

# Clinical Integration and How It Affects Student Retention in Undergraduate Athletic Training Programs

Allison Young, MS\*; Joanne Klossner, PhD, LAT, ATC\*; Carrie L. Docherty, PhD, ATC, FNATA\*; Thomas M. Dodge, PhD, ATC, CSCS†; James M. Mensch, PhD, ATC‡

\*Indiana University, Bloomington; †Springfield College, MA; ‡University of South Carolina, Columbia

**Context:** A better understanding of why students leave an undergraduate athletic training education program (ATEP), as well as why they persist, is critical in determining the future membership of our profession.

**Objective:** To better understand how clinical experiences affect student retention in undergraduate ATEPs.

**Design:** Survey-based research using a quantitative and qualitative mixed-methods approach.

**Setting:** Three-year undergraduate ATEPs across District 4 of the National Athletic Trainers' Association.

**Patients or Other Participants:** Seventy-one persistent students and 23 students who left the ATEP prematurely.

**Data Collection and Analysis:** Data were collected using a modified version of the Athletic Training Education Program Student Retention Questionnaire. Multivariate analysis of variance was performed on the quantitative data, followed by a univariate analysis of variance on any significant findings. The qualitative data were analyzed through inductive content analysis.

**Results:** A difference was identified between the persisters and dropout groups (Pillai trace = 0.42,  $F_{1,92} = 12.95$ ,  $P = .01$ ). The follow-up analysis of variance revealed that the persisters and dropout groups differed on the anticipatory factors ( $F_{1,92} = 4.29$ ,  $P = .04$ ), clinical integration ( $F_{1,92} = 6.99$ ,  $P = .01$ ), and motivation ( $F_{1,92} = 43.12$ ,  $P = .01$ ) scales. Several themes emerged in the qualitative data, including networks of support, authentic experiential learning, role identity, time commitment, and major or career change.

**Conclusions:** A perceived difference exists in how athletic training students are integrated into their clinical experiences between those students who leave an ATEP and those who stay. Educators may improve retention by emphasizing authentic experiential learning opportunities rather than hours worked, by allowing students to take on more responsibility, and by facilitating networks of support within clinical education experiences.

**Key Words:** persistence, attrition, professional socialization

## Key Points

- Clinical integration influences retention and attrition of students in athletic training education programs (ATEPs). In particular, support from clinical instructors and peers has an important influence on student retention.
- Authentic clinical learning experiences are meaningful to students and lead to increased feelings of engagement and ultimately professional self-efficacy.
- Time commitment was a barrier to retention for students who persisted in the ATEP and played a major role in attrition for those who dropped out of the program. Engagement in real-world, authentic learning opportunities allows students to identify with their developing professional role, thus facilitating retention in ATEPs and ultimately professional socialization.

Retention in undergraduate college students has been a research topic of interest for decades. *Retention* describes a student's persistence in college or a preprofessional program until a degree is received; *attrition* occurs when a student decides to drop out of college or a preprofessional program. Historically, general attrition rates have ranged from 35% to 40%.<sup>1,2</sup> However, current data are lacking regarding retention rates in athletic training and related fields. The goal of most retention research has been to identify those students who drop out and examine the factors that influence their decision to do so. College environment,<sup>3–5</sup> social factors,<sup>6</sup> personality,<sup>3</sup> academic ability,<sup>6</sup> and self-efficacy<sup>7–12</sup> are factors that influence retention and attrition.

In general, most undergraduate students who drop out leave within the first year of college, with an increase in dropouts at the end of the first spring semester.<sup>1</sup> Research suggests that there is not one but multiple factors that influence a student to persist with college.<sup>3–6,13</sup> More specifically, academic ability, as measured by high school grade point average (GPA) and SAT scores, affects retention.<sup>6,14</sup> Higher GPA and SAT scores are associated with a decreased risk of dropping out of college.<sup>6</sup> In addition, more self-efficacious students tend to perform better academically and are more likely to persist in college.<sup>8,11</sup> Students are also more likely to do better academically and stay enrolled when the collegiate environment offers a high degree of interaction between

faculty and student,<sup>2,4</sup> a flexible curriculum,<sup>4</sup> and more cultural facilities.<sup>4</sup>

Tinto's<sup>13</sup> student integration model suggests that an individual must be committed to his or her institution and have a goal of receiving a college degree.<sup>13</sup> These commitments and goals come from experiences before college, support from family, and personal characteristics. Institutional commitment can further be influenced by the individual's social and academic integration at the institution.<sup>13</sup> Retention and attrition are significantly affected by a combination of the individual's goal of college completion and commitment to the institution.<sup>13</sup>

Following Tinto's<sup>13</sup> model, an extensive amount of research has been done on retention of students in higher education. This work has slowly expanded into pre-professional fields such as nursing<sup>15-17</sup> and athletic training.<sup>18</sup> One author<sup>17</sup> identified 4 major areas that influenced students to withdraw from a nursing program: disenchantment about the program and profession, perceived lack of support from faculty, disillusionment about campus environment, and personal stressors. Such factors are similar to those factors identified in previous general retention research regarding undergraduate students.<sup>2,4,19</sup> Problems with clinical placement,<sup>15</sup> clinical integration,<sup>18</sup> course content, and motivation<sup>18</sup> and misinformation regarding program and profession<sup>15,18</sup> have also been identified as factors leading students to leave a pre-professional program.

Although the nursing field and other pre-professional programs have begun to investigate retention in their education programs,<sup>15,17</sup> only 1 group<sup>18</sup> has addressed retention in undergraduate athletic training education programs (ATEPs). Dodge et al<sup>18</sup> modified Tinto's student integration model by adding a clinical integration component in order to assess retention in ATEPs. A difference was identified between senior students and major changers, with student motivation, clinical and academic integration, and a peer-support system noted as key factors in persistence.<sup>18</sup>

Dodge et al<sup>18</sup> identified clinical integration and motivation as main factors that influence retention within District 3, but it is necessary to further investigate issues of retention and attrition within entry-level ATEPs to identify factors that influence students to remain in a program or drop out. By identifying specific factors, such as clinical integration, that influence retention in athletic training, program directors may consider how such factors facilitate or constrain student integration within their own programs and thereby make necessary changes. Such changes may improve the educational experiences for athletic training students, integrate the students more readily into the local ATEP, and decrease the attrition rate at their respective institutions.

As previously identified, motivation and clinical integration play a significant role in persistence.<sup>18</sup> Although persistent athletic training students often enjoyed their clinical experiences and described them as being positive, students who dropped out did not like their clinical experiences and reported the clinical experiences as being a factor in their decision to leave the ATEP.<sup>18</sup> Therefore, the purpose of our study was to better understand how clinical experiences affect student retention in undergraduate ATEPs within District 4 of the National Athletic

Trainers' Association (NATA). Specifically, the following research questions guided the study:

1. In what ways do the clinical instructors in the clinical education experience affect student retention in undergraduate ATEPs?
2. In what ways does the sport assignment of the clinical education experience affect student retention in undergraduate ATEPs?
3. In what ways does the setting of the clinical education experience affect student retention in undergraduate ATEPs?
4. In what ways do peers in the clinical education experience affect student retention in undergraduate ATEPs?
5. How do the other constructs of the survey—anticipatory experiences, academic integration, social integration, and motivation—affect student retention in ATEPs in District 4 of the NATA?

## METHODS

### Participants

The participants in this study were senior undergraduate students (persisters) in 3-year undergraduate ATEPs within District 4 of the NATA, as well as students who had left the ATEP (dropouts), regardless of their year in the program. To be included in the study, participants had to have completed at least 1 hour of clinical education. All participants were informed that completion of the questionnaire was voluntary and confidential and that completing the questionnaire served as informed consent to be part of the study. We sent participants an e-mail explaining the study, including a Web site link to the questionnaire to be completed. Approval of the university's institutional review board was obtained before the questionnaire was sent.

### Sampling

Eighty undergraduate ATEPs were identified within District 4 of the NATA. We contacted 35 education programs, of which 24 participated in this study. The survey was sent to 170 persisters and 90 dropouts. Seventy-one persisters (27 men, 44 women; age = 21.81 ± 1.17 years) and 23 dropouts (10 men, 13 women; age = 20.25 ± 0.90 years) participated in this study, for a total of 94 participants (see Table 1). We achieved a 42% response rate from persisters and a 26% response rate from dropouts. We sent 3 reminder e-mails to improve the response rates. The dropout response rate was probably low because the group did not have any incentive to complete the survey. Previous researchers<sup>18</sup> had a 90% response rate with the persister group and a 57% response rate with the major changers; however, data collection was performed in person, thereby increasing the response rate. In another survey,<sup>20</sup> data were collected by mailing paper copies of the survey to participants, yielding a 42% response rate.

### Instrumentation

We used a modified Athletic Training Education Program Student Retention Questionnaire (ATEPSRQ)<sup>18</sup> to assess student retention in ATEPs. The ATEPSRQ measures the

**Table 1. Demographics of Participants, No.**

	Persisters	Dropouts	Total	% of Total
<b>Sex</b>				
Male	27	10	37	39.4
Female	44	13	57	60.6
Total	71	23	94	100.0
<b>Race</b>				
African American	1	1	2	2.1
Hispanic	0	0	0	0.0
Asian/Pacific Islander	2	0	2	2.1
Native American	1	1	2	2.1
White/non-Hispanic	66	21	87	92.6
Other	1	0	1	1.1
Total	71	23	94	100.0
<b>Hours completed</b>				
<500	0	20	20	21.3
500–999	18	2	20	21.3
1000–1499	23	1	24	25.5
1500–1999	20	0	20	21.3
2000–2500	8	0	8	8.5
> 2500	2	0	2	2.1
Total	71	23	94	100.0

constructs of student integration academically, clinically, and socially and quantifies student anticipatory experiences and motivation. The questionnaire includes demographic information as well as 5 subsections that measure the constructs previously stated. The ATEPSRQ uses a 6-point Likert scale for responses: *strongly disagree*, *disagree*, *slightly disagree*, *slightly agree*, *agree*, or *strongly agree*. The ATEPSRQ also includes a number of open-response questions in each subsection, allowing participants to expand on responses to the Likert-scale items and provide any additional information on their experiences as athletic training students. We modified this instrument to include additional open-response questions regarding clinical integration to further target our specific research questions. Question 3 asks how the setting affects clinical integration. Although setting could be related to sport assignment, which is addressed in research question 2, we viewed *setting* as collegiate athletics, high school athletics, clinical or hospital setting, etc. Questions added to the clinical integration section of the survey are shown in Table 2. Previous literature<sup>18</sup> established reliability of the instrument, with Cronbach  $\alpha$  ranging from .73 to .92 for each construct. Even though the instrument has been used in previous literature,<sup>18</sup> it has never undergone rigorous validity testing. Development of the instrument included a thorough review of the pertinent literature related to student retention. Additionally, experts in the area of higher-education research and athletic training education reviewed the instrument.

The ATEPSRQ has 2 versions. The first is directed toward the persister group, with wording in the present tense and focusing on why students remained in the program. The second version is directed toward those students who prematurely left the program. The wording in this version is retroactive, focusing on reasons why the students left the program.

### Data Collection

We used purposeful criterion-sampling methods to investigate District 4 of the NATA based on the location

**Table 2. Open-Ended Survey Questions Added to the Athletic Training Education Program Student Retention Questionnaire**

In what way were your clinical experiences a factor in your staying in the athletic training major? Please elaborate on your response.  
 How did the ACI/CI at your clinical assignments affect your decision to stay in the athletic training program?  
 In what way did the sport of your clinical assignments influence your decision to stay in the athletic training program?  
 In what way did the setting of your clinical assignments influence your decision to stay in the athletic training program?  
 How did the peers in your clinical assignments affect your decision to stay in the athletic training program?

Abbreviations: ACI, Approved Clinical Instructor; CI, Clinical Instructor.

of the university within the district. The program directors of undergraduate ATEPs in District 4 were identified through the Commission on Accreditation of Athletic Training Education (CAATE) Web site. We gained access to participants by contacting program directors through e-mail, as well as by phone when e-mail attempts were unsuccessful. Program directors who agreed sent us a list of senior ATEP students and their e-mail addresses, as well as a list of names and e-mails of students who had voluntarily dropped out of their program but were still active undergraduate students on campus. We asked students to participate through e-mail recruitment.

In the early fall of the school year, we e-mailed participants instructions and a Web site link directing them to their respective version of the ATEPSRQ. Although the ATEPSRQ was originally a paper-format survey, we used Qualtrics Survey Software (Qualtrics, Provo, UT) to upload the instruments onto a Web site. This allowed us to send an e-mail to all participants with a link to their respective survey, and the participants could easily complete the survey on their personal computers. Each participant had an identifier code, so that there was no loss of confidentiality, yet we could track who had taken the survey. In an effort to increase the response rate, we sent a reminder e-mail to the students who had not completed the questionnaire after 1 month. If necessary, we contacted students a third time via e-mail approximately 3 weeks after the reminder e-mail.

### Data Analysis

Survey data were exported into SPSS (version 19.0; IBM Corporation, Armonk, NY) for statistical analysis. A multivariate analysis of variance (MANOVA) was performed, followed by a univariate analysis of variance (ANOVA) on any significant findings. Dependent variables included the 5 constructs of the ATEPSRQ (academic integration, clinical integration, social integration, motivation, and anticipatory factors), and the independent variable was group at 2 levels (persisters and dropouts). A priori  $\alpha$  level was set at less than .05.

To further evaluate the clinical integration component, we conducted multiple univariate ANOVAs, 1 for each of the 12 individual statements of the clinical integration construct. Because of the high number of analyses, we performed a Bonferroni correction; the new  $\alpha$  level was  $P < .004$  (.05/12).

In addition to quantitative analysis, we used a basic qualitative approach to analyze open-ended survey ques-

tions. Specifically, data were analyzed through inductive content analysis.<sup>21,22</sup> Answers to open-ended questions were transcribed and coded according to participant responses. Responses were grouped by construct (academic, clinical, or social integration; motivation; and anticipatory factors) and put into a Word (version 2010; Microsoft Corporation, Redmond, WA) document. The page size was set as 4 × 6 in (10.16 × 15.24 cm), so each response had its own page. Each response was then printed out onto a colored note card by construct, with each construct having its own color. After transcription, we reviewed responses and assigned meaning units<sup>21,22</sup> during the first phase of analysis. *Meaning units* consisted of 1 word or a phrase that captured our perceived interpretation of open-ended responses. We then analyzed meaning units by construct category and looked for like content in order to group meaning units into lower-order themes.<sup>21</sup> During the final phase of analysis, we reviewed lower-order themes collectively as well as by construct and grouped related lower-order themes into higher-order themes or categories.<sup>21</sup>

To facilitate trustworthiness of qualitative analysis procedures, we used peer debriefing.<sup>22,23</sup> After each phase of data analysis, an experienced qualitative researcher reviewed our data-analysis procedures, including a review of the raw data and thematic findings.

## RESULTS

### Quantitative Results

Means and standard deviations for all constructs are shown in Table 3. A difference was identified between the persister and dropout groups (Pillai trace = 0.42,  $F_{1,92} = 12.95$ ,  $P = .01$ ). The follow-up ANOVA revealed that the persister and dropout groups differed on 3 of the 5 scales. The first was the anticipatory factors scale ( $F_{1,92} = 4.29$ ,  $P = .04$ ), which indicated the dropout group ( $13.35 \pm 0.72$ ) had more precollege experiences related to athletic training than did the persister group ( $11.63 \pm 0.41$ ). Persisters and dropouts also differed on the clinical integration scale ( $F_{1,92} = 6.99$ ,  $P = .01$ ). The persister group ( $45.76 \pm 1.45$ ) was more clinically integrated in the athletic training major than was the dropout group ( $38.01 \pm 2.55$ ). In addition, the motivation scale also showed differences ( $F_{1,92} = 43.12$ ,  $P = .01$ ). The persister group ( $28.90 \pm 0.53$ ) was more motivated to finish the athletic training major than was the dropout group ( $21.91 \pm 0.93$ ). The persisters and dropouts were not different on the academic integration and social integration scales.

The univariate ANOVA conducted on the clinical integration construct identified a difference between the groups in 6 of the 12 statements. See Table 4 for means, standard deviations, and 95% confidence intervals.

### Qualitative Results

After careful analysis, we identified several higher-order themes from the qualitative data. These themes illustrated how clinical experiences affected student retention in the undergraduate ATEPs we studied. Besides addressing our primary purpose, qualitative data specifically depicted the ways in which clinical instructors and peers affected student retention in undergraduate ATEPs. Qualitative data did not indicate that sport assignment, clinical setting,

**Table 3. The 5 Constructs of the Athletic Training Education Program Student Retention Questionnaire**

Dependent Variable Group	Mean ± SD
Academic integration (maximum = 24, minimum = 4)	
Persisters	20.35 ± 0.45
Dropouts	18.83 ± 0.79
Clinical integration (maximum = 72, minimum = 12)	
Persisters	45.76 ± 1.45
Dropouts	38.01 ± 2.55
Social integration (maximum = 24, minimum = 4)	
Persisters	18.51 ± 0.36
Dropouts	18.17 ± 0.66
Motivation (maximum = 36, minimum = 6)	
Persisters	28.90 ± 0.53
Dropouts	21.91 ± 0.93
Anticipatory factors (maximum = 18, minimum = 3)	
Persisters	11.63 ± 0.41
Dropouts	13.35 ± 0.72

or other questionnaire constructs were primary factors influencing student retention. The higher-order themes that emerged for the persister and dropout groups are shown in Tables 5 and 6, respectively. The following sections outline higher-order themes that emerged relative to ways in which clinical experiences as well as clinical instructors and peers influenced student retention in NATA District 4 ATEPs.

### Authentic Experiential Learning

Persisting athletic training students identified authentic learning experiences, in which students were engaged in real-world athletic training learning experiences, as important to their retention in the major. In addition, such experiences led to increased confidence in their skills, or, in other words, heightened feelings of professional self-efficacy. A lack of such meaningful experiences was a barrier to persistence for the dropout group.

**Engagement in Learning.** For persisters, clinical experiences in which students were allowed to apply what they learned in class to the clinical setting through hands-on experiences solidified their decision to persist. These experiences were meaningful to the students and increased their confidence in their skills. One persister (1014) stated:

The clinical experiences is [sic] what really shape[s] athletic training. If it were not for the clinical sites, there is no way I feel I would know half as much as I do know. Learning in the classroom is one thing, but to apply your knowledge is completely different.

Several participants in the persister group found their clinical assignments to be more beneficial than their classes in that they felt they learned more in the clinical setting. In these settings, they were learning from a variety of clinical instructors who each had something different to share. This gave students a broader perspective of the athletic training profession. One participant from the persister group (21) said:

**Table 4. Responses to the Clinical Integration Questions of the Athletic Training Education Program Student Retention Questionnaire<sup>a</sup>**

	Persistor Group (Mean ± SD)	Dropout Group (Mean ± SD)	95% Confidence Interval for Difference	P Value	Effect Size	Power
1. I got along well with my supervisors in this clinical site.	5.13 ± 0.17	4.33 ± 0.29	0.13, 1.47	.019	0.06	0.65
2. I got along well with other athletic training students in this clinical site.	5.00 ± 0.20	4.16 ± 0.36	0.03, 1.65	.043	0.04	0.53
3. I got along well with athletes/patients/clients in this clinical site.	5.18 ± 0.18	4.11 ± 0.32	0.35, 1.79	.004 <sup>b</sup>	0.09	0.83
4. I got along well with other health care professionals (not athletic trainers) in this clinical site.	4.72 ± 0.25	2.15 ± 0.44	1.57, 3.57	.001 <sup>b</sup>	0.22	0.99
5. I was able to learn a great deal in this clinical experience.	4.79 ± 0.18	3.33 ± 0.31	0.75, 2.17	.001 <sup>b</sup>	0.15	0.98
6. I feel that I was responsible for too much in this clinical site.	1.89 ± 0.14	2.82 ± 0.24	-1.48, -0.38	.001 <sup>b</sup>	0.11	0.92
7. I feel that I had to do more “grunt work” in this clinical site that I should have had to.	2.42 ± 0.13	1.93 ± 0.23	-0.02, 1.02	.060	0.04	0.47
8. There were times when I experienced a feeling of “too many hours” at this clinical site.	2.79 ± 0.17	3.04 ± 0.29	-0.91, 0.41	.454	0.01	0.12
9. I feel that completing hours in this clinical site was anxiety inducing.	2.18 ± 0.16	2.62 ± 0.29	-1.10, 0.21	.183	0.02	0.26
10. I feel that I spent too many hours in this clinical site just wasting time.	2.47 ± 0.17	3.36 ± 0.30	-1.58, -0.20	.012	0.07	0.71
11. At the end of this rotation, I felt that I was able to meet the demands of professional practice in this setting.	4.39 ± 0.18	2.89 ± 0.31	0.80, 2.21	.001 <sup>b</sup>	0.16	0.99
12. Overall, I was satisfied with my clinical experience at this site.	4.81 ± 0.18	3.29 ± 0.31	0.81, 2.23	.001 <sup>b</sup>	0.17	0.99

<sup>a</sup> 1 = *Strongly disagree*; 2 = *disagree*; 3 = *slightly disagree*; 4 = *slightly agree*; 5 = *agree*; 6 = *strongly agree*; 7 = *not applicable*.

<sup>b</sup> Identifies a difference between the persistor and dropout groups.

The clinical experience is where I have learned the most. Learning by doing or observing real-life situations is more beneficial in my opinion than learning by scenarios in a classroom.

Conversely, a lack of authentic experiences was a barrier to retention for the dropout group. Unlike the persistor group, the dropout group did not report meaningful learning experiences. A few of the dropouts commented on not liking the clinical assignments or not being able to interact with the athletes (ie, patients) as much as they would have wanted. They also reported more “standing around” and “wasting time” at their clinical rotations compared with the persistors, who gained experience and confidence in each of their settings. Participant 30 of the dropout group explained why the clinical experiences or clinical instructors were a factor in his decision to leave:

They were a major part of my decision in leaving athletic training. I wasn't allowed very much hands-on experience. So I felt like I was just wasting time while I was sitting at practices.

**Self-Efficacy.** Confidence and responsibility also appear to play a crucial role in persistors' feelings of being competent athletic trainers. Twenty-eight percent of the students reported that their confidence improved as they were provided more responsibility within their clinical assignments. Doing well during clinical education was also described as “encouraging” (persistor 1053). Persistor 1075 commented more specifically on his clinical assignments:

I would say that most of them gave me the opportunity to practice my skills on a daily basis and so that helped me to gain confidence in my abilities.

Persistor 27 described how authentic experiential learning opportunities helped confirm students' feelings that they had chosen the right career path by stating:

The more that I was allowed to do at my clinical experiences as I progressed through the program, the more I became intrigued with athletic training. I became even more confident in my major than when I chose it.

Conversely, some persistors questioned their major or felt that they didn't have what it takes to be an athletic trainer when they weren't doing well in classes or didn't understand the material being covered in class or their clinical instructor was being hard on them. Persistor 3030 stated:

When I don't do so well on tests or when ACIs [Approved Clinical Instructors]/teachers are constantly hounding about not doing things properly, I feel as if I can't do it.

### Networks of Support

**Clinical Instructor Support.** Interactions with clinical instructors had a significant influence on students. Sixty-two percent of the persistors described their clinical

**Table 5. Clinical Integration Themes for Persister Students**

Lower-Order Themes	Higher-Order Themes
Peer support	Networks of support
Peer interactions	
Peer friendships	
Peer dispositions	
Relate with peers	
ACI/CI support	
ACI/CI encouragement	
ACI/CI mentorship	
Resources—facilities/equipment	
Atmosphere	
Engagement in learning	Authentic experiential learning
Self-efficacy	
Confidence responsibility	
Clinical setting	Role identity
High school rotation	
Sport specific	
Clinic	
Positive reinforcement	
Enjoyment/job satisfaction	
General clinical education	
Working with athletes	
Athletic identification	
Exposure	
Variety of rotations	
Variety of injuries	
Future	

Abbreviation: ACI/CI, Approved Clinical Instructor/Clinical Instructor.

instructors as being encouraging, supportive, and helpful. Persister 1028 said:

Most of them are very personable, knowledgeable, and helpful. They are easy for us to open up to, to seek advice from and ask questions. They enhance our learning a great deal and it is overall a good environment.

Many persisters spoke highly of their mentors and even credited them as having the biggest influence on their retention, such as persister 1087, who noted:

My clinical instructors had the largest influence on me staying in the athletic training program. It was the clinical instructors that gave us encouragement and critiques that gave me more confidence in myself.

Not all of the clinical instructors had a positive effect on the students. Persisters had both positive and negative experiences with their clinical instructors. Some of the students described bad experiences, and it was these clinical instructors who made students question their decision to persist. One persister (3030) explained:

I did not get along with some ACIs and that made me want to not continue in the program, but I made it through and the ACIs that I did get along with helped remind me that I want to be in the program.

This quote illustrates just how influential the clinical instructors are on the undergraduate students whom they mentor in the clinical settings. The type of interaction with

**Table 6. Clinical Integration Themes for Dropout Students**

Lower-Order Themes	Higher-Order Themes
Time commitment	Time commitment
Major/career change	Major/career change
Lack of engagement	Authentic experiential learning
ACI/CI encouragement -/+	Networks of support
Peer interaction	

Abbreviation: ACI/CI, Approved Clinical Instructor/Clinical Instructor.

a clinical instructor, either positive or negative, can be a facilitator or a barrier for persistence.

**Peer Support.** In addition to positive interactions with the clinical instructors, 68% of the persisters also described getting along with their fellow classmates and found them to be helpful in all situations. Persister 3046 attributed her retention to the upper-class students:

They influenced me a lot! The upperclassmen I got to work with as a sophomore were unbelievable to me. They were always there to help facilitate my learning experience and never once made me feel like I was less than them just because I was younger. I remain very close to them to this day and give them gratitude for making my undergraduate experience that much better.

Persisters also stated that they formed close relationships with their fellow classmates. Many found it comforting to know that other people were going through the same things and could relate. A recurrent statement among the persister group was “We have become family.” This statement best illustrates the relationships that are made in ATEPs. In addition, these positive interactions and close relationships with peers helped keep students motivated and influenced persisters’ decisions to continue in the athletic training program. Persister 1023 captured these ideas:

The peers have a big influence on the demeanor of the clinical assignment. Forming close relationships with my peers has strengthened my decision to stay in the program. After spending so many hours together, your peers become your family.

### Role Identity

The theme of role identity encompasses the student’s integration or professional socialization into the athletic training profession. Such integration or socialization occurred in several different ways, such as identifying with a specific sport or setting, sports in general, working with athletes (ie, patients), or seeing a variety of rotations and injuries. Twenty-one percent of persisters related their clinical experiences to what they see themselves doing in the future. One persister (1051) identified with the high school setting and saw that as a setting of choice for his professional future:

I really enjoyed working with the high school that I have been at and this will go well with where I see myself professionally in the future.

## Time Commitment

Time commitment emerged as the only barrier to retention in the persister group and played a major role in attrition of the dropout group. Twenty-one percent of persisters reported time commitment as a major conflict with their social life. Forty-eight percent of persisters described the time commitment involved in athletic training as a reason they questioned their decision to pursue an athletic training major because of the lack of a social life outside athletic training. Persister 1045 questioned his decision to pursue athletic training:

Yes, I have absolutely questioned my decision, but I had already put in so much work that it would've seemed like a waste not to finish. I have always enjoyed athletic training, but the time demands and busy work are sometimes hard to deal with.

However, many stated that their social life was something they were willing to sacrifice for athletic training. Persister 1043 highlighted this point:

While I did have to sacrifice my social life outside of the athletic training program, I gained the friendship of those in the program. I enjoy socializing with them, and they have had a major impact on my decision to stay in the program.

Although some persisters claimed to have no social life outside the athletic training program, it was not a big enough factor for them to leave the program. They always had the social interaction within the program with their peers, clinical instructors, and athletes, which likely helped.

For the dropout group, 78% of the participants agreed that the number of clinical hours put into athletic training was demanding and contributed to their decision to leave the ATEP. The time commitment to the program did not allow for many other experiences outside of the major. One participant from the dropout group (2053) said:

They had an impact on why I left. It was way too time consuming and I wasn't able to enjoy other college experiences or be involved with other events and clubs on campus.

Some of the dropouts had a hard time leaving the program because of their relationships with their peers and clinical instructors, but many of the dropouts found the lack of a social life to be a factor in their decision to leave the program. Dropout 2013 noted:

Yes I strongly believe that this was a factor. Even though my clinical assignment had some of my friends in it, the number of hours a day we put into it hindered my ability to socialize outside of the clinical setting.

## Major/Career Change

The dropout group identified a major or career change as a major reason for leaving the ATEP. Eighty-three percent of the dropouts realized that athletic training was not what

they wanted to do or that they were more interested in another area. Dropout participant 2086 indicated:

The main reason why I left is due to my interest changed to nutrition and resistance training.

Similarly, dropout 2067 felt "as if my calling is to be in youth ministry and not athletic training." Several other students agreed that their clinical experiences or social integration did not influence their decision to leave. They simply were not interested in the major anymore. Dropout 2013 realized, "Even though I wanted to go into the medical field, athletic training was not for me."

## DISCUSSION

The purpose of this study was to better understand how clinical experiences affect student retention in undergraduate ATEPs within District 4 of the NATA. Although previous researchers<sup>18</sup> identified clinical integration and motivation as being factors in persistence, we specifically looked at how clinical instructors, sport assignment, setting, and peers affect student retention in undergraduate ATEPs. We identified a difference between the persister and dropout groups. These results are consistent with those of Dodge et al,<sup>18</sup> who identified a difference between seniors and major changers in a similar study. We were specifically interested in understanding how particular aspects of clinical education affect student retention. From our qualitative data, it was clear that clinical instructors and peers played a major role in clinical integration. Therefore, it is the experiences gained, with clinical instructors and peers directly influencing these experiences, that affect persistence, versus the specific setting or sport of the clinical assignment.

Interestingly, the persisters and dropouts were not different on the academic and social integration scales. Both groups were equally integrated within the academic and social aspects of the ATEP. Therefore, retention and attrition within athletic training education seemed to be more related to clinical integration, motivation, and anticipatory factors and to have less to do with academic and social integration.

## Authentic Experiential Learning

Authentic experiential learning facilitated retention in the persister group; however, the lack of authentic learning experiences factored into dropouts' decisions to leave the ATEP. Learning is defined as "the process whereby knowledge is created through the transformation of experience."<sup>24</sup> Authentic experiential learning is the use of real-life situations in which students are able to apply their knowledge and skill to enhance their learning.

Students who persisted tended to have a positive clinical experience when they were allowed to apply the theories learned in the classroom during clinical practice. The more hands-on experiences given to students, the more likely they are to persist, as these experiences provide real-life situations in which students can practice and enhance their skills. Observational and hands-on experiences during clinical rotations provide students with meaningful, authentic learning experiences that enhance their education.<sup>25,26</sup> Students perceived the interactions with athletes

who had real injuries and rehabilitations as more helpful and meaningful.<sup>25</sup> Allowing students to interact with patients gives them the real-life situations that enable them to enhance their skills through authentic experiences.

Additionally, authentic meaningful experiences have been shown to increase students' self-efficacy.<sup>26</sup> We also found these authentic experiential learning opportunities to increase students' confidence levels. Persisters indicated that when their clinical instructor trusted them and gave them more responsibility, this boosted their confidence in their skills and abilities. The more responsibility students are given within their clinical assignments, the more confidence they have in their abilities, or, in other words, the greater their feelings of professional self-efficacy. According to Mensch and Ennis,<sup>25</sup> building upon students' prior knowledge in a meaningful way, encouraging autonomy and decision making, and encouraging positive peer and instructor relationships enhances students' confidence.

Although the persister group identified positive and meaningful learning experiences, the dropout group identified negative experiences in which they spent most of their time standing around. According to Miller and Berry,<sup>27</sup> students spent only a fraction of time in their clinical rotations working on their skills and engaging in meaningful learning experiences. The rest of the time was spent on managerial tasks such as cleaning coolers or restocking.<sup>27</sup> It was these unengaged and managerial tasks that factored in the dropouts' decision to leave the ATEP.

The persisters and dropouts were, in general, different in terms of clinical integration on 6 of the 12 statements. Yet it is interesting to note that although Likert-scale statements 7 and 10 were not quantitatively different, persisters and dropouts had similar qualitative comments. Statement 7 was "I feel I had to do more 'grunt work' in this clinical site than I should have had to." Both persisters and dropouts described "grunt work" within their clinical assignments. However, this was not enough for the persisters to leave the program, whereas it was a factor in the dropouts' decision to leave. Statement 10 was "I feel that I spent too many hours in this clinical site just wasting time." As described in the qualitative data, the persisters reported having authentic, meaningful experiences in their clinical assignments and the dropouts reported a lack of engagement.

## Networks of Support

Qualitative data demonstrated that persisters recognized the support they received from their clinical instructors and peers as having a positive effect on their decision to continue the athletic training major. Such "networks of support"<sup>28</sup> have been described in the professional socialization literature. These networks may be used to facilitate learning new responsibilities and to provide help and social support.<sup>28</sup>

As high school athletic trainers influenced students to pursue athletic training,<sup>29</sup> clinical instructors can influence retention in the athletic training program. Clinical instructors or mentors who are accessible<sup>30,31</sup> to the students and approachable<sup>31</sup> are critical for a positive mentoring relationship. Clinical instructors who display confidence, show respect towards the students, and offer opportunities for students to practice and apply their skill and knowledge

have also been described as effective mentors.<sup>30,31</sup> A majority of the persisters in our study identified their clinical instructors as helpful, knowledgeable, personable, and willing to teach. However, the mentoring process is a 2-way street. Students also must take initiative for a good mentoring relationship to develop.<sup>31</sup>

Through this mentoring process, acknowledgment of skills, constructive feedback, and supportive behaviors appeared to be beneficial to students and enhanced their performance in the athletic training room.<sup>32</sup> Several persisters commented on positive feedback from their clinical instructors as increasing their confidence, which motivated them to continue in the athletic training major. Students appreciated when clinical instructors took the time to demonstrate skills or explain athletic training theories, as this improved students' knowledge and integrated them into the athletic training profession.

In addition to the support from clinical instructors, persisters described the close relationships they formed with classmates in the ATEP. These relationships had a mostly positive influence on retention. Students can identify and relate with their classmates. Having such a support system helped motivate students and encouraged them to persist, as described in the qualitative data. In addition to a support system, students also used their peers as learning tools. Students have perceived gaining knowledge, understanding, and skill from interactions and experiences with their peers.<sup>33</sup> Classmates or peers tend to be more understanding because of closeness in age and an awareness of similar skill-acquisition obstacles. Thus, peers may be able to explain things in a manner that helps students better remember.<sup>34</sup> Many senior students have stated that their classmates played a major role in their decision to persist in athletic training.<sup>18</sup> Similarly, positive peer relationships have also been described as a major component to enhancing students' learning in ATEPs.<sup>25</sup>

## Role Identity

The role identity theme greatly affected the persister group. This theme explores the professional socialization aspect of athletic training. Authentic experiential learning found in the clinical setting ultimately leads students to identify with their developing professional role as an athletic trainer. As senior students finish their formal athletic training education, they have begun to identify with the athletic training profession and to view themselves as athletic trainers.

Support from clinical instructors and peers helps to facilitate authentic experiential learning opportunities, which in turn leads athletic training students to identify with the role of an athletic trainer. This role identity aids in socializing students into the athletic training profession.<sup>26,35</sup> As students progress through the ATEP, they gain more confidence in their knowledge and skills, as described in the qualitative data. This increased confidence leads to integration into the profession. Athletes, peers, and clinical instructors can serve as socializing agents in the clinical setting, which assists students in developing their professional roles. Socializing agents have been described in athletic training literature as patients, peers, clinical instructors, or others who help students gain confidence

in their identities as developing athletic trainers by accepting or affirming the students in this professional role.<sup>35</sup> Clinical instructors, in particular, help to facilitate professional development and ultimately professional socialization by giving students more responsibility and allowing them to fulfill specific professional roles.<sup>35</sup> Consistent with this idea, we found many students from the persister group identified greater levels of confidence and feelings that they had what it took to be an athletic trainer as they were given more responsibility. By the time a student reaches the final year in the program, he or she has started to develop a sense of self as an athletic trainer and is able to see a professional future.

Whereas the professional preparation period influences socialization into the profession, anticipatory experiences are also important. In particular, high school athletic trainers appear to be primary socializing agents for students interested in athletic training before enrolling in college.<sup>29</sup> Interestingly, in our study, the dropout group had more athletic training experiences than the persister group. One possibility for this result is that dropouts may have been introduced to only a small portion of professional settings in which athletic trainers work. Another reason could be that these experiences were less authentic in nature or did not clearly portray the roles and responsibilities of the athletic trainer. Mensch and Mitchell<sup>29</sup> emphasized the importance of ATEPs in providing meaningful experiences in a wide variety of settings to allow students to gain appreciation for the scope of practice of athletic trainers.

### **Time Commitment**

A primary theme for the dropout group was time commitment. The clinical hours associated with the athletic training major often interfere with a student's social and personal life. Time commitment was a primary reason students left an ATEP and was also a major inhibitor as to why students do not enter the athletic training major.<sup>29</sup> Excessive time commitment is a major contributing factor to work-family conflict for certified athletic trainers.<sup>20</sup> However, it is more likely a work-life conflict for athletic training students. Athletic training students are unique in that they deal with the same personal stressors as other students (eg, academic, financial, social, and other stressful life events) but also have increased responsibilities and time commitments during their clinical rotations, which may include athletic training room clinical education hours and traveling with their sport assignment.<sup>36</sup> Similarly, graduate assistant athletic trainers have described time management challenges associated with balancing clinical education, sporting assignment, administrative duties, and academic responsibilities.<sup>37</sup> These additional requirements and expectations can lead to considerable stress and ultimately to drop out from an ATEP. Allowing students a certain amount of time away from the athletic training room each week may reduce their stress and decrease the number of students who drop out because of the time commitment.

### **Major or Career Change**

The other primary theme for dropouts was a major or career change. Many participants acknowledged a lack of

interest in the athletic training major and decided another major would be better suited to them. This theme is also associated with the time commitment theme. After recognizing the hours required for the athletic training major, many students decided that the major wasn't right for them. This theme is consistent with the findings of Dodge et al.<sup>18</sup> A certain number of dropouts is inevitable within ATEPs; the athletic training major is not for everyone. Requiring a certain number of observation hours before entry into an ATEP may decrease the number of students who leave a program because they realize they are not interested in athletic training.

### **Limitations**

The primary limitation to this study is that participants came from undergraduate programs within District 4 of the NATA. Therefore, the results cannot be generalized to all undergraduate programs. Additionally, participants from the dropout group may have been less willing to complete the questionnaire and may have used the study to express negative feelings regarding their experiences in the ATEP. Another limitation to this study is the self-reporting aspect of a survey. We can only assume that all participants responded openly and honestly. Lastly, we did not ask for or consider major or general grade point average in our study, nor did we seek information specific to disciplinary problems in an effort to categorize quality of the students. In addition, although demographic data such as sex or race were reported, we did not directly consider these data in the research results.

### **Future Research**

Future investigators should look at retention rates in athletic training and related fields in order to gain greater understanding of the significance of retention and attrition in athletic training. Because previous researchers associated GPA and SAT scores with a decreased risk of dropout, retention rates should also be compared with both GPA and SAT, both upon entrance to the institution and within the ATEP. Researchers may also explore the other constructs (academic integration, social integration, motivation, and anticipatory factors) and how they affect retention. All other districts of the NATA as well as 4-year and 2-year entry-level ATEPs should be included. Future authors may wish to focus on areas in which to reduce role strain in athletic training students. Role strain caused persister students to question their decisions to remain in an ATEP and was a major factor in students' decision to drop out. Investigation into role strain may identify ways to reduce role strain and positively affect retention in ATEPs. With networks of support and authentic experiential learning playing major roles in persistence, ways to facilitate such support and meaningful experiences should be explored. We did not study how the clinical setting specifically affected student retention. Future researchers may wish to learn how the different settings in which athletic trainers may work can influence students' decisions to persist or drop out of an ATEP. Lastly, how, if at all, student-to-ACI ratios play a role in issues of retention and attrition should be addressed.

## CONCLUSIONS AND EDUCATIONAL IMPLICATIONS

We identified the clinical integration of students as an influential factor associated with retention and attrition in ATEPs. Specifically, the experiences gained from the clinical aspect of an ATEP and the support from clinical instructors and peers have significant effects on student retention and attrition. Clinical instructors should make an effort to be aware of how athletic training students are spending their time in their clinical rotations. If real-life learning situations are not occurring, meaningful learning experiences should be created so students do not feel their time spent in the athletic training room is wasted. Emphasis should not be placed on the number of hours completed but rather on the quality of experiences gained in these clinical hours.

Peer relationships clearly play a significant role in persistence, with research showing the benefits of peer-assisted learning. More attention should be placed on peer-assisted learning in the clinical setting. More structured peer-assisted learning may be implemented to facilitate such relationships. This should not replace instruction by clinical instructors; rather, it should be a reinforcement of skills through practice.

The athletic training major requires a large time commitment, which can put a strain on students' personal and social life. Therefore, ATEPs should consider the quality of the experiences rather than the quantity of hours and should allow students time for activities outside of athletic training. Although there is no specific hour requirement, CAATE standards state that consideration must be given to allowing students days off that are comparable with those provided by other academic programs and student activities offered by the institution.<sup>38</sup> Allowing students time away from the athletic training room gives them time to themselves or time to participate in other extracurricular activities on campus. This will help to reduce role strain and allow students to become integrated into the institution, not just their program.

Interestingly, dropouts in this study had more anticipatory athletic training experiences than did persisters. This finding is inconsistent with socialization research, which identifies anticipatory experiences as important to the professional socialization of athletic training students, thus suggesting students need a good understanding of the athletic training profession before enrolling in the program.<sup>29</sup> Taking this into consideration, ATEPs might wish to emphasize the quality and variety of authentic anticipatory experiences required before entering the athletic training major. Such experiences could introduce students to the roles and responsibilities of athletic trainers as well as potentially provide students with the opportunity for early but meaningful learning and developing preliminary networks of support.

A certain amount of attrition is inevitable as students refine their educational and professional interests. Educators may improve retention, however, by focusing on providing meaningful, authentic learning experiences and facilitating networks of support within the clinical aspect of ATEPs. Authentic learning experiences supplement the didactic material and keep students interested in the profession and motivated to learn. Positive reinforcement by clinical instructors and peers can provide the confidence

students need in order to continue to develop their clinical skills, develop a sense of professional identity, and stay motivated to finish the ATEP.

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Address correspondence to Carrie L. Docherty, PhD, ATC, FNATA, School of Public Health, Indiana University, 1025 East Seventh Street, Bloomington, IN 47405. Address e-mail to [cdochert@indiana.edu](mailto:cdochert@indiana.edu).