

CONTINUING EDUCATION FOR CERTIFIED ATHLETIC TRAINERS WORKING
IN THE TRADITIONAL SETTING: PERCEIVED UTILITY BASED ON ADULT
LEARNING THEORY

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The undersigned, appointed by the dean of the Graduate School, have examined
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CONTINUING EDUCATION FOR CERTIFIED ATHLETIC TRAINERS WORKING
IN THE TRADITIONAL SETTING: PERCEIVED UTILITY BASED ON ADULT
LEARNING THEORY

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a candidate for the degree of Doctor of Education,

and hereby certify that, in their opinion, it is worthy of acceptance.

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DEDICATION

To my parents,

Thank you for always believing in me and supporting me along the way. I appreciate and love you so much. Thanks for being a great emotional, moral, and financial support system. I could not have achieved so much without you.

To my SEMO Co-workers,

Thank you, Ben and Amanda, for supporting me taking this on. Not every boss would have been as supportive as you have been.

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To my friends, near and far

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ABSTRACT

CONTINUING EDUCATION FOR CERTIFIED ATHLETIC TRAINERS WORKING IN THE TRADITIONAL SETTING: PERCEIVED UTILITY BASED ON ADULT LEARNING THEORY

Kristin D. Jones

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The purpose of this mixed methods program impact evaluation is to determine the perceived utility of continuing education for athletic trainers working in the traditional setting. Data were collected via survey and interviews.

Based on adult learning theory, hands-on learning fulfilled the learners' Need to Know and valued learner experiences best. Online learning was deemed the best modality for learners when it came to Readiness to Learn and Orientation to Learning. The learner's Self-Concept seemed favorable for all three modes of learning. The Learner's Motivation needs further research to determine which modality serves learners best

The Value of Learner Experiences seems to be an area of improvement for the structure of CE, with over half of participants choosing an unfavorable response. The other tenets of Adult Learning Theory fared well among the participants regarding the structure of CE. For certified athletic trainers working in the traditional setting, continuing education is generally perceived to be useful to athletic trainers. The current structure of continuing education requirements was also perceived as useful overall among the participants of the study. There are however some areas to improve.

Section One- Introduction to the Dissertation-In-Practice

Background of the Study

Certified athletic trainers (ATs) are versatile healthcare professionals who work in a variety of settings, including military, industrial settings, performing arts, physician clinics, physical therapy clinics, and as physician extenders. Traditionally, however, athletic trainers work with athletes in high school, college, and in professional leagues. Even within the traditional setting, their job duties range widely from attending practices, training sessions, and competitions to responding to athletic injuries and other medical conditions as they occur. Certified athletic trainers are licensed, and credentialed healthcare professionals trained to evaluate and rehabilitate both surgical and non-surgical athletic injuries as well as identify and triage medical emergencies and general medical conditions (NATA, 2021a). When athletic trainers evaluate these medical conditions and injuries, they can either treat and rehabilitate the issue in-house using corrective exercise techniques or refer to a supervising physician when needed (NATA, 2021a).

As part of their wide-ranging scope of professional abilities, ATs are required, by the governing Board of Certification (BOC, Inc), to maintain 50 continuing education credits every fixed two-year reporting cycle (BOC,2020). If an athletic trainer does not keep up their certification requirements, they can lose their certification, state licensure and may not legally practice as an athletic trainer. Losing this certification may also result in legal complications if the person is practicing without proper credentials. This makes the continuing education process essential to athletic trainers. During the two year time frame in which recertification is needed, athletic trainers can earn educational credits, known as Continuing Education Units (CEUs) to maintain certification in many

ways. It is up to each athletic trainer to choose their own continuing education to fulfill their requirements. Some common ways to attain these credits are through utilizing online webinars, attending conferences, or enrolling in interactive live skills courses to learn specialized techniques (NATA, 2021b).

Due to the breadth of a certified athletic trainer's work, there are many continuing education topics available to athletic trainers. For example, the role of a physician extender varies from a clinician working in the collegiate setting. Even within the athletic setting, the educational needs of a practitioner who works with endurance athletes such as cross country or swimming, are vastly different than one who works a collision sport such as football, even if employed by the same institution. Not every topic is applicable to every practitioner, and it can be difficult to find what can have the greatest impact on clinical practice and patient outcomes.

Since athletic trainers are responsible for choosing their own continuing education to fulfill their requirements, they feel they are responsible for what they get out of their continuing education experience (Walker et al. 2008). Athletic trainers can recognize not all topics are for them. But how do they fulfill this need? Some of the factors that can affect what they glean from their experiences are if the individual selects appropriate, relevant continuing education and actively engages with the programming to further develop their professional skills and knowledge (Walker et al. 2008).

Continuing education experiences can also be expensive. Symposium registration costs, supplies, travel expenses and travel time must all be considered as limiting factors to continuing education (Armstrong & Widener, 2011). Alternatively, there are also many online webinars and self-study courses that range in price, some of which can be

inexpensive or even free (NATA, 2021b), but in participating in these activities, some, or all the social interaction with peers is lost (Wang & Lin, 2021). This loss of interactive learning could affect the overall continuing education experience.

Some factors that can affect what athletic trainers glean from their experiences are if the individual selects appropriate, relevant continuing education and actively engages with the programming to further develop their professional skills and knowledge (Walker et al. 2008). While the challenges facing athletic trainers in maintaining their certification credentials through continuing education have been documented, the perceived utility of these courses remains largely unknown. Clinicians should find the most efficient way of utilizing CE to increase positive patient outcomes and further their own knowledge in the profession.

Statement of the Problem

The main problem of practice in continuing education (CE) in athletic training is little is known about the perceived utility of CE and its direct impact on clinical practice. The intended purpose of continuing education is to promote ongoing learning, furthering the development of current professional skills and judgement within the profession of athletic training (BOC,2020). Most certified athletic trainers would say it is easy to fulfill the CE requirements and maintain certification, but does simply fulfilling the requirements increase a professional's knowledge and skills in the profession? Within the world of medicine, research is ever-changing and evolving. If an individual does not keep up with current research and the latest information their practice could suffer, and their patients' outcomes could decline as compared to those of their peers.

Most other healthcare professions also require continuing education for maintenance of credentials. Examples of these professions are Physical Therapy, Occupational Therapy, Nursing, Medicine, and countless others. There are several studies that explore what athletic trainers expect from their continuing education experience, and what their perception of continuing education is (Hughes, 2008; Walker et al. 2008). For continuing education in athletic training, there has been minimal research on effective means of continuing education for positive patient outcomes, and the research that has been completed has barely scratched the surface.

Most of the research on this topic exists in specific peer-reviewed journals such as *The Online Journal of Allied Healthcare and Practice* and the *Journal of Athletic Training*. There is minimal information available to determine what the perceived utility of continuing education for athletic training is for increasing the knowledge and skills of its participants as well as its effect on positive patient outcomes (Doherty-Restrepo et al., 2009).

Purpose of the Study

The purpose of this research was to determine the perceived utility of continuing education for athletic trainers working in the traditional setting. The intended purpose of all continuing education is to promote ongoing learning of the professional. Continuing education that is utilized to its fullest potential will foster the development of current professional skills and clinical judgement within the profession of athletic training (BOC,2020). The National Commission on Certifying Agencies (NCCA) says continuing competence is defined as “demonstrating specified levels of knowledge, skills or ability,

not only at the time of certification, but throughout an individual's professional career” (BOC, 2020 n.p.).

Since the purpose of this study was to explore the perceived utility of continuing education for athletic trainers in traditional settings, it was important to note these settings are not all-encompassing of the settings in which athletic trainers work. These settings include high schools, collegiate athletics programs, and professional sports teams. The scope of this study will not include emerging settings such as performing arts, industrial, military, and others at this time. This study sought to find the perceived utility of these continuing education programs for improving upon current practice and better patient outcomes.

The research attempted to determine the perceived utility of this continuing education as it aligns with the principles of adult learning theory. This study contributed to the existing research on continuing education in athletic training, as well as adult learning theory. The intent was to bolster the current continuing education process so athletic trainers in the traditional setting may utilize continuing education in a manner that will increase professional learning and positive patient outcomes in their clinical practice.

Research Questions

- I. How do certified athletic trainers working in the traditional setting fulfill their continuing education requirements?
 - a) How did Certified Athletic Trainers fulfill these requirements before the COVID-19 Pandemic (2018-2019)?

- b) How did Certified Athletic Trainers fulfill these requirements during the 2020-2021 reporting cycle, part of which coincided with the COVID-19 Pandemic?
- II. For certified athletic trainers working in the traditional setting, what is the perceived utility, based on the principles of adult learning theory, of the various modes of required continuing education? Specifically:
- a) Online Learning (Modules or Webinars)
 - b) Live Presentations or Seminars
 - c) Hands-on Skills Classes (e.g. Graston, Dry-Needling, Cadaver Labs etc.)
- III. For certified athletic trainers working in the traditional setting, what is the perceived utility, based on adult learning theory, of the current structure of continuing education requirements?

Theoretical Framework

Constructivism

Primarily, this study looked through the constructivist lens. Constructivism postulates adults are “organisms seeking meaning” and each person’s reality is conceived by their own perceptions. What may be true for one, may not be true for all (Merriam & Bierema, 2014; Mertens, 2020). This study was based on the participants’ perceptions of continuing education, therefore constructed in each individual’s reality. There is no one singular objective reality for all. This research will attempt to understand the multiple social constructions of reality of its participants (Mertens, 2020).

Adult Learning Theory

The theoretical framework for this study was based on Knowles’ Adult Learning Theory. The science of teaching children is known as pedagogy; however, adults learn

differently than children do. The education of adults, or Andragogy, will be utilized in this research. Adult learning theory includes six main assumptions about adult learners (Merriam & Bierema, 2014). These assumptions are paramount in understanding how adults receive and retain information. The perceived utility of continuing education in athletic training will be based on these six assumptions.

These assumptions are based on six simple ideas about learning. These six ideas can be applied to all learning, from children to adults, however they differ in the approach and content as the learner ages. These ideas are: The Need to Know, the Learner's Self-Concept, the role of the Learner's Experiences, the Readiness to Learn, the Orientation to Learning, and Motivation (Knowles et al, 2005). When broken down to their core, these six ideas illustrate how adults best take in information and learn.

Adult Learning: The Need to Know

The first assumption in adult learning is the "Need to Know" (Knowles, et al, 2005). For an adult learner, the Need to Know means simply an adult learner needs to know why they need to learn something. Adults want to know what benefits they will gain from a piece of information as well as the negative consequences of not knowing that same piece of information (Knowles et. al, 2005). It is important for adults to have buy-in when learning about a subject. If an adult learner does not think the information being taught will benefit them in some way, they are unlikely to spend the effort and time to learn it (Merriam & Bierema, 2014). For adults to learn, many times it is helpful if the facilitator of the knowledge can share possible ways a learner can benefit from the information given.

An athletic trainer working in a specific area may seek out continuing education they think will be useful to them. A practitioner working with a large population of high endurance distance runners is likely to seek out a continuing education opportunity pertaining to overuse ankle injuries that are common in their athletic population. The overuse injury is something they could encounter in their practice frequently and therefore put the latest information into use weekly or even daily. They may even seek out this information because they have been in a situation where a gap of knowledge was present. In this case they may not have been able to help their athlete improve their condition, and the practitioner wants to prevent being in that knowledge gap again. This practitioner would have a good understanding of how that knowledge is useful to them.

Adult Learning: Self-Concept

The next assumption Knowles describes is a person's Self-Concept. As an individual ages, they want to take control and be responsible for their own lives. Adults also want others to be aware of their own responsibility and want to be seen as self-sufficient (Knowles, et al. 2005). An adult's personality shifts from being dependent, when they are young, to being more independent as they age. Due to this phenomenon, adults sometimes resist being told what to do (Merriam & Bierema, 2014). This is a contrast to children who are learning in an elementary school classroom. They sit together and learn what the teacher tells them they need to know, generally without question.

Adults are much more self-directed, as opposed to elementary children. Adults can, and want to do more on their own, and do not want an instructor hovering over them and guiding them step by step. This assumption illustrates how professionals, in a field

such as athletic training, can be responsible for their own learning when engaging in continuing education. This could apply to choosing which continuing education topics are right for them, as well as how they choose to complete the continuing education, such as research, a live course, a webinar, or other methods. This assumption shows perhaps traditional classroom learning may not be the most effective way to educate adults.

Adult Learning: Experiences

The role of learner experiences is the next important assumption. Adults have both more experience and a more robust quality of life experiences than their younger counterparts. This has several different ramifications on the learning process.

The first is a group of adult learners is more diverse than a group of child learners because their life experiences have the potential to be much more varied. More individualized learning may be needed because of the differences in experience (Knowles, et. al, 2005). Adults also draw knowledge from these experiences that they can apply to lessons learned in the classroom so they can gain a deeper understanding of concepts. Child learners have a limited amount of life experiences they can draw from, simply since they have not been alive as long as adults. These experiences can be part of the learning of others. Situations like discussions and group activities facilitate adult learning because adults can learn from not only their own experiences, but from those of their peers (Knowles, et. al, 2005). In contrast, however, this can also hinder some learning because with all these learned experiences come learned habits and biased behaviors that may not be in the best interest of the learner (Knowles, et. al, 2005).

The job of an athletic trainer differs from day to day and between the different settings. They encounter different injuries and situation they must react to, and each of

these experiences adds to their reservoir of knowledge. Whether the situation goes well or poorly, they can store this information away for use later. When that individual enters a classroom or other continuing education opportunity, they will take the knowledge being given about the topic and compare it to the knowledge they have from their lived experience.

Sometimes this information will be congruent with their experiences and other times it will differ. In both cases, the practitioner can learn because it leads to more questions and critical thinking. They can also discuss these scenarios with their peers for a greater understanding. These lived experiences help shape a person's identity. In a situation where an adult learner can share their own identity, they feel valued and have a much better learning experience (Knowles, et. al, 2005). A child learner in the same situation does not have this opportunity because the only information available in that moment is what the instructor can give them.

Adult Learning: The Readiness to Learn

Readiness to learn is also important. Child learners only become ready to learn when the teacher tells them they must (Knowles et. al, 2005). The willingness of an adult to learn is more related to a need in their life, or a knowledge gap. Adults learn information to help them effectively manage their own lives. This could include their jobs, their role in the home and other areas of their existence (Knowles, et. al. 2005). It should be stated even though adults may not always have the readiness for a particular skill, but it can still be simulated so it can stimulate their "need to know." Athletic trainers may have a readiness to learn in a setting where they are dealing with an injury

they have not experienced before. They may research this topic and seek out information so it can fulfill a particular need in a scenario.

Adult Learning: Orientation to Learning

The Orientation to Learning of children and adults differs. This assumption Knowles asserts is, as people age, the time frame in which they will apply learned knowledge changes (Merriam & Bierema, 2014). Children are subject-centered learners as they go through school, where adults are much more problem-focused (Knowles, et. al, 2005). Adults want to learn information they think will help solve a problem in their practice. They are more likely to learn when they are shown a situation in which this information can help them with a problem they are facing. In contrast, children learn information they will need in the future to become functioning adults (Knowles, et. al, 2005).

A younger learner in an athletic training class may focus on lower extremity injuries. That student will learn the information about the subject being taught, because they were told to. A practicing athletic trainer may face a problem with an athlete with a particular injury that is not improving with treatment. The athletic trainer will want to learn a skill or technique that will help them solve this immediate problem so they can get their athletes healthy and back to performing to their highest potential.

Adult Learning: Motivation

The last assumption included in Knowles' work about andragogy is Motivation. All learners are motivated by something. Adults may be somewhat motivated by material things such as salaries and high-status jobs, but they are less motivated materially than younger learners (Merriam & Bierema, 2014). Adults are driven intrinsically, and more

motivated by non-tangible factors, such as self-esteem and job satisfaction (Knowles, et. al. 2005).

For example, an elementary school teacher may have a reward box students may pick prizes from when they reach milestones in the classroom or do well on a test. In the professional world, this would never happen. A practicing athletic trainer working clinically is not waiting for a trip to the reward box to learn a new ankle therapy; they will seek to learn it because they recognize they Need to Know that skill to help their athletes heal and get back to performing at their greatest level. Achieving this skill and a positive outcome gives the practitioner satisfaction that they have completed their role successfully, which for adults, serves as good motivation.

Conclusion

Adult learning theory uses these assumptions to explain how adults learn best as well as how their learning differs from the learning of children. These assumptions are best viewed through the lens of constructivism because the perception of one adult learner may differ from another. These assumptions must ring true to the individual and take place in their reality. When this occurs, so does optimal adult learning.

Design of the Study

This study was a program evaluation and has been conducted in a mixed-methods format. To investigate the previously stated research questions, data were collected using both surveys and interviews. This study was performed with the effort to glean non-biased data with many measures in place to uphold the integrity of the results.

Program Evaluation

This study was a program evaluation of the Board of Certification continuing education requirements for athletic trainers. Program evaluations can be described as an “application of systematic methods to address questions about program operations and results” (Newcomer et al, 2015). Specifically, this study was an impact evaluation.

Program impact evaluations are designed to determine if a certain program is perceived to be serving its intended purpose (Rossi et al, 2004). This study will attempt to determine what is the perceived utility, if any, of participating in continuing education activities, and specifically one kind of continuing education activity as compared to another. This study also investigates the perceived utility of the current format of the continuing education requirements for the maintenance of athletic trainer certification for those ATs working in the traditional setting.

This impact evaluation specifically addressed perceptions of the practitioners. It is necessary to do impact assessments of ongoing programs to determine if the program is still serving the purpose for which it is intended, as well as having the desired effect on its participants (Rossi, et.al, 2004). In a true impact assessment, there must be a comparison made between those who have participated in the program and those who have not (Rossi et, al. 2004). This was not feasible in this study however, since all athletic trainers are required to participate in continuing education. Therefore, the measurement of “perceived utility” has been created. Athletic trainers were asked questions in both the interview and survey formats to compare their perceptions of the utility of the continuing education they have participated in during the 2018-2019 reporting cycle and the 2020-2021 reporting cycle. This perceived utility was based on

the principles of adult learning theory and produced data to address if they believe the continuing education has had a high utility on their clinical practice.

For this evaluation, a formative evaluation method was used. A formative program evaluation is used to potentially improve upon the results of an ongoing program (Newcomer et. al, 2015). Since this is a program that is always in action, this will be an ongoing evaluation.

One potential challenge of this program evaluation was the use of inadequate markers to measure the success of the program. This will be a challenge because the evaluation markers in this evaluation were based on participant perception. To help counteract this potential challenge, it was important to review the purpose of the study and the research questions before beginning the data collection process. Bias and participant perspectives were evaluated to make sure the sample size of participants is large enough and diverse enough to produce reliable results. Selection bias, interfering events (such as the COVID-19 pandemic) and the maturation of the participants across the time span about which they are reflecting can also skew the results of an impact evaluation (Rossi, et. al 2004). Selection criteria that are too one-dimensional could also skew the results of the study (Newcomer, et. al. 2015).

Another challenge of this impact program evaluation was it was not possible to have a true control group. Since all certified athletic trainers are required to complete continuing education, the comparisons will be made between the individual types of CE a practitioner chooses to engage in as well as the perceived utility they have. There was not a group to compare that has not participated in CE at all.

Setting

The profession of athletic training is evolving. Athletic trainers work in a variety of settings. Athletic trainers are being hired in the military, industrial production venues, performing arts and other nontraditional settings. For the purposes of this study however, the focus has been only on athletic trainers working in the traditional athletics setting. The traditional setting of athletic training is defined for this study as individuals who are certified athletic trainers working in high schools, competitive collegiate athletics and within professional sports. The athletic trainers who participated in this study were employed within the continental United States of America.

Methodology

A mixed methods study is a study in which both quantitative and qualitative data will be used to address the research questions. The benefit of using this methodology is multiple types of data can be used complementarily to triangulate the data for more complete and accurate results (Mertens, 2020). This type of research can better illustrate results holistically. Within the constructivist paradigm, mixed-methods studies generally lean more towards the qualitative data, but quantitative data can be present to help verify and validate the results as well as triangulate the data for further validity (Mertens, 2020).

Quantitative data in this study were gathered using surveys that were created using Qualtrics. This survey serves the purpose of not only collecting demographic information from a large number of participants, but also to collect other numerical data about athletic trainers' perception of the utility of CE in athletic training.

The qualitative data were collected by conducting five interviews with certified athletic trainers working in the traditional athletic training setting. These interviews were

conducted via the video chat platform Zoom and recorded to use later during the data analysis.

Data Collection

The data collection for this study was conducted in two separate ways. First, surveys (see Appendix A) were sent out to athletic trainers working in traditional athletic training settings. All potential participants were first sent a recruitment script (see Appendix B) to gather willing participants. The goal of the study was to disperse enough surveys to these individuals with the hope of receiving a minimum of 100 useable data sets. One hundred useable data sets would glean enough surveys with consent completed and questions answered and allows for a substantial and reliable amount of data. It is imperative to have a large enough amount of data to offset outliers to prevent bias and make the data accurate (Fink, 2017).

This research study utilized the survey tool Qualtrics. These surveys were disseminated via email. Qualtrics allows survey data to be secure, and users can feel confident their answers will remain anonymous. Using this platform also helps increase convenience of dissemination and convenience for the respondent. The respondent can fill out the survey easily from their computer or even their smartphone. This is also a cost-effective way to reach many participants (Newcomer, et al. 2014). The survey also included a consent form (see Appendix C) and disclosure of any personal bias or conflict of interest as suggested in the text. (Fink, 2017).

The survey was developed with the research questions in mind. The survey had a total of 32 items that explore the participants view of their past experiences with continuing education in athletic training. The survey had specific items that relate these

experiences to the specific assumptions of adult learning as well as the different formats of CE offered. It also addressed the current structure of the CE requirements in the profession and how that structure fits within the assumptions for adult learners.

Respondents also can provide some demographic information.

As stated previously, this study utilized a mixed methods format, meaning it also requires qualitative data. This second type of data were collected via interview. These interviews were conducted via Zoom video call. These interviews were recorded, with the permission of the participant, so they could be revisited during the data analysis phase. The goal of the study was to complete five interviews with certified athletic trainers currently working in high school athletics, competitive collegiate athletics, or professional sports. Interviews with five certified athletic trainers working in the traditional athletics setting were conducted as part of the data collection process.

The interview protocol (see Appendix D) was also developed with the research questions in mind. Most questions in the interview protocol were designed to probe the interviewee about the experience that they have had with continuing education. These questions attempted to connect the experience of the participant to the concepts of adult learning theory. Other questions in the interview protocol gather demographic information and information on how the participant has completed their continuing education requirements in the past. Also included in the appendix is a consent form (see Appendix E) for participants of the interview.

The interview data were important to the project because they acknowledge an interest in the participant's life and personal experience within the profession, which adds a personal value (Seidman, 2019). Ultimately, the goal of the project was to improve the

delivery of CE in Athletic Training, which in-turn will improve the lives of the individuals who utilize the program.

Participants

The criteria for participation in the study were as follows: Participants in the study must be older than 18 years of age, be BOC, Inc certified, and licensed athletic trainers currently working in traditional athletics setting. These settings include high school athletics, National Collegiate Athletics Association (NCAA) or National Association of Intercollegiate Athletics (NAIA) collegiate athletics, and professional sports of any kind. These participants must also be working in the continental United States. These participants must also agree to participate, by signing an informed consent which will be presented to them prior to beginning their participation. Participants could choose to withdraw their consent at any time and for any reason with no ill effects.

To find applicable participants to fill out my survey I utilized several different athletic training organizations, some of which I am already a member. I disseminated a recruitment script for both the interview (see Appendix F) and the survey to attract potential participants. The scripts outlined the scope of the study and explained what was required of potential participants. For the survey, I used the professional organizations in the athletic training realm to help disseminate the recruitment script with survey link to large numbers of athletic trainers. The organizations I asked to help with dissemination of my survey were: the Missouri Athletic Trainers Association (MoATA), the Mid-America Athletic Trainers Association (MAATA), the National Athletic Trainers Association (NATA), the Facebook Group; Women in Athletic Training (WAT), the Professional Baseball Athletic Trainers Society (PBATS), the Professional Football Athletic Trainers

Society (PFATS), The Intercollegiate Council for Athletic Trainers, and the Korey Stringer Institute. The organizations that responded and assisted with the dissemination of my materials were the NATA, and the WAT. PBATS offered to assist in this process as well but the time frame in which they offered assistance was not compatible with the study timeline.

For the interview, I used my professional network to recruit the interviewees. Care was taken in this process to ensure a varied sample of individuals were used. These individuals were all employed by different organizations and have a variety of experiences within the profession. These individuals were also geographically diverse, working in different states and in either high school or collegiate athletics. The interviewees also had the chance to participate in the survey if they chose but was not required of them.

Data Analysis

Once the data were collected, the data analysis portion began. First, it was important to note the number of participants who returned the survey. A response goal of 100 data sets was ideal since it would provide an adequate amount of data (Fink,2017). The actual response count was 68 complete data sets with an additional 20 incomplete data sets. The survey was disseminated to approximately 10,000 people, however, not every person who had access to the survey link was eligible to complete the survey due to their setting of work within athletic training.

Next, it was also important to take notice of any known response bias that could affect the data. The quantitative data that were gleaned from the survey participants were then analyzed.

This information assembled from the data sought to answer the research questions as well as provide demographic data about the respondents. These data also illustrated how the respondents fulfill their continuing education requirements both prior to and during the COVID-19 Pandemic. The data collected show a comparison between the different modes of CE and their ability to utilize the assumptions of adult learning theory. The data also gave information showing the relationship between the current structure of CE in AT and how well it utilizes the assumptions of adult learning theory. Once the quantitative data had been analyzed, they were presented in a concise manner, such as tables or graphs as was appropriate (Creswell, 2014).

Survey item one asks what specific setting within the traditional realm of athletic training the participants work in. These data were analyzed and presented in a table showing frequencies and percentages for each category. This provides information about the demographic makeup of the respondents. The data from the next item, which also provide demographic information about how long the respondent has worked in the field, were analyzed by calculating the means and the standard deviations from each sub-item. This gives information regarding how experienced in their jobs the participants are, including in their current role as well as in the profession altogether.

Items three and four seek to find the percent of participation, out of 100% in each type of CE, virtual, in person, and hands-on, each participant completed both before and during the COVID-19 pandemic. This information answers research question one. The means and standard deviations were calculated for this data (Field, 2018). This information illustrates a greater picture of how athletic trainers obtained their CE in the

recent past, including time during the COVID-19 Pandemic, which has influenced all aspects of life during this time frame.

The next set of items, five through 19, delve into one of the six assumptions of adult learning as it is viewed in each modality of continuing education. This provided answers to research question number two. This data were presented in frequencies as well as percentages. These numbers were each displayed in six tables, one for each of the tenets of adult learning theory. Within each table, there is data for each of the three modalities of CE. Chi-Squares were also calculated for these items, to see if the response data were significant.

Items 20-22 examine the motivation athletic trainers have when choosing a CE activity. This also is part of the answer to research question two. These items require an independent scoring of a range of factors one through 10. The data for this question can be presented using three tables displaying the responses for each mode of learning. Responses were combined into two categories: Internal Motivation and External Motivation. A chi-square was also used for these items to determine the significance of the data. These items illustrated which type of factors impact the choosing of CE activities the most. Adult learning theory postulates adults are more internally motivated, rather than externally. The data from this item was to show if the opinions of the respondents are congruent with the principles of adult learning theory.

Items 23-25 asked the participants their overall perceptions of the utility of each mode of CE, online, live lectures, or hand- on skills courses, for their clinical practice. This data can be presented using frequencies and percentages. This allowed the data to show if the responses for this item align with the responses to show to what degree the

modalities of CE follow the principles of adult learning theory and if participants thought it is impactful on their patient outcomes and clinical practice.

The last set of items, 26-32, which provided answers to research question three, pertain to structure of the BOC, Inc.'s CE requirements and if they align with the six assumptions of adult learning. This data were also be presented using frequencies in a bar graph. There is also an item that asks for the respondent's impression of the utility of their CE experiences overall. This data were displayed using frequencies in a table. A chi-square analysis was performed on this data to determine if the results were significant.

The qualitative data from the interviews was more difficult to assess. The interviews, which had been recorded, were transcribed. From there, it was necessary to code the transcriptions, examining what themes emerge when speaking with various practitioners in the field. The interview items were also related directly to the research questions. They provided demographic information about the respondents as well as determined what the respondent's experiences with CE have been. Specifically, they asked the respondents to reflect on each type of CE as it relates to each assumption of adult learning theory.

The individual interviews were analyzed concurrently with the collection of other interview data, making this part of the data collection different than the quantitative data collection (Creswell, 2014). Once all the data were collected and analyzed, it was possible to see if the participants think the current CE, both in structure and the modes that are available, has a high level of perceived utility for practitioners' clinical practice and positive patient outcomes.

Definitions of Key Terms

Adult Learning Theory

Adult learning theory is the concept of how adults learn best. This theory, originally conceived by Malcom Knowles, states there are six main assumptions that define how adults learn best. These assumptions set differences between the way adults learn as compared to their younger counterparts (Knowles et. al, 2005).

Athletic Trainer

An athletic trainer is an allied healthcare professional. Athletic trainers have competence in the six domains of athletic training. These domains are Injury Prevention, Injury Evaluation and Diagnosis, Immediate Medical Care, Rehabilitation and Treatment, Organization and Administration, and Professional Responsibility. These individuals are certified by the Board of Certification and work in a variety of settings. These settings can include athletics as well as industrial, performing arts and the military (Anderson, et al. 2009).

Constructivism

Constructivism is a research paradigm that states there are multiple, socially constructed realities (Mertens, 2020). In constructivism, there is interaction between the researcher and the participants of the study. Together these entities work together to create valuable findings to the research questions (Mertens, 2020).

Continuing Education

Continuing Education is the process in which professionals can keep up both knowledge and skills to perform the duties of their job in a way that aligns with current

practices and research (BOC, 2020). The Board of Certification for athletic trainers sets a standard that certified athletic trainers must complete 50 continuing education units every two calendar years (BOC, 2020).

Impact Evaluation

An impact evaluation is an evaluative study that is performed on an ongoing program that determines the perceived effectiveness of that program. Impact evaluations are based on cause-and-effect outcomes of the program as based on the social conditions it is perceived to produce (Rossi et al., 2004).

Perceived Utility

In this study, outcomes will be based on perceived utility. Utility is defined as the "fitness for some purpose or worth to some end; the quality or state of being useful" (Merriam-Webster, 2021 n. p). Perception is the way that an individual thinks about, or understands about something (Merriam-Webster, 2021, n.p). Perceived utility in this study is defined as what the participants think or understand about the effectiveness the program has on its participants ability to learn the content. This capacity to learn will be based on the participants perception of the competence of the program to utilize the theory of adult learning.

Efforts to Support Quality of Research

To ensure quality data for this study there were several measures put in place. First, during the interview process it was important to strive to build good rapport with the athletic trainers who participated. Rapport with participants is important because it can help to ensure honest responses to questions (Seidman, 2019). Building rapport with my peers in the profession was imperative in getting not only quality but more robust

responses in the interview. It was important to recognize this may also elicit some bias as I, the researcher, am also a certified athletic trainer. By recognizing this bias, it can open the conversation for a more honest exchange of ideas (Creswell, 2014) stemming from acknowledging my own role as an athletic trainer and building rapport with participants in the study.

For the quantitative portion of the data collection, the goal was 100 useable data sets from the surveys distributed. This goal helped to ensure a large amount of varied data to be analyzed. It is necessary to ensure a large amount of data to make sure any results are valid (Fink, 2017). It was also only disseminated in the Continental United States, helping to ensure the participants were native English language speakers. This helped to alleviate any risk of language or cultural barriers to the questions asked (Fink, 2017). The survey was first disseminated to a small pilot group of participants to boost validity and reliability. This helped identify any confusing questions and ensure that a variety of information can be gleaned from the survey (Fink, 2017).

By utilizing Qualtrics, the data in the survey was much more secure than it would otherwise be if it were collected using other modes, such as mail or in-person. Though this method of dissemination limited responses to those with internet access, I do not feel this limited participation of my sample, because those individuals need to have computer and internet access to complete their specific job as an athletic trainer in traditional athletics setting. This role was a criterion of being a participant in the study.

Researcher Positionality Statement

Before embarking on the research journey, I would like to acknowledge as the researcher, I am a certified athletic trainer, licensed and working in the state of Missouri.

Besides my bachelor's degree in Athletic Training from the University of Central Missouri, I have also earned a Master of Arts in Higher Education Administration from Southeast Missouri State University. I am in good standing with the BOC, Inc, and a member of the NATA as well as the Mid America Athletic Trainers Association and the Missouri Athletic Trainers Association.

I have been working in the traditional setting for a total of eight years so far, -two of which were spent working as a Graduate Assistant Athletic Trainer at Southeast Missouri State University (SEMO) with their NCAA Division 1 Men's and Women's Cross Country and Track and Field teams. After that, I was hired full-time at SEMO to serve as the athletic trainer with the Women's Basketball Team. After a year with women's basketball, I chose to return to working with the Cross-Country and Track and Field program, a role I have filled ever since. I attend practices as well as travel to meets all over the country. I also oversee all rehab and treatment of injuries and other medical conditions of the members of the team.

During the COVID-19 Pandemic, though my job role has stayed the same, my primary employer did not. The Southeast Health organization took over my contract and I became an outreach athletic trainer through the department of orthopedics and sports medicine. I am still contracted by Southeast Health to work at SEMO and care for the Track and Field and Cross-Country Teams. Because of this change, I have experience with both the Athletics Department and Medical Model of athletic training coverage.

I regularly participate in a variety of continuing education activities to maintain my credentials as a Certified Athletic Trainer. I have attended several NATA conventions, as well as state and district meetings both in person and virtually. I have

participated in the NATA's online continuing education modules and many online Webinars from various sources during the COVID-19 Pandemic.

Some of these experiences have been incredibly positive and impactful on my career. The most impactful CE experience I have had was attending a weekend training on Graston therapy. Once receiving my training on this modality, I continue to use this technique on my athletes almost daily. It has had a positive impact on my practice. I have also attended lectures at the NATA convention as well as at the district meeting that I have found educational and impactful. Some of these topics that have had positive impacts on me are sickle cell disease, specific foot pain in distance runners, exertional rhabdomyolysis, and how certain foods can target inflammation in the body.

I have also had experiences with CE that have been less impactful. I have attended online webinars I cannot even remember what the topic was because they were not engaging. I have also attended conferences that had limited choices on programming, so I sat through sessions on topics that were not particularly relevant to my setting of practice. Though varying in utility, all these experiences have counted toward my CE requirements for keeping my Certified Athletic Trainer credentials and my Missouri athletic training license up to date.

Because of my close ties to the athletic training profession and personal experience with CE in the profession, I am going to work hard to eliminate, or at the very least identify and highlight my own bias. To accomplish this, I will first record my own responses to both the survey and the interview questions. These responses will not be added to the data collected. My responses will be recorded and compared during the data

analysis and findings process so I may identify any bias I have and not let that cloud the results of the study.

Significance of the Study

This research will contribute to both clinical practice and educational leaders and policy makers in a variety of ways. Knowledge of this topic could bring awareness to a more efficient way to utilize CE by the BOC, Inc. If this process is productive, clinicians can improve on their skills and increase positive patient outcomes. Positive patient outcomes can bring respect to the profession, causing it to be more recognized by other healthcare providers. By increasing utility of CE, athletic trainers can further elevate the profession because more awareness can bring more funding so leaders and policy makers can increase opportunities for learning and growth. Individuals in the profession can utilize CE to treat their patients more effectively as well as reach their current and future career goals.

This study will also make a difference in my current role at my institution. By better utilizing my own continuing education, I can further increase my skills as a clinician. Better skills lead to increased positive patient outcomes and increased rapport with my patients. This will also lead to greater athletic success of the team I work with, which is the goal of the department. I can also use my continuing education experience to facilitate my own desired career trajectory to meet future goals.

My study will contribute to the existing literature base by simply increasing the literature base on this topic as well as increasing the amount of data available. The current literature base contains minimal information about the profession of Athletic Training because it is largely unknown to the public. There are numerous studies that

look at other healthcare professions such as nursing, physical therapy, occupational therapy, and other allied healthcare professionals (Poton & Rea, 2006; Rutherford-Hemming, 2012; Wang & Lin, 2021).

Summary

The goal of this study was to determine the perceived utility of continuing education of athletic training as it currently stands. Since athletic trainers are allied healthcare professionals, they work with many types of people and encounter a vast array of medical conditions and injuries. To uphold the goals and mission of their profession, they must stay up to date on the research. The best way to achieve this is through continuing education; however, it is up to the athletic trainer how this is accomplished. Through the many modes of CE, it is up to the individual whether they attend conferences and sit in on live lectures, participate in skills courses, or log into a webinar at their home, just to name a few. Once they “check their boxes” and complete the requirements for certification set forth by the BOC, Inc, it is up to the athletic trainer how the knowledge is applied.

The research questions guided the study to a conclusion regarding the current manner that CE is delivered in the athletic training profession. This study operated under a constructivist lens, having investigated the perceptions of athletic trainers on this topic. The study utilized adult learning theory to determine the most perceived effective modes of CE, as well as the perceived effectiveness structure of the BOC Inc’s CE requirements.

This study was a formative program impact evaluation of the BOC Inc’s continuing education requirements. The participants in the study were all certified and

licensed athletic trainers who work in traditional athletic settings. Data collection was conducted in a mixed methods format through surveys and interviews.

This study was significant because it adds to the limited literature base on this topic. It will help current and future professionals elevate their skills and treat their patients with the highest standard of care. This study also helps contribute to the knowledge that leaders in the profession can use in the future to determine the course of continuing education. This in turn will contribute to the betterment of the profession, so it can continue to grow and be respected in the realm of healthcare as well as in the general public.

Section Two- Practitioner Context to the Study

Background of the Context

The field of sports medicine is a specific branch of healthcare that provides health and wellness services to individuals who are physically fit and active. This discipline works to prevent, diagnose, assess, treat, and rehabilitate injuries and conditions that result or affect those physically active individuals. There are many professionals that can be part of a sports medicine team, such as physicians, athletic trainers, physical therapists, EMTs, surgeons, medical imaging professionals, nutritionists, sport psychologists and quite a few others (Anderson et. al., 2009).

One of the key medical professionals on the sports medicine team that that has the most direct contact with the patient or athlete is the athletic trainer. An athletic trainer is a healthcare professional that is an expert in prevention, assessment, treatment and rehabilitation of athletic injuries and conditions (Anderson, et. al, 2009).

History of the Organization

The first known “athletic trainer” in the United States was hired by Harvard University in 1881. The profession has evolved in many ways over the years since then. The profession in its more modern role is recognized to have begun in the 1950s. In 1950, the National Athletic Trainer’s Association (NATA) was formed in its official capacity. At its beginning, the NATA had just 100 members. Shortly after, in 1959, athletic training education began, with a standardized curriculum. Prior to this time there was no official curriculum to teach athletic trainers. By the 1970s and 80s, the certification and licensure process had launched, and athletic trainers began taking the certification exam to become indoctrinated into the profession (Diakogeorgiou et. al, 2001).

By 1990, the NATA had surpassed 10,000 members. It was at this time the American Medical Association recognized athletic trainers as allied healthcare professionals (Delforge & Behnke, 1999). Another accomplishment of the NATA came in 1999, when its work in promotion of the profession caused the American Hospital Association to assign billing codes for athletic trainers to be able to bill insurance for their medical services, like other healthcare professionals (Anderson, et, al 2009). The NATA continuously works to establish and improve standards for professional conduct, research, education, and the growth and ongoing development of the profession (Anderson, et. al 2009). Throughout this process of standardizing a curriculum, the profession has changed over the years. The internship route was abolished in the 1990s to make way for the CAATE approved educational curriculum. Now the final bachelor's students are getting their degrees, due to the switch to a master's degree being mandatory for certification by 2025.

The Board of Certification, Inc. was officially formed as an independent organization in 1989. The Board of Certification, or BOC, Inc, serves as independent credentialing organization for entry-level athletic trainers. The Board of Certification is responsible for setting standards of practice for certified athletic trainers and regulating certification requirements within the 50 states (BOC, 2021).

The main way the BOC, Inc. communicates these standards of practice is through the Role Delineation Study. The Role Delineation Study is a document which outlines the knowledge and skills an athletic trainer must possess to do his or her job at the entry level. This text breaks down these roles into the Six Domains of Athletic Training. These domains are Prevention, Clinical Evaluation and Diagnosis, Immediate Care, Treatment,

Rehabilitation and Reconditioning, Organization and Administration, and Professional Responsibility (Anderson, et. al 2009). The newest revisions to this document come out in 2023, which will be the eighth edition of the Role Delineation Study.

The BOC, Inc. works with each state in the United States to set regulations on credentials within the profession (BOC, 2021). The BOC, Inc is also responsible for setting the continuing education requirements for athletic trainers to maintain their ATC credentials (BOC, 2021). The mission of the BOC , Inc. is “To provide exceptional credentialing programs for healthcare professionals to assure protection of the public.” (BOC, 2021). Today, there are more than 56,554 certified athletic trainers in the United States (BOC, 2020a).

Leadership and Policies

Organizational Analysis

The National Athletic Trainers Association is the professional organization for certified athletic trainers. The NATA is organized in the lens of the structural framework and can be easily related back to the ideas of Bolman and Deal (2017).

In the structural frame, the purpose of an organization is to not only work together to achieve a common goal, but also provide guidance and direction to its members in achieving that goal (Bolman & Deal, 2017). The NATA exists to support and further the profession of athletic training. The strategies in which the NATA accomplishes this are to facilitate education for best practices among its members, disseminate education to the public on awareness of the profession, and to endorse legislation that promotes the profession.

Organizations that are categorized in the structural frame increase efficiency and further facilitate the pursuit of its goals by specialization of skills. In other words, having divisions centered on different tasks (Bolman & Deal, 2017). The NATA has many committees that work toward their goals. There are groups and committees to provide educational resources on countless topics within the organization's membership. These topics include LGBTQ+ education, resources for specific job settings, specialized populations, and resources on mental health for members.

There are also groups whose job is to educate the public about the profession and advocate for the access of ATs to the public. These groups educate schools and parents on the importance of having an athletic trainer present at youth sports. There are also political action committees (PACs) to help legislation that benefits athletic trainers pass in all levels of local, state, and national government. These specialized groups and committees work together to achieve the overarching goals of the organization.

The NATA organization coordinates its efforts to reach a common goal: to unite its members and to promote the profession of athletic training. Within the organization, there are measures taken to control the members, so they act in a manner that is becoming of a professional. An example of this is the NATA Code of Ethics. The NATA Code of Ethics outlines the standards of professionalism that a professional must uphold (NATA, 2018). If a member does not live up from these standards, not only can they lose their membership in the organization but can also lose their license to practice athletic training. This is consistent with the structural frame. Organizations that follow the structural framework must have some form of coordination and control for its members to uphold the mission and goals of the organization (Bolman & Deal, 2017).

Another way the NATA operates within the structural framework is that rationality in the organization takes precedence over personal agendas and goals. This trait is one of the assumptions that outline the structural frame (Bolman & Deal, 2017). The way the NATA accomplishes this is through research. The NATA is always working tirelessly to provide its members with the most up to date information within its position and consensus statements. These statements all have the same goal: to provide the best possible care to all athletes. This reflects the vision of the NATA, which states: Athletic trainers will be globally recognized as vital practitioners in the delivery and advancement of health care. Through passionate provision of unique services, athletic trainers will be an integral part of the inter-professional health care team” (NATA 2021i). This vision represents the desire for all athletic trainers to achieve this high level of competency, not just elevating of those at the top.

The NATA has a complex structure that allows it to work for its purpose and be accessible to all. The NATA is a national organization that encompasses all 50 states as well as Guam, American Samoa, Puerto Rico, and the US Virgin Islands (NATA, 2021g). There is a board of directors, who along with the president, work together to lead and govern the organization.

Within this far-reaching organization, there are districts which are organized geographically. Each district elects a director to lead. The NATA board of directors is comprised of each of these district directors. The NATA Vice President and Secretary/Treasurer are elected within the board of directors (NATA 2021h). There is also an appointed Executive Director.

These districts operate as individual organizations within the larger NATA. For example, District One is known as the Eastern Athletic Trainers Association. This District contains Maine, Massachusetts, Connecticut, New Hampshire, Rhode Island, and Vermont. Figure 1 illustrates the breakdown of the districts within the NATA.

Figure 1.1

NATA Districts

DISTRICT NUMBER	DISTRICT NAME	AREAS INCLUDED
1	Eastern Athletic Trainer's Association (EATA)	Maine, Massachusetts, New Hampshire, Rhode Island, Vermont
2	Eastern Athletic Trainer's Association (EATA)	Delaware, New York, New Jersey, Pennsylvania
3	Mid-Atlantic Athletic Trainer's Association (MAATA)	District of Columbia, Maryland, North Carolina, South Carolina, Virginia, West Virginia
4	Great Lakes Athletic Trainers Association (GLATA)	Indiana, Michigan, Ohio
5	Mid-America Athletic Trainer's Association (MAATA)	Iowa, Kansas, Missouri, Nebraska, North Dakota, South Dakota, Oklahoma
6	Southwest Athletic Trainers' Association (SWATA)	Arkansas, Texas
7	Rocky Mountain Athletic Trainer's Association (RMATA)	Arizona, Colorado, New Mexico, Utah, Wyoming
8	Far West Athletic Trainers Association (FWATA)	California, Guam, American Samoa, Hawaii, Nevada
9	Southeast Athletic Trainers Association (SEATA)	Alabama, Florida, Georgia, Puerto Rico, Virgin Islands, Kentucky, Louisiana, Mississippi, Tennessee
10	Northwest Athletic Trainers Association (NWATA)	Alaska, Idaho, Montana, Oregon, Washington
11	Great Lakes Athletic Trainers Association (GLATA)	Illinois, Minnesota, Wisconsin

Within each district, each state also has a separate association. These state associations also each have elected officials that serve as the Executive Committee. These leaders are chosen by a vote of the members each year. In the Missouri Athletic Trainer's Association, or MoATA, there is a President, a President-Elect, Treasurer, Secretary, Public Relations Chair, and a Past President that make up this committee. The president's role is a three-year commitment to the executive committee. When elected, the president serves as President Elect for the first year, and after they have served as president still serve on the committee as past president. This allows for great continuity in leadership of the organization (MoATA, 2021).

Each state has its own unique mission and vision statements that help to unite the organization toward its goal. The MoATA mission, for example, is: "The Missouri Athletic Trainers' Association (MoATA) is the professional organization for athletic trainers in the state of Missouri. The MoATA directly serves its members by promoting the profession through communication, education, and advocacy. The MoATA indirectly serves the people of Missouri via its commitment to advancing the health care provided by athletic trainers" (MoATA, 2021). This mission helps the organization, and its members work toward a unified purpose.

The role of the state organizations is imperative to the longevity and prosperity of the profession. The state organizations often work with lawmakers on issues regarding the state practice acts. Each state has different rules and regulations for licensure of athletic trainers, and the state organizations, specifically their political action committees, can help educate and influence legislators on what is right for the profession.

Another hallmark of an organization operating within the structural framework is that when performance of an organization is lacking efficiency, a solution to the problem is restructuring (Bolman & Deal, 2017). A perfect reflection of this concept just took place within the NATA in January of this year, 2022. District Four, also known as GLATA was outgrowing its functionality. Until this year, GLATA was comprised of Illinois, Indiana, Ohio, Michigan, Minnesota, and Wisconsin. The membership size of this district was double that of most of the others. This caused members to have less of an individual voice and decreased leadership opportunities both within the district and within the NATA. To remedy this issue, the decision was made to split the district into two districts. Therefore, District 11 was formed with Illinois, Minnesota, and Wisconsin. These two new districts will still share some funding and still meet annually as one GLATA, but with this change, more members will be represented, and more leadership positions will be available (Quinn, 2022).

The NATA and its daily functions operate under the structural frame. There is formal authority, as is a trademark trait of the structural frame (Bolman & Deal, 2017), at the top starting with the President and the board of directors. The organization has distinct hierarchy and groups that serve functions within the larger organization, displaying not only vertical structure, but also lateral. Within the structural frame, this lateral organization helps work get done quicker and more efficiently (Bolman & Deal, 2017). They operate with strict rules and policies, and plan events methodically within the system. The different state and district organizations work from the bottom up to ensure the NATA is serving its purpose: to advocate and advance the profession of athletic training.

Knowledge Sharing

As mentioned above, the National Athletic Trainer's Association is the professional organization in which athletic trainers join to gather and share information with one another. The NATA, as it is commonly called, advocates for the members of the organization as well as works to further develop the profession. The NATA also provides opportunities for its members to engage with one another for education as well as community, comradery, and support. The NATA accomplishes these purposes in several ways (Diakogeorgiou et. al, 2001).

The NATA website is a place where members can go to gather information they need. The NATA publishes both position statements and consensus statements that provide practitioners with valuable information. These statements are all based in best practice research and provide guidance on how a professional should react in certain scenarios. Some examples of some topics that members can seek guidance on through these statements are environmental illnesses, pregnancy, lightning protocol, steroid use, and spear tackling in football. By being aware and following the guidance of these statements, athletic trainers can easily provide their patients with the best care, even in difficult situations (NATA, 2021f).

NATA as a Learning Organization

The NATA operates as a learning organization and offers many resources to its members. The NATA offers career advancement opportunities in the form of job boards and networking events. With access to these resources, ATs can search a database of job postings around the country and easily connect with opportunities to further their career and find opportunities to best suit their needs.

The NATA offers online continuing education. The Professional Development Center (PDC) on the NATA website has many on-demand courses available to its members. These courses offer different amounts of CEUs and educate on a variety of topics. There are also CEU opportunities in the form of journals with quizzes that members can use to increase their knowledge and skills on a plethora of subject areas. These courses are accessible when it is convenient to the professional and available to all members (NATA, 2021c). NATA Members get free access to 10 free CEUs each cycle.

Another way the NATA operates as a learning organization is through its professional interest committees. As stated before, certified athletic trainers work in a variety of professional settings. The NATA has committees that reflect each of these settings as well as other professional interest areas. There are specific committees for many of these areas that include Secondary Schools, College and University, Professional Sports, Higher Education and Emerging settings (NATA, 2021d).

The Early Professionals committee supports athletic trainers in their first six years of certification and provides resources for them to succeed long term in the profession. There are also Diversity and Inclusion committees to educate and support members of the organization on these issues. One of the resources the Inclusion Committee offers are courses such as the Safe Space Ally training so athletic trainers can better support LGBTQ+ patients. Other resources offered by the Inclusion Committee is Cultural Competence in Healthcare to assist with treating the “whole” patient-based respecting their cultural values and other considerations that could contain bias by the practitioner (NATA, 2021d).

The NATA also is a supporter of research. The NATA's Research and Education Foundation supports members in identifying areas for research and supporting members with that endeavor. The NATA strives to help its members have access to the latest information so they can increase positive patient outcomes and provide the best healthcare. The NATA also publishes two different peer reviewed journals: the *Journal of Athletic Training* and the *Athletic Training Education Journal*. These publications are a great resource to NATA members to find lots of innovative research all in one place (NATA, 2021e). There is also a monthly publication available to NATA members, known as the NATA News. This magazine shares news in the profession as well as advertises upcoming networking and learning events.

Structure of Conventions

Within the National Athletic Trainer's Association, the districts and state organizations, there are many meetings and conventions for athletic trainers to meet. During these events, athletic trainers can network with likeminded professionals, learn about a variety of related topics, and conduct business within the organization.

The largest of these meetings is the NATA Convention. This Convention is held every year in mid-to late June. The location of this event varies so many people can attend. Examples of past locations that this event has been held include, New Orleans, LA, St. Louis, MO, Las Vegas, NV, and Houston, TX. These conventions can draw thousands of athletic trainers from all over the country. It should be noted because of the COVID-19 pandemic, this event was held virtually in 2020 and 2021. It was held in person in Philadelphia, PA in 2022 (NATA, 2021j).

During the NATA Convention, the AT pays the registration fee, and this gets them access to the convention, which entails them to 20 plus CEUs. In 2022 the advanced registration fee for a Certified Athletic Trainer who is also a member in good standing of the NATA is 295 dollars. This does not include housing and travel expenses. Starting this year this fee also gives the registrant access to the NATA on demand, so they may also access these CEUs virtually without attending in person (NATA, 2021j).

Attendees of the in-person NATA convention can attend many sessions of learning, including a wide variety of topics to choose from. These topics can range from clinical to diversity and inclusion. The attendee also can attend free communications sessions of cutting-edge research and not only learn the content but interact with the researcher. Another benefit of attending the NATA convention is the Athletic Training Expo. This is an opportunity for practitioners to see firsthand new products that can enhance their patient care and ease of their jobs. This event lets ATs have access to samples and discounts for these products as well as a chance to try them out (NATA, 2021j)

Attendees also get the opportunity to gather with their peers. This is a great collaborative environment where practitioners get to learn and grow together. They can interact with each other and enhance their learning experiences by networking with others that work in their field. This opens the door for not only learning and growth in their practice but also the opportunity for career advancement (NATA, 2021j).

Like NATA but on a smaller scale, are the District Annual Meetings. These conventions offer much of the benefits listed above but in a more geographically compact format. These conventions are held to provide CEU opportunities for professionals as

well as networking within the district. District Conventions also house an opportunity for district leaders to gather in person for business meetings to run the organization. District members are all welcome to attend and participate. This also gives members a chance to mingle with their leaders and have an impact on their organization. Smaller still, but also impactful are the state meetings. These gatherings also offer CEU opportunities as well as business meetings with the state leaders to run the organization. This structure of conventions allows for members to be active in the organization, whether that be on a state, district, or national level.

NATA and Leadership

The structure of the NATA, and the other organizations discussed above lends itself to the theory of servant leadership. All the leaders within the NATA, districts or state organizations are different individuals with a variety of personalities and backgrounds. However, they all fall into the category of a servant leader.

One of the basic tenets of servant leadership is that leadership is a choice. Servant leaders chose to have the aspirations to lead (Northouse, 2019). Since all the leaders in the NATA and its similar organizations are athletic trainers who have full time jobs and responsibilities, being a leader in the organization is a large undertaking. These individuals must have the desire, drive, and passion to want to help the organization succeed to choose to run for these positions. Servant leadership is a behavior, not a singular trait that can make or break a leader (Northouse, 2019)

Servant Leaders also emphasize follower development (Northouse, 2019). This is illustrated in the very purpose of these organizations. The purpose of these organizations is to advocate and further the profession of athletic training. To successfully carry out this

mission, the leader has to cultivate empowerment among the members of the organization (Northouse, 2019).

The members of the NATA as well as the district and state organizations will be the ones who carry out the mission into the world. It is the responsibility of the servant leader to build the confidence in the members' own roles in their jobs to carry out their duties as a professional (Northouse, 2019). The members are given the freedom to carry out those job roles in the best way they are able, but the organizations help give tools to do so in the form of continuing education and community in the profession.

One of the characteristics that defines a servant leader is empathy. Empathy refers to the ability of the leader to see the point of view of the followers (Northouse,2019). Since the leader, was once one of the followers in the organization, the leaders of the NATA all possess empathy. The leaders are all certified athletic trainers, so they can understand the struggles and difficulties the members of the organization experience.

Servant leaders also strive to create community (Northouse, 2019). Building a community within the profession of athletic training is one of the main purposes of these organizations. This community has the shared interest of being an athletic trainer and the members can relate to one another based on their similar life experiences. Within the NATA, these professionals have a safe space to go to seek out these relationships and bonds without losing their sense of individuality.

One of the criticisms of servant leadership is the followers must want to be led this way (Northouse,2019). Leadership positions in the NATA are elected by the members of the organization, so most of the members have chosen this leader, this

criticism is diminished in this situation. There are, however, a few positions which are board appointed, so this could open up this issue for further criticism.

Implications For Research in the Practitioner Setting

This research has the potential to impact practitioners. As a certified athletic trainer, I regularly participate in a variety of continuing education activities. I also have attended multiple state, district, and national athletic trainers' conventions. I am also a consumer of the NATA News, a magazine that is published by the NATA to connect and educate professionals about current events in the world of athletic training and in health care at large. According to the National Athletic Trainers Association, the NATA News is the only magazine that is published specifically for athletic trainers.

As a researcher, it is my hope to be able to communicate the findings of my research study to many athletic trainers. This information can help them mindfully choose CE with the highest perceived utility, which will lead them to more positive patient outcomes and a higher standard of care. Providing high level healthcare is the main goal of any practitioner in the field and I genuinely believe that being a lifelong learner and being open to new techniques and research can help achieve this goal. Continuing education is the path to this latest information. To communicate this research, I think the NATA News magazine would be a great modality to get the information to the public. This publication is received by all members of the NATA. The NATA News provides complimentary information about new research in any part of the field of athletic training. This information is presented in an editorial format and is easier to read than an academic journal. The information in this news magazine can expose the practitioner to new research topics in the profession.

Section Three-Scholarly Context to the Study

As defined in section 1, athletic trainers are highly skilled allied healthcare professionals who work in a variety of settings. These professionals are trained in emergencies, preventative care, environmental conditions, industrial and sport equipment related safety and other topics of use for the physically active individual (NATA, 2021a). These healthcare professionals work tirelessly to ensure not only athletes, but also other physically active people, can participate in sports and carry out their jobs safely. Athletic training education is based around six core competencies (NATA, 2021). These competencies are:

- Injury and Illness Prevention/Wellness Promotion
- Examination/ Assessment/ Diagnosis
- Immediate Emergency Care
- Therapeutic Intervention
- Healthcare Administration
- Professional Responsibility

The education an athletic trainer receives during their time as an undergraduate and graduate student revolves around these domains (NATA, 2021). Athletic trainers are skilled in all these above areas, and together these skills make up the scope of practice of a certified athletic trainer. Injury and illness prevention, one of the most important domains of athletic training discussed above, is arguably one of the most important (Szuba, 2014). However, even the best athletic trainers cannot prevent all injuries, so when an injury does occur, an athletic trainer is equipped to evaluate and treat the athlete, providing both immediate triage as well as creating rehabilitative exercise programs to get the athlete back on the field, court, track or even just back to work.

Once an athletic trainer graduates from college and becomes certified by passing their board of certification exam, the ‘BOC,’ they must complete continuing education units (known by those in the profession as CEUs) to maintain competency and certification. The National Commission on Certifying Agencies (NCCA) says that continuing competence is defined as “demonstrating specified levels of knowledge, skills or ability, not only at the time of certification, but throughout an individual’s professional career” (BOC, 2020).

An athletic trainer must complete 50 CEUs within every set two-year reporting cycle. In the past, ten of these CEUs must fall within Category A, which is Evidence-Based Practice (BOC, 2020). Evidence-Based Practice CEUs serve the purpose of introducing athletic trainers to the newest research in clinical decision making, to get the most successful patient outcomes. These evidence-based practice CEU’s must be approved by the Board of Certification (NATA, 2021). The importance of evidence-based practice in continuing education has only grown in recent years. Starting in this reporting cycle, 2022, specific EBPs will no longer be required to be reported. Instead, all BOC, Inc. approved continuing education will have an element of evidence-based practice (BOC, 2021).

Other than evidence-based practice, the topics of CEUs an athletic trainer completes can be earned in a variety of topics, settings, and formats. A clinician is free to choose what continuing education experience he or she would like to pursue. Online resources, conferences, and live skills classes on any related topic are common modes of completing this requirement. Choices are often based on many factors such as job setting, proximity to a live event, time, and travel cost. Other clinicians use academics to fulfill

these requirements. Preceptors in an athletic training education program can earn CEUs for supervising students. Researchers can also earn CEUs for publications and studies they participate in, or even applicable continued university coursework (BOC, 2020).

With so many options and such a flexible format, what is the best route for practitioners to fulfill these requirements. Surely not all continuing education is created equal, and it is up to individual athletic trainers to wade through the mire of CE to find what is best for them and with most positively affect their patient outcomes.

Rationale and Literature Gap

The intended purpose of continuing education is to promote ongoing learning, furthering the development of current professional skills and judgement within the profession of athletic training (BOC,2020). The profession of athletic training requires the completion of a minimum of 50 continuing education units every two years to maintain certification (BOC,2020). Other allied healthcare professionals have similar requirements to maintain their certification. For example, Physical Therapists and Occupational Therapists requirements vary by state, but in Missouri Physical Therapists need 30 units of continuing education every two years (McDermott, 2019), and Occupational Therapists require 24 Continuing Competency Credits during the two-year license cycle (American Occupational Therapy Association, 2020). Certified Orthopedic Technologists need 120 continuing education hours every six years (National Board of Orthopedic Technologists, 2021). All these healthcare professionals maintain the common goal of staying on the forefront of research to provide the best possible care for their patients.

For continuing education in athletic training, there has been some minimal research on effective means of continuing education for positive patient outcomes, but this research has barely scratched the surface. Several studies have been done that explore what athletic trainers expect from their continuing education experience, and what their perception of continuing education is (Hughes, 2005; Walker et al. 2008).

Most of the research on this topic exists in specific peer reviewed journals such as *The Online Journal of Allied Healthcare and Practice* and the *Journal of Athletic Training*. There is minimal information available to determine what the utility of continuing education for athletic training is for increasing the knowledge and skills of its participants as well as its effect on positive patient outcomes (Doherty-Restrepo et al., 2009).

This review of literature will explore continuing professional education in athletic training. The literature will examine continuing education through the constructivist lens, focusing first on adult learning theory and the six assumptions in which adults learn different than children. Adult Learning Theory has a profound impact on continuing education in all professional fields (Merriam & Bierema, 2014a). Next, the literature will address social cognitive learning theory to examine the effect on continuing education the mode of delivery may have.

Perception is the most researched “measurement” of choice in healthcare because there are outside factors that can, and often do, affect patient outcomes (Cuppett, 2001; Hughes, 2005; Walker, et al, 2008). This includes other healthcare professions and their approach to continuing education as well. Patient motivation, time, and access to

resources, and other factors can thwart even the best healthcare professional from having 100% success.

Continuing education in healthcare is extremely important because research is always changing. The gap between the research and the patient care is one that all healthcare workers must strive to fill. Continuing education is the way professionals attempt to bridge that gap.

The following literature will first explore Constructivism and its role in the research measurement of perception and its role in adult learning and andragogy. Next, the literature will shift to Social Cognitive Learning Theory. Social Cognitive theory has been used in continuing education settings for nursing and other healthcare fields, so this investigation will focus on how it has been and can be used specifically in the field of athletic training continuing education. Continuing education in healthcare employs a variety of methods to find success and improve delivery, as the research below will show. The same can be said for Athletic training continuing education, although research has not been as in depth. The review below will illustrate these concepts.

Adult Learning

Constructivism

The ontology of the constructivist paradigm is that reality is a social construct based in the eye of the beholder (Mertens, 2020). When looking through the lens of the constructivist paradigm, adult learners, who as previously stated, need to have justification for learning and are internally motivated, can be viewed as “organisms seeking meaning” (Merriam & Bierema, 2014a). Adult learners can take their lived

experiences and use that information to construct a reality that is their own (Merriam & Bierma, 2014b).

When learning in the constructivist paradigm, participants can investigate and interact with the latest information and connect it to previous experiences to get a unique perspective and message. One learner may glean a dissimilar experience from a learning activity than another based on their past lived experience (Alesandrini & Larson, 2002).

This concept, also called “interpretivism” allows researchers to seek understanding of the world in which they live (Merriam & Tisdell, 2016). In this case, what is true for one practitioner of athletic training regarding their continuing education experience may not be true for others. The perceptions had by individuals can differ from each other, but none are less true for each person. These experiences are not simply things that “happen to” a person, but interactions that happen in social contact, causing those same experiences to differ in perception from one person to another (Merriam & Tisdell, 2017).

Constructivism also generally operates under a specific setting where people live and work. In each specific setting, athletic training for this study, there are cultural norms and historical values. This allows for the perspectives of everyone, while different, to have something in common. Through these differences however everyone has a unique experience and a unique perspective to contribute to the study (Creswell, 2014).

The concept of constructivism is, at its core, the perception of the world by the individual. Each person can interpret the world around them in a unique way, and this includes the different interpretations of different learning experiences. Understanding of this concept can help cultivate a better understanding of the learning process.

Andragogy vs. Pedagogy

Adult learning theories agree that adults learn differently than child learners do. The art of educating adults is known as andragogy (Merriam & Bierema, 2014b). All students, both adult and children alike, have one goal, they are striving to learn. Adult learners differ from children in regard to learning in many ways. Malcom Knowles penned six assumptions of how adults learn. These six assumptions are what set child learners apart from adults. Each assumption is different for the type of learner, child, or adult. The basis for these assumptions is: the Need to Know, Self-Concept, Experience, the Readiness to Learn, Orientation to Learning and Motivation (Knowles, 2005)

The Learner's Need to Know

The first assumption is the “Need to Know” (Knowles, et al, 2005). In Pedagogy, or child learning, the Need to Know is what the instructor tells them so they may pass the test, and get promoted to the next grade (Knowles, 2005). For an adult learner, however, the Need to Know means they know why they need to learn something. Adults want to know what benefits they will gain from a piece of information as well as the negative consequences of not knowing that same piece of information (Knowles et. al, 2005). Adults want to know how they can apply the information in their lives. It is important for adults to have buy-in when learning about a subject. If an adult learner does not think the information being taught will benefit them in some way, they are unlikely to spend the effort and time to learn it (Merriam & Bierema, 2014). For adults to learn, many times it is helpful if the facilitator of the knowledge can share possible ways a learner can benefit from the information given. Adults are more likely to learn something if they deem it to

be useful (Merriam & Bierema, 2014a). Adults may be more likely actively participate in a learning activity if they see its value.

The Learner's Self-Concept

The next assumption Knowles describes is a person's Self-Concept. This is the concept of one's self-learning shifting from a dependency on what others say is important to learn to a self-directed learning motivation. In other words, adults are motivated to learn things more independently than children, who learn things that others tell them to (Merriam & Bierema 2014a). Child learners have a dependent personality; therefore, they are dependent on a facilitator to teach them for them to learn (Knowles, 2005). As an individual ages, they want to take control and be responsible for their own lives. Adults feel the need to have others be aware of their own responsibility and want to be seen as self-sufficient (Knowles, et al. 2005). Adults' personality shifts from being dependent to more independent and sometimes can resist being told what to do (Merriam & Bierema, 2014). This is a contrast to children who are learning in an elementary school classroom. They sit together and learn what the teacher tells them they need to know. Adults are much more self-directed, as opposed to these elementary children. Adults can, and want to more on their own, and do not want an instructor hovering over them and guiding them step by step.

The Learner's Experience

The role of learner experiences is the next important assumption. A child learner's experiences do not have much impact on their classroom learning (Knowles,2005).

Adults have both more experience and a higher quality of life experiences. Adult learners

also have more lived experiences they can draw from to make connections and facilitate learning from everyday life (Merriam & Bierema, 2014a).

A learner's experience has several different ramifications on the learning process. The first implication is that a group of adult learners is more diverse than a group of child learners because their life experiences have the potential to be much more varied. More individualized learning may be needed for adult learners because of these differences in experience (Knowles, et. al, 2005).

Adults also draw knowledge from these experiences they can apply to lessons learned in the classroom so they can get a deeper understanding of concepts. Child learners have a limited amount of life experiences they can draw from, simply since they have not been alive as long as adults. These experiences can also impact the learning of others in cooperative learning, such as group discussions and activities because adults are able to learn from not only their own experiences, but those of their peers (Knowles, et. al, 2005). In contrast, however, a learner's experience can also hinder some learning because with all these learned experiences come learned habits and biased behaviors that may not be in the best interest of the learner (Knowles, et. al, 2005).

The Readiness to Learn

Knowles postulates Readiness to Learn is also important. Child learners only become ready to learn when the teacher tells them they must (Knowles et. al, 2005). The willingness of an adult to learn is more related to a need. This readiness reflects adults needing to know information to help them effectively manage their own lives. This could include their jobs, their role in the home and other areas of their existence (Knowles, et.

al. 2005). It should be noted even though adults may not always have the readiness for a particular skill, but it can still be simulated so it can stimulate their “need to know.”

The Learner’s Orientation to Learning

Orientation to learning in andragogy vs pedagogy differs as well. This assumption asserts that as people age, the time frame in which they will apply learned knowledge changes (Merriam & Bierema, 2014). Children are subject-centered learners as they go through school, where adults are much more problem focused (Knowles, et. al, 2005). They want to learn information they think will help solve a problem in their practice. In other words, adults are more likely to seek out learning and new knowledge because they have an awareness that it is needed to carry out work or improve performance (Merriam & Bierema 2014a). In contrast, children learn information in a subject-based manner. They are collecting pieces of information they can use later, whether that be for a test in school or later as adults (Knowles, 2005).

The Learner’s Motivation

The last assumption is Learner Motivation. All learners are motivated by something. It may seem sometimes that adults may be somewhat motivated by material things such as salaries and high-status jobs. Knowles (2005) asserts that is not the case. Adults are less motivated materially than younger learners. Adults are driven more intrinsically than children. Children may be more motivated with external rewards, but adult learners are more motivated by non-tangible factors, such as self-esteem and job satisfaction (Knowles, et. al. 2005).

Most learning theories assert all successful learning is based on six tenets; Need to Know, Self-Concept, Learner Experience, Readiness to Learn, Motivation and

Orientation to Learning. Adult learning theory, or andragogy, alleges that adults have unique needs as compared to children in these tenets. When educating adults, it is important to acknowledge these differences exist. By better understanding these concepts and applying them to the field of continuing education, adults can utilize these learning experiences to their utmost advantage in their careers.

Social Cognitive Learning Theory

Social Cognitive Learning Theory stated most of human learning happens within a social environment (Merriam & Bierema, 2014b). Most people are more inclined to engage in social learning activities. This phenomenon is due to cognitive processes that use stored information from past experiences of either past personal interactions or observed interactions between others (Poton & Rhea, 2006). There are five steps to social cognitive learning theory: Symbolization, Forethought, Vicarious Learning, Self-Regulation and Self Reflection. These steps help facilitate learning from social environments (Poton & Rhea, 2006).

The first of these steps is symbolization. Symbolization occurs when a person creates of sensory experiences. These experiences can be imagined through memories of personal past experiences or learned through the past experiences of others (Poton & Rhea, 2006). Next, in the progression is forethought. This occurs when symbolization is used to create future situations the person may react to. Vicarious learning is another element to social cognitive learning theory, which refers to taking the experiences of others and using them to learn so mistakes are not repeated (Poton & Rhea, 2006).

The last two elements of social cognitive theory are self-regulation and self-reflection. The learner uses self-regulation to select and relevant experiences to work

towards their goals, whereas self-reflection is where the learner can look back at past experiences not only to learn but to shape their philosophies and behaviors toward situations in the future (Ponton & Rhea, 2006).

Adult learners are more autonomous than child learners (Merriam & Bierema, 2014a), and they live in an objective reality that each person is free to see in their own way (Mertens, 2020). Sometimes an individual does not have the same information about a situation as another, but still must choose the course of action that is right for them. Adult learners can choose the path that is right for them based on these vicarious learning experiences and other life experiences they have encountered along the way (Ponton & Rhea, 2006).

Utilizing collaborative knowledge-based learning program designs that also heavily incorporate constructivism can help to improve advanced cognition as well as create new and diverse ways of teaching and learning, therefore enhancing the entire educational process (Gilbert & Driscoll, 2002).

Because adult learners can draw information and conclusions from not only their own life experiences, but the life experiences of others, research shows that learning may be most effective within collaborative social learning environments. Gilbert and Driscoll (2002) discuss there are several design guidelines for an effective collaborative social learning environment. It is stated in the research the first of these design elements that promote a collaborative social learning environment is creating “scaffolds.” Scaffolds, in learning much like in construction, help to guide the learner up to higher order thinking but still promote the freedom to support self- regulation, as discussed earlier (Gilbert & Driscoll, 2002; Poton & Rhea, 2006).

Another design element of a successful collaborative social learning environment is to track the learning process. Tracking the learning process can best be achieved by monitoring learner perception of the experience. If the perception is not ideal, this can be used as a guide to make changes (Gilbert & Driscoll, 2002). This again supports the constructivist nature of the adult learning process because the quality of the experience is based in the eye of those who are experiencing it (Merriam & Bierma, 2014b; Mertens, 2020).

Another recommendation to create successful social learning environments is to balance tension. This is described as creating “productive discomfort” for the learners. The idea behind “productive discomfort” is to motivate arduous work by creating a challenge, but not so much difficulty the learner gives up or feels that it is overwhelming (Gilbert & Driscoll, 2002).

Adult learning theory shows that adults learn when they find value in what they are learning (Merriam & Bierema, 2014b). To facilitate that concept, Gilbert, and Driscoll (2002) also suggests that it is important to promote relevance and motivation. Learner perception can be used to monitor if they (the learner) think the content of the learning activity is adequate. If they perceive that it is, research shows they will be more motivated to learn it (Gilbert & Driscoll, 2002; Merriam & Bierema, 2014b).

Successful social collaborative learning environments also must possess a shared vision. The learners must “buy-in” and see value in its content. When this is achieved, it promotes a flow of ideas between members of the group, furthering the social nature of the environment (Gilbert & Driscoll, 2002). Once the ideas are being shared within the group, there must also be the promotion of the acquisition of knowledge. All members of

the group, including the educator, must agree on key ideas in the learning content so all are willing to learn (Gilbert & Driscoll, 2002). When adult learners see value in the content of an activity, they are more likely to actively participate (Merriam & Bierema, 2014b).

Today there is an ever-increasing amount of online based learning available. If utilized in the most effective way, computer-based learning can adapt to adults learning style (LeNoue, et al 2011). Consumers of information can actively participate in a learning activity via the internet. Some computer-based learning programs are still based in social media platforms that can provide some interaction and collaboration and may mimic the benefits of a social collaborative learning environment (LeNoue, et. al 2011). These online based learning items also encourage self-directed learning (LeNoue et al, 201), one of the basic tenets of adult learning theory (Knowles et al, 2005).

Adults are social beings. There are a lot of reasons to believe that adults interacting in a social environment can enhance learning. Social cognitive theory is a learning theory that is based on five steps that if achieved, can enhance learning in a social environment. These steps, Symbolization, Forethought, Vicarious Learning, Self-Regulation and Self Reflection, can result in a positive social learning experience. These social experiences, which have traditionally been in live and in person, have also become possible in the virtual world with the increasing availability of technology and the necessity of social distancing during the COVID-19 pandemic.

Continuing Healthcare Education

Many forms of continuing education have moved online, for reasons of convenience (Wang & Lin 2021). Though online courses can be useful, studies have

shown that in healthcare, these online learning environments need to be enhanced with ways for students to interact with each other and their teachers. This supports the collaborative learning that was discussed in the previous section. Students feel more engaged when three core concepts are integrated: materials learning, embodied learning, and social interaction (Wang & Lin, 2021). These concepts all are cohesive with hands-on activities performed with their peers. Some aspects of this can be recreated in an online learning atmosphere, but instructors need to be creative and figure out ways to do so to fully get the most out of the learning experience (Wang & Lin, 2021).

Nursing education, not unlike athletic training education, often utilizes patient simulations to instruct its students, so the student can get an experiential learning encounter without risk of harming an actual patient (Rutherford-Hemming 2012). This utilizes adult learning theory in that one of the assumptions about adult learning is they gather life experiences that in turn facilitate their learning (Merriam & Bierema, 2014a). Students in nursing, as well as other healthcare professions are many times asked to repeat the actions of their teacher after listening and observing. This illustrates social cognitive theory because they are going through the steps required to achieve learning through Social Cognitive theory; Symbolization, Forethought, Vicarious Learning, Self-Regulation, and finally Self-Reflection (Ponton & Rhea 2006; Rutherford-Hemming, 2012).

Another study showed while simulations and interactive learning were beneficial to learning patient safety techniques within a hospital, some barriers occurred. These barriers were mostly related to interaction anxiety and poor leadership. The participants

in the study thrived in the interactive environments if there was effective leadership and communication among the members (Gordon et al. 2017).

Further studies agree with this idea. In a study with a mixture of healthcare professionals taking part in a simulation CE activity based on teamwork and collaboration, researchers found greater learning outcomes when the instructor or facilitator began and ended the activity with structured traditional lecture style information as compared to a more collegial setting for the activity pre-and post-activity briefing (Nystrom et al 2017).

Many different formats of healthcare education are utilized in all fields. One study of doctors and nurses entailed a virtual online module learning component, followed by classroom lectures and finally hands-on learning activities. The healthcare professionals that participated in this six-month long learning program showed higher competencies of the skills taught after completing the program than before, showing that a variety of educational methods can be used concurrently (Lim et al, 2019).

Physical Therapy has some similarities as athletic training as a profession. A study of physical therapists across the United States showed 96 percent believe that participating in CE had a positive impact on their practice and most therapists chose to participate in it, regardless of if it was required by the state that they were licensed in (Landers, et. al 2005). This illustrates the adult learning concept that adults are more intrinsically motivated to learn and seek knowledge to solve future and current problems of practice (Knowles, 2005). This study also noted PTs were more likely to participate in CE if they were members of a professional organization (Landers, et. al, 2005).

Most healthcare professionals must maintain their credentials by completing some form of continuing education. Though the modes can vary from one profession and person to another, there is a common goal: to maintain professional competence with the evolution of the research to increase positive patient outcomes. Many of these healthcare professions offer some type of hands-on learning and simulation training to complete these requirements. These types of learning experiences can prepare the learner to better treat their patients and perform their job roles better. However, these experiences can be expensive and time consuming to an already busy and money conscious professional.

Continuing Education in Athletic Training

Continuing Education in Athletic Training is not vastly different than other types of continuing education in healthcare. The same principles of adult learning, constructivism and Social Cognitive Theory still apply in this field.

One of the ways that many athletic trainers choose to gain their continuing education credit is to attend professional conferences, such as the National Athletic Trainers Association Conference or other regional and state equivalents. The goals of a professional conference are to interact with others in the field and to be able to discuss, in person, current issues in the profession (Manners & Scifers, 2005). This allows for like-minded individuals to share ideas and promote the acquisition of knowledge as discussed above (Gilbert & Driscoll, 2002).

Athletic trainers do think they are responsible for what they get out of their continuing education experience (Walker et al. 2008). Factors that affect this are if the individual selects appropriate, relevant continuing education and engages with the programming to develop as professionals (Walker et al. 2008). This supports the concept

that adult learners are self-directed and seek out knowledge they deem useful and that will help them solve a problem they face in their work setting (Knowles et. al, 2005).

Conventions of athletic trainers are also used as wide networking events. There are many opportunities to meet other likeminded professionals in similar job settings. However, while socialization and sharing lived experiences can be a preferred method of learning for adult learners, (Knowles, et. al. 2005). it is not unusual for some individuals to spend more time socializing at professional conferences than they do actively participating in the sessions (Manners & Scifers 2005).

There have been several studies performed centering around what factors affect what topics of continuing education are most sought after. Research illustrates that athletic trainers perceived each of the items within the domains of athletic training to be at least “somewhat important,” Rehab and specific info for the back and neck were perceived to be most important (Cuppett, 2001).

These studies find that most usually the programming that is most applicable to the setting the professional is employed in, for example: high schools, collegiate, clinic, industrial, performing arts, military or education is what is deemed most useful to the professional. (Hughes, 2008). This supports the adult learning theory laid out above because adults are self-motivated to learn, and they learn things they feel would be useful in their role (Merriam & Bierema 2014b).

There has also been some research that suggests that to help athletic trainers get the most out of their continuing education experience, they need to have a personalized learning plan. This would allow for them to learn the most about topics they feel would benefit them the most. 94% of athletic trainers in one survey agreed having a

Personalized Learning Plan for continuing education would help develop meaningful continuing education experiences (Walker et al, 2010). This is further illustrated in another study that shows that athletic trainers also think they improve their competency and self-efficacy by utilizing continuing education, but only if appropriate topics are chosen. Otherwise, the athletic trainer does not feel engaged in the learning process, therefore glean less information from it (Walker et al 2008).

Hands-on learning is also a common theme in athletic training education. For example, when learning cardiovascular assessment, research showed a high-fidelity simulation was more effective in teaching these skills due to more active involvement in the lesson (Frank et. al. 2020). Consistent with this theme, some researchers have suggested the structure of CE in athletic training should be more aligned with the practices of the Institute of Medicine recommendations (Samdperil, 2012). This would mean moving away from large, structured lecture type continuing education and moving more toward self-directed learning that would allow for more interaction between peers as well as between pupil and instructor. This would be also more aligned with adult learning theory and allow for more self-reflection (Samdperil, 2012).

Most athletic trainers prefer these types of hands-on formal activities and networking events that allow more social interaction. The problem with these methods is that barriers of cost and travel distance exist. (Armstrong & Widener, 2011). Some themes related to AT motivation and implementation of continuing education are also shown to be limited choices of continuing education activities due to barriers of time and again, money (Edler & Eberman, 2019).

Athletic trainers have a variety of options for continuing education. When choosing continuing education to complete their requirements, there are many factors at hand. Many choose to attend conventions for the CE opportunities, but some get more networking than learning from these events. Again, hands-on opportunities, while seen as beneficial, can also be seen as time consuming and expensive. Athletic trainers feel responsible for what they get out of their continuing education experience, but there are many barriers for them to get the most out of the experience.

Conclusion

Continuing education will always be a critical area of research in many fields. Without effective continuing education, professions will become stagnant and will not be able to grow and change with ever evolving technology and research. This is especially important in healthcare fields. New research studies come out all the time, finding new ways to treat different conditions and what was once known can become outdated, if not obsolete. If an athletic trainer stays in the field until they retire, many things can change regarding the best ways to treat an injury. Continuing education can help an athletic trainer stay relevant and up to date on treatments and techniques to help their athletes. However, if an athletic trainer simply “checks their boxes” when earning CE and spends more time socializing than learning at their conferences, science will quickly leave them behind.

By understanding how adults learn, continuing education in athletic training can be revolutionized and made more efficient. Adult learners learn best through hands-on, social activities, so by utilizing social cognitive learning theory, creators of continuing education content and help athletic trainers get the most out of their continuing education

experience. Adult learners are also more autonomous than child learners (Merriam & Bierema 2014a) and have life experiences they can draw from while learning. This should be considered when planning continuing education experiences that do more than just “check boxes” for re-certification.

Several studies have been done to examine continuing education in athletic training but there is room for more. Until the utility of continuing education for the profession of athletic training is known, it cannot be improved. Athletic trainers must be lifelong learners to be able to help their athletes succeed. A successful continuing education experience is the way to ensure they can stay sharp through the entire spectrum of their careers, from graduation through retirement.

Much of this research has been done in the 2000s. While in the realm of research, this is relatively new, however, the landscape is changing rapidly with increases in technology and with the further challenges of the COVID-19 pandemic. There is most certainly room in the literature for more research in the continued utility of CE with the current available technological advances as well as considerations on how to maintain social interaction while learning in the post-COVID world.

Section Four- Contribution to Practice

How Useful is Continuing Education to Traditional Athletic Trainers?

To be submitted to the *NATA News*

How Useful Is Continuing Education for Traditional Athletic Trainers?

Athletic trainers can easily fulfill the continuing education requirements set forth by the Board of Certification (BOC, Inc.) to maintain certification. Professionals enjoy attending the NATA Convention, and other gatherings and meetings of likeminded people. Some choose to take classes to learn a new skill to implement in their practices such as IASTM or dry needling. Almost everyone fills in some of their CE gaps with online webinars and modules to finish checking off those CEU boxes. There are many ways to fulfill these requirements, but little is known if this process increases the professional's knowledge and skills in the profession, which is the purpose of these continuing education requirements in the first place. The goal of this study was to determine the usefulness of continuing education for athletic trainers working in the traditional setting.

This study was based upon on Knowles' Adult Learning Theory. Adult learning theory includes six main assumptions about adult learners (Knowles, et al. 2005). These assumptions explain how adults receive and retain information. These six ideas can be applied to learners of all ages, however adult learning theory defines how these six assumptions apply to adult learners specifically. When broken down to their core, these six ideas illustrate how adults best take in information and learn. These ideas are: The learner's Need to Know, the Learner's Self-Concept, the role of the Learner's Experiences, the Readiness to Learn, the Orientation to Learning, and Motivation (Knowles et al, 2005).

The Need To Know: The Need to Know means the adult learner needs to know why they need to learn something. What purpose will this information serve? Adults want

to know what benefits they will gain from a piece of information as well as the negative consequences of not knowing that same piece of information (Knowles et. al, 2005).

The Learner's Self-Concept: Adult learners want to take control and be responsible for their own lives. They also want others to be aware of each of their responsibilities and be seen as self-sufficient (Knowles, et al. 2005). Adult learners wish to be more self-directed in their learning endeavors.

The Role of Learner's Experiences: Adult learners want their lives and work experiences to be valued by others as part of a learning encounter. Each learner wants to be acknowledged as an individual with unique knowledge to bring to a situation (Knowles et al. 2005).

The Readiness to Learn: The willingness of an adult to learn is related to a knowledge gap and they often seek out information to fill this gap. Adults learn information to help them effectively manage their own lives (Knowles, et. al. 2005).

The Orientation to Learning: The time frame in which adults will apply learned knowledge is more imminent than child learners (Merriam & Bierema, 2014). Adults are more problem-focused on their learning pursuits and seek knowledge to solve problems, not necessarily to store up for future use (Knowles, et. al, 2005).

Motivation: Adults may be somewhat motivated by material things such as salaries and high-status jobs, but they are less motivated materially than younger learners (Merriam & Bierema, 2014). Adults are driven intrinsically, and are more motivated by non-tangible factors, such as self-esteem and job satisfaction (Knowles, et. al. 2005).

Methods, Setting and Participants

This study was designed as a program evaluation of the BOC, Inc,'s continuing education requirements used a mixed methods research format. Participants filled out surveys and/or participated in Zoom interviews to share their experiences with continuing education. To participate, participants were required to be certified athletic trainers who were currently employed in Jr High, High School, Collegiate and Professional Athletics within the continental United States. The interviews and surveys contained items that were designed to answer the research questions of the study, listed below.

- I. How do certified athletic trainers working in the traditional setting fulfill their continuing education requirements, both before and after the COVID-19 pandemic?
- II. For certified athletic trainers working in the traditional setting, what is the usefulness, based on the principles of adult learning theory, of the various modes of required continuing education? Specifically:
 - i. Online Learning (Modules or Webinars)
 - ii. Live Presentations or Seminars
 - iii. Hands-on Skills Classes (Graston, Dry-Needling, Cadaver Labs etc.)
- III. For certified athletic trainers working in the traditional setting, what is the usefulness, based on adult learning theory, of the current structure of continuing education requirements?

The items in both the interview and survey address each of the listed modes of CE and how each one fits within the principles of adult learning theory.

Results

How Traditional Athletic Trainers Fulfill Their CE Requirements

The 88 respondents in the survey were overwhelmingly part of the high school and college setting, with just over half working in the high school setting, just under half working in the professional setting and a lone one percent of respondents working in the professional setting. A slight majority (3) of interview participants worked in the college setting, with the other two working in the high school setting. The survey respondents ranged from one year of certified athletic training experience to 44 years. (M=13 years, SD= 10) . They also ranged from 21 years of experience in the traditional athletics setting to just six months.

Athletic trainers working in the traditional setting fulfill their continuing education requirements in a variety of ways. Before the COVID-19 pandemic, professionals reported they earned approximately one third of their continuing education units online. They estimated one third of their continuing education units were completed by attending conferences and other live, in-person lecture style presentations. The other one third of continuing education units were completed by attending hands-on skills courses and in academic pursuits. This changed drastically during the 2020-2021 reporting cycle, where online learning shifted to more than three-fourths of all continuing education.

Traditional Athletic Trainers' Perceived Usefulness of CE Content

As mentioned above, adult learning theory postulates for adults to learn best, there are six criteria that need to be fulfilled. For certified athletic trainers working in the traditional setting, continuing education is generally perceived to be useful. Within the

tenets of adult learning theory, hands-on learning fulfilled the learners' need to know, and valued learner experiences best. Alternatively, online learning was deemed the best modality for learners when it came to Readiness to Learn, and Orientation to Learning. All modes of learning seemed favorable for the learner's Self-Concept. The Learner's Motivation needs further research to determine which modality will serve the learner best.

Traditional Athletic Trainers Perceived Usefulness of the BOC's CE Structure

The current structure of the BOC, Inc's continuing education requirements stipulate certified athletic trainers must get 50 continuing education credits for each two-year reporting cycle. This structure was spoken of favorably by the participants of the study. The current structure of continuing education requirements was perceived useful among athletic trainers working in the traditional setting. Most of the tenets of adult learning are reflected well in the structure of the BOC, Inc's requirements. The Value of Learner Experiences seems to be an area of improvement for the structure, with just over half of participants choosing "minimally well" and "not at all," when asked if they felt the structure of the BOC, Inc's continuing education requirements valued their lived experience.

Discussion and Recommendations

When looking through the lens of adult learning theory there are both positive and negative factors to discuss. Since the COVID-19 pandemic, there is a huge increase in online continuing education. While more in-person opportunities return to availability, the vast array of online options remain. For example, though they did hold NATA in

person this calendar year, the virtual option remained an available option for those who could not attend.

In Knowles' adult learning theory, two of the tenets are the Readiness to Learn and Orientation to Learning (Knowles, et al, 2005). Readiness to Learn explains adults will learn best when their life situation creates a "need to know." In this scenario, when adults are ready to fill this need, they will learn best (Knowles, et al. 2005). Online learning, being the most flexible modality of learning, fills this Readiness to Learn tenet best. Online learning is always at the fingertips of the practitioner, whenever he or she is ready to access it. Online learning also fulfills the needs of the Orientation to Learning criteria as well. The Orientation to learning tenet postulates adults learn information best they deem will be useful in solving an imminent problem, rather than a simple subject-based learning (Knowles, et. al, 2005). Since online learning is so accessible, and the content areas so vast, learners can seek out whatever information they need to fill a knowledge void at any time.

Online learning is not, however, the perfect learning modality. For a learner's basic "need to know," hands-on learning was deemed the most relevant to athletic trainers. Collaborative learning situations have shown to have an increased satisfaction on fulfilling this tenet (Knowles, et. al, 2005). Both survey and interview participants generally agreed some of the most useful content they have gotten from continuing education has come from a hands-on experience. Learners also value their experience and want their educational pursuits to respect that experience (Knowles, et. at, 2005). Hands-on learning was deemed the best learning modality to fulfill this need as well. In the interview, several participants stated the smaller the group of learners and the more

human interaction, the greater they felt their experience and knowledge was valued. In contrast, online learning scored the worst in fulfilling this need based on the anonymity and impersonality of it. This also relates back to Social Cognitive Learning Theory, which states since adults are social beings, learning experiences in which they can interact with each other can be a more positive learning experience (Merriam & Bierma, 2014).

Knowles' theory of adult learning also states adult learners like to be self-directed and responsible for their own learning. Adult learners want to be autonomous, which could mean many things. One manner in which adults want to have autonomy could be adults want to choose the way they learn. Some want to learn more formally, and others want to teach themselves. This choice that the learners make is the learners' Self-Concept. (Knowles' et. al 2005). This category was rated equally across all three learning modalities, further illustrating adults like to choose and have control over their learning situation and any of the three could be effective. Usefulness based on the last tenet of adult learning theory, Motivation, was mixed. More research is needed to determine what effect Motivation has on the three modalities of continuing education.

In regard to the BOC, Inc. structure of continuing education, the study results reflected favorably. The learner's Need to Know and self- concept was easily fulfilled by the practitioner's ability to choose which continuing education to use. The Readiness to Learn and Orientation to Learning are also easily fulfilled by the large time frame practitioners have in which to complete their continuing education. The least fulfilled tenet in the structure of CE was the learner's experiences, although interview participants

still acknowledged some value was placed on their experiences since they can choose their CE and there is no mandated content.

Overall, athletic trainers feel favorably about their continuing education experience and deem it is useful. There are, however, individual experiences with CE each practitioner have had that are not so useful. Online learning seems to be a large part of continuing education for most practitioners, but there are some improvements needed be made to it. One of the more glaring needs is perhaps educators need to develop a way for online learners to feel their past experiences are more valued. Alternatively, though most participants felt their experiences with hands-on learning were very useful, there needs to be a way for these hands-on experiences to be more flexible and accessible for practitioners, so they may utilize these courses to fill a more imminent need for new or improved clinical skills.

References

- Knowles, M., Elwood, F. H, & Swanson, R. A. (2005). *The adult learner: The definitive classic in adult education and human resource development*. Elsevier.
- Merriam, S. B., & Bierema, L. L. (2014). *Adult learning: Linking theory and practice*. Jossey-Bass.

Section Five- Contribution to Scholarship

**Utility of Continuing Education as Perceived by Traditional Athletic
Trainers**

To be submitted to the *Journal of Athletic Training*

Abstract

Context

Little is known of the utility of continuing education for athletic trainers

Objective

Determine the perceived utility of continuing education for athletic trainers working in the traditional setting.

Design

Mixed Methods

Setting

Secondary School, Collegiate and Professional Athletic Trainers in the United States

Participants

Certified athletic trainers working in the traditional setting

Data Collection and Analysis

Surveys were distributed to members several professional organizations. Survey data were collected and analyzed using Qualtrics. Interview participants were recruited by researcher professional network. Zoom interviews were recorded and transcribed for analysis.

Results

Prior to the 2020-2021 reporting cycle, athletic trainers earned one third of their continuing education units online, one third by attending live in-person lectures and one third either in hands-on courses or in academic pursuits. During the 2020-2021 reporting cycle, more than three fourths of all CE was completed online.

Based on adult learning theory, hands-on learning fulfilled the learners' Need to Know and valued learner experiences best. Online learning was deemed the best modality for learners when it came to Readiness to Learn and Orientation to Learning. All three modes of learning seemed favorable for the learner's Self-Concept. The Learner's Motivation needs further research to determine which modality serves learners best

The Value of Learner Experiences seems to be an area of improvement for the structure of CE, with over half of participants choosing an unfavorable response. The other tenets of Adult Learning Theory fared well among the participants in regard to the structure of CE

Conclusions

For certified athletic trainers working in the traditional setting, continuing education is generally perceived to be useful to athletic trainers. The current structure of continuing education requirements was also perceived as overall useful among the participants of the study. There are however some areas to improve.

Key Words: Adult Learning Theory, Athletic Training Continuing Education, Perceived Utility

Abstract Word Count: 293

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Key Points:

- Before the COVID-19 pandemic, professionals reported they earned approximately one third of their continuing education units online, one third in person and one third hands-on or in academic pursuits. This changed drastically during the 2020-2021 reporting cycle, where online learning shifted to more than three fourths of all continuing education.
- For certified athletic trainers in the traditional setting, CE is generally perceived to be useful to athletic trainers. Within the tenets of adult learning theory, hands-on learning fulfilled the learners' need to know, and valued learner experiences best. Alternatively, online learning was deemed the best modality for learners when it came to Readiness to Learn, and Orientation to Learning. All three modes of learning seemed favorable for the learners Self-Concept. The Learner's Motivation needs further research to determine which modality will serve the learner best.
- The current structure of continuing education requirements was perceived useful among the participants of the study. Most of the tenets of adult learning are reflected well in the structure of the BOC, Inc's requirements. The Value of Learner Experiences seems to be an area of improvement for the structure, with just over half of participants choosing "minimally well" and "not at all," when asked if they felt their experience was valued by the structure.

Introduction

The intended purpose of continuing education is to promote ongoing learning, furthering the development of current professional skills and judgement within the profession of athletic training (BOC,2020). Many certified athletic trainers would say it is easy to fulfill the CE requirements and maintain certification, but does simply fulfilling the requirements increase a professional's knowledge and skills in the profession? Within the world of medicine, research is ever-changing and evolving. If an individual does not keep up with current research and the latest information their practice could suffer, and their patients' outcomes could decline as compared to those of their peers.

Athletic trainers can easily fulfill the continuing education requirements set forth by the Board of Certification to maintain certification. Professionals enjoy attending the NATA Convention, and other gatherings and meetings of likeminded professionals. Some choose to take classes to learn a new skill to implement in their practices such as IASTM or dry needling. Almost everyone fills in some of their CE gaps with online webinars and modules to finish checking off those CEU boxes. There are many ways to fulfill these requirements, but little is known if this process increases the professional's knowledge and skills in the profession, the purpose of the continuing education requirements.

The goal of this study was to determine the perceived utility of continuing education for athletic trainers working in the traditional setting. The intended purpose of all continuing education is to promote ongoing learning of the professional. Continuing education that is utilized to its fullest potential will foster the development of current

professional skills and clinical judgement within the profession of athletic training (BOC,2020). Research questions are listed below.

- I. How do certified athletic trainers working in the traditional setting fulfill their continuing education requirements?
 - a. How did Certified Athletic Trainers fulfill these requirements before the COVID-19 Pandemic (2018-2019)?
 - b. How did Certified Athletic Trainers fulfill these requirements during the 2020-2021 reporting cycle, part of which coincided with the COVID-19 Pandemic?
- II. For certified athletic trainers working in the traditional setting, what is the perceived utility, based on the principles of adult learning theory, of the various modes of required continuing education? Specifically:
 - a. Online Learning (Modules or Webinars)
 - b. Live Presentations or Seminars
 - c. Hands-on Skills Classes (Graston, Dry-Needling, Cadaver Labs etc.)
- III. For certified athletic trainers working in the traditional setting, what is the perceived utility, based on adult learning theory, of the current structure of continuing education requirements?

The items in both the interview and survey address each of the listed modes of CE and how each one fits within the principles of adult learning theory.

The theoretical framework for this study was based upon on Knowles' Adult Learning Theory. Adult learning theory includes six main assumptions about adult learners (Knowles, et al. 2005). These assumptions explain how adults receive and retain

information. These six ideas can be applied to learners of all ages, however adult learning theory defines how these six assumptions apply to adult learners specifically. These ideas are: The learner's Need to Know, the learner's Self-Concept, the role of the Learner's Experiences, the Readiness to Learn, the Orientation to Learning, and Motivation (Knowles et al, 2005). When broken down to their core, these six ideas illustrate how adults best take in information and learn and are outlined below.

The Need To Know: The Need to Know means adult learner needs to know why they need to learn something. What purpose will this information serve? Adults want to know what benefits they will gain from a piece of information as well as the negative consequences of not knowing that same piece of information (Knowles et. al, 2005).

The Learner's Self-Concept: Adult learners want to take control and be responsible for their own lives and they also want others to be aware of their responsibility and want to be seen as self-sufficient (Knowles, et al. 2005). Adult learners wish to be more self-directed in their learning endeavors.

The Role Of Learner Experiences: Adult learners want their life and work experiences to be valued by others as part of a learning encounter. They want to be acknowledged as an individual with their own unique knowledge to bring to a situation (Knowles et al. 2005).

The Readiness to Learn: The willingness of an adult to learn is related to a knowledge gap and they often seek out information to fill this gap. Adults learn information to help them effectively manage their own lives (Knowles, et. al. 2005).

The Orientation to Learning: The time frame in which adults will apply learned knowledge is more imminent than child learners (Merriam & Bierema, 2014). Adults are

more problem-focused in their learning pursuits and seek knowledge to solve problems, not necessarily to store up for future use (Knowles, et. al, 2005).

Motivation: Adults may be somewhat motivated by material things such as salaries and high-status jobs, but they are less motivated materially than younger learners (Merriam & Bierema, 2014). Adults are driven intrinsically, and more motivated by non-tangible factors, such as self-esteem and job satisfaction (Knowles, et. al. 2005).

The measurement utilized in this study is perceived utility. Utility is defined as the “fitness for some purpose or worth to some end; the quality or state of being useful” (Merriam-Webster, 2021). Perception is the way an individual thinks about, or understands about something (Merriam-Webster, 2021). Perceived utility in this study is defined as what the participants think or understand about the effectiveness the program has on its participant’s ability to learn the content. This capacity to learn will be based on the participants’ perception of the competence of the program to utilize the theory of adult learning.

Method

This study was a program evaluation and has been conducted in a mixed methods format. Specifically, this was an impact evaluation designed to determine the perceived utility of traditional setting athletic trainers’ continuing education experience.

Data Collection

The data collection for this study was conducted in two different ways. First, surveys were sent out to athletic trainers working in traditional athletic training settings. This research study utilized the survey tool Qualtrics. These surveys were disseminated

via email. Qualtrics allows survey data to be secure, and users can feel confident their answers will remain anonymous.

The survey was developed with the research questions in mind. The survey has a total of 32 items that explore the participants' view of their past experiences with continuing education in athletic training. The survey has specific items that relate these experiences to the specific assumptions of adult learning as well as the different formats of CE offered. The items also address the current structure of the CE requirements in the profession and how that structure fits within the assumptions for adult learners. Respondents of the survey are also asked to provide some demographic information.

As stated previously, this study utilized a mixed methods format, meaning it also required qualitative data. This second type of data were collected via interview. These interviews were conducted via Zoom video call. These interviews were recorded so they could be revisited during the data analysis phase. The researcher completed five interviews with certified athletic trainers currently working in the traditional athletics setting.

The interview protocol was also developed with the research questions in mind. Most items in the interview protocol are designed to probe the interviewee about the experience they have had with continuing education. These questions attempt to connect the experience of the participant to the concepts of adult learning theory. Other questions in the interview protocol gather demographic information and information on how the participant has completed their continuing education requirements in the past.

Participants

Participants in the study must be older than 18 years of age, be BOC, Inc. certified, and licensed athletic trainers currently working in traditional athletics setting. These settings include high school athletics, National Collegiate Athletics Association (NCAA) or National Association of Intercollegiate Athletics (NAIA) collegiate athletics, and professional sports of any kind. These participants must also be working in the continental United States.

The professional organizations that helped with dissemination of this survey were: The Missouri Athletic Trainers Association (MoATA), The Mid-America Athletic Trainers Association (MAATA), The National Athletic Trainers Association (NATA), and the Facebook Group; Women in Athletic Training (WAT).

A varied sample of individuals was used for the interviews. These individuals are all employed by different organizations and have a variety of experiences within the profession. These individuals were also geographically diverse, working in different states and in either high school, collegiate or professional athletics.

Data Analysis

Once the data were collected, the data analysis portion began. First, it was important to note the number of participants who returned the survey. The actual response count was 68 complete data sets, with another 20 partial data sets. The partial data sets were due to some participants not answering all the survey items. Their responses were still included in the results. It was also important to observe any known response bias that could affect the data. The quantitative data that were gleaned from the survey participants was then analyzed.

This information assembled from the data seeks to answer each of the research questions posed above. It also provided demographic data about the respondents. Once the quantitative data had been analyzed, it was presented in a concise manner, such as tables or graphs (Creswell, 2014) in order to draw conclusions from the data.

The qualitative data from the interviews was more difficult to assess. The interviews, which were video recorded, were transcribed. From there, it was necessary to code the transcriptions, examining what themes emerge when speaking with various practitioners in the field. The interview items were also related directly to the research questions. They provided demographic information about the respondents as well as determined what the respondent's experiences with CE have been. Specifically, they asked the respondents to reflect on each type of CE as it relates to each assumption of adult learning theory.

Results

How do certified athletic trainers working in the traditional setting fulfill their continuing education requirements?

Athletic trainers fulfill their continuing education requirements in a variety of ways. Prior to the COVID-19 pandemic, athletic trainers estimated they completed a mean of 37% of their continuing education units online. They estimated 38% of their continuing education units were completed by attending conferences and other live, in-person lecture style presentations. Hands-on skills courses made up 9% of continuing education units and the other 16% of continuing education units were completed in academic pursuits. It was noted in the interview data that prior to the 2020 reporting cycle, many practitioners attended the NATA Convention to gain their continuing

education, which is mostly comprised of live, in-person lectures although sometimes hands-on courses are held there for an extra fee.

This changed drastically during the 2020-2021 reporting cycle. During this time, athletic trainers reported 77% of their continuing education units were completed online, and only 13% was completed in in-person lectures. Hands-on courses dropped to 3% of all continuing education units completed and the remaining 7% were completed in academic pursuits. Interview participants noted during this time, many new online opportunities became available. NATA Convention launched a virtual format, which three of the interview participants took part in, in lieu of attending live events. For the most part the participants observed there were really not many live or hands-on events available to attend during this reporting cycle.

For certified athletic trainers working in the traditional setting, what is the perceived utility, based on the principles of adult learning theory, of the various modes of required continuing education?

Need to Know

A chi-square analysis was performed on the “need to know” data. Table 1 illustrates this disaggregation and a statistically significant result ($X^2(df=6)=64.69, p=0$). The options Not all Relevant and Slightly Relevant were combined to produce a valid chi-square. The survey data showed hands-on learning and skills classes fulfill an adults Need to Know best. Participants can understand the purpose and usefulness of the information in a hands-on learning course better than in online or in-person learning. This was apparent in the number of participants that chose the “Very Relevant” option when

asked which of the modes provided them the most relevant information to their current job role.

While online and in-person learning scored high in the “Moderately Relevant” category, 49 athletic trainers said their hands-on learning experience was “Very Relevant” as compared to only 22 and 19 that said online and in-person learning was “Very Relevant,” respectively.

Table 1

Perceived Utility of Modes of CE: Learners Need to Know

Mode of Learning	Never Participated	Not at all Relevant	Slightly Relevant	Moderately Relevant	Very Relevant
Online	0	1	8	47	22
In-person	6	0	5	48	19
Hands-On	15	0	1	12	49

It was also important to note 60% of the interview participants actively seek out continuing education across the modes of learning they think will be useful to them. However, 40% of the participants also noted while they are seeking out opportunities to learn about relevant topics, sometimes those topics can be difficult to find. However, one participant stated they had specifically learned extremely relevant content in a hands-on course they had participated in and the course they took really stood out to them as very relevant.

Self-Concept

When asked about taking responsibility for their own learning, survey data showed adult learners feel some responsibility in all three of the modes of continuing education. A chi-square analysis was performed on the data, with the categories “Not all Responsible” and “Slightly Responsible” combined to produce a valid chi-square result. ($X^2(df=6)=31.99, p=0$). Based on the chi-square analysis there does not appear to be a significant difference in the three modes of learning in which adults feel the most responsible. The majority (80%) of interview participants did comment in their continuing education experience, they felt the responsibility lay with them to learn or not learn the content that was presented to them.

Table 2

Perceived Utility of Modes of CE: Learner’s Self-Concept

Mode of Learning	Never Participated	Not at all Responsible	Slightly Responsible	Moderately Responsible	Very Responsible
Online	1	0	13	28	34
In-person	2	0	8	43	23
Hands-On	12	0	2	25	37

Experiences

The survey data showed as the human interaction aspect of CE increases, the amount of value and acknowledgement of lived experience increases to a certain extent. In response to their experience with online learning, 14 survey participants chose “Not Valued”. This is a large number compared to hands-on learning, as zero participants felt their experiences were not valued. However, it is important to mention all three modes

had low scores in the “very valued” column so this could identify an area in which all three modes could improve. The chi-square analysis showed the findings were significant. ($X^2(df=8)=48.276, p=9e-8$). Table 3 illustrates the results.

Table 3

Perceived Utility of Modes of CE: The Value of Learner Experiences

Mode of Learning	Never Participated	Not at all Valued	Slightly Valued	Moderately Valued	Very Valued
Online	0	14	26	26	10
In-person	2	2	25	35	11
Hands-On	12	0	12	41	11

During the interview three of the five participants commented they felt online learning valued their experiences least due to lack of human interaction. Without any person-to-person interaction, they felt it was not possible to have their experiences valued. A couple of participants noted they felt the size of the group participating in the learning experience influenced the amount their experiences were valued. They felt less valued in a situation such as in a large lecture hall with many participants, than if the presentation was more intimate. With fewer participants the presentation could be more conversational, and this made them feel as if their experiences were more valued.

Readiness to Learn

Adult learners have busy schedules and want to learn on their own time when they feel ready to do so. Online learning for continuing education seems to be overwhelmingly more flexible than the other two modes of learning. In the survey, 60 participants said they felt online learning was “Very Flexible.” Interview participants also agreed with this

sentiment. Almost all of the interview participants mentioned online learning was very flexible since it is always available anytime the learner is ready to complete it.

Only seven total participants said they felt either in-person and hands-on learning were flexible options for completing their continuing education. Alternatively, zero participants said online learning was “Not Flexible” and only two participants chose “Slightly Flexible” for this modality. The chi-square analysis showed the findings were significant. ($\chi^2(df=8)=155.347, p=0$). Table 4 illustrates these results.

Table 4

Perceived Utility of Modes of CE: Adults Readiness to Learn

Mode of Learning	Never Participated	Not at all Flexible	Slightly Flexible	Moderately Flexible	Very Flexible
Online	0	0	2	14	60
In-person	1	13	36	23	3
Hands-On	10	13	29	18	4

Orientation to Learning

Online learning seems best equipped to provide clinicians with information needed to solve imminent problems in their practice. The survey asked participants if they have timely access to continuing education content that addresses current issues faced in their practice for each mode of delivery. Many (40) participants said by utilizing online learning, they had timely access to continuing education to help solve imminent problems in their practice “Most of the Time.” Some (16) participants said online provided them with timely access to this information “Almost Always” as compared to

only four participants each who chose the other two modes. In-person and hands-on scored high in “sometimes,” showing most participants have at least some positive experiences in accessing timely content to help solve a problem in their workplace. The chi-square analysis showed this pattern is significant. ($\chi^2(df=8)=46.629, p=2.8e-7$).

Table 5

Perceived Utility of Modes of CE: Orientation To Learning

Mode of Learning	Never Participated	No, Not Really	Yes, Sometimes	Yes, Most of the Time	Yes, Always
Online	0	3	17	40	16
In-person	1	8	39	23	4
Hands-On	6	14	31	19	4

The interview participants were split on this issue. Three participants said they felt they did have access to timely continuing education content that helped them address current problems of practice. They justified this answer by saying since they had the freedom to choose what CE they wanted to participate in, they could seek out what they needed to learn. This was especially important when a unique situation comes up that an athletic trainer has not dealt with before. One participant said an example of this was when they ended up with a pregnant athlete. They were able to seek out an online CE to help this navigate this situation. The other two interview participants were adamant that in their experience, they did not feel they were able to utilize CE in a timely manner to solve imminent problems in their practice.

Motivation

For both online and in-person continuing education, learners seemed to be slightly more motivated by external factors to choose those modes. More learners in each of those modes rated the external factors as “Very Important” as shown in Table 6. The chi-square analysis for these two modes showed a significant finding. Online: ($X^2(df=2)=16.162$, $p=0$). In-Person: ($X^2(df=2)=23.335$, $p=0$).

However, the hands-on learning chi-square analysis showed a non-significant result, with internal and external factors being equal in importance of choice. ($X^2(df=2)=.168$, $p=.919$). More research is needed to determine whether this means hands-on learning is chosen more based on internal factors.

Table 6

Learner Motivation for Each CE Modality

Motivation Type	Not Important	Moderately Important	Very Important
<i>Online CE</i>			
Internal	26	96	167
External	42	56	193
<i>In-Person CE</i>			
Internal	27	88	142
External	17	47	196
<i>Hands-On CE</i>			
Internal	14	45	165
External	12	46	166

The interview participants were consistent in their responses. All of them stated they like to choose their continuing education experiences based on the content topic and

whether it sounds interesting to them. Three of the participants also mentioned they liked to participate in hands-on activities when they were available to increase their skill level and gain new credentials and certifications. Only one of the participants mentioned the barriers of time and money when choosing continuing education.

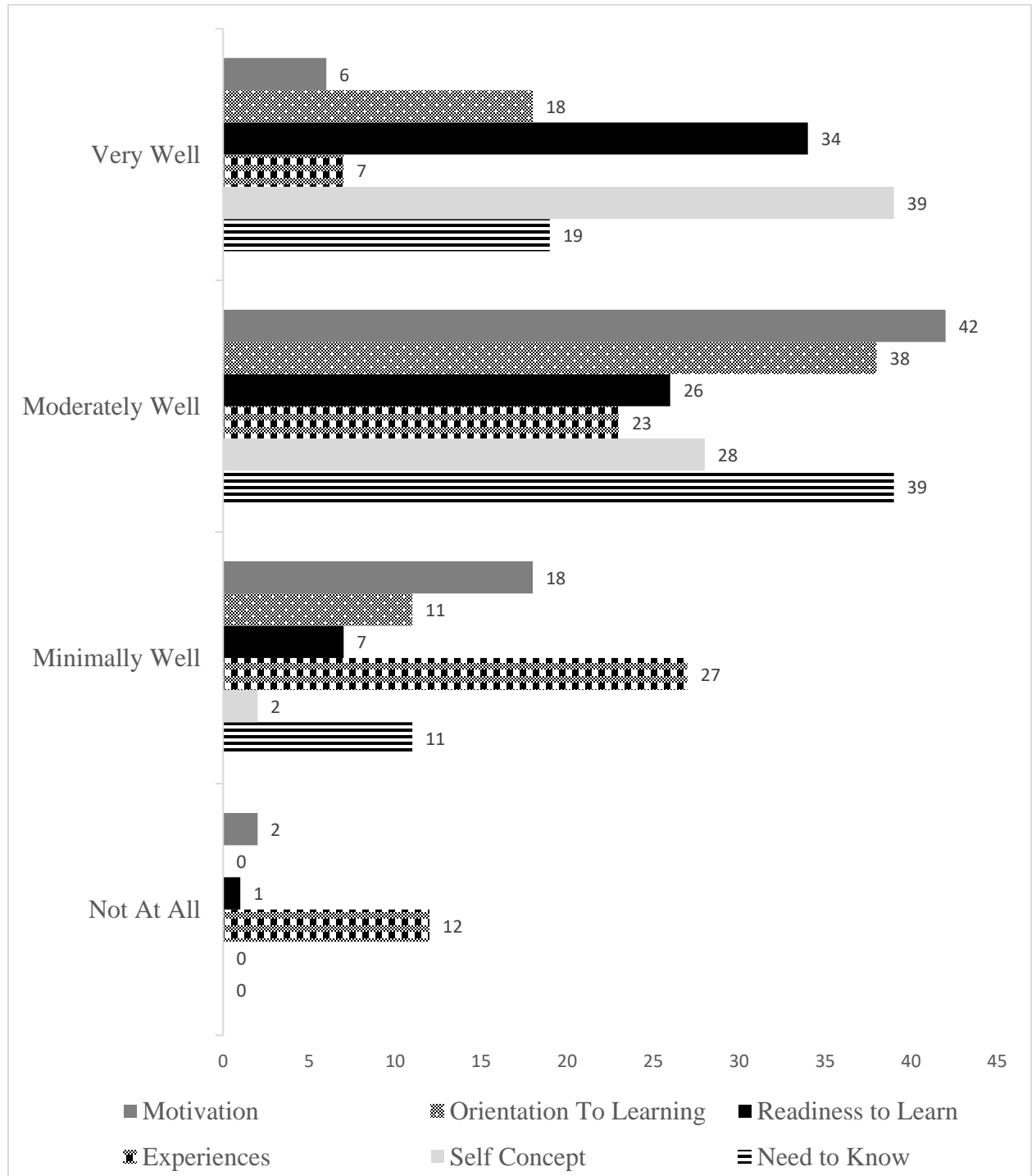
For certified athletic trainers working in the traditional setting, what is the perceived utility, based on adult learning theory, of the current structure of continuing education requirements?

Overall, participants responded favorably to the items that asked their perceptions of the structure of the BOC Inc.'s continuing education requirements as they related to each tenet of adult learning theory. Figure one shows the aggregate data for these six tenets of adult learning in reference to the structure of the BOC, Inc.'s CE.

Figure 1

To What Extent Does the Structure of CE Requirements Fulfill the Tenets of Adult

Learning Theory

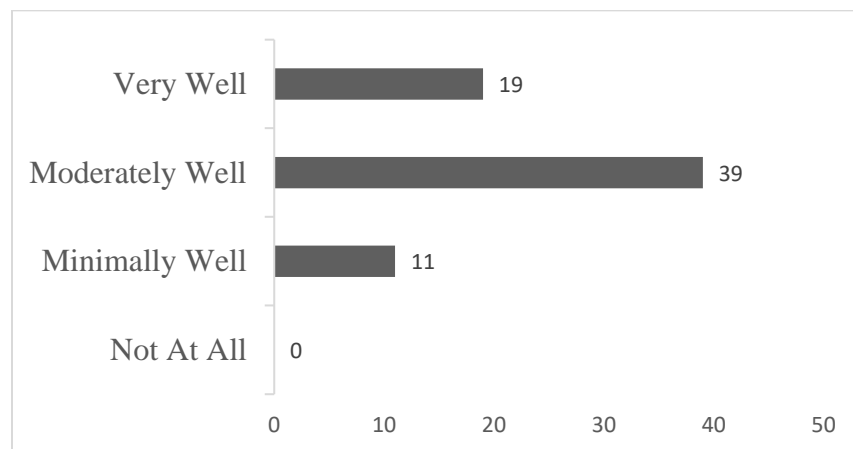


Need to Know

The interview participants spoke positively about the structure of the BOC, Inc.'s continuing education requirements. All of them noted since the structure of the BOC, Inc.'s continuing education requirements allows you to choose how to fulfill your CE, you can actively seek out content that is relevant to you. No one who took the survey said the structure of the requirements did not help them fulfill their "Need to Know" and 19 participants said yes, it did allow them to access relevant information "Very Well."

Figure 2

Structure of the BOC's Continuing Education Requirements: Need To Know

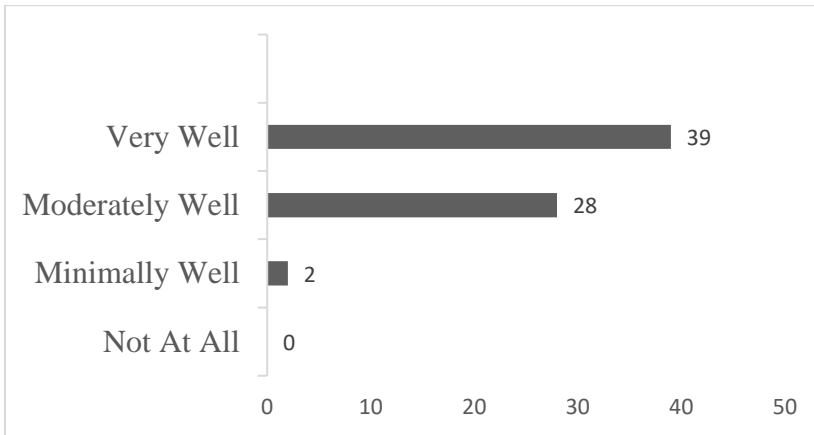


Self-Concept

In response to the question about the learner's self- concept, Interview participants noted it is completely to each athletic trainer to fulfill these requirements. If they do not fulfill the requirements, they will lose their certification. It is also completely up to each individual to learn the content or not. This was a very consistent answer among the interview participants. Survey participants also agreed. Many (39) athletic trainers who answered the survey items also said they felt the structure of the BOC, Inc. Requirements did "Very Well" in making them feel responsible for their own learning.

Figure 3

Structure of the BOC's Continuing Education Requirements: Self-Concept



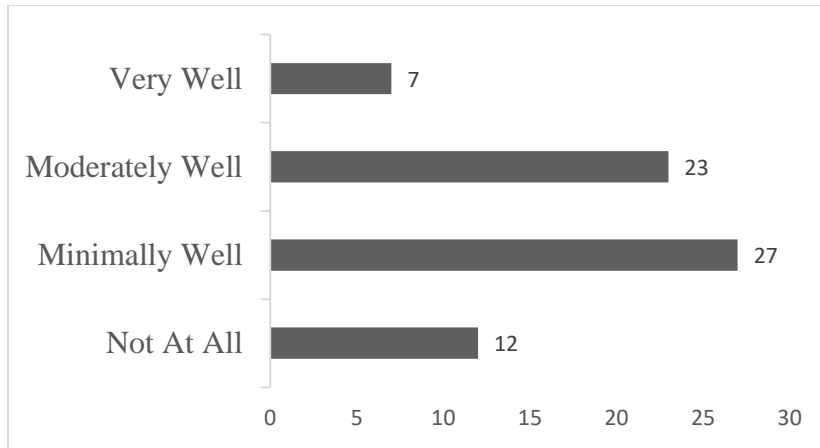
Experiences

Survey participants did not answer affirmatively quite as strongly on how well they believed the structure of the BOC Inc's CE requirements valued their lived experiences. Most respondents fell into the middle two categories, with 23 participants answering with "Moderately Well" and 27 participants answering, "Minimally Well." However, the number of participants who said the BOC, Inc's continuing education requirements did not make them feel their experiences were valued was still low, with only 12 people choosing the negative response.

Interview participants acknowledged they did feel their experiences were somewhat valued. Three of the interview participants noted since the structure allowed for them to choose what CE to participate in, they felt their experiences were valued. The BOC, Inc. does not mandate what they must learn, they are entrusted with choice in what topics the individual practitioner decides will make them more effective in their job role.

Figure 4

Structure of the BOC's Continuing Education Requirements: Value of Lived Experiences

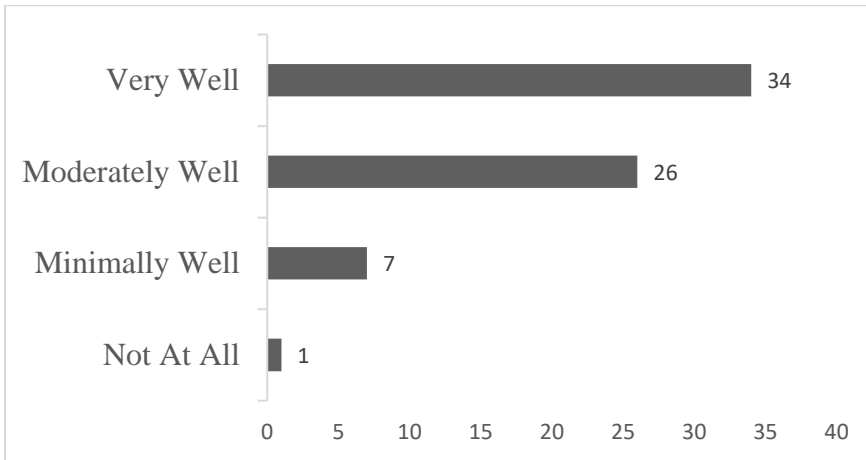


Readiness to Learn

For the structure of the BOC, Inc,'s requirements for continuing education, survey participants answered favorably about the flexibility and accessibility. Many (34) respondents said “Yes” to whether the current structure of the BOC, Inc’s CE Requirements gave them ample time and flexibility to complete them when they felt ready. Another 26 chose “moderately” for this item. Of the participants, seven chose “minimally” and only one person chose the negative response. Interview participants remarked in agreement that since there is a two-year window in which to complete the requirements, they can complete them when they have time, including during off seasons for sports.

Figure 5

Structure of the BOC's Continuing Education Requirements: Readiness to Learn

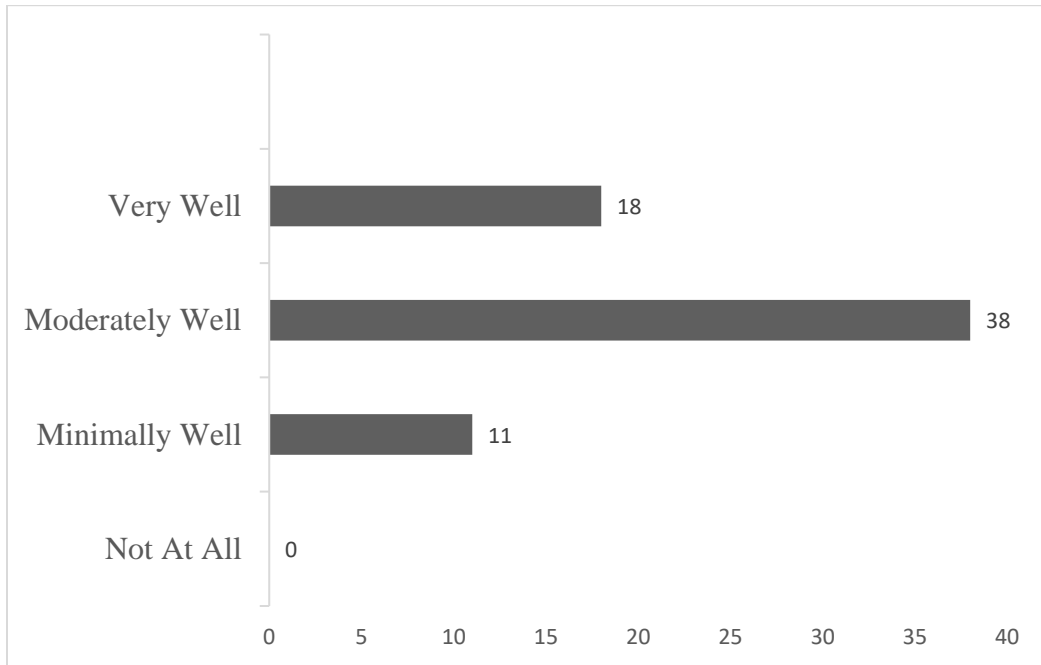


Orientation to Learning

38 survey participants said the BOC, Inc's continuing education requirements helped them to solve immediate problems in their practice "moderately well," while 18 participants chose "Very Well." It is also worth noting zero participants said this tenet was not fulfilled at all. Three of the interview participants also stated specifically the structure works very well for solving imminent problems of practice. If a unique situation comes up, they are able to seek out continuing education that is applicable to their problem. Since they have a wide range of time to complete these requirements, they have the freedom to complete continuing education on their own schedule.

Figure 6

Structure of the BOC’s Continuing Education Requirements: Orientation to Learning

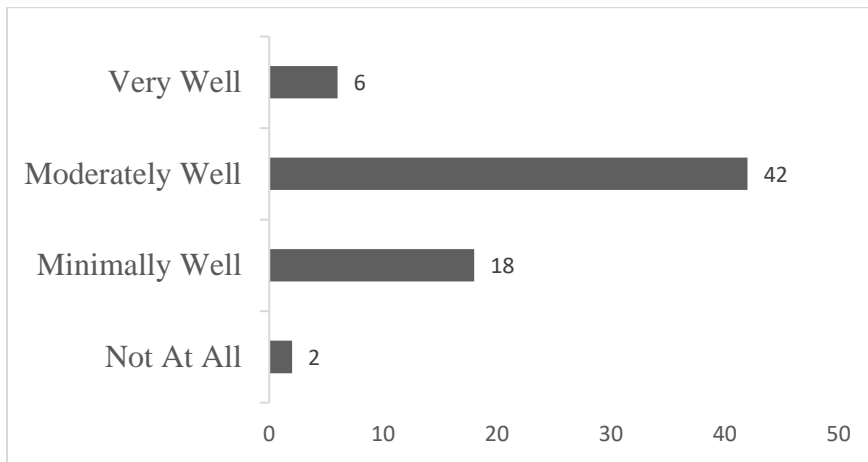


Motivation

When asked about Motivation to Learn, only six respondents said the structure of the BOC’ Inc’s continuing education requirements motivated them “Very Well” to be a lifelong learner and expand their clinical skills. Most of the participants chose “Moderately well” when asked about their motivation. Interview participants were not asked specifically about their motivation levels based on the structure of the BOC, Inc’s CE requirements.

Figure 7

Structure of the BOC's Continuing Education Requirements: Motivation



Discussion

When looking through the lens of adult learning theory, there are both positive and negative factors to discuss. Since the COVID-19 pandemic, there has been a huge increase in online continuing education. While more in-person opportunities return to availability, the vast array of online options remain. For example, though they did hold NATA in person this calendar year, the virtual option remained an available option for those who could not attend.

In Knowles' adult learning theory, two of the tenets are the Readiness to Learn and Orientation to Learning (Knowles, et al, 2005). Readiness to Learn explains adults will learn best when their life situation creates a "need to know." In this scenario, when adults are ready to fill this need, they will learn best (Knowles, et al. 2005). Online learning, being the most flexible modality of learning, fills this Readiness to Learn tenet best. Online learning is always at the fingertips of the practitioner, whenever he or she is ready to access it. Online learning also fulfills the needs of the Orientation to Learning

criteria as well. The Orientation to learning tenet postulates adults learn information best they deem will be useful in solving an imminent problem, rather than a simple subject-based learning (Knowles, et. al, 2005). Since online learning is so accessible, and the content areas so vast, learners can seek out whatever information they need to fill a knowledge void at any time.

Online learning is not, however, the perfect learning modality. For fulfilling a learner's basic "need to know," hands-on learning was deemed the most relevant to athletic trainers. Collaborative learning situations have shown to have an increased satisfaction on fulfilling this tenet (Knowles, et. al, 2005). Both survey and interview participants generally agreed some of the most useful content they have gotten from continuing education has come from a hands-on experience. Learners also value their experience and want their educational pursuits to respect that experience (Knowles, et. at, 2005). Hands-on learning was deemed the best learning modality to fulfill this need as well. Several interview participants affirmed that the smaller the group of learners and the more human interaction, the greater they felt their experience and knowledge was valued. In contrast, online learning scored the worst in fulfilling this need based on the anonymity and impersonality of it. This also relates back to Social Cognitive Learning Theory, which states since adults are social beings, learning experiences in which they can interact with each other can be a more positive learning experience (Merriam & Bierma, 2014).

Knowles' theory of adult learning also states adult learners like to be self-directed and responsible for their own learning. Adult learners want to be autonomous, which could mean many things. One manner in which adults want to have autonomy could be

adults want to choose the way they learn. Some want to learn more formally, and others want to teach themselves. This choice that the learner makes expresses the learners' Self-Concept (Knowles' et. al 2005). This category scored equally among all three learning modalities, further illustrating adults like to choose and have control over their learning situation and any of the three could be effective. The data of the last tenet of adult learning theory came out with some unclear results. More research is needed to determine what effect motivation has on the three modalities of continuing education.

In regard to the BOC, Inc's structure of continuing education, the study results reflected favorably. The learner's Need to Know and self- concept was easily was fulfilled by the practitioner's ability to choose which continuing education to engage in. The Readiness to Learn and Orientation to Learning are also easily fulfilled by the large time frame practitioners have in which to complete their continuing education. The least fulfilled tenet in the structure of CE was the learner's experiences, although interview participants still acknowledged some value was placed on their experiences since they can choose their CE and there is no mandated content.

Overall, athletic trainers feel favorably about their continuing education experience and deem it is useful. There are, however, individual experiences with CE each practitioner have had that are not so useful. Online learning seems to be a large part of continuing education for most practitioners, but there are some improvements needed be made to it. One of the more glaring needs is perhaps educators need to develop a way for online learners to feel their past experiences are more valued. Alternatively, though most participants felt their experiences with hands-on learning had a very high utility, there needs to be a way for these hands-on experiences to be more flexible and accessible

for practitioners, so they may utilize these courses to fill a more imminent need for new or improved clinical skills.

References

Board of Certification, Inc. (2020). 2020 annual report.

<https://7f6907b2.flowpaper.com/2020BOCAAnnualReport/#page=8>

Creswell, J. W. (2014). *Research design: Qualitative, quantitative, and mixed methods approaches*. Sage.

Knowles, M., Elwood, F. H, & Swanson, R. A. (2005). *The adult learner: The definitive classic in adult education and human resource development*. Elsevier.

Merriam, S. B., & Bierema, L. L. (2014). *Adult learning: Linking theory and practice*. Jossey-Bass.

Merriam-Webster. (n.d.) Perception. In Merriam-Webster.com dictionary. <https://www.merriam-webster.com/dictionary/perception>

Merriam-Webster. (n.d.) Utility. In Merriam-Webster.com dictionary. <https://www.merriam-webster.com/dictionary/utility>

Section Six- Scholarly Practitioner Reflection

This research study and dissertation writing process has had a profound impact on me in many ways. It has affected me in the job I do daily, as a clinical athletic trainer working in collegiate athletics. It has affected my leadership perspectives, with my future aspirations to teach professionals to do the job I currently do. Last but most certainly not least, this process has helped me to grow as a scholar. As a researcher, I now have a much greater appreciation for other research, because I know a lot of time and effort was put into a study. Moving through this process has taught me a great deal of things are applicable to my roles now as well as roles I hope to have in the future, particularly as an educator of prospective athletic trainers.

How has this process influenced you as a practitioner?

During the process of writing and researching continuing education, I could not help but think way back to the first summer of the program and how we completed the Strengths Quest quiz to find out our top personality traits. The highest score on my Strengths Quest was empathy. Empathy is “sensing the feelings of others and imagining themselves in the others’ lives or situations” (Gallup, 1999). Empathy is something that comes into play a lot in qualitative research. When conducting qualitative research, such as the interviews I completed, it is important to acknowledge other people’s experiences and feelings. That is why the interviews are completed, and it is important for me as a practitioner of athletic training to not only acknowledge the perspectives of the athletes I treat but also those of my coworkers and peers. This process made me more aware of the fact that even though people may work in the same setting as me, they still might have different experiences and perspectives.

Since everyone has a different perspective, it is important to look at things through their point of view. Looking at situations through other lenses is something that was explained in great detail in summer one. The four frames (Bolman & Deal, 2017) help organizations look at situations in different ways and can play a big role in how departments are run. As a result, I realized as I interviewed different people and read through the survey results that, depending on the frame an individual's organization is operated, this might affect their experiences with continuing education. For example, an athletic training staff which is run in the human resource framework may be more likely to pay for a group to attend a skills class as a staff to learn together to reach their overall goals of professional growth and self-actualization (Bolman & Deal, 2017). In reverse, a more structural frame-oriented organization may not offer this to its staff because there is no monetary gain for completing it. They would more likely expect their staff to complete their continuing education on their own time and funds. Thinking about this context has made me realize as a practitioner, I would prefer to be in a staff that is more organized in the human resource frame because it allows a more free-flowing structure of information.

Johnson's (2018) portion of reading from the coursework in the program discussed the differences of people such as race, sexuality and other things can cause bias in people. This book really opened my eyes to some subconscious bias I could have possibly had when conducting my study. Obviously, I have never considered myself racist, or sexist or anything of that nature, but this book illustrated ways people may be unintentionally excluded. When choosing participants for my study, I took great care in choosing a number of people who come from a wide variety of backgrounds. The

participants were different ages, sexes, and races. I wanted to make sure everyone was included, and more importantly, no one was unintentionally excluded. This process helped to ensure the perspectives of the participants were not too one-dimensional. Sometimes it is easy to assume a particular perspective or experience whether it is about continuing education or something else is shared by all. This assumption is often only true of people in one demographic or situation (Johnson, 2018). It is possible for me to assume, for example, everyone chooses to complete their continuing education by going to NATA, simply because I prefer it. However, some practitioners may be of lower socioeconomic status and may not have ever had the experience of attending NATA because it is too expensive. Therefore, they may have only participated in online CE courses and their perspective could be extremely different than mine. It is important as a practitioner to acknowledge everyone's experience is different and equally valuable. This also plays into the empathy concept discussed above, as well as the concept of constructivism, which will be addressed later, since everyone has their own version of reality.

How has this process influenced you as an educational leader?

This process has been greatly influential on me as an educational leader. The strengths quest traits I received in summer 1 note I am a Maximiser and an Includer. Maximiser is defined as "seeking to transform something strong into something superb" (Gallup, 1999). Includer is defined as someone who "stretches the circle wider" (Gallup, 1999). As an educational leader, I want to help people learn. In the process of continuing education, I want to help people get the most out of their continuing education experience. The whole purpose of this study is to help people become more proficient in

their clinical practices by learning important skills in their CE. This illustrates those traits because maximiser is taking someone who is already a proficient clinician in their field of athletic training and making them even better by means of effective continuing education. I also embody the trait, includer because I want this for all practitioners working in the traditional setting. I want to share my research and make people excited to take part in meaningful CE experiences, not just simply ‘check their boxes.’”

I chose this program because I want to be an educational leader in the field of athletic training. Writing this dissertation puts leadership in sharp focus because anytime a change is to be made, a leader must emerge to make that change. I am passionate about clinicians being able to have a positive experience in continuing education and being able to take what they learned and apply it daily to their practice. The reason I feel this way is because I love to learn, and I get excited about going to continuing education conferences and classes to learn new information. I envision myself to be an authentic leader.

Authentic leaders exhibit several characteristics I strive to have. Authentic leaders have a sense of purpose, understand their own values and work to build strong relationships with their peers (Northouse, 2019). I really enjoy working with other practitioners in athletic training to build these relationships and strive to have genuine connections. I think people relate to authentic leaders the best because those people seem “real.” Again, I am passionate about learning, a passion which I am excited to share with others. This builds a strong foundation for authentic educational leadership.

Another aspect of leadership we learned about in the program is emotional intelligence. This is an important trait no matter what kind of leader a person aspires to be. This is a trait I think I have cultivated well in my career and further enhanced

throughout the research process. One example of a situation where emotional intelligence benefits you in research is during qualitative data collection. When I conduct an interview with a participant, it is important to have a good rapport with that person so you can be assured they will answer the interview questions honestly and in a comfortable manner. Emotional intelligence plays a big role in building relationships with people. People with high emotional intelligence are more self-aware of how they are perceived by others. They are more empathetic, and they are able to control emotions and disruptive impulses (Goleman, 2011). These traits help build relationships with others. I don't believe it is possible to be a good leader without building strong relationships with potential followers.

How has this process influenced you as a scholar?

I believe this process has had possibly the greatest impact on me as a scholar. First and foremost, this study has given me a huge appreciation for research. There is so much that goes into a research project and so much to consider. Before you can even think about getting started with any research, you must decide which research methods best fit your study.

One of the most notable and foundational readings we had in this coursework was Creswell's (2014) text on research design. Taking on a mixed methods format study seemed daunting at first, but with the help of this text I soon realized this format was perhaps the best of both worlds, since mixed methods studies can employ both quantitative and qualitative data together to provide a more comprehensive understanding of the problem of practice (Creswell, 2014). This seemed the most appropriate because I felt the need to have lots of certified athletic trainers weigh in on the basic facts of their

experience with continuing education, but I also really wanted to incorporate the stories and feelings of a diverse but select few. This personal aspect, in my opinion, helps me as the researcher get a more comprehensive picture of the data and helps me to be even more personally invested in the project. I enjoy connecting with people and this seemed a way to keep the data a manageable size while still maintaining a personal aspect.

For my study, the constructivist paradigm felt the most natural for me as a researcher. In keeping with that personal aspect of research, it is important to note one person's perspective on continuing education may be completely different from another. Neither is wrong. Which is why we employ the Constructivist paradigm, which acknowledges each person lives within their own socially constructed reality and allows for many participant perspectives (Creswell, 2017).

The constructivist paradigm, however, is not the only way to do research. Some studies are conducted in the postpositivist paradigm, transformative paradigm, or the pragmatic paradigm (Mertens, 2020). It was helpful as a researcher to think through each of the paradigms to make sure I was using the one that worked best. This brought my attention to other research possibilities that, while I wasn't interested in following up on now, was still a good mental exercise to really consider all of the possibilities for the research.

Prior to beginning this research journey, I had never really done any solo research that included interviewing other people. The readings from the course really prepared me for that portion of the research. I consider myself a "people-person" and enjoy interacting with others. That being the case, I felt conducting interviews would be an important piece of my research. I learned how the purpose of interviewing is to really understand the

lived experience of others and the meaning they take from these experiences (Seidman, 2019). I think this is especially important for this study because one of the tenets of Knowles' Adult Learning Theory is the value of lived experience (Knowles, 2005).

Interviewing is not, as I learned, simply having a conversation with another person. There are a lot of factors to consider when conducting interviews. One of the techniques the reading mentioned was "listen more, talk less," meaning the listening in an interview is more important than the responding. It is important to really listen to understand what the interviewee is saying, both out loud and what is being left unsaid. (Seidman, 2019). This was perhaps one of the most challenging aspects of this project for me. When I interviewed my participants, I was excited to hear what they had to say about athletic training continuing education. This is obviously a topic I have a lot of opinions about and am very interested in learning more. It was very hard for me to be more silent, and not share my opinions or reactions to what was being said in the interview. Whether in agreement or disagreement, I did not want to cloud the data in any way. This was more challenging than I thought it would be.

Again, this project was my first journey into solo research. As such, my experience with surveying an audience was virtually zero at the beginning of this endeavor. The readings from the course warned about many pitfalls in surveying, most glaringly the difficulty of getting people to respond to the survey without any reward or copious reminders (Fink, 2017). I must admit I took this for granted in the beginning. Since I have had aspirations of being a scholar with a terminal degree for practically all of my professional life, I tend to take a lot of surveys. If I get a survey from someone doing research in my inbox, I usually completed it. In the past, I didn't think much of it,

but I always found them mildly interesting and since it didn't take much effort on my part, it seemed like a no brainer. I recently doubled down on this practice due to a sort of "researcher karma" theory hoping if I completed many surveys for others, I would get many responses in return. This was undoubtedly not the case. I ended up getting somewhat close to my response rate goal, but only after painstakingly using all of the resources available to me.

In further developing my skills as a scholar by even embarking on this educational journey, I think this also embodies my last two Strength Quest traits: Developer and Futuristic. Developers see people as always on a journey and want to help people grow and make positive improvements along the way (Gallup, 2019). As a scholar, my goal in conducting this research is to have an impact on people and their clinical practice. The way I envision people growing and improving themselves to have an impact on their clinical practices is to get the most out of their continuing education experiences. To accomplish that, I have to study and research continuing education as it stands. The StrengthsQuest also revealed I am Futuristic. This means I am always looking for the future and what is "over the horizon" (Gallup, 2019). I think this embodies scholarship in general. Scholars study topics to improve and grow the knowledge available on that topic. In the future, my goal is for athletic trainers to be able to increase their positive patient outcomes by furthering their knowledge and skills to reflect the most current and cutting-edge science of treatment and rehabilitation. I think the way to obtain this knowledge is to have great experiences with meaningful and impactful continuing education. I am passionate about continuing education, and I want to help others get the most they can out of this process.

Conclusion

In conclusion, I think this whole process has had a profound impact on me as a scholar, a leader and a researcher. Throughout this journey I have learned a lot about the leader I want to be and the steps I need to take to get there. It has also shed light on my strengths and weaknesses and made me open my mind to different perspectives I can use to better understand those around me. As a scholar and a researcher, I am more proficient in the research process, and will be able to carry not only this project forward to help shape the trajectory of continuing education for athletic trainers, but also help conduct other research to increase knowledge and proficiency in the profession as a whole. This knowledge makes me very excited for my future career path, whichever direction I decide to go because I feel equipped to lead and share my knowledge and experiences with others. I am so passionate about the field of athletic training, and I want to be able to go forth and use these skills and knowledge to have the greatest possible impact on the profession I can.

References

- Alesandrini, K., & Larson, L. (2002). Teachers bridge to constructivism. *The Clearing House*. 75(3). 118-121.
- American Occupational Therapy Association. (2020). Occupational therapy profession continuing competence requirements.
https://www.aota.org//media/Corporate/Files/Advocacy/Licensure/StateRegs/ContComp/ContinuingCompetenceChartSummary.pdf?fbclid=IwAR0RkKg8Zr4KKZCtaQnyQR4zaLsrFA11NgPtUIYYpYec6Lmu2_HNnIggasA
- Anderson, K. A., Parr, G. P., & Hall, S. J. (2009). *Foundations of athletic training: Prevention, assessment, and management*. Wolters, Kluwer, Lippincott, Williams and Wilkins Health.
- Armstrong, K, J. & Widener, T.G. (2011). Preferences for and barriers to formal and informal athletic training continuing education activities. *Journal of Athletic Training*. 46(6), 680-687.
- Board of Certification, Inc. (2020). 2020 annual report.
<https://7f6907b2.flowpaper.com/2020BOCAAnnualReport/#page=8>
- Board of Certification (2020a). Certification maintenance requirements: For certified Athletic trainers.
<https://www.bocatc.org/system/documentversions/versions/154/original/boc-standardsof-professional-practice-2018-20180619.pdf?1529433022>
- Board of Certification. (2020b) Keys to Understanding the Athletic Training Profession.
http://www.bocatc.org/system/document_versions/versions/203/original/athletictraining-essentials-20190724.pdf?1563994096

- Board of Certification. (2021). What is the BOC? <https://www.bocatc.org/about-us/what-is-the-boc>
- Bolman, L. G., & Deal, T.E. (2017). *Reframing Organizations*. Jossey-Bass.
- Creswell, J. W. (2014). *Research design: Qualitative, quantitative, and mixed methods approaches*. Sage.
- Cuppett, M. M. (2001). Self-perceived continuing education needs of certified athletic trainers. *Journal of Athletic Training*. 36(4). 388-395.
- Delforge, G.D., & Behnke, R.S. (1999). The history and evolution of athletic training education in the United States. *Journal of Athletic Training*, 34(1), 53-61.
- Diakogeorgiou, E, Ray Jr, R. R., Brown, S., Hertel, J., & Casa, D. J. (2021). The evolution of the athletic training profession. *Kinesiology Review*. 10(3). 308-318.
- Doherty-Restrepo, J. L., Hughes, B. J., Rossi, G.D., & Pitney, W. A. (2009). Evaluation models for continuing education program efficacy: How does athletic training continuing education measure up? *Athletic Training Education Journal*. 4(3). 117-124.
- Edler, J. R. & Eberman, L. E. (2019) Factors influencing athletic trainers' professional development through continuing education. *Athletic Training Education Journal*. 14(1). 12-23.
- Field, A. (2018). *Discovering Statistics Using IBM SPSS Statistics*. Sage.
- Fink, A. (2017). *How to Conduct Surveys: A step-by-step guide*. Sage.
- Frank, E. M., Doherty-Restrepo, J., Roberts, L. & Montalvo, A. (2020). Simulation-based instruction in continuing education. *Athletic Training Education Journal*. 15(1). 65-74.
- Gallup (1999). CliftonStrengths Assessment. Gallup.

- Gilbert, N. J. & Driscoll, M. P. (2002). Collaborative knowledge building: A case study. *Educational Technology Research and Development*. 50(1). 59-79.
- Goleman, D. (2011). What makes a leader?. *HBR's 10 Must Reads on Leadership*. Harvard Business Review Press
- Gordon, M, Fell, C. W. R., Box, H. Farrell, M. & Stewart, A. (2017). Learning health “safety” within non-technical skills interprofessional simulation education: A qualitative study. *Medical Education Online*. 22(1). 1-9.
- Hughes, B. J. (2005). Identifying attitudes and deterring factors toward continuing education among certified athletic trainers. *The Online Journal of Allied Health Sciences and Practice*. 3(1). 1-12.
- Johnson, A. G. (2018). *Privilege, Power, and Difference*. McGraw Hill Education.
- Journal of Athletic Training. (2022). *Journal of Athletic Training* author’s guide. https://meridian.allenpress.com/DocumentLibrary/NATA/2020_JAT_Authors'_Guide.pdf
- Knowles, M., Elwood, F. H, & Swanson, R. A. (2005). *The adult learner: The definitive classic in adult education and human resource development*. Elsevier.
- LeNoue, M. Hall, T., & Eighmy, M. A. (2011). Adult education and the social media revolution. *Adult Learning*. 22(2). 4-12.
- Lim, S. C., Mustapha, F. I., Aagaard-Hansen, J., Calopeitro, M., Aris, T., & Bjerre-Christensen, U. (2019). Impact of continual medical education for primary healthcare workers in Malaysia on diabetes knowledge, attitudes, skills, and clinical practices. *Medical Education Online*. 25(1710330). 1-11.
- Manners, J, & Scifers, J. (2005). Continuing education ethics and professionalism. *Athletic Therapy Today*. 10(5). 58-59.

- McDermott, E. (2019). Physical therapist CEU requirements by state. *WebPT*.
https://www.webpt.com/blog/physical-therapist-ceu-requirements-by-state/?fbclid=IwAR19r6HcYjd8DeYQJnm9WKLA_DhgFrV61xMvk_9eooFWj6KjcWiD9YAUgAI
- Merriam-Webster. (n.d.) Perception. In Merriam-Webster.com dictionary. <https://www.merriam-webster.com/dictionary/perception>
- Merriam-Webster. (n.d.) Utility. In Merriam-Webster.com dictionary. <https://www.merriam-webster.com/dictionary/utility>
- Merriam, S. B., & Bierema, L. L. (2014). *Adult learning: Linking theory and practice*. Jossey-Bass.
- Merriam, S. B. & Tisdell, E. J. (2017). *Qualitative Research: A guide to design and implementation*. Jossey-Bass.
- Mertens, D. M. (2020). *Research and evaluation in education and psychology: Integrating diversity with quantitative, qualitative, and mixed methods*. Sage.
- Missouri Athletic Trainer's Association. (2021). About Us: Executive Committee.
<https://moata.net/about-us/>
- National Athletic Trainer's Association. (2018). NATA Code of Ethics.
<https://www.nata.org/sites/default/files/nata-code-of-ethics.pdf>
- National Athletic Trainer's Association. (2021a). What is an Athletic Trainer? At Your Own Risk: A Safer Approach to Work and Sport.
<https://www.atyourownrisk.org/resources>
- National Athletic Trainer's Association. (2021b). CEU Information. What is an Evidence-Based Practice CEU? <https://www.nata.org/career-education/education/ceu-info>

- National Athletic Trainer's Association. (2021c). How Athletic Trainers Mitigate Risk. At Your Own Risk: A Safer Approach to Work and Sport. <https://www.atyourownrisk.org/>
- National Athletic Trainer's Association. (2021d). Career and Education. <https://www.nata.org/career-education>
- National Athletic Trainer's Association. (2021d). Developing Awareness to Advance Awareness. <https://www.nata.org/professional-interests/inclusion/resources>
- National Athletic Trainer's Association. (2021e). Supporting Athletic Training Research to Advance the Profession. <https://www.nata.org/practice-patient-care/research>
- National Athletic Trainer's Association. (2021f). NATA Statements. <https://www.nata.org/news-publications/pressroom/statements>
- National Athletic Trainer's Association. (2021g). Districts and States. <https://www.nata.org/about/districts-and-states>.
- National Athletic Trainers Association (2021h). Board of Directors. <https://www.nata.org/about/board-directors>.
- National Athletic Trainers Association (2021i). About. <https://www.nata.org/about>
- National Athletic Trainers Association (2021j). NATA 2022: Reunited At Last. <https://convention.nata.org/>
- National Board of Orthopedic Technologists Inc. (2021). Recertification. <https://nbcot.net/recertificationinfo?fbclid=IwAR3A6OnqNlBoLm9XG5Jr3WqD9Ua36HcxjT8zy0IQ3Q87PIn1cYsu-NXaw>
- Northouse, P. G., 2019. *Leadership: Theory and Practice*. Sage.
- Newcomer, K. E., Hatry, H. P., & Wholey, J. S., (2015) *Handbook of practical program evaluation*. Josey Bass.

- Nystrom, S., Dahlberg, J., Edlebring, D. Hult, H., & Dahlgren, M, A. (2017). Continuing professional development: pedagogical practices in interprofessional simulation in healthcare. *Studies in Continuing Education*. 39(3). 303-319.
- Poton, M. K. & Rhea, N. E. (2006). Autonomous learning from a social cognitive perspective. *New Horizons in adult education and human resources development*. 20(1). 38-49.
- Quinn, E. (2022). What to know about districts four and eleven. *NATA News: News Magazine of the National Athletic Trainers Association*. 34(1). 20-21
- Rossi, P. H., Lipsey, M. W., & Freeman, H.E., (2004). *Evaluation: A Systematic Approach*. Sage.
- Rutherford-Hemming, T. (2012). Simulation methodology in nursing education and adult learning theory. *Adult Learning*. 23(3). 129-137.
- Samdperil, G. (2012). Emerging trends in continuing education in athletic training. *International Journal of Athletic Therapy and Training*. 17(6). 1-3.
- Seidman, I. (2019). *Interviewing as Qualitative Research: A guide for researchers in education and the social sciences*. Teachers College Press.
- Szuba, J. (2014). *The Six Domains of Athletic Training: A Guide to the Profession of Athletic Training*. Senior Honors Theses, Eastern Michigan University.
- Walker, S.E., Pitney, W.A., Lauber, C.A., & Berry, D., (2008). An exploration of athletic trainers' perceptions of the continuing education process. *The Online Journal of Allied Health Sciences and Practice*. 6(2). 1-8.
- Walker, S. E., Berry, D., Pitney, W. A., Lauber, C.A., Hossler, P. & Hughes, B. (2010). A

professional learning plan has value in guiding the continuing education of athletic trainers: A pilot study. *Internet Journal of Allied Health Sciences and Practice*. 8(1).1-12.

Wang, W. T. & Lin, Y. L. (2021). The relationships among students' personal innovativeness, compatibility, and learning performance: A social cognitive theory perspective. *Educational Technology and Society*. 24(2). 14-17

Appendices

Appendix A: Survey Protocol

Survey Protocol

1. In what setting do you work as a certified athletic trainer?
 - a. Jr High/High School Athletics
 - b. Collegiate Athletics
 - c. Professional Athletics
 - d. I do not work in the traditional setting

2. How long have you
 - i. Been a certified athletic trainer?
 - ii. Worked in the traditional setting?
 - iii. worked in your current role?

3. In percentages, indicate how you fulfilled your continuing education requirements during the 2020-2021 reporting Cycle (Must equal 100%)
 - a. Online Modules and Webinars
 - b. Conventions (State, District, NATA)
 - c. Live Classes (IASTM, Dry needling, labs, KT Tape, etc.)
 - d. Academics (Research, Graduate School, Supervision of AT Students etc.)

4. In percentages, indicate how you fulfilled your continuing education requirements prior to the COVID-19 Pandemic (2018-2019 Reporting cycle)? (Must Equal 100%)
 - a. Online Modules and Webinars

- b. Conventions (State, District, NATA)
- c. Live Classes (IASTM, Dry needling, labs, KT Tape, etc.)
- d. Academics (Research, Graduate School, Supervision of AT Students etc.)

5. When you have utilized Online learning for CE, how relevant has the content been for you?

- a. Very Relevant
- b. Moderately Relevant
- c. Slightly Relevant
- d. Not at all Relevant
- e. I have never participated in this type of CE Activity

6. When you have utilized an in-person lecture or seminars for CE, how relevant has the content been for you?

- a. Very Relevant
- b. Moderately Relevant
- c. Slightly Relevant
- d. Not at all Relevant
- e. I have never participated in this type of CE Activity

7. When you have utilized a hands-on or skills class for CE, how relevant has the content been for you?

- a. Very Relevant
- b. Moderately Relevant

- c. Slightly Relevant
- d. Not at all Relevant
- e. I have never participated in this type of CE Activity

8. When you utilize online learning for CE, to what extent do you feel responsible for the information that you learn from the activity?

- a. Very Responsible for my learning
- b. Moderately Responsible for my learning
- c. Slightly Responsible for my learning
- d. Not at all responsible for my learning
- e. I have never participated in this type of CE Activity

9. When you utilize in person lectures for CE, to what extent do you feel responsible for the information that you learn from this activity?

- a. Very Responsible for my learning
- b. Moderately Responsible for my learning
- c. Slightly Responsible for my learning
- d. Not at all responsible for my learning
- e. I have never participated in this type of CE Activity

10. When you utilize hands-on skills classes for CE, to what extent do you feel responsible for the information that you learn from this activity?

- a. Very Responsible for my learning
- b. Moderately Responsible for my learning
- c. Slightly Responsible for my learning
- d. Not at all responsible for my learning

e. I have never participated in this type of CE Activity

11. When you participate in an online based learning activity for CE, to what extent are your work and life experiences valued?

a. Very Valued

b. Moderately Valued

c. Slightly Valued

d. Not at all Valued

e. I have never participated in this type of CE Activity

12. When you participate in an in-person lecture or seminar for CE, to what extent are your work and life experiences valued?

a. Very Valued

b. Moderately Valued

c. Slightly Valued

d. Not at all Valued

e. I have never participated in this type of CE Activity

13. When you participate in a hands-on learning activity or skills course for CE, to what extent are your work and life experiences valued?

a. Very Valued

b. Moderately Valued

c. Slightly Valued

d. Not at all Valued

e. I have never participated in this type of CE Activity

14. In terms of being able to learn on your own time, and having timely access to learning, which best describes your experience with Online CE?

- a. Very flexible and Accessible
- b. Moderately flexible and Accessible
- c. Slightly Flexible and Accessible
- d. Not at all flexible or accessible
- e. I have never participated in this type of CE Activity

15. In terms of, being able to learn on your own time, and having timely access to learning, which best describes your experience within person lectures and seminars?

- a. Very flexible and Accessible
- b. Moderately flexible and Accessible
- c. Slightly Flexible and Accessible
- d. Not at all flexible or accessible
- e. I have never participated in this type of CE Activity

16. In terms of being able to learn on your own time, and having timely access to learning, which best describes your experience with hands-on learning activities and skills classes?

- a. Very flexible and Accessible
- b. Moderately flexible and Accessible
- c. Slightly Flexible and Accessible
- d. Not at all flexible or accessible
- e. I have never participated in this type of CE Activity

17. Do you feel that you have timely access to Online CE content that addresses current issues that you face in your practice?
- Yes, Almost always
 - Yes, Most of the time
 - Yes, Sometimes
 - No, not really
 - I have never participated in this type of CE Activity
18. Do you feel that you have timely access to in person lectures or seminar CE content that addresses current issues that you face in your practice?
- Yes, Almost always
 - Yes, Most of the time
 - Yes, Sometimes
 - No, not really
 - I have never participated in this type of CE Activity
19. Do you feel that you have timely access to hands-on skills CE content that addresses current issues that you face in your practice?
- Yes, Almost always
 - Yes, Most of the time
 - Yes, Sometimes
 - No, not really
 - I have never participated in this type of CE Activity
20. On a scale from 1- 10, please rate each of the following factors on how much they motivate you to choose an online CE Activity (1 for not motivating at

all, 10 for very motivating) (Skip question if you have never participated in Online CE Activity.

- a. Cost of Activity (External Factor)
- b. Value of Activity (External Factor)
- c. Desirable Location (External Factor)
- d. Fits into my schedule (External Factor)
- e. Content will help with a specific problem in my practice (Internal Factor)
- f. Interest in the Content (Internal Factor)
- g. Content Area in which I feel I need to improve (internal factor)
- h. Content will provide specific knowledge or credentials to further my career (Internal factor)

21. On a scale from 1- 10, please rate each of the following factors on how much they motivate you to choose an in-person lecture CE Activity (1 for not motivating at all, 10 for very motivating) (Skip question if you have never participated in an in-person lecture CE Activity.

- a. Cost of Activity (External Factor)
- b. Value of Activity (External Factor)
- c. Desirable Location (External Factor)
- d. Fits into my schedule (External Factor)
- e. Content will help with a specific problem in my practice (Internal Factor)

- f. Interest in the Content (Internal Factor)
- g. Content Area in which I feel I need to improve
(internal factor)
- h. Content will provide specific knowledge or
credentials to further my career (Internal factor)

22. On a scale from 1- 10, please rate each of the following factors on how much they motivate you to choose a hand on or skills course CE Activity (1 for not motivating at all, 10 for very motivating) (Skip question if you have never participated in a hands-on skills course CE Activity.)

- a. Cost of Activity (External Factor)
- b. Value of Activity (External Factor)
- c. Desirable Location (External Factor)
- d. Fits into my schedule (External Factor)
- e. Content will help with a specific problem in my
practice (Internal Factor)
- f. Interest in the Content (Internal Factor)
- g. Content Area in which I feel I need to improve
(internal factor)
- h. Content will provide specific knowledge or
credentials to further my career (Internal factor)

23. Overall, when you utilize online CE, what kind of impact has it had on your clinical practice?

- a. Very Useful and Impactful

- b. Moderately Useful and Impactful
- c. Slightly Useful and Impactful
- d. Not at all Useful or Impactful
- e. I have never participated in this type of CE Activity

24. Overall, when you utilize in-person lectures CE, what kind of impact has it had on your clinical practice?

- a. Very Useful and impactful
- b. Moderately Useful and impactful
- c. Slightly Useful and Impactful
- d. Not at all useful or impactful
- e. I have never participated in this type of CE Activity

25. Overall, when you utilize skills courses and hands-on classes for CE, what kind of impact has it had on your clinical practice?

- a. Very Useful and impactful
- b. Moderately Useful and impactful
- c. Slightly Useful and Impactful
- d. Not at all useful or impactful
- e. I have never participated in this type of CE Activity

26. How well does the BOC's current structure of CE requirements provide you with the opportunity to access relevant content? (50 CEUs every fixed, 2-year reporting cycle)

- a. Very well
- b. Moderately Well

- c. Minimally Well
- d. Not at all

27. Does the structure of the BOC's current CE Requirements make you feel responsible for your own learning?

- a. Yes
- b. Moderately
- c. Minimally
- d. No

28. Do you think that the current structure of the BOC's CE Requirements values your lived experiences?

- a. Yes
- b. Moderately
- c. Minimally
- d. No

29. Do you think that the current structure of the BOC's CE Requirements gives you ample time and flexibility to complete them when you feel ready?

- a. Yes
- b. Moderately
- c. Minimally
- d. No

30. Do you think that the current structure of the BOC's CE requirements allows you to have timely access to content that helps you solve problems in your practice?

- a. Yes
- b. Moderately
- c. Minimally
- d. No

31. To what extent does the current structure of the BOC's Continuing education requirements motivate you to become a lifelong learner and expand your skills in the profession?

- a. Very Motivating
- b. Moderately Motivating
- c. Minimally Motivating
- d. Not at all Motivating

32. Overall, what is your impression of your CE Experience as it relates to your clinical practice and patient outcomes?

- a. Strongly Positive
- b. Positive
- c. Negative
- d. Strongly Negative

Appendix B: Recruitment Script For Survey

Hello, My name is Kristin D. Jones, and I am a doctoral student in the Educational Leadership and Policy Analysis Program at the University of Missouri-Columbia. I am seeking participants for a research study titled “Continuing Education for Certified Athletic Trainers Working in the Traditional Setting: Perceived Utility Based on Adult Learning Theory.” Specifically, I am seeking participants willing to participate in a survey about their experiences in continuing education. Guidelines for participation are the participant must be a certified athletic trainer currently working in the traditional athletics setting and live in the continental United States of America. Your completion of the survey is voluntary. This is an online survey that takes approximately 30 minutes to complete, and your responses are completely anonymous.

Possible benefits from participating in this research are being able to better understand the continuing education process and to be more aware of which continuing education activities would be most appropriate to choose in the future. Information collected in this study could benefit the athletic training profession in the future because it could help to improve the continuing education process. By optimizing continuing education, professionals can become lifelong learners and have the most positive patient outcomes.

Appendix C: Informed Consent for Survey

Hello, I am asking you to participate in a research study titled “Continuing Education for Certified Athletic Trainers Working in the Traditional Setting: Perceived Utility based on Adult Learning Theory.” This study is led by Kristin D. Jones, a doctoral student in the Educational Leadership and Policy Analysis Program at the University of Missouri- Columbia. The Faculty Advisor for this study is Dr. Cynthia MacGregor, University of Missouri.

You are being asked to participate in this survey to assess the perceived utility of continuing education in athletic training based on adult learning theory. The researcher, Kristin D. Jones, will analyze the survey data to determine the perceived utility of continuing education for ATs working in the traditional setting. You must be 18 years or older to participate in this survey. You also must be a certified athletic trainer working in the traditional athletics setting (High school, collegiate, or professional athletics). You also must live in the continental United States.

Your completion of the survey is voluntary. This is an online survey that takes approximately 30 minutes to complete, and your responses are completely anonymous. Your answers will not be associated with your e-mail address, name, or any contact information. You may stop or leave the survey at any time. There are no identifiers to link you to your responses. Refusal to participate will involve no penalty or loss of benefit to you. Your complete honesty is appreciated.

Data collected from the survey will be stored until the completion of the study. Anticipated completion of the study is December 2022, after which time the data will be destroyed. Until it is destroyed, it will only be accessible to researcher. The data will be

saved in Qualtrics, and passcode protected. The only data that will be published or shared will be aggregate responses. If you have any questions or concerns during this survey, please contact Kristin D. Jones at kdj734@umsystem.edu or 660-233-6029.

Before you start the survey, you may save this page and keep this consent form for your personal record. Thank you for your consideration!

Do you consent to these terms?

- a. Yes
- b. No

Appendix D: Interview Protocol

1. In what setting do you work as a certified athletic trainer?
2. How long have you:
 - a. Been a certified athletic trainer?
 - b. Worked in the traditional setting?
 - c. worked in your current role?
3. Describe how you fulfill your continuing education requirements? (Online, NATA Convention, etc.)
4. Was this different in 2020 because of the COVID-19 Pandemic, if so, please describe.
5. In your continuing education experience, tell me how you perceive the content. Is it relevant to complete your current job? (Explain why or why not)
6. Regarding the structure of the BOC's Continuing education requirements, please describe how the structure supports you by providing you with information that is needed to fulfill your job duties.
7. How do the BOC's continuing education requirements enable you to take responsibility for your own learning?
8. In what ways, if any, does the content of continuing education acknowledge and value your prior experience and knowledge as a professional?
9. Do you think that the current structure of continuing education values these experiences? If you do not believe it does, why do you think that way?

10. Do you think that the BOC's Continuing education requirements allow you to access the content that need to learn when you are ready to learn it? Explain your answer
11. In what ways, if any, has the content of the continuing education that you have completed helped you in solving immediate problems in your current workplace?
12. In your experience, does the structure of the BOC's continuing education requirements allow you to access information that you need to solve imminent workplace problems? Why or why not?
13. What motivates you to participate in specific continuing education activities?
What factors motivate you to you choose one over the other?
14. Please share the most meaningful or impactful CE experience you have had.
15. Is there anything else you would like to share regarding your experiences with continuing education?

Appendix E:
Informed Consent for Interview

Hello, I am asking you to participate in a research study titled “Continuing Education for Certified Athletic Trainers Working in the Traditional Setting: Perceived Utility based on Adult Learning Theory.” I will describe this study to you and answer any of your questions. This study is led by Kristin D. Jones, a doctoral student in the Educational Leadership and Policy Analysis Program at the University of Missouri-Columbia. The Faculty Advisor for this study is Dr. Cynthia MacGregor, University of Missouri.

What the study is about

The purpose of this research is to determine the perceived utility of continuing education in the field of athletic training, specifically athletic trainers working in the traditional athletics setting. This research study seeks to find whether the BOC’s current structure and formats of continuing education operate under the principles of adult learning theory. The formats of continuing education being examined in this research study are online webinars, in person lectures and hands-on learning classes. The research study will collect data about each of these modes of continuing education regarding their alignment with adult learning theory.

What I will ask you to do

I will ask you to participate in an interview regarding your experience with continuing education within the profession of athletic training. This interview will take approximately one hour. This interview can be held either, in person or via Zoom, whichever the participant feels most comfortable with. The participant may choose to

discontinue the interview at any time for any reason, as well as withdraw their consent at any time during or after the interview has been completed.

Benefits

Possible indirect benefits from participating in this research are being able to better understand the continuing education process and to be more aware of which continuing education activities would be most appropriate to choose in the future.

Information collected in this study could benefit the athletic training profession in the future because it could help to improve the continuing education process. By optimizing continuing education, professionals can become lifelong learners and have the most positive patient outcomes.

Audio/Video Recording

Interviews conducted for this research will be audio and video recorded. The recordings will be needed in order to transcript and analyze the data for the study. These recordings as well as transcriptions of the recordings will only be viewed by the researcher and will be destroyed after the completion of the research study. Before the interview begins you will be asked for consent to be recorded.

Privacy/Confidentiality/Data Security

All interview data will be kept confidential and will only be viewed by the researcher. No identifying information will be shared in any form. All data will be presented together, using only generalizations and themes among the participants. Direct quotes may be used but with no identifying data or information present. Data will be kept private and confidential by being stored on a jump drive and on my personal computer and will not be stored using internet storage. Only the researcher will have access to

identifying information. Please note that any email communication is neither private nor secure. Though I am taking precautions to protect your privacy, you should be aware that information sent through e-mail could be read by a third party. Your confidentiality will be kept to the degree permitted by the technology being used. We cannot guarantee against interception of data sent via the internet by third parties.

Taking part is voluntary

The participant's involvement in this research is voluntary. The participant may refuse to participate before the study begins, discontinue at any time, or skip any questions that may make him/her feel uncomfortable, with no penalty to him/her, and no effect on the compensation earned before withdrawing, or their academic standing, record, or relationship with the university or other organization or service that may be involved with the research.

If you have questions

The main researcher conducting this study is Kristin D. Jones, a doctoral student at the University of Missouri-Columbia. Please ask any questions you have now. If you have questions later, you may contact Kristin D. Jones at kdj734@mail.missouri.edu or at 660-233-6029.

You may also contact the University of Missouri Institutional Review Board (IRB) if you have any questions about your rights as a study participant, want to report any problems or complaints, or feel under any pressure to take part or stay in this study. The IRB is a group of people who review research studies to make sure the rights of participants are protected. You can reach them at 573- 882-3181 or muresearchirb@missouri.edu. If you want to talk privately about your rights or any

issues related to your participation in this study, you can contact University of Missouri Research Participant Advocacy by calling 888-280-5002 (a free call) or emailing MUResearchRPA@missouri.edu.

Appendix F: Recruitment Script for Interview

Hello, My name is Kristin D. Jones, and I am a doctoral student in the Educational Leadership and Policy Analysis Program at the University of Missouri-Columbia. I am seeking participants for a research study titled “Continuing Education for Certified Athletic Trainers Working in the Traditional Setting: Perceived Utility Based on Adult Learning Theory.” Specifically, I am seeking participants willing to be interviewed about their experiences in continuing education. Guidelines for participation are the interviewee must be 18 years of age or older a certified athletic trainer currently working in the traditional athletics setting and live in the continental United States of America.

The purpose of this research is to determine the perceived utility of continuing education in the field of athletic training, specifically athletic trainers working in the traditional athletics setting. This research study will determine whether the BOC’s current structure and formats of continuing education operate under the principles of adult learning theory. The formats of continuing education being examined in this research study are online webinars, in person lectures and hands-on learning classes. The research study will collect data about each of these modes of continuing education regarding their alignment with adult learning theory.

If interested, I will ask you to participate in an interview regarding your experience with continuing education within the profession of athletic training. This interview will take approximately one hour. This interview can be held either, in person or via Zoom, whichever the participant would like based on geographic location and preference.

Possible benefits from participating in this research are being able to better understand the continuing education process and to be more aware of which continuing education activities would be most appropriate to choose in the future.

Information collected in this study could benefit the athletic training profession in the future because it could help to improve the continuing education process. By optimizing continuing education, professionals can become lifelong learners and have the most positive patient outcomes.

If you would like to participate, please contact me at kdj734@mail.missouri.edu, or by phone at 660-233-6029.

VITA

Kristin D. Jones grew up in Sweet Springs, Missouri. She was involved in many sports growing up and during that time developed a passion for athletics. Kristin attended the University of Central Missouri in Warrensburg for her undergraduate studies. Here she graduated in May 2014 with a bachelor's degree in athletic training and a minor in Spanish. Once she became a certified athletic trainer, she became a graduate assistant at Southeast Missouri State University in Cape Girardeau. She served as the athletic trainer in charge of SEMO's Cross Country and Track and Field Teams. During this time, she completed a master's degree in Higher Education Administration. Upon graduation 2016 she stayed in Cape Girardeau and began her full-time athletic training career at Southeast. She spent her first year working as the athletic trainer for the women's basketball team. She then had the opportunity to return to cross country and track and field as their full-time athletic trainer. She has remained in that post for the last six years, working with the cross country and track program for eight of the last nine years. During her tenure, she has also served as preceptor for SEMO's athletic training education program.