletic Trainers' Association began to recognize the undergraduate athletic training programs. The athletic training education program has developed vastly since the late 1960's. In 1970 the first national certification examination was administered by the NATA Certification Committee. It wasn't until 1972 when the first graduate athletic training curriculum was approved by the NATA. Recently, the NATA has approved the transition to make Athletic Training an entry level Master's program.

In the 1980's the National Athletic Trainers' Association pushed for colleges to have athletic training as a major. It took the athletic training profession many years until they became recognized as an allied health profession by the American Medical Association (AMA) in June of 1990.² The 1990's proved to be a pivotal decade for the athletic training profession. It was not until 1994 when the first entry-level athletic training educational program became accredited by the American Medical Association Committee on Allied Health Education and Accreditation.¹ Athletic Training is a relatively new profession and has come a long ways in the last fifty-six

years. The term entry-level has recently changed to professional. The research is absent on professional athletic training education students' perspectives on face-to-face and online courses. Ensuring that athletic trainers have the best education is essential since athletic trainers have the potential to deal with life or death situations.

National Survey of Student Engagement

The National Survey of Student Engagement (NSSE) was explicitly created to measure the degree to which students are involved in their educational practices and what they attain from their college experiences.³ The National Survey for Student Engagement plays a pivotal role in determining college's strengths and weaknesses.

In the 2014 National Survey of Student Engagement 716 colleges and universities and 473,633 students have participated.⁴ Also, since 2000 1,574 colleges and universities and 4.5 million students that have participated.⁴ The result from the NSSE project have been used to produce a set of national benchmarks of good educational practice that participating schools are using to estimate the efficacy of the improvement efforts.³

The 2000-2012 NSSE Benchmarks examined the level of academic rigor, active and collaborative knowledge, student-faculty collaboration, supportive campus setting, and enriching the students' educational experiences.⁴ For the survey conducted during this research the researcher created questions based on the first four benchmarks. In addition to the four NSSE benchmark areas, the researcher also used questions pertaining to the students' satisfaction and perception of the traditional face-to-face learning environment and the online learning environment.

Online Learning

Many forms of learning are present in today's society. Most universities are experimenting with or have implemented online courses. Moore and Kearsley have defined an online course as:

any group of educational meetings that are completed outside the classroom via a computer, tablet, and/or mobile device enabled by the Internet and web-based technologies; teachers and students are separated by space and/or time.⁵

The recent developments in technology have forced most universities to also advance their use of technology. Online courses and degrees are growing and becoming more common within the past few years. Online learning has opened up many new avenues for students. With online learning there is no longer a limitation on people, time and places which grants people the same opportunity of being instructed in online courses as in the traditional face-to-face learning environment.⁶ Online courses are more popular than ever. Roughly 7.1 million students participated in a minimum of one online course during the 2013 academic year, and the number of academic educators that endorsed online courses improved from 57% to 77% from

2003 to 2012.⁷ Recently, some athletic training programs have been following suit with other programs and are offering some of their athletic training classes online.

Usage

Online courses have taken precedent over distance learning and traditional face-to-face courses.⁸ With the advancement in technology, many universities offer bachelors, masters and doctoral fully online degrees. The usage of online learning was steadily increasing over the years.

The internet has had a major impact on higher education and the need for online programs is growing significantly.⁹ The demand for online programs is increasing therefore colleges are increasing the number of courses offered online. The United States had an increase in online registration by 12.9% between 2007 and 2008 which surpassed the 1.2% increase of overall higher learning.¹⁰

Effectiveness

Many colleges and universities are now offering entire degrees solely online. Offering classes online allows students to be able to complete course work from essentially anywhere that has access to the Internet. One

of the main questions with online courses is about the effectiveness. It is essential to examine how effective online courses are.

George et al found that online eLearning does lead to changes in knowledge, skills, attitude and satisfaction and seems to be more effective than traditional learning in terms of knowledge and skills gained.¹¹ Online courses can be beneficial and effective. However, depending on the study some online studies have conflicting reports. George et al systematic review also found that considerably greater knowledge gains (29%), notably higher skill acquisitions (40%), no change in perspective (67%), and some students' perceived greater approval of online courses than with traditional face-to-face courses.¹¹

Online courses have been effective in helping save some academic programs. Some academic programs have seen a steady decrease in enrollment. Due to lack of enrollment, some academic programs have had to resort to online courses as a way to survive.¹² Placing complete academic programs online allows colleges to gain revenue from online students who are unable to attend campus in person.

Many colleges and universities have resorted to offering many classes online to meet the demand which exceeds those of traditional face-to-face courses.¹² Some

schools have had the problem of having too high of a demand and not enough seats in their courses. Governor Jerry Brown of California administered funds to permit students to graduate on time to allow them to take online courses because the demand for traditional face-to-face courses surpassed the capacity.¹³ Online courses have been effective in helping schools add courses to meet the increase in demand.

Pros & Cons

Online learning has developed greatly since the start of the Internet. Online learning comes with several benefits. There are also several disadvantages when it comes to online learning. It is important to analyze both sides of online learning when selecting the most effective course.

One major benefit of online learning is that you can be anywhere in the world and as long as you have a connection to the Internet you can participate in online learning. The main difference between online learning and traditional face-to-face learning is that the students can be virtually located in different cities, states, and even countries. ^{14,15,16}

Another benefit that comes with online education is the fact that the classrooms can potentially have unlimited students. Unlike traditional classrooms, many online courses can host as many students as need be. Online courses are only limited by bandwidth and server capacity unlike traditional face-to-face courses.¹⁴

Many students also like that online classes allow them to complete course work on their own time. Numerous students also work while attending college. The flexibility

of online courses allows them to complete their course work at any time of the day. Unlike traditional face-to-face courses, online courses can be completed at any time during the day.¹⁴ Online courses allow the student more flexibility when it comes to managing their lives outside of college.

According to Jung and Gilson, there are many benefits to online courses including a diverse student population, a more thoughtful student response, accommodating time and space organization.¹⁷ The students can take more time to complete their work in online classes therefore the reflections from students' discussions can be deeper and more thought out. The authors also stated, teacher-student interaction is greater, they are able to adjust to the students learning styles and the assessment is with more impartial evidence.¹⁷

A major assistance to college professors is the luxury to make changes during the course. With traditional courses many teachers who make changes to their course mid-semester have to reprint information for their students. Making changes to online courses are easier and cost efficient. Online courses offer the flexibility of changing or editing course materials with ease and save money since printing is

not required.¹⁴ Online courses essentially cut down the cost of paper and printing for universities.

Online learning can make students feel like they are being socially isolated because of the lack of face-to-face interaction.¹⁴ The social interaction that most students receive while attending traditional classes is nonexistent while participating in online courses. Depending on the student, this can be somewhat detrimental to the students' emotional wellbeing.

Another negative aspect of online learning is the lack in variation of teaching styles. It is often harder for professors to meet the needs of the students and for the learning to be individualized. It is a common fact that everyone learns differently. When compared to traditional classes, online learning typically does not provide the individual learning needs that some students may need.¹⁴ Without the individualized teaching that some students need, online learning can be difficult for some students.

Cost is another key factor when it comes to online education. Developing and implementing online tutorials and virtual patients can be highly costly and can cost anywhere from thousands to several hundred thousand.¹⁴ The amount of time that students and faculty spend online can be costly as well.

A challenge with online courses according to Jung and Gilson is that student's will not be reading all of the other student's posts, students have a tendency to have post that are irrelevant, redundant, and repetitive.¹⁷ Some students will not dedicate the proper amount of time needed to complete well written and thought-out discussions and responses. Some students will do the bare minimum just to get by and not dedicate their time, effort, and energy into their online courses.

With all the advances in technology, there are bound to be technical problems. Another downfall to online education is technological issues. These technological problems can impede students from completing their course work on time. Technological issues can lead to dissatisfaction by students thereby hindering class participation by students.

Satisfaction

According to many authors, four different studies determined that most online students felt more pleased with online learning.¹⁸⁻²¹ Satisfaction can play a major role in a student's success. According to the literature in both the medical and non-medical field, students are very pleased with online learning.²² Most students are satisfied with

online courses because it gives them more freedom to complete their course work on their own time.

Traditional Face-to-Face Courses

The teacher was traditionally the leader and the director that controls the teaching and learning dynamics.²³ A traditional face-to-face course is any group of educational meetings that are completed in the classroom on campus or at a satellite campus where the teacher is physically present.

Usage

With the exception of colleges that are solely online, every college and university has traditional classroom courses. Traditional face-to-face courses have typically required students to attend the class in person a few days a week and people found that the schools facilities could play a crucial role in the students learning.²⁴ Traditional classrooms are very common in present day colleges and universities.

Effectiveness

Each student acquires knowledge differently. There has been an increase in popularity for problem-based learning, accommodating to meet the educational needs of the students, and more insight on student-centered learning.²⁵

Classroom courses can be easily altered to meet any student's needs. Many professors are willing to devote time during or after class in order to meet the students' needs. According to Diaz, the typical profile of an on-campus student was similar to that of a hard working student that likes to meet the expectations of the teacher and receive rewards.²⁶ Some students believe that they can learn better when there is a teacher physically present to answer any questions or concerns that they may have had. According to a study by Neuhausser, revealed that the online group's average was slightly higher but there was minimal change in test scores, assignments, participation grades, and final grades.²⁷ Traditional classes have been proven to be effective.

Pros & Cons

Alvarez, Brown, and Nussbaum found students in traditional lecture based classroom are required to concentrate harder on the professor and be careful not to

disturb others.²⁸ In the traditional classroom it may be harder for students to focus on the instructor because of distractions. Unlike traditional face-to-face courses, in online courses students may have the freedom to review recorded lectures if they may have missed information.

A disadvantage of traditional classrooms is the fact that most of the time is spent on the lecture material itself. Most traditional classes do not take the time to focus on each individual student's skills and abilities. Lectures can take up a major portion of class time and not leave enough time for active learning. Since every student learns differently, this make be a challenge for students who need different types of learning.

A positive aspect of traditional classrooms is that students can ask question on the spot and typically receive a quick answer. In online courses normally the students have to email their professors and wait for a response. The delay in response time could potentially slow up the students learning. Students may also stay after class to receive additional help if need be.

Satisfaction

According to a study done by Rovai et al, some students felt that their satisfaction was higher in

traditional face-to-face courses because of the face-to-face interaction with their teacher.²⁹ The teachers' enthusiasm and charisma can play an important role in stimulating students learning and improving their satisfaction. Satisfaction can play a major role in a students' success. Most students felt that traditional face-to-face courses provided the instructor with more tools such as chalkboards, props, and anatomical skeleton model to help demonstrate and improve the learning process.²⁹

Summary

Changes are occurring in technology and this is playing a major role in the athletic training education.³⁰ As early as 2004 Garrison and Kuanuka stated, more campuses are starting to use blended learning during their traditional face-to-face courses.³¹

If athletic training education professors shared more materials, the use of technology could increase in the athletic training field.³⁰ The teacher plays a pivotal role in the education of their students. It is the professors responsibility to implement technology into their courses for the students benefit.³² Another aspect that should be

looked at when examining the effectiveness of courses is the teacher. According to Rose, with the advancement of technology it is crucial to add state-of-the-art teaching methods into the classroom to improve the students satisfaction and improve their learning in the online courses.³³ Online and traditional course have benefits and weaknesses, the important factor is to determine if the benefits outweighs the weaknesses when examining which course is more effective.

In conclusion, it is important to examine the efficiency of online courses in the athletic training educational programs. They should be analyzed to determine if the students' are learning the same amount as in traditional face-to-face courses. Depending on the athletic education program some online athletic training courses could play a role in board of certification pass rates. If the students have numerous online courses but is not learning the same amount in online courses as traditional face-to-face course these classes could make or break an athletic training program.

APPENDIX B

The Problem

STATEMENT OF THE PROBLEM

Many universities have implemented online aspects into their traditional classroom course, offering entire courses and even complete degrees solely online. With the advancement of technology and the Internet within the last few decades, teaching has taken on a whole new face. Today, most college students are required to participate in some form of online activity during their course work.

The purpose of the study was to examine the students' perspectives of online classes compared to the traditional classroom. There has not been a lot of research comparing and contrasting athletic training students' perspectives of online courses and traditional face-to-face courses. It would be intriguing to find out if the online courses are as favored more than traditional classroom courses.

Definition of Terms

The following definitions of terms were defined for this study:

- 1) An online course was defined as is defined as any form of learning that takes place on an electronic device such as a computer, tablet, or smart phone and is delivered via the internet.⁵
- 2) A traditional face-to-face course is any group of educational meetings that are completed in the classroom on campus or at a satellite campus where the teacher is physically present.

Basic Assumptions

The following are basic assumptions of this study:

- 1) The subjects will be honest when they complete the Students' Perspectives of Athletic Training Courses survey.
- 2) The subjects will answer all questions completely and to the best of their ability.
- 3) The survey had context validity after being reviewed by a panel of experts.
- 4) All subjects had access to technology and were able to access the survey through SurveyMonkey®.

Limitations of the Study

The following were limitations of the study:

- 1) A low response rate of the ATEP Students' Perspective of Online and Traditional Face-to-Face survey.
- 2) Results were limited to athletic training entry level students who are members of the National Athletic Trainers' Association.
- 3) There were no current research studies specifically regarding this topic.
- 4) Only UG ATEP students with a valid email address within the NATA database received the survey.

Delimitations

The following were the delimitations of the study:

- 1) The sample size of 102 professional athletic training students.
- 2) The setting was via the Internet through emails sent by the National Athletic Trainers' Association.
- 3) Instrumentation of the survey was via SurveyMonkey®.

Significance of the Study

It is important to investigate students' perceptions of traditional face-to-face courses and online courses to determine which course delivery system they prefer. The results of this study will help athletic training college professors determine the students' perceptions of online courses and traditional face-to-face courses. The results examined the level of academic challenge, active and collaborative learning, student-faculty interaction, campus environment, and overall satisfaction to determine which type of course the college students preferred.

With the world advancing technologically it is important to examine how athletic training students perceive online courses as compared to the traditional face-to-face courses. It is essential to examine the students' perspective of online courses to ensure that students are learning and enhancing their knowledge and skills to the best of their ability. Online capabilities are playing a major role in today's education. It is crucial to ensure that the extent of learning is not deviating from traditional classroom education with the different aspects of online courses that are being added into your typical curriculum. This study would be beneficial to athletic training college professors to

ensure that they are meeting the education and curriculum needs of their athletic training students. This study will also potentially help program directors to determine if they should offer more online courses or retain traditional face-to-face courses.

APPENDIX C
Additional Methods

APPENDIX C1

Cover Letter

Dear Professional Athletic Training Education Program Student,
Hello, my name is Ashley Alexander. I am a graduate athletic training student at California University of Pennsylvania and am requesting your participation in a research study. The purpose of this study is to examine professional athletic training education program students' perspectives of athletic training online and traditional face-to-face courses.

To participate in the study you must be 18 years of age or older. Your participation is voluntary and you can choose to discontinue participation at any time without penalty. If the survey is not complete data will be disregarded. Minimal risk is posed by participating as a subject in this study. Participation will involve completing a brief survey via Survey Monkey. Consent will be implied once the survey is accessed.

All survey responses are anonymous and will be kept confidential, and informed consent to use the data collected will be assumed upon return of the survey. Completed surveys will not have any information that will allow you to be identified or allow for your data to be associated with you. Survey results and collected data will be stored in password-protected files on California University of PA servers.

You have been selected to participate because you are a National Athletic Trainers' Association member currently enrolled in a CAATE professional athletic training education program. This study has been approved by the California University of Pennsylvania Institutional Review Board (**Proposal #14-075**). The IRB approval dates for this project are from: 03/25/15 to 03/24/16. This student survey is not approved or endorsed by NATA. It is being sent to you because of NATA's commitment to athletic training education and research.

If you have any questions concerning the research study or participation in it, please feel free to contact the primary researcher or faculty advisor listed below. Follow the link provided for the survey:

<https://www.surveymonkey.com/r/StudentPerspectivesCALU>

Sincerely,

Ashley Alexander, LAT, ATC

STUDENT/PRIMARY RESEARCHER

ALE8267@calu.edu

Ellen West, EdD, LAT, ATC

RESEARCH ADVISOR

west_e@calu.edu

APPENDIX C2

Institutional Review Board -

California University of Pennsylvania

**Institutional Review Board
California University of Pennsylvania
Morgan Hall, Room 310
250 University Avenue
California, PA 15419
instreviewboard@calu.edu
Robert Skwarecki, Ph.D., CCC-SLP, Chair**

Dear Ms. Alexander,

Please consider this email as official notification that your proposal titled "Athletic Training Education Program Students' Perspectives on Online and Traditional Face-to-Face Courses" (Proposal #14-075) has been approved by the California University of Pennsylvania Institutional Review Board as submitted.

The effective date of the approval is 3/25/2015 and the expiration date is 3/24/2016 These dates must appear on the consent form .

Please note that Federal Policy requires that you notify the IRB promptly regarding any of the following:

- (1) Any additions or changes in procedures you might wish for your study (additions or changes must be approved by the IRB before they are implemented)
- (2) Any events that affect the safety or well-being of subjects
- (3) Any modifications of your study or other responses that are necessitated by any events reported in (2).
- (4) To continue your research beyond the approval expiration date of 3/24/2015 you must file additional information to be considered for continuing review. Please contact instreviewboard@calu.edu

Please notify the Board when data collection is complete.

Regards,

Robert Skwarecki, Ph.D., CCC-SLP
Chair, Institutional Review Board

APPENDIX C3

Panel of Experts Cover Letter

January 14, 2015

Dear CALU Certified Athletic Trainer,

I am a graduate athletic training student at California University of Pennsylvania pursuing a Master of Science degree in athletic training. To fulfill the thesis requirement for this program, I am conducting survey research. The objective of this study is to determine the entry level Athletic Training Student's Perspectives of Athletic Training Online Courses and Traditional Face to Face Courses.

In order to increase the reliability of the instrument, a panel of experts has been chosen to review the survey. You have been selected as one of the professionals to be on this panel. Your feedback is vital to the success of this study. The information obtained by this panel of experts review will be used to make revisions and create the final survey to be distributed to the population sample. Your responses are voluntary and will be confidential.

Please click the following link to begin the survey and answer the following questions listed in this email. You may make any other additional comments you deem appropriate. Please return your comments and revisions via email at your earliest convenience. If you have any questions or concerns, please do not hesitate to contact me at ALE8267@calu.edu.

<https://www.surveymonkey.com/s/N2V6G6W>

1. Are the questions appropriate, valid, and understandable? Please Explain.
2. Approximately how long did the survey take?
3. Which questions, if any, should be restated from the survey? Why? What suggestions would you make?
4. Which questions, if any, should be added to the survey? Why? What suggestions would you make?

Very Respectfully,

Ashley Alexander LAT, ATC

Appendix C4
ATEP Students' Perspective of Online and Traditional
Courses Survey

Cover Letter

***1. Dear Professional Athletic Training Education Program Student,**

Hello, my name is Ashley Alexander. I am a graduate athletic training student at California University of Pennsylvania and am requesting your participation in a research study. The purpose of this study is to examine professional athletic training education program students' perspectives of athletic training online and traditional face-to-face courses.

To participate in the study you must be 18 years of age or older. Your participation is voluntary and you can choose to discontinue participation at any time without penalty. If the survey is not complete data will be disregarded. Minimal risk is posed by participating as a subject in this study. Participation will involve completing a brief survey via Survey Monkey. Consent will be implied once the survey is accessed.

All survey responses are anonymous and will be kept confidential, and informed consent to use the data collected will be assumed upon return of the survey. Completed surveys will not have any information that will allow you to be identified or allow for your data to be associated with you. Survey results and collected data will be stored in password-protected files on California University of PA servers.

You have been selected to participate because you are a National Athletic Trainers' Association member currently enrolled in a CAATE professional athletic training education program. This study has been approved by the California University of Pennsylvania Institutional Review Board. The IRB approval dates for this project are from: 03/25/15 to 03/24/16. This student survey is not approved or endorsed by NATA. It is being sent to you because of NATA's commitment to athletic training education and research.

If you have any questions concerning the research study or participation in it, please feel free to contact the primary researcher or faculty advisor listed below:

**Ashley Alexander, LAT, ATC
STUDENT/PRIMARY RESEARCHER
ALE2267@cupa.edu
(814) 837-0166**

**Ellen West, EdD, LAT, ATC
RESEARCH ADVISOR
west_e@cupa.edu**

(724) 838-4358

By clicking yes, you are indicating that you are 18 years of age or older, agreeing that you have read the above text in its entirety, and would like to voluntarily participate in the survey research. Would you like to continue?

Yes

No

Demographic Questions: Part I

Please answer the following questions to the best of your ability.

***2. What is your age?**

***3. Which of the following describes you best:**

- Professional Undergraduate ATEP Student
- Professional Graduate ATEP Student

***4. What is your sex?**

- Female
- Male

***5. What is your current class standing?**

- Graduate Student
- Senior (93 credits and over)
- Junior (82-92 credits)
- Sophomore (61-81 credits)
- Freshman (30 credits and under)

***6. What District are you currently attending school in?**

- District One: Connecticut, Maine, Massachusetts, New Hampshire, Rhode Island, Vermont
- District Two: Delaware, New Jersey, New York, Pennsylvania
- District Three: District of Columbia, Maryland, North Carolina, South Carolina, Virginia, West Virginia
- District Four: Illinois, Indiana, Michigan, Minnesota, Ohio, Wisconsin
- District Five: Iowa, Kansas, Missouri, Nebraska, North Dakota, Oklahoma, South Dakota
- District Six: Arkansas, Texas
- District Seven: Arizona, Colorado, New Mexico, Utah, Wyoming
- District Eight: California, Hawaii, Nevada
- District Nine: Alabama, Florida, Georgia, Kentucky, Louisiana, Mississippi, Tennessee
- District Ten: Alaska, Idaho, Montana, Oregon, Washington

Definitions:

1. An *online* course is defined as any group of educational meetings that are completed outside the classroom via a computer, tablet, and/or mobile device enabled by the Internet and Web-based technologies, teachers and students are separated by space and/or time. (Moore, M.G., & Kearsley, G., 2005).

2. A traditional face-to-face course is any group of educational meetings that are completed in the classroom on campus or at a satellite campus where the teacher is physically present.

Please answer the following questions to the best of your ability:

***7. Have you ever participated in an online course?**

- Yes
- No

***8. How many online GENERAL EDUCATION courses have you participated in?**

- 0 - I have never taken a general education online course
- 1
- 2
- 3
- 4 or more

***9. Please select the correct course offering method, i.e. traditional face-to-face, or Online, for the following Athletic Training programs courses. (Programs course names may vary, please answer to the best of your ability.)**

	Traditional Courses	Online Courses	Not Applicable
Care & Prevention, Introduction to AT	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Pharmacology	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Emergency Procedures/Response, First Aid, Basic Life Support	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Organization / Administration of AT	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Athletic Taping / Bracing / Wrapping	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Psychosocial Intervention & Patient Care	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Ethics	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Therapeutic Modalities	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
General Medical	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Anatomy & Physiology	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Nutrition	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Exercise Physiology / Physiology of Exercise	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Orthopedic Assessment	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Evaluation Measures / Diagnosis	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Kinesiology / Motor Behavior / Biomechanics	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Therapeutic Exercise, Exercise Prescription/Testing/Assessment	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Ergonomics	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Other (please specify)

The following questions are based on the National Survey of Student Engagement's engagement indicators and four engagement themes (NSSE, 2016). Please answer to the best of your ability.

The following scale is used:

- (1) Strongly Disagree
- (2) Disagree
- (3) Neither Agree nor Disagree
- (4) Agree
- (5) Strongly Agree

***10. I take more notes in traditional face-to-face learning environment than in the online learning environment.**

Strongly Disagree Disagree Neither Agree nor Disagree Agree Strongly Agree

***11. I feel a greater sense of community in traditional face-to-face learning environment than in the online learning environment.**

Strongly Disagree Disagree Neither Agree nor Disagree Agree Strongly Agree

***12. I am more likely to ask for help from my instructor in online courses compared to my traditional face-to-face learning environment.**

Strongly Disagree Disagree Neither Agree nor Disagree Agree Strongly Agree

***13. I can get the same amount of learning support services (tutoring, writing center, etc.) in my online learning environment that I get in my traditional face-to-face learning environment.**

Strongly Disagree Disagree Neither Agree nor Disagree Agree Strongly Agree

***14. The online learning environment is more convenient for me than traditional face-to-face learning environment.**

Strongly Disagree Disagree Neither Agree nor Disagree Agree Strongly Agree

***15. I spend more time studying for courses in the traditional face-to-face learning environment than the online learning environment.**

Strongly Disagree Disagree Neither Agree nor Disagree Agree Strongly Agree

***16. I participate more in discussions in the online learning environment than in traditional face-to-face learning environment.**

Strongly Disagree Disagree Neither Agree nor Disagree Agree Strongly Agree

***17. I believe I receive more prompt and detailed feedback on tests or completed assignments in the traditional face-to-face learning environment than the online learning environment.**

Strongly Disagree Disagree Neither Agree nor Disagree Agree Strongly Agree

***18. The Online learning environment offers a supportive environment encouraging contact among students from differing backgrounds (social, racial/ethnic, religious, etc.).**

Strongly Disagree Disagree Neither Agree nor Disagree Agree Strongly Agree

***19. I feel my individual learning needs are considered and better met in a traditional face-to-face learning environment compared to the online learning environment.**

Strongly Disagree Disagree Neither Agree nor Disagree Agree Strongly Agree

***20. I read more of the course text in the online learning environment than in traditional face-to-face learning environment.**

Strongly Disagree Disagree Neither Agree nor Disagree Agree Strongly Agree

***21. The quality of communication with my peers is better in the online learning environment than traditional face-to-face learning environment.**

Strongly Disagree Disagree Neither Agree nor Disagree Agree Strongly Agree

***22. If I need help, my question(s) are better answered by the instructor in a traditional face-to-face learning environment compared to the online learning environment.**

Strongly Disagree Disagree Neither Agree nor Disagree Agree Strongly Agree

***23. The Online learning environment leaves more time for work, family, and other non-academic responsibilities compared to traditional face-to-face learning environment.**

Strongly Disagree Disagree Neither Agree nor Disagree Agree Strongly Agree

***24. I feel like I was able to develop a deeper professional relationship with my professor during the traditional face-to-face learning environment than during the online learning environment.**

Strongly Disagree Disagree Neither Agree nor Disagree Agree Strongly Agree

***25. I believe the traditional face-to-face learning environment is more academically challenging than the online learning environment.**

Strongly Disagree Disagree Neither Agree nor Disagree Agree Strongly Agree

***26. The online learning environment provides a greater opportunity to interact with diverse populations (i.e., race/ethnicity, economic status, religious beliefs, political views, etc.) other than your own compared to the traditional face-to-face learning environment.**

Strongly Disagree Disagree Neither Agree nor Disagree Agree Strongly Agree

***27. Instructors explain course goals and requirements more clearly in traditional face-to-face learning environment compared to the online learning environment.**

Strongly Disagree Disagree Neither Agree nor Disagree Agree Strongly Agree

***28. The traditional face-to-face learning environment offers students greater access to administrative staff and offices (registrar, financial aid, etc.) compared to the online learning environment.**

Strongly Disagree Disagree Neither Agree nor Disagree Agree Strongly Agree

***29. I learn best in classes which are offered in the online learning environment.**

Strongly Disagree Disagree Neither Agree nor Disagree Agree Strongly Agree

***30. I believe that my grades are better (higher) in the traditional face-to-face learning environment than the online learning environment.**

Strongly Disagree Disagree Neither Agree nor Disagree Agree Strongly Agree

***31. There is more opportunity for teamwork and group projects in the traditional face-to-face learning environment compared to the online learning environment.**

Strongly Disagree Disagree Neither Agree nor Disagree Agree Strongly Agree

***32. My individual learning needs are considered more in the traditional face-to-face learning environment compared to the online learning environment.**

Strongly Disagree Disagree Neither Agree nor Disagree Agree Strongly Agree

***33. I have a quality connection to my academic advisers while taking courses in the online learning environment.**

Strongly Disagree Disagree Neither Agree nor Disagree Agree Strongly Agree

***34. I prefer the traditional face-to-face learning environment more than the online learning environment.**

Strongly Disagree Disagree Neither Agree nor Disagree Agree Strongly Agree

***35. The online learning environment course exams are easier for me than the traditional face-to-face learning environment.**

Strongly Disagree

Disagree

Neither Agree nor Disagree

Agree

Strongly Agree

***36. There is a greater opportunity for peer reviewed feedback in the online learning environment than the traditional face-to-face learning environment.**

Strongly Disagree

Disagree

Neither Agree nor Disagree

Agree

Strongly Agree

***37. The online learning environment provides for a greater opportunity to discuss course topics, ideas, or concepts with faculty members outside of class compared to the traditional face-to-face learning environment.**

Strongly Disagree

Disagree

Neither Agree nor Disagree

Agree

Strongly Agree

***38. I am more involved with campus life when I am taking courses in the traditional face-to-face learning environment.**

Strongly Disagree

Disagree

Neither Agree nor Disagree

Agree

Strongly Agree

***39. Overall, I am more satisfied with the online learning environment.**

Strongly Disagree

Disagree

Neither Agree nor Disagree

Agree

Strongly Agree

Thank you for completing our brief survey and submitting your valuable feedback! Your confidential answers will help improve our offerings of traditional and online courses. If you have any further questions do not hesitate to contact me via email at ALEX257@omk.edu. Thanks again!

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ABSTRACT

Title: Athletic Training Education Program Students' Perspectives of Online and Traditional Face-to-Face Course

Researcher: Ashley M. Alexander

Advisor: Dr. Ellen J. West

Purpose: To examine the athletic training education program (ATEP) students' perspective of online courses (ONL) and traditional face-to-face (F2F) courses.

Methods: Participants included 1,000 professional athletic training professional from the National Athletic Training Database. The subjects completed an online survey distributed via SurveyMonkey®. The data was analyzed using SPSS 22.0.

Results: A total of 102 (N=102) professional athletic training education program students randomly selected by the National Athletic Trainers' Association (NATA) from its national database completed the survey. The respondents consisted of 64 female (63%) and 38 male (37%) students. The age range for this sample was 19 to 60 years of age (22.81 ±5.58). The total number of participants who have participated in an ONL course was 73 (74.49%). There were 25 (25.51%) of the participants that have never participated in an ONL course. The average mean for the six questions related to academic challenge was a 3.66 ±0.987. The average mean for learning with peers was 3.17 ±0.874. The average mean for experience with faculty was 3.64 ± 0.991. The results indicated that the average mean for campus environment was 3.21 ±0.117. According to the participants' results the average mean for overall academic experience was 3.063 ±0.888). The researcher then compiled the overall average of Tables 5 through 9 and determined that average number of participants that scored

their responses to the questions as "Agree" or "Strongly Agree" toward traditional face-to-face courses was 41.7 (49.64%). The average number of participants that scored their answers as "Strongly Disagree" or "Disagree" indicates that they favor the online courses was 36.534 (43.49%). An average of 19.966 (23.77%) of the participants selected that they "Neither agree nor disagree" with traditional face-to-face and online courses. The average mean for the survey was 3.3486 ± 0.929 .

Conclusion: The results of this study revealed that most students perceive that there is a greater level of academic challenge, that there is more active and collaborative learning, a greater student-faculty interaction, a more supportive campus environment, and overall greater satisfaction in the traditional face-to-face learning environment than the online learning environment.

WORD COUNT: 368