Awareness and the Usage of Clinical Teaching Models in Clinical Education

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Context: Students spend over half of their professional preparation in clinical education under the instruction and supervision of preceptors. Preceptors must optimize the time spent creating high-quality, authentic clinical experiences. Preceptors serve as clinical educators and should be proficient in clinical teaching and using clinical teaching models.

Objective: Investigate if preceptors are aware of clinical teaching models and how often components of clinical teaching models are being used.

Design: Concurrent mixed methods.

Setting: Web-based survey and virtual semistructured interviews.

Patients or Other Participants: A total of 165 preceptors, averaging 10 ± 9 years of experience as a preceptor, completed the survey. We recruited 10 preceptors (4 male, 6 female, average of 12 ± 10 years of preceptorship experience) to volunteer in follow-up interviews.

Data Collection and Analysis: Surveys were administered via Qualtrics, and virtual interviews were completed using Zoom. Frequency tables were used to examine the quantitative survey data. A phenomenological approach of inquiry was used for interview data analysis. Member checking, external peer review, and triangulation were all used to establish trustworthiness.

Results: The Supervision, Questioning, Feedback (SQF) model was most recognized or used by preceptors (48% responded yes), unlike the One-Minute Preceptor (OMP) or the Summarize, Narrow, Analyze, Probe, Plan, and Select (SNAPPS) models (15%, 8% responded yes, respectively). Eight components aligned with the SQF model were frequently used daily or weekly. Components of the OMP or SNAPPS models were used less frequently. Preceptors describe using similar techniques to the SQF model but are generally unaware of clinical teaching models. Preceptors report eagerness in improving their clinical teaching abilities to enhance student clinical experiences.

Conclusions: Preceptors are largely unaware that clinical teaching models exist and need to be further instructed on how to incorporate them into clinical teaching. Preceptors have little experience in teaching practices, so enhancing their clinical teaching practices will improve students' professional growth and competence.

Key Words: Preceptorship, mentoring, feedback, clinical education

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KEY POINTS

- Preceptors are largely unaware of clinical teaching models with the Supervision, Questioning, Feedback model being used most often.
- Components of clinical teaching models are used more frequently rather than integrated clinical teaching models.
- Clinical teaching model components used more frequently signify novice-level skills, and qualities embodying educators are used less frequently.
- Preceptors convey an eagerness to enhance their clinical teaching abilities through professional development.

INTRODUCTION

Preceptors deliver a vital and influential role in athletic training students' enthusiasm, long-term commitment, and developmental growth by serving as educators within the clinical setting.¹ Simultaneously, preceptors are also practicing clinicians, thus balancing 2 very different roles. An efficient preceptor can interweave these 2 roles by using their clinical practice to influence their clinical teaching or optimize slow times in the clinical setting to create an engaging learning atmosphere for students. To serve as an athletic trainer preceptor, an individual should have a minimum of an athletic training degree, be credentialed as an athletic trainer, and demonstrate competence in athletic training clinical practice according to the Commission on Accreditation of Athletic Training Education (CAATE) Professional Program Standard 45.² However, preceptors generally have very little if any knowledge or formal training in pedagogy, andragogy, or providing meaningful clinical experiences beyond foundational preceptor training.^{3,4} Preceptors report acquiring knowledge of their role through mentorship from more experienced preceptors and reflection on their own past experiences of preceptor interactions as a student.⁴

Without formalized training in andragogy, preceptors commonly use several varied strategies during student interactions. Mazerolle et al⁵ reported athletic training preceptors described their teaching styles through student engagement in active learning, being approachable to the student, and developing students' autonomy in clinical practice. However, Mazerolle et al⁵ did not focus on the integration of any specific clinical teaching models. Preceptors should use a diverse array of teaching strategies to accommodate unique clinical situations, student learning styles, and each student's skill developmental level.^{6–8} The quality of the time spent in clinical education is valued higher by students than the quantity of time spent in clinical rotations.⁷ With clinical education comprising at least 50% or more of the total time a student spends in the professional phase of the athletic training program,⁹ it is important to ensure students are receiving a purposeful and progressive educational experience. Likewise, students expect a preceptor who will communicate with them by providing positive and constructive feedback,

challenging their critical thinking, helping discern clinical reasoning skills, and providing an overall authentic hands-on experience.¹⁰ To aid preceptors in optimizing a teachable moment or encounter, several clinical teaching models exist to support preceptors in promoting quality student development.

Several clinical teaching models have been developed for use in health care education, such as the One-Minute Preceptor (OMP) model, the Supervision, Questioning, Feedback (SQF) model, and the SNAPPS model.¹¹⁻¹⁶ The components of clinical teaching models including supervised autonomy, strategic questioning, clinical reasoning, professional communication, self-reflection, and positive or constructive feedback help preceptors facilitate a meaningful, educational clinical experience. No research exists in athletic training for the use of the OMP, while limited reporting exists for the SQF and SNAPPS models.^{14,17–20} These 3 clinical teaching models were selected for this study, as they are used in other health care professions such as medicine, nursing, pharmacy, and speechlanguage pathology, in addition to being reported in The Athletic Trainers Pocket Guide to Clinical Teaching,¹⁶ and the Master Preceptor.¹⁵ None of these clinical teaching models have been investigated on their frequency or integration of use in athletic training education.

The OMP is a common clinical teaching model consisting of 5 microskills: (1) get a commitment, (2) probe for evidence, (3) reinforce positive feedback, (4) correct mistakes, and (5) teach a general rule.^{11,12} This model teaches students to reflect on their clinical practice, apply general concepts for future corrective action, and implement clinical reasoning more efficiently.¹¹ The OMP model is designed to be a quick intervention to aid both the preceptor and the student in balancing patient care and providing learning opportunities.¹⁶ Medicine and nursing both predominantly use the OMP model since it is positively favored by preceptors and students over more traditional teaching methods, and it results in higher teaching scores.^{11,12} The OMP has not been studied in athletic training to research its usage or effectiveness; therefore, its utility in athletic training clinical education needs further exploration.^{11,12}

The second clinical teaching model being examined is the SQF model. It is a 3-step model explicitly reported in the athletic training literature for providing clinical teaching.¹⁶ The first step is *proper supervision* of the students during clinical experiences. Over the past decade, supervision of students engaged in clinical experiences has undergone significant debate regarding the use of direct supervision versus supervised autonomy. Recently, the concept of supervised autonomy has become more widely accepted by athletic training educators. Supervised autonomy allows students incremental steps of independence and autonomy during clinical experiences based upon the level of the student while still giving the preceptor the ability to intervene if warrant-ed.¹⁷ The second component is *questioning*, which has been

described according to the level of critical thought the preceptor is trying to achieve based upon the situation using scaffolding and a strategic approach.¹⁸ Questions are asked by sequentially ordering them to confirm knowledge or concepts in a "what" question, supporting their clinical rationale using "so what" questions, or by developing critical thinking in "now what" questions.¹⁸ The third step is *providing feedback*, either positive or constructive, based on how the student performs in a specific situation, and improving their general clinical skills.¹⁸ The SQF model has been described in its individual components^{16–20} in athletic training, then presented as an integrated model during seminars such as the Master Preceptor¹⁵ or in speech-language pathology literature.^{21–23}

The last clinical teaching model examined is the SNAPPS model. The SNAPPS model was derived from studentcentered learning by engaging the student in a systematic case presentation to their preceptor.¹⁴ The SNAPPS model consists of a 6-step process including (1) the student summarizing the history and exam findings, (2) narrowing down a list of differential diagnoses, (3) analyzing or supporting the differential diagnosis, (4) probing the preceptor with questions the student may have, (5) developing a plan for patient management, and (6) self-directed study through reflection, curiosity, or lifelong learning.¹⁴ This model is taught to students to critically appraise while using uniform case presentations.¹⁴

The purpose of this study is to examine if preceptors are familiar with clinical teaching models and how often they use individual components of these clinical teaching models when serving as preceptors to athletic training students. The research questions guiding this study were: (1) In athletic training clinical education, what clinical teaching models or components of clinical teaching models are preceptors aware of? (2) How often do the preceptors use clinical teaching models to deliver student feedback?

METHODS

Design

A concurrent mixed-methods study with 2 distinct phases was used to explore preceptors' awareness of clinical teaching models and the frequency of their use within their preceptor roles.²⁴ In Phase 1, we used a cross-sectional survey, and in Phase 2, we used follow-up individual interviews. The mixedmethods design was selected to help measure the knowledge and implementation of these clinical teaching models into practice as well as dive deeper into factors that influenced awareness and implementation. The Strengthening the Reporting of Observational Studies in Epidemiology²⁵ and Consolidated Criteria for Reporting Qualitative Research²⁶ reporting guidelines were used to strengthen the integrity of this study. The institutional review boards approved this study at Fort Hays State University and Rocky Mountain University of Health Professions.

Participants

Recruitment of potential participants for our study was guided by the following inclusion criteria: (1) an athletic trainer who is serving as a preceptor, (2) is affiliated with a CAATE accredited athletic training program, (3) has supervised at least one athletic training student within the past 2 academic years, (4) has completed either Level 1 of the Master Preceptor program or completed an institutional-led preceptor training, and (5) has at least 2 years of experience as a preceptor to demonstrate prior preceptorship experience.

To recruit participants, program directors (PDs) and coordinators of clinical education (CCEs) of CAATE-accredited programs were used to access preceptors. The initial recruitment e-mails sent in February 2021 were targeted at National Athletic Trainers' Association (NATA) Districts 1, 2, 4, 5 and 11 (primarily the Northeast and the Midwest United States). At the time of this study, these programs made up 54% (200 of 365) of CAATE-accredited programs, and we estimated 4000 preceptors in these 5 NATA districts represented 200 CAATE-accredited athletic training programs.²⁷ The sample size needed was 251 preceptors ($P < .05, \pm 6\%$)²⁸ to obtain appropriate statistical power.

After an initial 8-week data collection period, we had a small sample of responses returned. As a result of low response, a secondary recruitment strategy was implemented by recruiting affiliates of a doctoral-granting institution who were associated with an athletic training program. After a 5-month recruitment process, which included adding the secondary recruitment plan and sending multiple e-mail reminders to both recruitment groups, only 165 survey responses were returned. The authors recognize a potential contributing factor to the lower response rate was the effect of the ongoing COVID-19 pandemic on education, health care delivery, and the increased time demands of athletic training preceptors. A response rate is undeterminable, as the exact number of invitation recipients is unknown because they were not sent directly to the target population.

Phase 2 participants were recruited at the end of the clinical teaching models survey by voluntarily agreeing to be contacted for an interview. Forty-eight survey participants acknowledged wanting to participate in an interview; however, data saturation was achieved after a total of 10 interviews were completed. Interview participants represented the university or college, secondary school, and clinic employment settings with 6 female and 4 male preceptors contributing. Interviews lasted an average of 15 to 20 minutes in length.

Instruments

The clinical teaching models survey was developed with questions in 3 areas: (1) participant demographics, (2) what components of the teaching models preceptors use, and (3) how often preceptors use a clinical teaching model (Appendix). The survey was designed with 32 items being nominal or Likert-scale questions in addition to 1 open-ended question. On average, participants completed the survey in 8 to 10 minutes. The survey was validated for content validity using a 3-person expert panel in athletic training and medicine. A panelist was determined to have expertise through active publication or presentation scholarly activity in 1 of the 3 clinical teaching models being explored in this study. A Validation Rubric for Expert Panel instrument was disseminated to the expert panel to provide a uniform assessment of the validity and feedback organization of the survey instrument.²⁹ To determine if survey items needed revision, a cutoff score of 3 or higher on this rubrics Likert scale was

Figure 1. Semistructured interview guide used during the qualitative portion of this study. Abbreviations: NATA, National Athletic Trainers' Association; SQF, Supervision, Questioning, Feedback model.

- 1) How long have you been serving as a preceptor?
- 2) In what athletic training setting do you serve as a preceptor?
- 3) Why did you initially want to become a preceptor?
- 4) What aspects of being a preceptor do you enjoy?

Now I would like to ask your experiences with clinical teaching and clinical teaching models.

- 5) How would you describe your clinical teaching style as a preceptor?
 - a. What instructional methods have you found to be effective during clinical teaching? Can you explain why you find those methods to be effective?
 - b. What instructional methods have you found to be ineffective during your clinical teaching? Why are those methods ineffective?
- 6) What clinical teaching models do you utilize as a preceptor?
 - a. Are you familiar with any of the following clinical teaching models...?
 - i. One-minute preceptor?
 - ii. Supervision, Questioning, Feedback model or the SQF?
 - iii. SNAPPS models?
 - b. How did you learn about these clinical teaching models?
 - c. How comfortable are you using those clinical teaching models?

I would like to ask you about your perceptions on models of clinical teaching.

- 7) What benefits do you see in student learning when using clinical teaching models?
- 8) Please describe the benefits you see as a preceptor in using clinical teaching models?
- 9) What barriers or drawbacks do you believe exist when using clinical teaching models?

Next I would like to ask you a few questions about preceptor training related to clinical teaching.

- 10) Have you participated in preceptor training at your institution focusing on clinical teaching?
 - Have you participated in the Master Preceptor Level I training offered through the NATA?
 - a. How much of your preceptor training focuses on clinical teaching?
 - b. During preceptor training do you find value in learning about clinical teaching?
- 11) Do you feel preceptor training prepares you for how to utilize clinical teaching models?
- 12) What are your beliefs on how preceptor training could improve upon teaching how to use of clinical teaching models?

used to determine appropriate content validity. Feedback from the expert panel improved the alignment of the codes used to classify survey questions based upon the model(s) depicted, modifying questions for clarification, eliminating double-barreled questions, and adding 1 demographic question on preceptor education background.

A pilot survey via Qualtrics was performed using a convenience sample of preceptors to establish face validity and internal reliability. In the validation survey study, 16 responses (not included in the final study) were submitted; however, 3 responses were excluded for not meeting the inclusion criteria. For the pilot study, the Cronbach α was 0.929, suggesting high internal consistency among the question items with an item-total Cronbach α ranging from 0.919 to 0.938.³⁰

An interview guide was constructed using a semistructured interview design with questions focusing on (1) perceptions of student learning when using clinical teaching models, (2) existing barriers in using clinical teaching models, (3) perceived benefits to using clinical teaching models, and (4) perspectives on clinical teaching preparation in preceptor training (see Figure 1 for interview guide). The interview guide was screened for content validity by 2 experts in clinical education and qualitative interview methods, both with significant publication history in these content areas. Upon review, question clarity was enhanced, and the interview guide was modified to further address preceptor training and ask more broad questions on clinical teaching practices. Three trial interviews were completed after the expert review to practice high-quality interview skills and determine participant question understanding. After receiving trial participant feedback, modifications were made to provide further clarity on some questions and add transitional statements.

Procedures

Since contact information specifically for preceptors is not obtainable for use by the CAATE or NATA, participants were recruited to participate by asking CCEs or PDs to forward an e-mailed invitation letter to their preceptors. The URL link to the survey on Qualtrics was included in the invitation letter. Informed consent was completed on the first

Table 1.Survey Participant Demographics, N = 165

	n (%)
Degree level	
Master's	106 (64.2)
Bachelor's	59 (35.8)
Total	165 (100)
Athletic training setting	
Secondary school	64 (38.8)
University or college	78 (47.3)
Clinic or hospital	19 (11.6)
University and secondary school	1 (0.6)
University and clinic	1 (0.6)
Secondary school and clinic	1 (0.6)
Secondary school, clinic, and performing arts	1 (0.6)
Total	165 (100)

page of the survey using click-through electronic consent. After completing the final page of survey questions, participants were asked if they wanted to participate in a voluntary interview. If they chose yes, they were automatically redirected to a separate survey to collect their demographic information and e-mail address. At the end of either survey, a debriefing page was provided to all participants. No incentives were given for survey participation.

Within 1 week of completing the survey, those participants who chose to participate in the interview were contacted by the primary investigator (J.G.) to confirm their desire to participate and schedule an interview. One person (J.G.) completed all interviews individually with participants. The interview adult informed consent was e-mailed to the participant at least 24 hours before the interview occurred. Ahead of the interview, only the broader, general topics of interview questions were given to participants when the adult consent form was e-mailed to them. At the beginning of the interview session, oral consent was obtained by using an institutional review board-approved oral consent script. Participants were asked questions from the interview guide (Figure 1) described previously in addition to being asked impromptu follow-up questions using a semistructured interviewing technique. Zoom videoconferencing software was used to record and transcribe the interviews. Upon the Zoom software completing its automatic transcription process following each recorded interview, the transcript was manually transcribed by 1 author (J.G.) who listened to the recording while simultaneously confirming or correcting the transcript.

Data Analysis

Phase 1 data analysis from the clinical teaching models survey consisted of collecting demographical information on participants, including employment setting, athletic training program degree level, years of experience, number of students supervised per day and per clinical rotation, supervision of students within the past 2 years, completion of institutional preceptor training and/or Master Preceptor training modules, and prior use of the OMP, SQF, and/or the SNAPPS clinical teaching models. Frequency distributions were used to evaluate how often participants use different individual components of clinical teaching models using a 6-point Likert scale. A Cronbach α statistical test was used to determine the internal reliability of the Likert-scale survey items. Statistical analysis was completed using Intellectus Statistics online software. Missing data were completed using the data imputation function of the Intellectus software.

Data analysis for the qualitative interviews was completed using a phenomenological approach.³¹ The interview transcripts were read multiple times by 2 authors (J.G. and S.H.) to facilitate data immersion before any coding of the interview data. Data saturation was determined to be met after 10 interviews since 1 interviewer (J.G.) conducted all interviews and continuously observed trends in the individual interviews occurring until no new ideas were being introduced. Two authors (J.G. and S.H.) individually coded all transcripts by identifying relevant and repetitive ideas that were conveyed by participants that correlated to the study's research questions. After coding, both authors compared codes and developed major themes that represented the significant findings. Triangulation was integrated by using 2 different methods of data collection (survey and interviews) and having 2 different investigators code the interview transcripts for comparison. Member checks and peer review were also used to establish the trustworthiness and credibility of the data analysis. Member checking was done immediately after transcription to confirm the interview was accurately transcribed. If no response was received in 1 week, it was assumed the transcript was accurate. An external peer review was completed by a qualitative methods expert in clinical teaching to ensure the coding, themes, and quotes reflected the interview findings appropriately. The expert (S.M.S.) completing the peer review was chosen because she demonstrated expertise with a significant publication history in clinical teaching and the use of qualitative methods. After expert review, both the quantitative and qualitative results were compared, and it was determined and agreed upon by all authors that the results supported each other and should be integrated so the qualitative data provided a richer, personal perspective of the quantitative findings.

RESULTS

The clinical teaching models survey had 165 participants complete the survey. Master's level programs were represented by 64.2% of the respondents (n = 106), while the remaining 35.8% were associated with a bachelor's degree program (n = 59), both allowed by CAATE at the time of this study (see Table 1). The average years of preceptor experience of respondents were 10.27 ± 8.65 years. On average, respondents supervised 2 ± 1 athletic training students per day and 2 ± 2 athletic training students per clinical rotation. Here, 47.2% of the participants were employed in the university or college setting (n = 78), 38.8% in secondary schools (n = 64), with the remaining working in a clinic or hospital (n = 19, 11.6 %) or combined settings such as university and secondary school; university and clinic; secondary school and clinic; or secondary school, clinic, and performing arts settings (Table 1). The Cronbach α statistic ($\alpha = 0.93$) demonstrates strong internal consistency among the survey items with minimal change (0.92-0.94) if any questions were removed.³⁰ The generalizability of the results should be cautiously applied to the preceptor population at large, provided the low power of this study.

Ten participants with a combined average of 12 ± 10 years of experience as a preceptor were interviewed. Four of them were

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Figure 3. Themes of what preceptors possess.

Table 2.	Interview	Participant	Demographics,	Ν	= 10	
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Participant Pseudonym	Experience as a Preceptor (y)	Athletic Training Employment Setting
Joe Helen Bob Tim Erin Don Tammy Shirley Nancy	6 3 23 30 20 6 15 5 5 2	College Secondary school Secondary school Clinic Clinic Clinic College College Secondary school Secondary school

employed in the secondary school setting, 3 in the university or college setting, and the remaining 3 in the clinic or hospital setting. See Table 2 for interview demographics and Figure 2 for the methodology flow diagram.

Figure 2. Methodology flow diagram. Flowchart showing recruitment, enrollment, and analysis of participants. Abbreviations: CCE, coordinator of clinical education; PD, program director.





We identified 3 major themes within our data: (1) awareness of clinical teaching models, (2) implementation of clinical teaching models, and (3) desire to improve clinical teaching (Figure 3). The survey data was reexamined after the interview data analysis, resulting in the same subthemes being supported by the quantitative data.

Awareness of Clinical Teaching Models

Survey participants were asked about their prior use of 3 established clinical teaching models: OMP, SQF, and SNAPPS. Twenty-five participants noted using the OMP model (15.2%), 76 used the SQF model (46.1%), and 14 participants had used the SNAPPS model (8.4%). For each clinical teaching model, the remaining participants answered either they did not or were unsure if they used the identified clinical teaching model (Table 3).

Almost 70% of our interview sample had no awareness of how to institute clinical teaching models. This was confirmed in our interviews, as many participants revealed they did not have a strong awareness of clinical teaching models. Erin stated, "I don't know if I'm familiar with any of them, or if I do them, naturally, and I just wouldn't know how to tell you what they are." Tammy responded, "I wasn't familiar with any of those teaching models." Alternatively, Helen reported searching for these clinical teaching models after taking the survey and reporting, "I've never been taught those teaching

Table 3. Prior Use of Clinical Teaching Models, N = 165

Parameter	n (%)
One-Minute Preceptor	
Yes	25 (15.1)
No	5 (55.8)
Unsure	5 (29.1)
Total	165 (100)
Supervision, Questioning, Feedback	
Yes	76 (46.1)
No	50 (30.3)
Unsure	39 (23.6)
Total	165 (100)
SNAPPS	
Yes	14 (8.5)
No	84 (50.9)
Unsure	67 (40.6)
Total	165 (100)

Table 4. Distribution of Frequently Used Clinical Teaching Model Components, N = 165

Likert Scale Responses, n (%)								
Component	Clinical Teaching Models	Multiple Times Daily	Once Daily	3-4 imesWeekly	1–2× Weekly	1–2× Monthly	Never	
Provide positive feedback Use adaptive supervision based on	SQF, OMP	100 (60.6)	32 (19.4)	19 (11.5)	13 (7.9)	1 (0.6)	0 (0)	
student skill level	SQF	109 (66.1)	21 (12.7)	16 (9.7)	14 (8.5)	5 (3.03)	0 (0)	
Provide own prior experiences to students Provide immediate feedback to ATS	SNAPPS SQF, OMP	91 (55.2) 75 (45.5)	21 (12.7) 32 (19.4)	31 (18.8) 25 (15.2)	19 (11.5) 31 (18.8)	3 (1.8) 2 (1.2)	0 (0) 0 (0)	
Provide feedback based on ATS clinical performance	SQF, OMP	67 (40.6)	28 (17.0)	42 (25.5)	23 (13.9)	5 (3.03)	0 (0)	
Allow ATS to give rationale for making clinical decisions	SNAPPS	73 (44.2)	29 (17.6)	37 (22.4)	22 (13.3)	2 (1.2)	2 (1.2)	
level in clinical performance Provide constructive feedback	SNAPPS SQF, OMP	74 (44.8) 74 (44.8)	21 (12.7) 26 (15.8)	35 (21.2) 39 (23.6)	27 (16.4) 26 (15.7)	8 (4.8) 0 (0)	0 (0) 0 (0)	

Abbreviations: ATS, athletic training student; OMP, One-Minute Preceptor model; SQF, Supervision, Questioning, Feedback model.

models. I learned that some of the things that I do kind of follow along with those (clinical teaching models)."

Within our interview sample, 30% of the respondents had some awareness of at least 1 clinical teaching model. Nancy

reported, "I definitely learned it [SQF], but I don't think that I can recite it back to you right now. I'm not familiar with SNAPPS." Bob reported he was familiar with OMP in addition to reporting, "I would say the SQF is the one that I think is the most effective and that I use most often."

Table 5.	Distribution of	Less Commonly	Used Clinical	Teaching Model	Components,	N = '	165
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		Likert Scale Responses, n (%)									
Component	Clinical Teaching Models	Multiple Times Daily	Once Daily	3–4× Weekly	1–2× Weekly	1–2× Monthly	Never				
ATS approaches preceptors for mentoring or feedback	SQF, OMP, SNAPPS	58 (35.1)	24 (14.5)	26 (15.8)	35 (21.2)	18 (10.9)	4 (2.4)				
Provide general learning point from a specific encounter	OMP, SNAPPS	58 (35.2)	37 (22.4)	43 (26.1)	22 (13.3)	5 (3.03)	0 (0)				
Ask questions at varying levels of difficulty	SQF	62 (37.6)	25 (15.2)	40 (24.2)	32 (19.4)	5 (3.03)	1 (0.6)				
Talk with ATS about clinical reasoning	SQF, OMP, SNAPPS	59 (35.8)	26 (15.8)	38 (23.0)	31 (18.8)	7 (4.2)	4 (2.4)				
Have student focus on differential diagnosis	SNAPPS	56 (33.9)	26 (15.8)	46 (27.9)	28 (17.0)	5 (3.03)	4 (2.4)				
Students provide case presentation using systematic approach	SNAPPS	49 (29.7)	15 (9.1)	36 (21.8)	46 (27.9)	15 (9.1)	4 (2.4)				
ATS determines plan of care based upon patient case presentation	OMP, SNAPPS	57 (34.5)	24 (14.5)	40 (24.2)	34 (20.6)	6 (3.6)	4 (2.4)				
Have ATS self-identify positive behaviors	OMP	47 (28.5)	30 (18.2)	32 (19.4)	36 (21.8)	14 (8.5)	6 (3.6)				
Have ATS self-identify corrective behaviors	OMP	48 (29.1)	24 (14.5)	40 (24.2)	32 (19.4)	17 (10.3)	4 (2.4)				
Ask specific follow-up questions regarding skills performed	SQF	60 (36.4)	31 (18.8)	47 (28.5)	21 (12.7)	6 (3.6)	0 (0)				
Preceptor leads the clinical conversations	SQF, OMP	49 (29.7)	38 (23.03)	44 (26.7)	33 (20.00)	1 (0.6)	0 (0)				
Student leads the clinical conversations	SNAPPS	35 (21.2)	32 (19.4)	28 (17.00)	44 (26.7)	19 (11.5)	7 (4.2)				

Abbreviations: ATS, athletic training student; OMP, One-Minute Preceptor model; SQF, Supervision, Questioning, Feedback model.

Implementation of Clinical Teaching Models

In assessing the frequency of use for individual clinical teaching model components in the survey, some were more frequently used daily, while others are not integrated into clinical teaching as often. Those components being perceived as being used at least once or multiple times per day include providing positive and constructive feedback (80% of respondents), using adaptative supervision based upon a student's skill level (79%), providing the preceptor's own past experiences to students (68%), providing immediate feedback to the student (65%), and allowing the student to state the rationale for making clinical decisions (61%). See Table 4 for Likert-scale frequency distribution

Other components were less frequently used daily by preceptors. These components include how often the student approaches the preceptor for mentoring or feedback (49% of respondents), preceptors asking questions at varying levels of difficulty (53%), preceptors discussing clinical reasoning strategies (53%), having students use a differential diagnosis approach in patient care (49%), having students use a systematic approach when presenting patient cases (39%), students using the patient's case presentation to determine the plan of care (49%), having the student self-identify both positive and corrective behaviors from their clinical performance (43%), and having preceptor- versus student-led clinical conversations (52% versus 40%). See Table 5 for Likert-scale frequency distribution.

Participants responded similarly during the interviews about how they currently used clinical teaching models and what instructional strategies have proven to be effective. In hindsight, the SQF model was indirectly relied upon as a basis of clinical teaching. Some participants included other teaching strategies. For example, Shirley stated, "I like to give them instructions, have them go do it. . . usually, I like to debrief and talk about what went well, what can we improve on, and go through those situations." A different teaching strategy, "see one, do one, teach one," was referenced by 2 different participants, Bob and Joe. Both participants reported similar instances of "liking to let students observe it, then getting students hands on" as soon as possible.

The other significant component preceptors often reported was the role of supervision and letting the student gain clinical independence. Participants felt that getting the student acquainted with the new clinical environment was necessary; however, it was important to let the student build confidence and autonomy slowly. Don stated the following about his clinical teaching strategy:

It's a combination of questions and answers a lot of times... the first couple of days is kind of get their feet wet. As they become more proficient, I let have them do more and become more independent.

Implementation of clinical teaching models in their entirety was shown in both survey and interviews not to be supported. Participants all used distinct components of clinical teaching models more frequently, yet few of them reported specifically when asked if they used a clinical teaching model such as OMP, SQF, or SNAPPS in its entirety even though they may be aware that model exists.

Enthusiasm for Improving Clinical Teaching

Interview participants wanted to learn more about clinical teaching, and some emphasized the desire to improve upon their clinical teaching practices, especially after participation in this study. Tammy stated:

[M]edicine is always evolving, and technology is always evolving, so if I'm not open to that, I'm not educating my students and the way that they're being educated in the classroom, so then there's going to be a disconnect there.

The need to recognize self-growth is vital to maintaining high expectations for student success. Don summed up why improving clinical teaching is important to the student themselves by stating:

Ultimately, the goal is to have better-educated athletic trainers, so if we can have better-educated preceptors, we're going to be able to get the education delivered more efficiently and timely, hopefully raising their skillset faster.

DISCUSSION

This study was completed to investigate the utility of clinical teaching models in athletic training education, given the limited preparation of preceptors in clinical teaching. Our study revealed 3 major themes: (1) awareness of clinical teaching models, (2) implementation of clinical teaching models, and (3) enthusiasm to improve clinical teaching.

Awareness of Clinical Teaching Models

For the awareness of clinical teaching models theme, we found a significantly low percentage of preceptors who were familiar with clinical teaching models such as the OMP, SQF, or SNAPPS models. The most recognized model of the 3 was the SQF clinical teaching model at 46%; however, it is unknown if participants are truly familiar with the complexities of this model or simply recognize the name at face value. It is estimated they recognize it at face value, given that some components of the SQF model, specifically those asking questions and providing feedback, were not as highly ranked in their frequency of use as the supervision component of the model. The SQF model has been described in the athletic training education literature, demonstrating that 70% of the questions preceptors used were low-level questions, and 17% were classified as high-level questions, which indicates preceptors were unfamiliar with how to ask higher-level questions that are strategically created to stimulate critical thinking.³² Authors of speech-language pathology studies found the SQF model positively affects a student's clinical experience and learning when supervised autonomy is used and questioning techniques include strategic question design, scaffolding, and timing.^{21–23} Providing appropriate education and training of preceptors in the SQF model with attention to the strategic design of questioning and feedback may be helpful for improving the clinical education environment.

The other 2 clinical teaching models were used less frequently, with approximately 16% of the participants having used OMP and 8% having used SNAPPS. It is expected these 2 models would be lower among participants, as they had limited reporting in the athletic training literature.^{14,16} Therefore, the only likely exposure preceptors have to these clinical teaching

models is through preceptor training workshops if they are included. Preceptors who have participated in the Level 1 Master Preceptor online program since its unveiling in 2017 have been exposed to all 3 models examined here: OMP, SQF, and SNAPPS. In our study, 24 preceptors had completed the Master Preceptor workshop. However, retention of these models does not seem apparent from preceptor training; therefore, programs need to continuously educate and implement these clinical teaching models in preceptor training. The OMP and SNAPPS models have been used significantly in medicine,^{12,13,33–39} nursing,¹¹ pharmacy,⁴⁰ and athletic training¹⁴ literature; however, these studies do not examine preceptor awareness or how often these clinical teaching models are implemented in clinical teaching.

Implementation of Clinical Teaching Models

Our results show that preceptors use individual components of these clinical teaching models, whether they are knowingly aware of a model or not. Several components such as situational supervision, providing positive and constructive feedback, and the timing of providing feedback are frequently used daily or weekly. A significant majority of these components is derived from the foundation of the SQF clinical teaching model.^{16–20} These characteristics of clinical teaching models resemble preceptors who lean on a novice approach to preceptorship rather than a higher-level educator's perspective. Preceptors operating at a novice level may not have full comprehension of how to thoroughly integrate a clinical teaching model. Having preceptors trained at a novice level may lead to a minimal educational approach within clinical education and students not being exposed to an intentional, engaging educational experience that meets their own clinical education expectations.

Other components that are used less frequently such as integrating differential diagnosis, creating individualized treatment plans, initiating student- versus preceptor-directed learning strategies, providing general points, and building clinical reasoning through questioning and feedback techniques are all components that align closely with either the OMP or SNAPPS clinical teaching models. This difference likely correlates to the less familiar clinical teaching models like the OMP or SNAPPS models in comparison with the SQF model. These components signify preceptors who rely on more of a clinical educator's approach to clinical teaching rather than mentoring from a supervisory role. These preceptors are taking a specific teachable moment and creating reflective learning points for both the specific encounter and for similar future encounters.⁴¹ The transition from novice to expert style teaching generally takes 2 to 5 years and is accomplished as preceptors gain more teaching experience, focus intentionally on student-centered learning, and especially have a deeper context of teaching pedagogy.42,43

These tactical approaches to clinical teaching should be developed into student-centered and educational encounters to provide teachable moments for students.⁴¹ Preceptors may expand upon their questioning abilities by asking strategic questions in a thoughtful, progressively more challenging manner to engage higher levels of critical thinking and reasoning.¹⁸ Preceptors who use this type of strategic questioning technique effectively integrate timing, sequencing,

and phrasing of questions that target higher-level information that builds off of basic knowledge.³² The methodology of how preceptors provide feedback determines its usefulness. Students appreciate feedback, both positive and constructive. However, they prefer feedback being provided in an appropriate, timely manner after a specific intervention or when it is intended to promote professional growth.²⁰

Enthusiasm for Improving Clinical Teaching

A consensus appeared among participants that improving their clinical teaching methods would benefit both them and the students by enhancing the clinical experience. As supported in previous research, most preceptors have no prior education or in-depth training on educational techniques, pedagogy, or andragogy.⁴ This finding is supported by previous researchers stating athletic training preceptors identified teaching and learning within the clinical setting as their top learning need in preceptor training.⁴⁴ However, they are limited with time, financial, and continuing education constraints to pursue this interest further. Preceptors have identified the enjoyment of teaching students and promoting their professional development as reasons they choose to be preceptors.⁴ Conversely, preceptors in our study reported their preceptor training focused more on program policy and procedures rather than principles of clinical teaching, even though this has been identified as a top learning area of interest both in this study and past literature.44

Limitations and Future Directions

Our study has several limitations. The intended sample size was estimated to be 251 participants ($P < .05, \pm 6\%$)²²; therefore, this study did not meet the statistical power anticipated. In part, this might be due to the timing of data collection from February to July 2021, during an unusual set of circumstances when preceptors were exceptionally busy with athletic training coverage during the COVID-19 pandemic. Given the low power in this study, the generalizability of the results should be cautiously inferred to preceptors outside this study population. The distribution of survey invitations also is factored in, as it is unknown exactly how many CCEs or PDs forwarded the e-mail to their respective preceptors or if the preceptors received the invitation due to spam filtering. The actual response rate of the survey is unknown since the recruiting e-mails were not sent directly to the target population. The precise number of preceptors or their direct contact information is unknown. The truthfulness of the survey or interview responses is assumed to be accurate. The frequency and content of preceptor training vary significantly across athletic training programs; therefore, each preceptor has a different level of comprehension of the clinical teaching models being investigated.

For future studies, several areas need to be explored. First, the teaching effectiveness of preceptors who do use clinical teaching models needs to be investigated in athletic training education. This has been studied in other health care professions. Secondly, the perceptions of preceptor training and barriers to teaching clinical teaching models with CCEs should be explored to understand program administrators' viewpoints in further integrating clinical teaching models into clinical teaching. The use of clinical teaching models over time should be evaluated in students to determine student

perceptions of preceptors who use specific clinical teaching models. Lastly, further investigators need to look at the professional preparation of preceptors with the evolution of immersive clinical education.

CONCLUSIONS

The ability of a preceptor to use and incorporate inclusive clinical teaching strategies that create a positive, studentcentered, engaging learning environment is vital. In our study, we show preceptors may be inadequately prepared by having a lack of knowledge of clinical teaching models like the OMP, SQF, or SNAPPS models. Intuitively, they already use some components of these models including supervision, feedback, and basic questioning techniques. However, preceptors could provide a much richer experience by learning how to correctly and persistently use these specific clinical teaching models to promote reflection, critical thinking and reasoning, and improved competence. Preceptors display an enthusiastic willingness to learn how to be more effective clinical teachers but need the professional development provided in preceptor training. Preceptors who are not exposed to clinical teaching models or the principles of teaching cannot be expected to develop expertise in being clinical educators. Using these clinical teaching models can provide preceptors with a better technique to meet the expectations of students and program administrators in providing an engaging, positive clinical experience.

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REFERENCES

- 1. Dodge TM, Mazerolle SM. Preceptors' influence on athletic training students' development of excitement and commitment to the field of athletic training. *Athl Train Educ J*. 2015;10(1):18–24. doi:10.4085/100118
- 2. Commission on Accreditation of Athletic Training Education. 2020 Standards for Accreditation of Professional Athletic Training Programs. Accessed November 3, 2022. https://caate.net/Portals/ 0/Documents/Standards%20and%20Procedures%20for%20 Accreditation%20of%20Professional%20Programs.pdf
- Bomar RE, Mulvihill T. Educating educators: perceptions of preceptors and clinical education coordinators regarding training at a division II athletic training program. *Athl Train Educ J*. 2016;11(1):10–17. doi:10.4085/110110

- 4. Nottingham S. Preceptors' perceptions of the preparation and qualifications for the preceptor role. *Athl Train Educ J*. 2015;10(4):302–314. doi:10.4085/1004302
- Mazerolle SM, Bowman TG, Dodge TM. Clinical instructional methods employed by preceptors in the clinical setting. *Athl Train Educ J.* 2012;7(4):157–165. doi:10.4085/0704157
- 6. Thon S, Hansen P. Preferred learning styles of professional undergraduate and graduate athletic training students. *Athl Train Educ J.* 2015;10(2):159–163. doi:10.4085/1002159
- Laurent T, Weidner TG. Clinical-education-setting standards are helpful in the professional preparation of employed, entry-level certified athletic trainers. *J Athl Train*. 2002;37(4 Suppl):S-248–S-254.
- Weidner TG, Trethewey J, August JA. Learning clinical skills in athletic therapy. *Int J Athl Ther Train*. 1997;2(5):43–49. doi:10. 1123/att.2.5.43
- Miller MG, Berry DC. An assessment of athletic training students' clinical-placement hours. J Athl Train. 2002;37(4 Suppl):S-229–S-235.
- 10. Nottingham SL, Kasamatsu TM. Paired athletic training preceptors' and students' perceptions of effective preceptor characteristics. *J Allied Health*. 2018;47(1):e1–e7.
- Gatewood EFC, De Gagne JC. The one-minute preceptor model: a systematic review. J Am Assoc Nurse Pract. 2019;31(1):46–57. doi:10.1097/JXX.00000000000099
- Shagholi R, Abadi SEH, Moghaddasi A, Syyadee T, Tayefi M. Teaching strategy of one minute preceptor and its approaches in the past two decades: systematic review. *Rev Clin Med.* 2018;5(4):123–131. doi:10.22038/RCM.2018.32851.1240
- Wolpaw TM, Wolpaw DR, Papp KK. SNAPPS: a learnercentered model for outpatient education. Acad Med. 2003;78(9):893-898. doi:10.1097/00001888-200309000-00010
- Heinerichs S, Vela LI, Drouin JM. A learner-centered technique and clinical reasoning, reflection, and case presentation attributes in athletic training students. J Athl Train. 2013;48(3):362– 371. doi:10.4085/1062-6050-48.2.17
- Sexton P, Levy L, Turocy PS, Barnum M. Master preceptor level one module two. NATA Professional Development Center. Accessed November 30, 2022. https://pdc.nata.org/courses/ master-preceptor
- 16. Weidner TG. *The Athletic Trainer's Pocket Guide to Clinical Teaching*. Slack Incorporated; 2009.
- 17. Sexton P, Levy LS, Willeford KS, et al. Supervised autonomy. *Athl Train Educ J*. 2009;4(1):14–18. doi:10.4085/1947-380X-4.1.14
- Barnum MG, Guyer MS, Levy LS, et al. Questioning and feedback in athletic training clinical education. *Athl Train Educ* J. 2009;4(1):23–27. doi:10.4085/1947-380X-4.1.23
- Levy LS, Gardner G, Barnum MG, et al. Situational supervision for athletic training clinical education. *Athl Train Educ J*. 2009;4(1):19–22. doi:10.4085/1947-380X-4.1.19
- Nottingham S, Henning J. Feedback in clinical education, part I: characteristics of feedback provided by approved clinical instructors. J Athl Train. 2014;49(1):49–57. doi:10.4085/1062-6050-48.6.14
- 21. Dalessio SJ, Carlino N, Barnum MG, Joseph D, Sovak MM. A pilot study investigating the effect of the supervision-questioning-feedback model of supervision on stimulating critical thinking in speech-language pathology graduate students. *Teach Learn Commun Sci Disord*. 2021;5(1):Article 5. doi:10.30707/ TLCSD5.1.1624982519.507364

- Dalessio (Procaccini) SJ. A tutorial for implementing strategic questioning in the clinical teaching environment. *Perspect ASHA Spec Interest Groups*. 2019;4(6):1465–1472. doi:10.1044/2019_ PERS-SIG11-2019-0015
- Dudding CC, McCready V, Nunez LM, Procaccini SJ. Clinical supervision in speech-language pathology and audiology in the United States: development of a professional specialty. *Clin Superv*. 2017;36(2):161–181. doi:10.1080/07325223.2017.1377663
- Castro FG, Kellison JG, Boyd SJ, Kopak A. A methodology for conducting integrative mixed methods research and data analyses. J Mix Methods Res. 2010;4(4):342–360. doi:10.1177/ 1558689810382916
- 25. von Elm E, Altman DG, Egger M, et al. Strengthening the reporting of observational studies in epidemiology (STROBE) statement: guidelines for reporting observational studies. *BMJ*. 2007;335(7624):806–808. doi:10.1136/bmj.39335.541782.AD
- 26. Tong A, Sainsbury P, Craig J. Consolidated criteria for reporting qualitative research (COREQ): a 32-item checklist for interviews and focus groups. *Int J Qual Health Care*. 2007;19(6):349–357. doi:10.1093/intqhc/mzm042
- Commission on Accreditation of Athletic Training Education. 2018-2019 CAATE Analytics Report. 2020. Accessed November 3, 2022. https://caate.net/Portals/0/Documents/2018-2019-CAATE-Analytics-Report_VF2.pdf
- Sample size calculator: calculate your sample size. SurveyMonkey. Accessed November 4, 2022. https://www.surveymonkey. com/mp/sample-size-calculator/
- 29. Simon M, White J. Survey/interview validation rubric for an expert panel. Dissertation Recipes. Published February 4, 2016. Accessed November 3, 2022. https://www.researchgate.net/profile/Laura_Hartman2/post/I_created_interview_questions_to_measure_co-teachers_perceptions_of_collaboration_Would_anyone_here_be_willing_to_review_them/attachment/59d6259279197b8077983e1a/AS%3A318165811171329%4014528 68048595/download/Expert-Validation+for+Interview+Questions+LH.doc
- 30. Portney LG. Foundations of Clinical Research: Applications to Evidence-Based Practice. 4th edition. F.A. Davis Company; 2020.
- Creswell JW, Poth CN. Five qualitative approaches to inquiry. In: *Qualitative Inquiry & Research Design: Choosing Among Five Approaches.* 4th edition. SAGE Publications, Inc; 2018:65–110.
- Barnum MG. Questioning skills demonstrated by approved clinical instructors during clinical field experiences. J Athl Train. 2008;43(3):284–292. doi:10.4085/1062-6050-43.3.284
- 33. Aagaard E, Teherani A, Irby DM. Effectiveness of the oneminute preceptor model for diagnosing the patient and the

learner: proof of concept. Acad Med. 2004;79(1):42-49. doi:10. 1097/00001888-200401000-00010

- Irby DM, Aagaard E, Teherani A. Teaching points identified by preceptors observing one-minute preceptor and traditional preceptor encounters. *Acad Med.* 2004;79(1):50–55. doi:10. 1097/00001888-200401000-00012
- Furney SL, Orsini AN, Orsetti KE, Stern DT, Gruppen LD, Irby DM. Teaching the one-minute preceptor. A randomized controlled trial. J Gen Intern Med. 2001;16(9):620–624. doi:10. 1046/j.1525-1497.2001.016009620.x
- 36. Wolpaw T, Papp KK, Bordage G. Using SNAPPS to facilitate the expression of clinical reasoning and uncertainties: a randomized comparison group trial. Acad Med. 2009;84(4):517-524. doi:10.1097/ACM.0b013e31819a8cbf
- 37. Farrell SE, Hopson LR, Wolff M, Hemphill RR, Santen SA. What's the evidence: a review of the one-minute preceptor model of clinical teaching and implications for teaching in the emergency department. J Emerg Med. 2016;51(3):278–283. doi:10.1016/j.jemermed.2016.05.007
- Seki M, Otaki J, Breugelmans R, et al. How do case presentation teaching methods affect learning outcomes? SNAPPS and the One-Minute preceptor. *BMC Med Educ.* 2016;16:12. doi:10. 1186/s12909-016-0531-6
- Teherani A, O'Sullivan P, Aagaard EM, Morrison EH, Irby DM. Student perceptions of the one minute preceptor and traditional preceptor models. *Med Teach*. 2007;29(4):323–327. doi:10.1080/01421590701287988
- Lyons K, McLaughlin JE, Wolcott MD, Grandy R, Williams CR. How pharmacist preceptors foster students' therapeutic reasoning using the one-minute preceptor method. *Am J Pharm Educ.* 2019;83(8):7212. doi:10.5688/ajpe7212
- Chinai SA, Guth T, Lovell E, Epter M. Taking advantage of the teachable moment: a review of learner-centered clinical teaching models. West J Emerg Med. 2018;19(1):28–34. doi:10.5811/ westjem.2017.8.35277
- 42. Turocy PS. The impact of instructor expertise and competency on student learning and strategies for improvement. *Athl Train Educ J.* 2016;11(3):158–160. doi:10.4085/1103158
- Payne EK, Walker SE, Mazerolle SM. Exploring athletic training educators' development as teachers. *Athl Train Educ J*. 2017;12(2):134–145. doi:10.4085/1202134
- Hankemeier DA, Kirby JL, Walker SE, Thrasher AB. Athletic training preceptors' perceived learning needs regarding preceptor development. *Athl Train Educ J.* 2017;12(1):39–45. doi:10.4085/ 120139

Appendix. Clinical teaching models survey. Survey instrument created and validated for use in this study. Abbreviations: NATA, National Athletic Trainers Association; OMP, One-Minute Preceptor.

Demographic Questions

Please answer the following questions concerning your role as a preceptor for a professional level Athletic Training Program.

1. Identify the athletic training setting(s) in which you currently serve as a preceptor (choose all that apply):

					University Secondary Clinic or H Profession Performin Military/P Occupatio								ry School Hospital onal Sports ing Arts Public Safety ional Health						
2.	2. What degree level of athletic training students do you supervise at the time of this survey?									or's	5	M	er's						
3.	3. Did you supervise professional level athletic training students between August 2018 and August 2020?											Y	es	No					
4.	How many years of experience do you have as a preceptor:				1	2	3	4	5	6	7	8	9	10+					
5.	On average, how many athletic training students do you supervi	se?	Per c Per c	lay: linical rotation:	1 1	2 2	3 3	4 4	5 5	6 6	7 7	8 8	9 9	10+ 10+					
6.	Do you have any formal degree preparation in the field of educa a) If yes, please list your degree and field of study.	ation	or teacl	ning?								Y	es	No					
7.	Have you completed either of the following types of preceptor t a) At your own institution specifically discussing methods of c	rainir linica	ng work Il teach	kshops? ing?								Y	es	No					
	b) NATA workshop "The Master Preceptor", specifically module 2 discussing models of clinical teaching including the One-Minute Preceptor, or the Supervision, Questioning, Feedback models?									Y	es	No							
8.	Have you used any of the following clinical teaching models in One-minute Preceptor Model Supervision, Questioning, Feedback (SQF) Model SNAPPS Model	your : Yes Yes Yes	role as No No No	a preceptor? Unsure Unsure Unsure															

The following terms are defined for use in this survey in the following manner:

Feedback: Providing a student with a comparison of their performance on a task compared to what is expected or a standard of performance to help them improve their clinical skills and knowledge.^{1,2}

Positive feedback is given when the students' performance if satisfactory and reinforces the students action.

Corrective feedback is given when the students' performance is incorrect or needs improvement.

<u>Clinical Reasoning</u>: the thought process used by students and clinicians when determining diagnostic or therapeutic intervention decisions by incorporating the concepts of knowledge, cognition, and metacognition ^{3, 4}

Supervision: "Preceptors must be on-site and have the ability to intervene on behalf of the athletic training student and the patient. Supervision occurs along a continuum that allows a student to move from interdependence to independence based on the student's knowledge and skills as well as the context of care." ⁵

Please answer the following questions on your clinical teaching by using the following rating scale:

			Very									
			Frequently Frequently (Multiple (Once per day) times per day)		Occasionally (3-4 times per week)	ccasionally Rarely 3-4 times (1-2 times. per week) per week)			Ne	ver		
			5	4	3	2	1			0		
9.	Ho a) b) c) d) e)	ow often as a precepto give a student positiv give a student correc ask follow-up questiv talk to the student ab have a student appro	r do you: ve feedback dur tive feedback d ons on a specifi out his/her clin ach you during	ing clinical edu luring clinical e c clinical skill ical reasoning clinical educat	ucation? education? the student perf strategies? tion for feedback	`ormed? k or mentorsl	5 5 5 nip? 5	4 4 4 4	3 3 3 3 3	2 2 2 2 2 2	1 1 1 1	0 0 0 0 0
10.	. Ho	w often do you use clin	nical teaching the	hat:								
	a)	has the student focus	on determining	a differential d	iagnosis'?		5	4	3	2	1	0
	b)	has the student system	natically presen	t patient case in	formation to yo	u?	5	4	3	2	1	0
	c)	has the student determ	nine their own p	lan of care bas	ed upon a patien	it's case?	5	4	3	2	1	0
	d)	is conducted by the st	udent leading th	ne clinical conv	ersation?		5	4	3	2	1	0
	e)	is conducted by the pr	receptor leading	the clinical con	nversation?		5	4	3	2	1	0
	f)	adapts level of superv	ision based upo	on the students'	skill level?		5	4	3	2	1	0
	g)	provides your prior ex	periences for the	ne student to lea	arn from?		5	4	3	2	1	0
	h)	allows the student to s	self-identify pos	sitive behaviors	during a patient	t interaction?	5	4	3	2	1	0
	i)	allows the student to s	self-identify mis	stakes during a	patient interaction	on?	5	4	3	2	1	0
	j)	allow the student to pr	rovide a rationa	le for their own	clinical decisio	n making?	5	4	3	2	1	0
	k)	allow the student to co	onvey their owr	a confidence lev	vel during patier	t interactions	? 5	4	3	2	1	0
	1)	asks questions at diffe	erent level of cri	itical thinking f	ollowing a patie	nt interaction	.? 5	4	3	2	1	0
	m)	provides feedback to t	the student base	d upon perform	nance or skill lev	vel?	5	4	3	2	1	0
	n)	provides the student in	mmediate feedb	ack on their cli	nical performan	ce?	5	4	3	2	1	0

SURVEY INSTRUMENT REFERENCES

- 1. Van De Ridder JMM, Stokking KM, McGaghie WC, Ten Cate OTJ. What is feedback in clinical education?: Feedback in clinical education. *Med Educ*. 2008;42(2):189-197. doi:10.1111/j.1365-2923.2007.02973.x
- 2. Ende J. Feedback in clinical medical education. JAMA. 1983;250(6):777-781.
- 3. Heinerichs S, Vela LI, Drouin JM. A Learner-Centered Technique and Clinical Reasoning, Reflection, and Case Presentation Attributes in Athletic Training Students. *J Athl Train*. 2013;48(3):362-371. doi:10.4085/1062-6050-48.2.17
- Neistadt ME. Teaching Clinical Reasoning as a Thinking Frame. Am J Occup Ther. 1998;52(3):221-229. doi:10.5014/ajot.52.3.221
- Commission on Accreditation of Athletic Training Education. 2020 Standards for Accreditation of Professional Athletic Training Programs. Austin, TX; 2018.
 https://conten.pet/Portale/0/Documents/Standards and Proceedures Professional Programs pdf

https://caate.net/Portals/0/Documents/Standards_and_Procedures_Professional_Programs.pdf