Reflective Observation in the Clinical Education Setting: A Way to Promote Learning

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Context: Clinical experiences help athletic training students gain real-time learning experiences by engaging in patient care. Observational learning has been identified as important to athletic training student development, yet little is known about its effectiveness.

Objective: To explore the athletic training students' perspectives on their experiences in the clinical education setting, particularly examining the effectiveness of observational learning.

Design: Qualitative study.

Setting: Commission on Accreditation of Athletic Training Education (CAATE)-accredited undergraduate programs.

Patients or Other Participants: Twenty-four athletic training students (7 juniors and 17 seniors) from 4 National Athletic Trainers' Association (NATA) districts volunteered to participant in our study. The average age was 21 years (range, 20–23 years).

Main Outcome Measure(s): Participants responded to a series of open-ended questions by journaling their thoughts and opinions through the secure Web site QuestionPro. Questions examined clinical education experiences and learning preferences. The resulting data were analyzed using a general inductive procedure, and credibility was established by employing peer review, member checks, and multiple analyst triangulation.

Results: Our analysis revealed that observational learning can benefit students when academic standing is considered, the circumstances are right, and it allows for directed mentoring. Our participants valued opportunities to engage in observational learning, as long as it was limited and purposeful.

Conclusions: All 24 participants identified themselves as hands-on learners who preferred to be actively engaged during their learning experiences, but who also valued opportunities to observe their preceptors demonstrating and modeling appropriate skills and behaviors before engaging in the same practices themselves. Today's student, the millennial, appears to favor visual learning, which may partially explain why our cohort of athletic training students described observational learning as advantageous in certain situations.

Key Words: Millennial, professional socialization, learning preferences

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INTRODUCTION

Today's student, the millennial, is looking for interactive, collaborative, and authentic learning opportunities.^{1,2} As discovered by Mensch and Ennis,3 the athletic training student wants meaningful educational opportunities, which most often occur through interactions between preceptors, students, and patients during clinical education. Previous literature examining athletic training students' learning reveals a tendency to favor concrete, structured learning with chances to apply learned knowledge in an authentic learning environment.^{3,4} There is also evidence to suggest that the millennial student is a visual learner,¹ and that observational learning can aid their development by allowing them to visualize what is expected as a future health care provider before performing the task.³ Observational learning was first described by Bandura⁵ and was viewed as a basic means by which the learner gains an understanding of necessary and important response through watching others' behaviors and responses.⁶ Role modeling is a benchmark of the process, which often includes an authority figure or someone with more experience to help demonstrate appropriate behaviors.⁵ Mentoring and role modeling have also been cited as paramount to students' professional socialization into their future roles,⁷ further illustrating why observational learning benefits athletic training students. In athletic training clinical education, preceptors and peers are the best models, since they can stimulate guided participation or directed mentoring⁸ by allowing novice students to gain firsthand knowledge or expected behaviors and skills. Moreover, observational learning can be an effective means to help the athletic training student learn, but as suggested by Bowman and Dodge,⁹ it should be used in moderation because monotonous, disengaged clinical education can lead to frustration.

The purpose of this study was to explore athletic training student's perspectives on their experiences in the clinical education setting; particularly examining their thoughts on the effectiveness of observational learning during their clinical education experiences. Since athletic training students favor engaging clinical education experiences based on practical, hands-on learning,^{3,10} it is important to understand whether a more observational learning experience or environment can influence their professional development. Kolb¹¹ suggests that learners transfer knowledge through either reflection on their observational experiences or by actively applying their knowledge. For athletic training students, active experimentation appears to be the preferred learning tool in the clinical education setting, especially when compared with the class-room setting.^{3,4,10} Regardless, instructors in both settings must serve as learning facilitators, beginning by understanding their students' learning needs and preferences.

METHODS

Our study utilized online interviewing to gain information regarding athletic training students' learning preferences, specifically with regard to clinical education. The advantages of this increasingly popular technique¹² are well understood and benefit millennial student recruitment because of their passion for technology and the ease with which they communicate online via social media.^{1,2}

Participants and Participant Recruitment

We utilized a purposeful, criterion recruitment technique, in which participants meeting our criteria were solicited. We were looking for (1) athletic training students who were formally enrolled in a Commission on Accreditation of Athletic Training Education (CAATE)-accredited undergraduate athletic training program (ATP); (2) athletic training students who had completed a minimum of 2 clinical education experiences; and (3) athletic training students who had both off-campus (not at the university/college formally enrolled) and on-campus clinical education experiences. Currently, there is no accessible database available to reach students in ATPs; therefore, faculty at CAATE-accredited ATPs helped facilitate recruitment. We chose ATPs where we had a professional relationship with either the program director or a faculty member. We sent an invitation e-mail to our faculty contacts and professional colleagues at 7 CAATE ATPs and asked them to forward our study information to all athletic training students meeting the aforementioned criteria. The 7 schools were undergraduate programs, representing a mix of Carnegie classifications including research (n = 3), baccalaureate (n = 2), and master's (n = 2). Our initial pool of applicants included 18 athletic training students, and after the initial data analysis, we concluded that saturation had been reached with that pool.¹³ However, an additional 3 athletic training students completed the study prior to the closure of the active Web site, and 3 others participated in a pilot study, bringing the total number of participants to 24 in the final analysis.

Twenty-four athletic training students (7 juniors and 17 seniors; 15 women and 9 men) whose average age was 21 years (range, 20–23 years) volunteered to participant in our study. Our participants represented 4 National Athletic Trainers' Association (NATA) districts (1, 2, 4, and 9), were enrolled in 5 different accredited CAATE ATPs (research [n = 2], baccalaureate [n = 1], and master's [n = 2]) sponsoring Division I or III athletics, and were engaged in clinical education experiences for an average of 23 hours per week (16–35 hours). Our participants had completed an average of 2 ± 2 clinical education experiences with Division I or III collegiate athletics, at high schools, and at rehabilitation/ outpatient rehabilitation service settings.

Data Collection Procedures

After obtaining Institutional Review Board approval, participant recruitment began during the fall semester of 2012. Two of the researchers developed the open-ended questions using previous literature on student learning, clinical education, and the Kolb's Learning Inventory.^{3,11,14} Prior to data collection, we had the instrument reviewed by a peer for clarity, content, and flow. The peer is an athletic training educator with expertise in the area of clinical education and professional socialization, and has educational training regarding qualitative methodology. Upon completion of the peer review, only minor grammatic edits were made. Additionally, the study was pilot tested by 3 athletic training students meeting the aforementioned criteria. No changes were made to the data collection process or interview guide (Table), so the pilot data were included in the analysis. Data were collected using QuestionPro (Seattle, WA), where participants responded to questions that pertained to their clinical education experiences and learning preferences.

Data Analysis

Two researchers evaluated the data by a general inductive approach.^{15,16} They completed this analysis independently, but simultaneously, and discussed the steps to be included before engaging in the process. The first step in the process included a holistic examination of all transcripts, meticulously looking for similarities in the participants' responses. On the second data review, the similarities were assigned conceptual labels/tags, which helped structure the key points and trends. On the third data evaluation, the data labels/tags were organized into dominant themes. The data analysis process began during data collection, allowing for reevaluation when necessary. During this process, the lead author shared the findings with the second investigator, which included the transcripts, coding schematic, and quotes supporting the emergent themes. The second investigator, who had also completed the same steps as detailed above and created similar schematics and coding sheets, reviewed the findings and provided feedback based upon their independent review of the data. Via telephone, the researchers negotiated the presentation of the themes, including supporting textual data and labels used to classify the themes. Upon data collection completion, the 2 investigators discussed their individual findings and came to final agreement upon their results.

Credibility

Data credibility was established by employing a peer review and multiple analyst triangulation.¹³ We had an athletic trainer, knowledgeable in the qualitative research paradigm as well as in clinical education in health care and athletic training, complete the peer review. The review included the data collection procedures, the interview guide as already described, and the final results. We employed multiple analyst triangulation—a procedure that can help establish credibility in the data as it allows for the convergence of multiple viewpoints, thereby increasing the likelihood of reducing bias in the analysis of the data and presentation of the results.¹⁴ Our triangulation procedure was completed by the 2 lead authors as described in the "Data Analysis" section. The lead authors have previously collaborated and completed multiple analyst triangulation before using a similar method of analysis and triangulation as described by Pitney and Parker.¹³

RESULTS

Our general inductive analysis of the textual data revealed that our group of athletic training students perceived reflective

Table. Interview Guide

- 1. How would you describe your personal learning style as a student?
- 2. Drawing on your previous clinical experiences, please describe an ideal learning situation or environment that you have been a part of.
 - a. Why is this your ideal learning situation or environment?
 - b. Which style do you feel this is most similar to— "reflective observer" or "active and engaged"? Please explain.
- 3. In your own words, how would you define "reflective observation" learning?
- 4. In your own words, how would you define "active and engaged" learning?
- 5. Have you had clinical experiences in which you felt "hands-on" or very engaged in patient care/ responsibilities of athletic training? Please describe your experience in the clinical placement(s) in detail.
 - a. Probe: Did you feel as though this was a good learning environment?
 - b. Probe: Did it help or hinder your professional development?
- 6. Have you had an experience in which you felt more like an "observer," where you were hands off? Please describe your experience in the clinical placement(s) in detail.
 - a. Probe: Did you feel as though this was a good learning environment?
 - b. Probe: Did it help or hinder your professional development?
- 7. Which style do you feel is most helpful for your learning style? Why?
- 8. Do you feel that the clinical experiences you have had so far have matched your learning style as a student? Why or why not?
 - a. Probe: Please describe in detail your previous clinical education experiences thus far in your academic preparation and how well they have matched your learning style as a student.
- 9. Have you been satisfied with your experiences at your clinical placement sites relative to their effectiveness in maximizing your learning and professional development? Please explain your response in detail.
- 10. What would you change about your clinical education experiences that would have made them a better learning experience and furthered your professional development?

observation to be an effective means of learning in the clinical education setting. Specifically, our analysis identified that reflective observation can benefit students when the following are considered: (1) circumstances are right; (2) academic standing is considered; and (3) directed mentoring is allowed (Figure). Our analysis found that athletic training students value the chance to engage in observational learning when the right opportunity presents itself (circumstances are right), such as during a general medical examination or with a unique case as a means to advance clinical practice. The data also revealed that students believe observational learning is beneficial when they are in the earlier stages (academic standing) of their educational training. Finally, the athletic Figure. Factors for an effective observational learning Circum experience.



training students valued observational learning when it was followed by or included mentoring and discussion between the preceptor and themselves.

DISCUSSION

All 24 participants identified themselves as hands-on learners who preferred active engagement during their learning experiences, but who also welcomed opportunities to observe their preceptors demonstrate and model appropriate skills and behaviors before engaging in the same practices themselves. Today's student, the millennial, appears to favor visual learning, which may partially explain why our cohort of athletic training students described observational learning as advantageous in certain situations.¹⁷

Many of our participants discussed "reflective observation" as the opportunity to "observe the situation and reflect on it," learning by "watching and observing," or "participating in learning as an onlooker, instead of jumping in and doing things." Despite preferring hands-on learning, our sample group did appreciate reflective observation as a means to learn. One senior reflected on one experience that was more observational by saying, "Yes, I feel like the situation did not allow me to learn directly from hands-on, I was still able to ask necessary questions to get the information I needed to understand what was happening." Another student discussed the value of the observational learning environment when they said, "I enjoyed seeing the way the [team] physician conducted his evaluations. I liked seeing things that they miss or things that I would have done. It was still a learning experience." These thoughts support role modeling by the preceptor or health care provider engaging in patient care as a means to learn what is appropriate and expected. Role modeling is a popular socializing tool,⁷ and commonplace in medical and health care education. Not all clinical education experiences are viewed as engaging; in fact, Bowman and Dodge⁹ found that a great source of frustration for recent athletic training graduates included monotonous clinical education experiences where the athletic training student was disengaged. Reflective observation can lead to disengagement, but as indicated by our participants, it can also aid learning when it is anchored by circumstance and timing and coupled with supervised active experimentation.

Circumstances

Mentoring and modeling are important clinical supervisor characteristics¹⁸ and may provide insights into why our cohort of athletic training students valued learning opportunities that afforded demonstration and observation. Moreover, Harrelson and Leaver-Dunn¹⁹ found that students value structured, supervised learning. Mensch and Ennis³ revealed that athletic training students want the chance to observe preceptors engaged in clinical practice to reinforce information learned in the classroom. Although hands-on learning is preferred, there are certain circumstances that warrant a more observational role. Take, for example, this scenario discussed by a junior athletic training student:

During preseason field hockey, I brought an athlete [with MRSA] to see the team doctor for a follow-up visit. On this visit, one of her infected areas was lanced and drained. This experience was certainly not hands-on due to its nature, but it still allowed me to learn a lot.

Our sample group of athletic training students believed that observational learning could be valuable, but only when the circumstances were right and singular, such as when observing a team physician conducting an evaluation. A senior shared,

Sometimes this happens [observational learning] when there is a team physician on site. At my current site—ice hockey the team physician does many of the evaluations and I just watch. Sometimes I get involved with sutures or something along those lines but primarily the evaluations are just observation time. I enjoy seeing the way the physicians go about evaluations. I like seeing things that they miss or things that I would do differently. It is still a learning experience.

Another example of the circumstances being right, was considered an emergency situation or on-the-field injury evaluation. Although there may not be an opportunity to actively participate in patient care, witnessing appropriate behaviors and actions can be just as impactful. This is highlighted by a junior's reflections:

In certain situations [observational learning is important], such as emergency care situations and when a substantial injury would occur we would learn things [by watching], but in most aspects I think [just watching] it was not conducive to our development as [athletic training students].

His comments illustrate that, in certain circumstances, observational learning is necessary, but continual observational learning is not helpful for student learning. Previous studies examining athletic training students' professional development in their ability to manage a case of exertional heat stroke and other potential causes of sudden death have found that observational learning can facilitate learning, particularly because the opportunity for real-time learning is rare.^{20,21}

Academic Standing

The timing of the reflective observation learning experience was discussed by many of our athletic training students. Many of these comments focused on the students' academic standings and referenced the timing of the observational learning experience as being critical to its effectiveness to facilitate learning. For example, a senior athletic training student reflecting on his first clinical rotation with a college football team said, I felt like it [observational learning] did help me in my professional development. I felt like having football, as my first clinical rotation was a good stepping-stone. I felt that having football was a really great experience because I was exposed to a lot of different injuries and athletes. It was a good learning environment. My preceptor knew what my level was with athletic training, and he knew I wasn't accustomed to everything yet.

Another senior—reflecting on a more observational learning experience earlier in her college career—said,

In a way this was a good learning environment at the time because I had not taken many classes at the time and wasn't aware of some things. It allowed me to watch and learn from the athletic trainers at the site. It also allowed me to ask questions and gain further knowledge.

Those athletic training students who valued the chance to observe and reflect on their experiences referenced singular and specific learning opportunities. When the learning experiences occurred over a longer period of time, however, the athletic training students felt that it was not beneficial to learning. For example, one senior said,

This [clinical experience] was not a good learning environment because I was not able to actually practice any skills. I only saw evaluations/testing techniques being practiced and that sometimes led to me losing focus and not being as engaged.

Several athletic training students mentioned the negative impact observational learning had on their professional development, implying that it limited the opportunities for real-time learning, critical thinking, and skill application. One junior said,

Being more of an observer during my learning process tends to hinder my professional development because I am not learning essential skills that can be only perfected through practice, such as palpating, special tests, and observing gait. The more you practice these skills and other skills, the more you can pick up on minor details and improve.

Another athletic training student best articulated the need for hands-on learning by comparing it with learning how to ride a bike. He said,

Athletic training is a very hands-on clinical medicine. Techniques take time to learn how to perform correctly, just like a riding bike. No one learns how to ride the bike by watching others ride bikes. At some point, you have to get on and try to ride it by yourself. The sample applies to athletic training. You have to try a Lachman's yourself; watching others will not allow you to actually learn how to do a Lachman's test.

Despite identifying reflecting observation as necessary and situational, our subject cohort valued time in active patient care and clinically integrated experiences. Beyond the critical need to learn, being engaged in learning experiences will help facilitate competence, reduce frustrations with learning, and support athletic training student retention.^{9,22,23} Reflective observation, however, can be a fruitful learning environment, when considering academic standing. For example, less-experienced athletic training students can benefit from observing their preceptors engaging in clinical practice because they do not yet possess the knowledge or skills that an upper-level athletic training student has mastered.

Directed Mentoring

Direct mentoring or modeling, as described by Sexton and colleagues,²⁴ is a blend of direct supervision and independent clinical practice. In essence, the direct modeling provides the novice, in this case the athletic training student, with the chance to be engaged while being guided to the expected or correct outcome.⁸ Our results describe directed mentoring as learning through engagement with a preceptor during patient care, which can include observation or discourse followed by the chance to implement or practice those same skills and care. Our findings, similar to literature on mentoring and preceptor-student interactions,^{25–27} showcase the need for students to have time to internalize a concept or skill before applying it. Take, for example, a senior athletic training students' description of his learning style as "more hands-on. I do like having new information explained to me first, but I retain that information better if I have the chance to practice it, at [my] clinical."

Guided autonomy, for this cohort, was an engaging experience characterized by directed instruction and founded on the premise that learning can happen through activities that include instruction through observation facilitated by either a preceptor or ATP faculty member and followed by active experimentation by the athletic training student.² Guided autonomy was further described as opportunities to engage in observational learning, another learning preference identified by Mensch and Ennis,³ which is distinctly different from a converger learning style in which the student prefers to interact with things rather than people. One senior athletic training student shared, "I like to see something done and then get the opportunity to do it myself." Another senior athletic training student provided an example of learning:

I like to watch and observe, and then ask questions. Then, I like to practice skills myself. For example, I learned how to use the Graston technique by first observing my preceptor use the technique. Then, I asked her questions regarding different strokes I saw her using, as well as the different tools, and how much pressure to use. She then let me try the technique on her.

Many of our participants described preferring a structured learning environment that includes modeling followed by learner implementation, which is comparable to concrete sequential learning as described by the Gregorc Mind Styles²⁸ and has previously been found to be preferred by other athletic training students.²⁹

Understanding learning needs is important, as it allows both the instructor and the learner to appreciate how they process, retain, and apply knowledge—thus, by understanding the methods best used to stimulate learning, the easier it becomes to gain new knowledge. While athletic training students demonstrate diverse learning styles and value opportunities to engage in patient care and experience other responsibilities associated with the athletic trainer role,⁷ our findings demonstrate that they also find value in observational learning. At the center of observational learning is the importance of mentoring, which allows the learner to witness appropriate and acceptable actions or behaviors.⁶

Limitations and Future Research

Our study only represents the experiences and learning preferences of a small group of athletic training students.

Although our findings correspond with the existing literature on learning in athletic training, and we employed several reliable credibility strategies, generalizations are limited. Future research should include a larger sample of athletic training students and attempt to make comparisons between clinical education sites. We presented findings that represent the perceptions of only the athletic training students, and therefore cannot corroborate whether preceptors or ATP faculty agree that observation is effective as a learning tool. Future studies can utilize data source triangulation between students and educators as a means to gain a holistic impression of reflective observation effectiveness in clinical education experiences.

CONCLUSIONS

Clinical education is an essential aspect of the athletic training students' professional development, as it allows them to engage in real-time learning, gain confidence in their clinical abilities, and develop critical thinking skills. Athletic training students favor engaging learning experiences, which are anchored by practical application of their knowledge and skills,¹⁰ yet they recognize the need for opportunities to be visual learners and observe their preceptors engaged in clinical care. Clinical experiences that offer too much observation can lead to disengagement and frustration, which may reduce effective clinical integration, the key to persistence, development of professional commitment, and professional identity.^{9,22,30,31} Athletic training educators and preceptors are encouraged to capitalize on observational learning opportunities, but in a limited capacity, such as with emergency care situations when the athletic training student is in the infancy of their academic preparation. We believe reflective observation can improve athletic training students' knowledge and clinical skill development, particularly when followed closely by active experimentation through direct patient care or simulations. Observational learning can also help provide context to learning and is successful when role modeling occurs with positive and reinforcing feedback.

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