Exploring Athletic Training Educators' Development as Teachers

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Context: Little research is available on how athletic training educators develop their instructional styles over the course of their careers and what influences their teaching practices. Understanding the development of athletic training educators' teaching practices may help promote effective teaching in athletic training programs and help guide professional development.

Objective: To gain a better understanding of how athletic trainers develop as educators and how their experiences as an educator influence their teaching.

Design: Qualitative study.

Setting: Higher education institutions.

Patients or Other Participants: We interviewed 11 doctorally trained athletic trainers teaching in undergraduate professional athletic training programs.

Main Outcome Measure(s): Data were collected through in-depth interviews, and additional artifacts (curricula vitae, syllabi, videotaped teaching lessons) were used to triangulate data collected during the interviews. We used a phenomenological approach to analyze the data and maintained trustworthiness through member checking, data-source triangulation, multiple-analyst triangulation, and peer review.

Results: Two main themes emerged from the data: (1) role induction through role continuance and (2) teaching for student learning. Participants discussed how their teaching evolved over the course of their careers, how they valued their clinical practice, how they promoted student learning, and how they aimed to challenge students to transfer knowledge learned into clinical practice.

Conclusions: From the data, we are able to understand that athletic training educators develop their teaching practices through engaging in their role as a teacher. This was an informal, continual process of learning how to be an educator.

Key Words: Pedagogy, faculty development, faculty socialization, role induction

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INTRODUCTION

Successful completion of the Board of Certification (BOC) examination verifies that athletic trainers have the knowledge and skills within the field of athletic training for clinical practice. Many who teach athletic training continue with their education and complete graduate education culminating in a terminal degree, which is often required of a faculty member. A terminal degree "does not mean that the person holding this degree necessarily understands how to design, implement, assess, or even instruct his/her content expertise."[1(p38)] The question then arises of how athletic training educators develop as expert educators and effective classroom instructors. Little research is available on how athletic training educators develop their instructional styles over the course of their careers and what influences their teaching practices.

Currently there is no requirement from the Commission on Accreditation of Athletic Training Education that athletic training educators have formal or informal preparation or experience in teaching methods.[2,3] The delivery and presentation of the required content to students is at the discretion of the institution and specific faculty member.[3,4] Athletic training educators have a daunting responsibility to prepare students to successfully pass the BOC examination. Part of this preparation includes fostering a culture of evidence-based practice and professionally socializing students to the BOC's professional standards.[4,5] As transparency and assurance of quality outcomes and reporting of those outcomes become the norm,[6] there is a need for more research to investigate effective teaching in professional athletic training programs.

Effective teaching in higher education is an expected skill set for a faculty member. In fact, it is one of the major variables that a faculty member is evaluated on throughout the academic year, as well as when he or she pursues promotion and reappointment.[7] Despite these expectations, many faculty are not fully prepared to handle the responsibilities that come with teaching, or at best they have very little training regards best practices in education.[1,8–10] A lack of pedagogical training could influence the development of practices related to classroom instruction, yet very little is known about this in athletic training. We do know that faculty members receive extensive instruction and skills related to research development, but often doctoral education (eg, doctor of philosophy, doctor of education) is not fully aligned with providing knowledge and skill development as an educator.[11] Although beliefs about what effective athletic training educators should do in the classroom have been discussed in the literature, Burningham et al[12] did not examine how educators develop into their role as educators. Developing an understanding of what influences how athletic training educators teach may help promote effective teaching in athletic education programs, help guide professional development opportunities, and help the next generation of athletic training educators transition into the role of educator. The purpose of this study was to gain a better understanding of how athletic trainers have developed as educators and how their experiences as an educator have influenced their teaching. The research questions guiding this study were (1) How do athletic training educators perceive their own professional development as educators? and (2) How do athletic training educators describe their teaching and influence on students in the classroom?

METHODS

Phenomenological methodologies have been used in health professions research, including nursing and athletic training.[13–16] A phenomenological study describes the participants' understanding of the experiences with the phenomenon from the participants' perspective.[13,17–19] The phenomenon under investigation in this study was teaching in a professional undergraduate athletic training program. This phenomenon was explored through interviews with and self-reflection by 11 purposefully selected athletic training educators.

Participants

Selection. Participants were purposefully selected based on the following inclusion criteria: (1) currently teaching at least 1 undergraduate athletic training class, (2) possessing a terminal degree (EdD or PhD) in athletic training, education, or a related field, and (3) possessing a minimum of 8 years of experience teaching athletic training courses. We chose 8 years of teaching experience as our benchmark to ensure participants had adequate role induction. Eight years of teaching experience should also allow for tenure and/or promotion, if applicable, to help ensure the participants were steadfast in their role as an educator. Our selection criteria were based upon our purpose, which was founded upon understanding the development as an athletic training educator; therefore, we wanted individuals who had been engaged in that role for a substantial period of time. Variations on length of time for role induction exist, yet we believe based upon the review of literature within athletic training that this time frame is appropriate.[20,21]

Our Participants. Eleven individuals (4 men, 7 women; age range, 36–55 years [average = 45.5 ± 9.5 years]) participated in this study. Ten of the participants were white and 1 was Asian. Participants had been BOC certified for an average of 22.73 ± 5.71 years (range, 14–32 years) and had been in athletic training education for an average of 18.09 ± 6.01 years (range, 10–28 years). Each participant was assigned a pseudonym. Table 1 contains further information about each participant.

Procedures

After institutional review board approval, participants were purposively recruited via e-mail. The e-mail included a general overview of the study, inclusion criteria, a consent form to sign and return, and the request to schedule a follow-up phone call. Potential participants were also asked to recommend additional participants whom they thought could contribute to the study; this is known as the snowball recruitment

method.[13] Six participants were interviewed from the first round of recruiting and an additional 5 participants were recruited later to reach data saturation. Of the 11 participants, 4 were initially identified by the primary author (E.K.P.) and 7 were recruited through the snowball method. We present our procedures succinctly in Figure 1, but describe the process in detail below.

Inclusion criteria were verified via a scheduled phone call with the primary author (E.K.P.) and the study was explained in greater detail. During this call, participants were asked to send in their curriculum vitae, the course syllabus for the athletic training class they would videotape, and a videotaped teaching lesson. Curricula vitae were collected to gain information on the educational background, clinical athletic training experience, teaching experience, and research interest and background of each participant. This information provided the backbone to understanding our participants' development as athletic trainers and educators in athletic training programs.
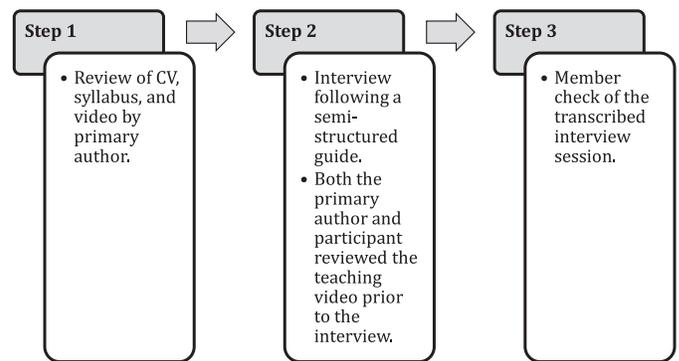
Course syllabi provided information on course objectives and teaching methods used by participants and helped put the videotaped teaching lesson in the perspective of the whole course. Participants videotaped a lecture or discussion of any length from one of their undergraduate athletic training classes. Participants were asked to review the videotaped teaching lesson by themselves before the interview to aid in their reflection. The purpose of the videotape was to aid the participant's reflection on his or her teaching and allow for discussion using concrete examples of what he or she did in the classroom during the interview.[13,22–25] The primary author also reviewed the recorded teaching lesson, as a means to foster more discourse and follow-up during the interview sessions.

Once the curriculum vitae, course syllabus, and videotape for a participant had been reviewed by the primary researcher (E.K.P.), an interview was scheduled. A semistructured interview guide was used in each interview (see Table 2).[17,19,26] The interview guide was developed based on the research questions and to better understand what influenced the participant's teaching and how he or she had evolved as an educator. An expert in qualitative research and higher education teaching reviewed the interview guide for clarity and content, and only minor wording modifications were made. The interview guide was then piloted with an individual who fit the inclusion criteria. Minor modifications were made and the data collected during the pilot study were included in this study. Additional interview questions were asked based on the participant's specific videotaped teaching lesson and responses to the initial questions. Interviews ranged from 30 to 90 minutes and were recorded and transcribed verbatim. Data saturation guided the number of participants recruited.

Data Analysis and Trustworthiness

Data analysis followed a phenomenological approach described by Moustakas.[19] This was an ongoing process during the study beginning as the artifacts arrived and continuing throughout each interview. A constant comparison process was used during analysis to identify commonalities and differences among individuals.[27] After the interviews were transcribed, the transcripts were read for general understanding. The transcripts were then read for identification of significant statements that supported the general research agenda and trending themes.[19]

Figure 1. Stepwise data collection process.

Step 1
- Review of CV, syllabus, and video by primary author.

Step 2
- Interview following a semi-structured guide.
- Both the primary author and participant reviewed the teaching video prior to the interview.

Step 3
- Member check of the transcribed interview session.

Next, the themes were refined and subthemes developed. Quotes were identified to support the themes and subthemes. Curricula vitae, course syllabi, and videotaped teaching lessons were then reviewed to support or contrast the statements the participants made during their interview.

The trustworthiness was established through 4 methods: (1) member checks, (2) multiple-analyst triangulation, (3), data-source triangulation, and (4) peer review. Individual interview transcripts were e-mailed to 4 random participants to allow for member checking. Participants were asked to respond if any information was inaccurate or incorrect. Three participants responded, but had no major changes or corrections to the transcripts. Two of the researchers (E.K.P., S.E.W.) independently coded the transcripts as outlined above to perform multiple-analyst triangulation. Data-source triangulation occurred through review of the syllabi and curricula vitae from all participants. These artifacts were used to triangulate data collected during the interviews and provide background information on the participants. We (E.K.P., S.E.W.) then negotiated on the coding until we agreed on the final categories and subcategories. Finally, we used peer review with the third author to confirm the findings agreed upon by the first 2 authors.

RESULTS

Two main themes emerged from the data: (1) role induction through role continuance and (2) teaching for student learning. Role induction through role continuance refers to the participants' engagement in their teaching over the course of their careers. They also discussed how they brought their experiences as a clinical athletic trainer into the classroom, both for educational purposes and to prioritize content in the classroom.

The second theme, teaching for student learning, developed from the student-centered answers the participants gave to the interview questions. This was supported by the value participants placed on engaging students to think critically and teaching for application as future athletic trainers. Figure 2 depicts our findings. Our thorough discussion ensues with participant quotes.

Role Induction Through Role Continuance

Role induction through role continuance refers the participants' engagement in their role as a teacher and the evolution of their teaching over the course of their careers. The

participants discussed an evolution in their teaching over time and how they learned to develop and refine their skills by "being in the role." Meghan reflected on how, over time as an educator, her teaching practices changed as she focused more on the students' needs and their learning, rather than her delivery. This was developed because she was engaged as an educator. Meghan shared,

I became much more purposeful in my teaching, it wasn't as much about just getting the content out there as it was about, more about learning than it was about teaching... being more concerned about student learning than about my own teaching.

Edward also discussed how being a teacher helped him realize what was necessary to be effective and what was important. Much like Meghan, he realized that the students' learning needs were his primary focus. Edward said:

I also think it's necessary to remember that education isn't just about 50 minutes in the classroom...and if any educator thinks they just go to class and then they're done teaching, that's a problem. I always try to remember that as an educator and try to remember that students are the most important.

The theme appears to be founded on the informal socialization process, whereby engaging in the role of the teacher in any capacity provided the knowledge, skills, and behaviors necessary to navigate the role. For example, Jill discussed the influence her former teachers had on her current teaching style and stated:

There are 3 or 4 very specific teachers in college, they were just great courses. My head athletic trainer, who was my main professor in undergrad, I realize a lot of my teaching style has come from him. Knowledgeable, energetic, forced you to think outside the box, forced you to apply stuff and he was probably the most influential.

Changes in Teaching over Time. Many of the participants discussed the changes in their teaching style and focus over the course of their careers in higher education. They discussed an evolution in their teaching philosophy that occurred over time. For example, Anthony, who has been teaching for 14 years, stated:

I use to be more concerned and more oriented to giving facts and pointing out facts to the students; the facts and things that I thought were important. Where now I think I still highlight specific information, but it's the concepts and theories that are more important. And to where I think currently my biggest challenge and objective is to take a student give them the facts, the information, but challenge them to apply it into the actual application, clinically. And so I use a lot of examples that are towards that, rather than just multiple-choice tests, for instance where you just test facts and knowledge and memorization. So I use more short answer, and essays if you will, even practical exams if it is something that fits into the class format.

During the videotaped teaching lesson, Anthony stressed concepts and theories, over memorizing terminology and other facts. He actually diverted from the PowerPoint (Microsoft, Redmond, WA) for most of the class to explain a concept differently than he had originally intended. When asked about this in the interview, Anthony said he just stopped advancing the slides and used the white board to address the topic. He stated he covered the same content addressed in the slides; he just did it in a different order. Although he stressed the importance of concepts, application of material, and the movement away from multiple-choice tests during the interview, Anthony's syllabus for this class painted a different picture. His syllabus for this course indicated that all examinations were Scantron format and that the grade in the course was largely from these examinations.

Pamela, another 14-year teaching veteran, also discussed a similar transition from focusing the minor details to now stressing the importance of larger concepts. For her, it was a move from memorization to practical application:

I think it's [her teaching] changed over the years, it's funny because I wish I had kept a journal from year to year of thoughts and everything but, I think over time it's changed to less worrying about having them know every little detail and focusing more on larger concepts that are applicable and transferrable to other content.

As addressed below, teaching became more about the application of information and less about individual facts and details for many of the participants. Over time, the participants felt that they grew into their roles and became inducted into the role of educator. Interestingly, Emily summarized the change in her teaching when she stated, "I feel like I am much more effective because I am comfortable, because I have been doing this role for such a long period of time."

Participants also addressed the change in how they managed the classroom over the course of their careers. Matt, who has been teaching for 15 years, reflected and said,

I've really gone from somebody who tried to rule with an iron fist to being somebody who tries to be empathetic and sympathetic, while still making them [the students] accountable and responsible for their actions at the same time.

Along the same line, Kristen even called her early teaching style a "command style" at the beginning of her career.

Pamela also addressed the change in her classroom management and how she focused her time and energy in the classroom. She stated, "I gave myself permission to let it go, 'cause I can either focus on the one kid who seems not to care, or I can focus on the other 5 or 6 who are really wanting to be challenged and want to learn." This evolution in teaching over the course of their careers was discussed by the majority of the participants, going from someone ridged in their teaching style and classroom management to someone more flexible and student focused. They started letting go of control on the material to allow students to have more ownership in discovering the information. For example, Lisa, with 22 years of teaching experience, stated:

I had to find ways to deliver content a little bit differently, let go of some of the control that I had with the content and let the students discover that content. Because with discovery, they're going to retain it much better than with me just up there talking about it. So I think that's what's changed, it's [her teaching] gone from lecture based to more engagement based—more activities, letting go, having my students discover content.

Table 1. Participant Information

Participant Pseudonym	Terminal Degree	Institution Type	Years Certified[a]	Years Teaching[a]	Administrative Role in Athletic Training Program	General
Matt	PhD	Teaching	20	15	Program director	Matt has educational training at the baccalaureate, master's, and doctoral level. He also has athletic training experience at the secondary school, clinical, and collegiate settings. His research interests focus on various aspects of athletic training education and he is also interested in promoting undergraduate research.
Edward	EdD	Teaching	27	17	None	Edward spent the first 10 years of his career as a traditional athletic trainer in the secondary school, clinical, and collegiate settings. He then completed his doctoral degree in adult education and began teaching full time. Edward's research record is extensive and focused on athletic training education and professional issues.
Pamela	PhD	Research	19	14	Clinical education coordinator	Pamela has been on the education track since teaching during her master's program. Her clinical athletic training experiences primarily occurred during her various graduate assistantships. Pamela's research interests include continuing education and clinical education.
Lisa	EdD	Teaching	24	22	Clinical education coordinator	Lisa has worked at the collegiate level since graduating college. She continues to practice clinically while teaching. Her doctoral degree is in education and her research line focuses on clinical education.
Kristen	EdD	Teaching	28	25	Program director	Both Kristen's master's and doctoral degrees are in education, and her research focused on clinical education. She continues to practice athletic training at the collegiate level while teaching and serving as program director.
Meghan	EdD	Research	32	27	Program director	After a few years of clinical practice, Meghan returned to school for a terminal degree related to education and since then has been teaching. Her line of research has focused on athletic training education and professional issues.
Emily	PhD	Research	15	10	Program director	Emily was introduced to teaching during her master's program and then decided to pursue a doctoral degree related to education. The majority of her clinical experience was as a collegiate-level graduate assistant and then as the head athletic trainer at a secondary school. Her research is related to athletic training education, professional development, and professional issues.

Table 1. Continued

Participant Pseudonym	Terminal Degree	Institution Type	Years Certified[a]	Years Teaching[a]	Administrative Role in Athletic Training Program	General
Erin	EdD	Research	19	15	Program director	Erin worked clinically at the collegiate level after completing her master's degree and then began teaching as an adjunct instructor while practicing clinically full time. When a full-time position opened, Erin was able to transition to that role. After that, she completed her doctoral degree in education. She serves as both program director and department chair. Erin is currently not on a tenure-track line, so teaching and service are her primary obligations.
Jill	PhD	Teaching	30	28	None	Different from many of the other participants, Jill's PhD is in exercise science. At her current university, she has continued to increase her administrative role from program director to now associate dean of the college. Teaching and service have been the focus of Jill's career, as evident from her extensive activity with professional organizations.
Anthony	PhD	Teaching	22	14	Clinical education coordinator	Anthony completed a PhD in kinesiology that also allowed him to teach. His first position after completing that was a split position with responsibilities in both athletics and academics. Different from many of the other participants, Anthony's research interests relate to exercise science and clinical athletic training more than education.
Steven	EdD	Teaching	14	12	Program director	Steven completed his PhD related to education while serving as a graduate assistant in athletics. The majority of his clinical experience was during that time. He has been at his current institution his entire career and is heavily involved with university committees and other service. His current research is related to athletic training education and continuing education.

[a] Years are approximate.

The variety in Lisa's teaching style was evident in her videotaped teaching lesson, in which she used both small- and large-group activities, PowerPoint with a lot of images, and questioning students to promote discussion and engagement.

The participants also discussed that changes in their teaching often were the result of feedback from students during the end-of-semester course evaluations. The participants indicated that they valued comments from the students and tried to address them in their future classes. Change also occurred during the course of the semester because of a lack in student engagement or understanding during a particular lesson. Jill, with 28 years teaching experience, may have said it best:

If they're [the students] not excited when they respond, if they're not excited like "oh I know that answer," then I'm not hitting it where I need to hit it and I need to change that style, and it's often in the middle of a class. If I'm not hitting the mark where I have them engaged then I will suddenly, just spur of the moment, just pop up in another activity that forces them to integrate the knowledge and challenges them a little bit more.

Jill videotaped a lesson on biomechanics and used lecture with questioning, videos, and demonstrations to illustrate her points and maintain student engagement. Erin discussed her view on change in the classroom by simply stating, "You know, you try something new and it doesn't work, then you just move on and try something else."

Table 2. Interview Questions

1. Tell me about your educational background.
   a. Looking back now, how has your educational background and past teachers affected your teaching today?
2. Take me through a chronology of your teaching experiences.
   a. How has your teaching changed since the beginning of your career?
   b. What were the catalysts for the changes in your teaching?
3. Describe your teaching.
   a. What strategies do you frequently used in teaching?
   b. What drives your selection of teaching methods?
4. How does the videotaped lesson fit within the whole course?
5. Why did you choose this lesson to videotape?
6. Is this a typical lesson for you? Why or why not?
7. After watching your videotaped teaching lesson, how have your thoughts about your teaching changed?
8. Would you change anything about your teaching after watching the videotape?
9. What are your thoughts about the process we undertook?
10. What have I not asked you?
11. What else do you want to share?

Clinical Experience. The majority of the participants discussed how their previous and current athletic training clinical experience had influenced their teaching. All the participants had different clinical experiences, ranging from graduate assistantships to those, such as Lisa and Kristen, who still practiced as part of their role at their university. Participants had a breadth of professional experience and with that experience combined, they collectively have been certified athletic trainers for approximately 250 years. Matt, who has practiced in both the secondary school and collegiate levels, stressed the importance of educators having clinical experience to draw from. He stated, "That's one thing that people who do a good job of teaching can, they can relate to what's happening, they can bring in stories that are meaningful to students." Anthony, who has clinical experience primarily at the collegiate level, also reflected on this idea as an individual educator and stated,

> I realized that my clinical background is what makes me, or what I think makes me, a better teacher, because I am able to understand or look at the materials from the student's perspective, the clinician's perspective, and relate that information that way.

Emily also addressed this when she said, "My personal experiences of either working clinically, or working as a professional in the field, I think have helped me craft my teaching." Kristen, who still has a team assignment as part of her faculty role. said,

> I think there's a huge thing to say about still practicing and still being involved in the profession, whether you have a team assignment still or you're volunteering. I think you have that connection when you're working with students.

Figure 2. Development of athletic training educators.
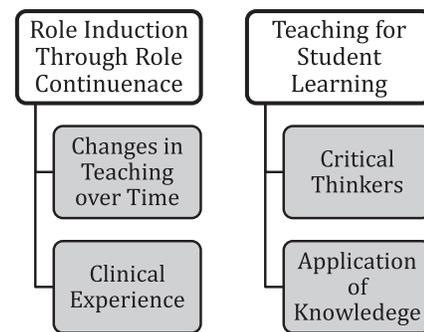
Participants used their clinical experiences to discuss patient encounters, give concrete examples, and connect with students in the classroom.

Erin went on to discuss at length how having current clinical experiences help her feel "relevant" in the field. She sought out various clinical opportunities to volunteer as an athletic trainer. When reflecting on here time volunteering during football camp at the university she teaches at, Erin stated, "I'm basically showing the students that I'm remembering for myself how hard it is to work as an athletic trainer." Erin continued to discuss how during this experience she did not see many injuries or have a very active role, which led her to seek out another volunteer opportunity with a local secondary school's football program. At the secondary school, she helped cover Friday night football games, which allowed her to do more than the college setting. Over and over again, Erin discussed how these experiences helped her stay relevant in the field and kept her stories fresh for the students. She also used her clinical experiences to "tell them [students] when I've screwed up in the past and let them laugh at poor decisions I've made."

Teaching for Student Learning

Although the interview questions centered around the participants and their thoughts on their own teaching, the answers given centered on student learning. When Lisa was asked what drove her teaching, she responded, "Student success certainly drives my teaching, the outcome for students is we want them to be great athletic trainers." Our participants spoke about their concerns for their students' learning, and that their teaching development was more about promoting student learning rather than their teaching. For example, Emily, who talked about her comfort in the role of an educator, shared, "I am less concerned whether or not I am making every student happy, but am concerned that they are learning." Likewise, Meghan, too, was focused on her ability to facilitate learning, rather than how she was teaching. She shared,

> I became much more purposeful in my teaching, it wasn't as much about just getting the content out there as it was about learning—I guess that's the transition for me—you know being more concerned about student learning than about my own teaching.

Teaching to promote learning was an evolutionary process; that is, our participants realized through their teaching experiences that the focus should be on student learning rather than their own style of teaching. Teaching for student

learning was also supported by encouraging critical thinking among their students and teaching for application as future athletic trainers.

Encouraging Critical Thinking. Although all who participated in this study did not use the term critical thinking directly, they discussed the importance of having students learn and use critical-thinking skills. For example, Anthony stated:

> *I present a lot of scenarios or situation where there is no clear path, no simple answer, there is no right or wrong. I just want you [the student] to be able to identify and support the answer that you come up with. I try to utilize those a little bit more too, because I think there are many things, especially in athletic training, that aren't black and white.*

Lisa discussed having students "discover" the content; through discovery there was increased engagement and retention of the information. She indicated that she used "thinking questions," discussions, case studies, and scenarios throughout her classes in an effort to have students think about the material being presented. Meghan echoed a similar sentiment: "It's [teaching] more about critical thinking now, engaging the kids more, less content, more discovery, more building on what they knew in the past, tying things together."

Kristen stated, "I needed to help them [the students] to develop a process for thinking and problem solving that started in the classroom if I wanted them to do that in the clinical component." Kristen talked about using "strategic questioning" to bring students "through the different stages of cognitive processing." For example, she indicated that she used worksheets that required identification first, which focus on lower cognitive skills. After that, her strategy involved questioning to use higher cognitive skills, which were more "thought provoking."

During the interview, Meghan discussed that "instead of being so content driven…it's more about critical thinking.... More building on what they [the students] knew in the past, tying things together." She continued to describe her teaching as "like a puzzle, where they [the students] have to put the pieces together." She indicated that she designed tests that were short answer or case analysis to promote critical thinking in her students. Pamela discussed critical thinking with her students and stated, "I try to get students to think about things in more than one way. Because a lot of health care and athletic training is, well, it works in this situation but it might not work in the next situation." In class, Pamela has tried to "not focus on things that are rote memorization." She indicated that her teaching strategies involved frequent questioning of students in an effort to make them think about the material and problem solve. She demonstrated this in her teaching video by asking students a lot of questions during the lesson and providing real-life examples when possible.

Teaching for Application. Teaching for application refers to valuing the little details, yet also appreciating the complexity of each individual case or injury. Participants discussed making sure their teaching was relevant, practical, and applicable to what the students would be doing in the day-to-day responsibilities of their future positions. For example, Pamela repeatedly mentioned making her teaching and the content applicable for her students' future practice and their lives in general. She asked, "What's more important really for you [the student] to know as a professional leaving the program?" and continued on to say,

> *What do they need to know if they're going to be a practicing clinician? Versus, what do they need to memorize that would be great for them to know on an exam, that maybe 2 months from now if they never use again they may never remember? Because there's a lot of that.*

The example Pamela used during her interview was cranial nerves. She discussed how the students needed to memorize the cranial nerves, not only because they are an important part of the anatomy, but also because students will probably have a question about cranial nerves on the BOC examination. However, according to Pamela, on the athletic field or court, it is not important if the student can list all the cranial nerves when an athlete has a potential head injury. What is important is if the student knows when to refer an athlete to a physician and what should be considered a medical emergency.

Similarly, Anthony stated:

> *I'm teaching to the application in the clinical world, I think they [the students] see that it's real. It's not that they're reading the concepts that they won't ever apply it again. It's not like trigonometry where they just have no clue how it may or may not apply. So whatever I'm teaching, I'm talking about this happens in the real world. I think they appreciate that. They kind of enjoy going back to their real environment and seeing whether that information actually happens or doesn't happen.*

Steven may have summed it up best when he said, "I give a darn about the kids and that they're going to get the knowledge and information and that it is applicable to them with what they are going to be doing for the rest of their lives."

DISCUSSION

The purpose of our study was to gain a better understanding of how athletic trainers developed as educators and how their development has influenced their teaching. The research questions guiding this study were (1) How do athletic training educators perceive their own professional development as educators? and (2) How do athletic training educators describe their teaching and influence on students in the classroom? After analysis, 2 main themes emerged from the data: role induction through role continuance and teaching for student learning. Our results provide a better understanding of the evolution and role socialization of athletic training educators along with what influences athletic training educators teaching practice.

Role Induction Through Role Continuance

Role induction through role continuance refers to the participants' growth as a teacher over the course of their career so far and consists of the subthemes of (1) changes in teaching over time and (2) clinical experience. All of the participants described how they evolved and changed as a teacher. The results from this study illustrate the growth and evolution of their teaching and the how their current and previous clinical practice affects their teaching.

Changes in Teaching over Time. The participants discussed not only the transition of their teaching styles, but also their classroom management philosophies over the course of their careers in higher education. As mentioned above, Matt discussed his shift in his style from "rule with an iron fist" to being more empathic. Other participants, like Pamela, discussed changes in focus and priorities. Through role engagement, or by "doing," the participants' focus in the classroom changed over time from having total control over the content to allowing more self-discovery by the students. Participants indicated a change in priorities over time from teaching every detail and memorizing facts to a focus on theories and the larger concepts that are important for future athletic trainers to know. They did not seem to become more relaxed with their expectations or standards for student performance, just to have shifted their priorities since the beginning of their teaching career.

Some of this transition in their teaching style and classroom management can be explained by their successful socialization into the role of educator.[21] Role socialization, or the process of incorporating the knowledge, skills, attitude, and affective behavior associated with a particular role,[28] and the transition from clinician to educator take time. A recent commentary[21] in the *Athletic Training Education Journal* discussed the transition clinicians go through to become educators and how this period possibly impacts student learning. Turocy[21] cites research showing it takes approximately 2 to 5 years for a teacher to transition from novice to expert. The participants of this study had been teaching for a minimum of 8 years, and many of them for much longer. They indicated a level of comfort in their roles and, because of their past experiences, a willingness to go beyond traditional "stand and deliver"–type instruction. To achieve this, and to encourage student engagement in the classroom, the participants were willing to try new things in the classroom, such as more student-centered activities and introducing new resources. As addressed by Turocy,[21] expert teachers are more willing to do these things because they are less afraid of making mistakes. Our participants were not afraid to struggle during these attempts to try new methods, and if they failed, they indicated they would just try something else, as participants Jill and Erin mentioned. Part of this could be explained through the participants' role continuance and the learning that occurred over time as they taught. As confidence built and new teaching techniques were tried, even when techniques failed or did not go as planned participants retained enough confidence to keep moving forward and trying new techniques. Over time, they reflected on their teaching techniques and learning from these teaching moments and possible failures in the classroom.[29]

The socialization process of athletic trainers in different roles, including the secondary school and collegiate settings,[30,31] graduate assistants,[20,32] and preceptors,[33] has been investigated. Although there is currently no research related to the socialization of athletic training educators, we can compare the results of this study with the socialization process that preceptors go through. Specifically, the socialization process of preceptors involves both formal and informal processes.[33] The formal processes include preceptor development, professional development sessions, and teacher certifications. Informal processes include observations of other preceptors, interactions with other preceptors and role models, and self-reflection and student evaluations. In comparison, the participants of this study also discussed both formal and informal processes that helped guide their teaching and socialize them into the role of educator. A few participants discussed attending the athletic training educators' conference and other professional development opportunities through the National Athletic Trainers' Association as events that helped shape their teaching practice. Surprisingly, all of the participants had some type of formal course work in teaching methods, curriculum design, or related areas as part of their undergraduate and/or graduate education. Although in this study, we found all participants had experience with different formal socialization processes, during the interviews the participants tended to focus on the informal processes that had influenced their teaching and helped them socialize into the role of educator. These included connecting with professional mentors, modeling expert teaching behaviors, and relying on student feedback, all of which were also recommended by Turocy[21] as ways for novice teachers to transition to expert teachers. The quote from Jill in the "Results" section is just one example of the informal socialization processes the participants discussed. Although the purpose of this study was not to investigate the socialization process of athletic training educators, the results illustrate some of the processes that may occurred as these participants developed as educators.

Clinical Experience. The second subtheme refers to how the participants' current and/or previous clinical experience influenced their teaching practice. Although only 2 of the participants (Lisa and Kristen) had clinical responsibilities as a formal part of their faculty role, all of them discussed the influences clinical practice had on their teaching. Sharing previous experiences with the students was indicated as a way to help prepare students for future practice such as in the quotes in the results by Matt, Anthony, and Emily. Some participants felt this was a way to highlight concepts and engage students in the material presented; others wanted students to learn from their experiences, and mistakes, as athletic trainers. All the participants indicated real-life examples were a way to connect with students in the classroom. Storytelling has been used as a way to emotionally engage students and allow for reflection and visualization in nursing.[34] It has also been recommended that nurse educators reflect on their own clinical experiences and then use real-life experiences in the classroom to help students develop critical-thinking skills.[35]

In 1995, when investigating the desired competencies of doctorally trained allied health care faculty, Elder and Nick[36] stated there was a need for faculty experienced with patient care who could integrate that with teaching and research. That need continues today. Specific to the need for experience with patient care, the topic of clinical competence among nurse educators has been the subject of ongoing discussion.[37–39] Clinical competence is important to allow educators to link theory to practice, and, as discussed by Benner and Shulman,[39] "dual clinical and classroom teaching assignments facilitate integration" of clinical examples into the classroom and vice versa. The authors go on to state, "Despite the hard work of teaching in the classroom and practicing in the clinical setting, the reward is being able to bring currency about practice to their students."[39(p156)] But with the possibly overwhelming requirements of tenure-track faculty positions, many educators

simply do not have time for ongoing clinical practice. This is especially true when clinical practice is combined with all forms of service and potentially weighted less than teaching and/or research components required for promotion and tenure.[40]

Some health care professions, such as nurse practitioners, require all providers, including educators, to maintain clinical practice for licensure.[40] With other professions, such as physical therapy, the requirement for active clinical practice varies by state. For example, Virginia requires 160 hours of active clinical practice during a renewal period, whereas Pennsylvania has no such stipulation for physical therapy license renewal.[41,42] The Commission on Accreditation in Physical Therapy Education Standards defer to individual state practice requirements for minimal, if any, active clinical practice for teaching faculty.[43] Beyond the possible state requirements, physical therapy accreditation standards do include that all core and associated faculty members must have "contemporary expertise" related to their teaching assignment (standards 4A and 4D). Although the standards do outline multiple ways this can be achieved (eg, additional certifications, residency, research and publications, and formal mentoring), just continuously teaching the same course(s) will not suffice for compliance with the standard.[43] Presently, we are unaware of any state that requires active clinical practice for athletic training license renewal or maintenance of the BOC credential. As long as athletic training educators maintain their continuing education units and renew their certification, they maintain their credential and are eligible to teach in professional athletic training programs.

From these results, it is recommended that athletic trainers considering a role in academia gain as much clinical experience as possible in a variety of settings before teaching full time. Whether that is through graduate assistantships or part-time or full-time employment, having diverse experiences and relevant personal examples to give students in the classroom is important. If possible, educators should consider per diem or volunteer athletic training experiences to maintain an aspect of clinical practice throughout their teaching careers. Educators could also begin to direct their professional development/continuing education activities to their areas of clinical expertise. This, in addition to clinical practice, is one way to keep current with their athletic training practice. Just as clinical experience is important for educators, and a way they can stay up to date on the evolving profession, so are the type of continuing education opportunities they elect to participate in. Continuing education is another way educators can stay fresh within the profession. We suggest educators engage in clinically relevant continuing education when possible to stay abreast of changes and learn new skills.

Teaching for Student Learning

The theme of teaching for student learning was divided into 2 interconnected subthemes: (1) encouraging critical thinking and (2) teaching for application. The results of this study were not surprising and support previous findings on the importance of developing critical thinking in higher education, and specifically in athletic training. The importance of promoting critical thinking among students has been well documented in higher education[44,45] and other health care professions[35,46–50]

as well as athletic training[12,51–56] Our findings highlight the value the participants placed on promoting critical thinking and the relationship between critical thinking and teaching for application. As Mitchell et al[49] stated,

> Critical thinking is essential for quality clinical practice. With the current knowledge explosion, staying abreast of changes requires a set of skills unlike those that worked in the past, if patients are to benefit from scientific gains.[p(238)]

During the interviews, all 11 participants addressed the importance of encouraging students to think critically. Many of the participants discussed the specific teaching methods they used to help students grow in this area. Activities such as written simulations, case studies, discovery learning, independent research, and evidence-based decision-making activities have been suggested to promote both critical-thinking and clinical decision-making skills.[12,35,47,49,50,55–58] Class activities should be purposely designed to challenge students to think and then, ideally, to be able to apply information in the clinical setting. It is important for students to see the practical application of the information they learn in the classroom to the real-world setting. Simply put, Geisler and Lazenby[53] stated, "Students must be taught how to use, apply, modify, and analyze said knowledge and skills in ways that are not static, predetermined, and contextually irrelevant."[p(54)]

From our findings and the related research, we would recommend continuing education opportunities for athletic training faculty to improve their skills in the area of developing critical thinking.[53,54] Educators need help teaching students critical thinking skills and developing activities. This is also supported by the research of Kowalczyk et al,[48] who stressed the importance of educators being critical-thinking models for their students and using various teaching methods that promote critical thinking.

> Taking larger concepts learned in the classroom, applying critical-thinking skills, and then using the information in the clinical setting leads to the idea of the participants teaching for application. Participants indicated that what they taught in class was more than just independent facts to be tested on later; they wanted their students to see how that information transferred to the clinical setting. Their teaching was driven by the idea of improving students' clinical decision-making skills, improving patient care, and preparing students to work as athletic trainers.

Weidner[59] discussed on this idea and stated, "I hope our Athletic Training Education Programs don't prepare students simply and narrowly in athletic training skills and knowledge, ignoring their expanded roles as health care providers."[p(6)] He went on to expand upon the idea that educators need to teach not only athletic training skills but also how to think like an athletic trainer. He believed this was done through mentoring and role modeling. This concept, that teaching is more than just the content, aligns with what the participants of our study were stressing throughout their interviews. To the participants, it all came back to the big picture and having students who were good athletic trainers and health care providers.

Limitations and Future Research

Although we did reach data saturation, the results of this study are not generalizable to all athletic training educators.

Participants were from professional undergraduate athletic training programs only and did not include educators teaching in professional master's or post professional athletic training programs. Our participants averaged 18 years as educators, and different findings could occur with novice educators as well as those with more experience. Our study asked educators to reflect back on their teaching, and this depended on their memory of their teaching over the course of their careers. We also did not measure if what the participants were doing in the classroom was effective. We asked participants to reflect on their teaching methods, but did not attempt to measure if these were indeed best practices or the most effective way to deliver the content.

Longitudinal studies investigating the evolution of educators as they teach over many years are needed. This type of research could shed light onto how teaching evolves over the course of a career and the different catalysts for change in teaching over time. This would allow researchers to probe deeper into the socialization process as it takes place. The purpose of this study was not to investigate the impact of different formal and informal socialization processes, but from our results there is clearly a need to investigate the impact of these processes on athletic training educators. We could benefit from additional investigation into the socialization process novice educators go through as they transition into their new roles in academia and how educators evolve over the course of their careers. From this, seasoned educators, program directors, or department chairs could help new faculty members better transition into their roles.

CONCLUSIONS

Two themes, role induction through role continuance and teaching for student learning, developed from the data. From this, we are able to understand that athletic training educators develop their teaching practices through engaging in their role as a teacher. Simply, the process of role induction continued in role continuance and reflected the informal nature of learning how to be an educator. This may speak to the need to have time to be engaged in the role as a means to develop an appreciation for the skills needed for success. Drawing on their past experiences as clinicians, our participants were able to teach by sharing their stories related to clinical practice. Also, just as clinical practice grows over time, our participants shared how they too changed as educators, shifting their focus onto learning and application. They became focused on their students' learning and success, which also shaped how they taught their students. Self-reflection and engagement in the role of the educator were foundations to growth for our sample cohort of athletic training educators.

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