

Dynamic Paired-Behaviors in Effective Clinical Instruction

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Background: Pedagogical strategies related to clinical instruction are needed to improve students' education in the clinical setting.

Description: In this article, we use the relevant literature to identify and define "effective" clinical instructor behaviors in athletic training. In addition, we propose a pairing of behaviors as a cueing strategy for athletic training clinical instructors.

Objective: The purpose of the article is to provide a brief background on the following paired-behaviors: communication-action, demonstration-practice, and instruction-evaluation as key elements to effective clinical instruction in athletic training education.

Educational Advantages: If clinical instructors recognize the importance of using these paired-behaviors in clinical education, it may dramatically impact student learning.

Key Words: clinical education, clinical instruction, pedagogy, athletic training, education, behaviors.

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Full Citation:

Ford PD, Velasquez B. Dynamic paired-behaviors in effective clinical instruction. *Athl Train Educ J*; 2010;5(1):32-37

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Athletic training education curricula are continuing to refine and further develop pedagogical frameworks to prepare future professionals. The past directives from the NATA Education Council (now the Executive Committee on Education) and the Commission on Accreditation of Athletic Training Education (CAATE) have shaped athletic training education by emphasizing the importance of clinical education, where “Good teaching is the degree to which the teacher moves the student towards an outcome.”^{1 (p.1079)} Thus, effective clinical education through qualified and well prepared clinical instructors will ultimately improve students’ educational experiences and produce highly qualified athletic trainers.

Many health professions use both the classroom and the clinical environment to teach their profession’s necessary knowledge and skills. While athletic training clinical education occurs within various settings, a significant portion of content practical application is conducted in a sport setting. Clinical instruction that occurs in the presence of athletic teams creates permeable physical barriers. This open environment requires a supervising athletic trainer to provide concurrent patient care and student education to create competent professionals.² As a result, the competing needs in this setting may inhibit instructional effectiveness. Compounding the situation for many clinical instructors, is their lack of formal preparation in athletic training pedagogy, and selection into education based purely on their professional skills as an athletic trainer rather than their teaching abilities.³ In recognizing this concern, CAATE requires formalized training for clinical instructors. The same perception that expertise as a clinician does not necessarily guarantee expertise as an clinical educator extends to other health professions as well.¹ This dichotomous relationship between being both a clinician and an educator requires continued investigation and subsequent educational training.

Clinical education models that focus on knowledge transfer between the clinical instructor, active experience, and subsequent reflection to promote critical thinking and life-long professional development, are essential.⁴ As ATEPs implement curricular changes, there is increasing need for clinical instruction research that supports the planning and use of appropriate clinical teaching behaviors to improve the overall effectiveness of clinical instruction and knowledge integration between the classroom and practice settings.¹⁻²⁸ When developing and training clinical instructors, it is crucial that attention be paid to the type and frequency of clinical instructor behaviors used. Further, ongoing feedback must be provided to the clinical instructor regarding his or her performance in order to improve the quality of clinical instruction. Therefore, the purpose of this article is to use the relevant literature to identify and define effective clinical instructor behaviors in athletic training. In addition, we propose pairing these behaviors to use as a cueing strategy for athletic training clinical instruction.

Effective Clinical Instructor Behaviors

A clinical instructor’s behavior provides the basis for quality clinical education. Weidner (1997) states, “It (clinical instruction) involves applying the thoughtful and proactive teaching of psychomotor skills and professional behaviors, with the primary focus on the student rather than the patient.”^{12(p49)} An effective clinical instructor fuses theory with clinical skills for the student in a patient-centered environment. A search of the literature reveals four categories of common effective clinical instructor behaviors: 1) communication and interpersonal behavior; 2) instruction; 3) demonstration and modeling; and 4) evaluation and feedback.⁵⁻²⁰

Communication and Interpersonal Skills

Throughout the literature, the term communication is often interchanged with words such as dialogue, discussion, verbal directions, and information. An atmosphere of collegiality, respect, encouragement, concern, and thoughtfulness are often attributed to positive communication and more specifically interpersonal skills.^{17,19} Interpersonal skills can be viewed as the method in which communication is conveyed.

In the clinical setting, the communication pathway often includes, but is not limited to, the clinical instructor, patient, and student triad. A communication pattern can be as simple as the clinical instructor giving directions and/or providing information during the learning opportunity. A common pattern of giving direction and providing information is usually a verbal behavior that guides a process or defines the procedures necessary for providing health care for patients. A more complex communication pattern, such as discussion, can occur when questions arise or more explanation is provided on a topic. Whether simple or complex, the ability to measure the level of communication is essential. Communication can occur between clinical instructors, classroom faculty, coaches, and patients with the same attention to the student. Thus, effective communication patterns are essential for the student to understand the inner-workings of the profession.^{20,21} Dialogue can be viewed as specific communication which references preparatory tasks, communication with coaches or other allied health members, or among the clinical staff.

Researchers continue to find that interpersonal skills are essential in student perception of quality clinical instruction.^{17,19} These studies suggest interpersonal relationships improve between clinical instructors and students when attributes that demonstrate support, consideration, genuine interest, and encouragement are present in the educational process.^{17,19} Conversely, the literature reveals the negative effects of unhelpful communication, such as criticism of student performance in front of others by the clinical instructor.⁵⁻¹⁰

Instruction

Effective instruction is imperative to the learning process. Within clinical education, the goal is to facilitate a student's real-time critical thinking and the ability to problem solve. These skills are essential to molding a student into an expert practitioner. Stemmans and Gangstead¹⁸ explored the concept of "screening techniques" which include questioning, clarifying, and explaining as important behaviors of clinical instructors. Lauber et al.¹⁷ went further to suggest clinical instructors should "explain procedures clearly" and "explain the basis for actions and decisions." Instruction can also be defined as any *cueing* and/or *questioning* given during the learning opportunity. Cueing is either verbal or non-verbal behavior that is commonly used in skill instruction.^{4,18,22} *Questioning* is characterized by a verbal exchange or action that stimulates reflective thought, problem solving, and critical thinking.¹⁸ The process of *explaining* suggests that the clinical instructor provides the student specific information regarding a particular psychomotor skill with the ultimate purpose of having the student attempt that skill.¹⁸ Cueing and questioning techniques can also be used to further guide the student through the psychomotor skill process and promote critical thinking and student reflection leading to the transfer of knowledge.^{4,18,22-24}

Athletic training clinical education is unique in that a significant period of the students' clinical experience is spent in purposeful observation, whereby potential injuries are identified. Novice clinical instructors may miss opportunities for instruction when patient care is the primary objective.¹⁸ Thus, skill practice is dependent upon actual events that permit appropriate attempts by a novice practitioner. Subsequently, since the nature and type of injury events occur randomly, it is fundamentally important for the clinical instructor to plan opportunities for a student to *practice*, as well as identify "real world" opportunities in which a student can apply specific skills. Unfortunately, clinical instructors with limited experience are often unaware of learning opportunities for a student and may be preoccupied with their own personal cognitive, psychomotor development, and professional practice.^{11,18} Thus, the lack of attention to instruction often leads to missed practice opportunities by the student. Skill practice by students should be extensive, task appropriate, challenging, goal driven, and produce moderately successful attempts.²² *Practice* can be defined as any action taken by the student regarding a particular psychomotor skill. Furthermore, "guided practice" is any repeated behavior of a skill or portion of a skill performed by the ATS in an appropriate environment with a clinical instructor facilitating the learning process.^{8,17,18} The clinical practice that promotes competence with confidence or self-efficacy in students is an integral part of clinical instruction.

Demonstration and Modeling

Athletic trainers must competently perform a multitude of disparate skills on a daily basis to care for and protect the patient, the public, and the integrity of the profession. Students must also demonstrate skill competency to insure learning has taken place. The need for skill presentation is well supported in the physical education literature,²² where it incorporates effective teaching

pedagogy and inclusion of many previously learned behaviors to focus on the relationship between proper skill demonstration and student feedback. The Qualitative Measures of Teaching Performance Scale (QMTPS) Task Presentation Categories developed by Rink and Werner in 1989 evaluates a teacher's skill presentation of in terms of: clarity, demonstration, cueing, focus, and feedback to students.²² Students were found to perform the skill best when it was fully demonstrated, summary cues were used, and the student was allowed to rehearse or practice following the instructor's presentation. Therefore, for the purpose of this article, demonstration is defined as the performance of a clinical skill or a portion of a skill by the clinical instructor for the student.^{18,22}

Experts must physically demonstrate fundamental skills for the student during the learning process. Demonstration provides the student with a visual picture of how to appropriately perform a particular task, and when components are done in sequence, chaining occurs.^{22,23} For example, when chaining the Lachman's test, clinical instructors would first demonstrate how to position the patient, then their hand position, and finally how to provide appropriate anterior force. A combination of positive communication, interpersonal skills, explanation, cueing, questioning, and feedback are essential components of skill acquisition. The Academic Learning Time – Physical Education (ALT-PE) research²² confirms that demonstration must precede student practice, and that the combination of quality demonstration and student practice significantly impacts student achievement. The implication is that the physical demonstration of a psychomotor skill is an essential component in the student learning process.^{22,24}

In contrast to skill demonstration, role modeling by the instructor demonstrates professional behavior, eg. showing caring behavior for both the patient and the student. Campbell, et al., stated "Effective clinical teachers have been found to be good role models who enjoy teaching and demonstrating clinical skills and sound judgment."^{5(p1125)} Nursing literature also supports a philosophy of caring,^{5,11} where caring extends beyond the patient and becomes an educational objective in training a nursing student's bed-side manner. Campbell et al.⁵ described the helpful behaviors displayed in nursing education. One quote that is shared by a student was: "They make you feel you are doing a good job, they give you positive feedback, discuss appropriate nursing interventions with you, and give you a chance to correct mistakes without criticizing or belittling you."^{5(p1127)} These words further demonstrate the necessity to impart compassion to patients and students in athletic training, because a compassionate attitude is not only beneficial to a patient-clinician relationship, but it is often judged as effective clinical practice.

Feedback as Evaluation

Feedback provided during educational practice has been strongly advocated to support student learning. There is a direct link between feedback and learning that suggests that learning cannot occur without feedback.^{4,22-25} Unfortunately, due to the limited research focusing on the frequency of feedback given

during skill acquisition and the increased number of students in the field, research in physical education²² has not produced similar results regarding the relationship of feedback to learning. However, pedagogy experts across disciplines recommend providing specific feedback to the student.^{4,22-25}

Feedback can be general, specific, intrinsic, extrinsic, augmented, positive, negative, relevant, irrelevant, timely, delayed, frequent, or restricted.^{4,22-25} For feedback to be useful as an evaluation tool, students must be given knowledge about both the skill outcome and performance. Experts agree that feedback should be given frequently throughout the skill acquisition and development process.^{4,22-25,27} Furthermore, clinical instructors should be: 1) specific, detailing what was correct and what needs to be changed; 2) developmentally appropriate, higher developmental levels require increased complexity of feedback; 3) timely, immediate feedback provides that best relative information; 4) followed up with practice to reinforce learning; and 5) positive, best for student motivation.^{4,22-25,27} As such, Swann²⁰ provides the clinical instructor with six guidelines for providing feedback: 1) be specific; 2) avoid “glory” or “killer” statements; 3) enhance or maintain the student’s self-esteem; 4) focus on the behavior not the person; 5) balance positive feedback and feedback for improvement; and 6) use a model to frame feedback.

Most instruments discussed in the literature identify aspects of feedback when assessing the effectiveness of clinical instructor behavior. *Feedback* in clinical education and skill development is verbal information either during or following student behavior that is specific and corrective with the aim of improving skill acquisition.¹⁸ Feedback, however, should not be limited to oral information; written feedback should be used throughout the evaluation of a student’s performance. Similar attributes of oral feedback are manifested in the written evaluation of a student’s and clinical instructor’s performance.

Dynamic Paired-Behaviors in Effective Clinical Instruction

The previous discussion on clinical instructor behaviors illuminated communication and interpersonal skills, demonstration and modeling, and feedback as evaluation as critical and noteworthy components of effective education. We now turn attention to chaining the behaviors together in order to facilitate appropriate movement of a student through a learning cycle.

Based on Kolb’s Experiential Learning Model^{27,28} students move from concrete experience (feeling) to reflective observation (watching) to abstract conceptualization (thinking) to active experimentation (doing). Clinical instructors should align their behaviors to move the student through the learning cycle.

The clinical education environment and the student’s previous knowledge and experience initiate the learning cycle. The student begins to “feel” their way around the clinical experience. It is the “communication” behavior on the part of the ACI that motivates the student into action and moves them toward the second phase of the cycle. Student now engage in purposeful

observation of athletic training as they begin to watch events around them. For the next phase of the cycle to begin, the ACI must engage the student further by presenting conflicts, differences, or disagreements in the clinical experiences.^{28,29} This is often accomplished by questioning techniques which are part of the “instruction” behavior of the ACI. This instruction allows the student to continue the thinking process and conceptualize (abstract conceptualization) the problem. This point is crucial but backtracking to previous phases of the cycles may happen; however, this is often necessary in order to allow the student to move forward. The driving force behind student progress in many situations is the ACI demonstrating a particular skill and then permitting the student to practice or engage in active experimentation (doing). Finally, evaluation feedback assists in moving from experimentation to further testing of theory (abstract conceptualization) and development of new theories (concrete experiences).

In applying Kolb’s Experiential Learning Model^{28,29} we wanted to utilize a simple pedagogical strategy to link one effective behavior with another in moving a student through the learning cycle. The intent of this dynamic relationship is to use a more common behavior such as demonstration by the clinical instructor to serve as a cuing technique for its paired-behavior student practice. If the clinical instructor is aware of effective behaviors and can see the natural link between each paired-behavior then the outcome should be an increase in the frequency of these behaviors. The increase in behaviors will ultimately benefit student learning. When, for example, a clinical instructor engages in instructional behavior and subsequent feedback, then students are more likely to produce the desired learning outcomes. We suggest the following dynamic paired-behaviors as a simple way to increase the frequency of effective pedagogical behaviors by clinical instructors (figure 1).

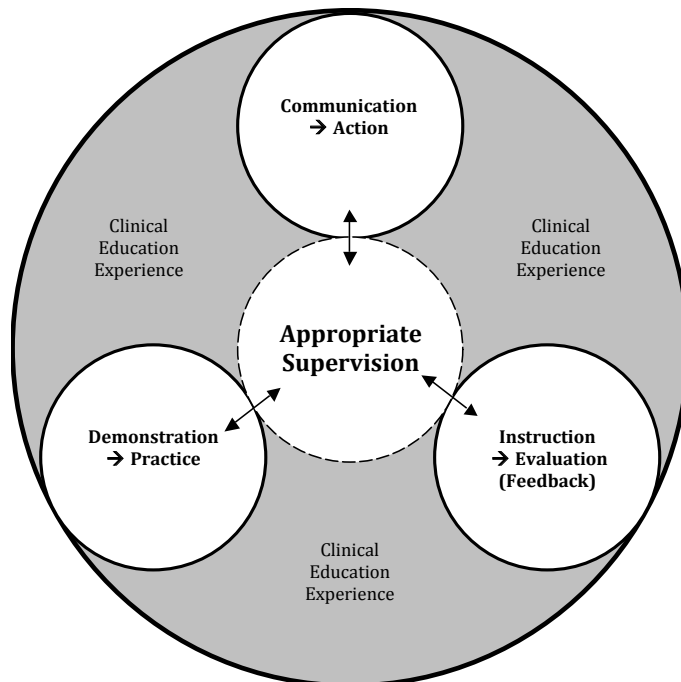


Figure 1. Dynamic Paired-Behaviors in Effective Clinical Instruction

Communication —→ Action

Appropriate and relevant verbal communication is the backbone to a successful learning environment in the ever-changing world of athletic training. An effective clinical instructor should demonstrate a concerted effort to effectively communicate with students during supervision. Student engagement is often utilized as a measure of student learning. Communication should initiate student focus to participate (*action*) in clinical practice.³⁰ Communication is complicated and may vary depending on many factors including the educational level of the athletic training student, the experience level of the clinical instructor, and the physical environment where clinical learning occurs. In the case of the educational level, novice students will need more communication or telling by the clinical instructor to provide guidance and reassurance when attempting new skills in this real-world environment. This “telling” is the beginning of the instruction process.²⁷ The type of communication in clinical instruction may come in many forms ranging from general conversations about athletic training, to specific directions, to information, and finally convening student expectations. When clinical instructors communicate high expectations, student motivation is increased and subsequent action will be taken by the student.²⁷ This paired-behavior challenges every clinical instructor to evaluate his/her modes of communication to generate student action and make appropriate changes if necessary.

Demonstration —→ Practice

Psychomotor skills in athletic training require practice on the part of the student to develop and refine that skill. However, learning those skills in a clinical setting often requires students to visualize that skill modeled and demonstrated by an expert. We believe if a clinical instructor finds it necessary to demonstrate a skill then the student probably has demonstrated a lack of competency and further practice of that skill is warranted. It is understandable in providing athletic training services that there is not always an appropriate time for a student to practice a particular skill, however, a student will be more likely to reproduce the skill accurately if permitted to practice the skill immediately after the demonstration. Often fear and apprehension limit student experience in the transfer of knowledge⁴ thus planned and immediate access to student practice will allow that novice student to gain experience as they progress toward competency.²⁷

Instruction —→ Evaluation (Feedback)

Communication initiates learning, instruction formalizes it, and evaluation (feedback) promotes further learning or reflection. During the clinical field experience, evaluation is essential during instruction (questioning, etc) of student skill acquisition either during or immediately following the learning opportunity. This immediate evaluation is the primary way for novice clinicians to gain the necessary information to become experts.¹⁸ Evaluation should provide the student with knowledge regarding how well they performed the skill, (e.g., you used proper patient position) as well as knowledge of results (e.g., you correctly stated positive findings). In addition, the evaluation should be timely,

specific (skill and developmental level), and positive. Feedback is expected and widely accepted from our current generation of students, making it ever important for clinical instructors to limit missed opportunities in giving feedback.³¹ If clinical instructors find themselves asking questions or providing cues during student performance this should trigger the need for student feedback. This pairing of behaviors should increase the frequency and, in turn, promote reflective thinking, confidence, and motivation in our students.

Summary

Throughout the literature it is clear as to what constitutes effective clinical instructor behavior.^{1,5-20} In addition, Kolb^{28,27} provides us with a useful way to view how students learn. The use of these behaviors through intentional and appropriate clinical supervision will provide students with the greatest opportunity to become successful and competent athletic training professionals. The Dynamic Paired-Behaviors of Effective Clinical Instruction paradigm is a simple method for clinical instructors to chain behaviors to enhance athletic training clinical education.

References

1. Emery M. Effectiveness of the clinical instructor: Student perspective. *Phys Ther.* 1984;64(7):1079-1083.
2. Knight K. Progressive skill development and progressive clinical experience responsibility. *Athl Train Educ J.* 2008;1(Jan-Mar):2-4.
3. Weidner T, Henning J. Historical perspective of athletic training clinical education. *J Athl Train.* 2002;37(suppl):S-222-S-228.
4. Radtke S. A conceptual framework for clinical education in athletic training. *Athl Train Educ J.* 2008;2(2):36-42.
5. Campbell I, Larrivee L, Field P, Day R, Reutter L. Learning to nurse in the clinical setting. *J Adv Nurs.* 1994;20:1125-1131.
6. Curtis N, Helion J, Domsohn M. Student athletic trainer perceptions of clinical supervisor behavior: A critical incident study. *J Athl Train.* 1998;33(3):249-253.
7. Dunlevy C, Wolf K. Perceived differences in the importance and frequency of practice of clinical teaching behaviors. *J Allied Health.* 1992;21(3):175-183.
8. Jarski R, Kulig K, Olson R. Clinical teaching in physical therapy: Student and teacher perceptions. *Phys Ther.* 1990;70(3):173-178.
9. Laurent T, Weidner T. Clinical education setting standards are helpful in the professional preparation of employed, entry-level certified athletic trainers. *J Athl Train.* 2002;(suppl):S-248-S-254.
10. Laurent T, Weidner T. Clinical instructors' and student athletic trainers' perceptions of helpful clinical characteristics. *J Athl Train.* 2001;36(1):58-61.
11. Scanlan J. Learning clinical teaching. *Nurs Health Care Pers.* 2001;22(5):240-246.
12. Weidner T, August J. The athletic therapist as clinical instructors. *Athl Ther Today.* 1997;2:49-52.

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13. Weidner T, Henning J. Being an effective athletic training clinical instructor. *Athl Ther Today*. 2002;7(5):6-11.
 14. Weidner T, Henning J. Importance and applicability of approved clinical instructor standards and criteria to certified athletic trainers in different clinical education settings. *J Athl Train*. 2005;40(4):326-332.
 15. Irby D. Clinical teaching and the clinical teacher. *J Med Educ*. 1986;61:35-45.
 16. Foster D, Leslie D. Clinical teaching roles of athletic trainers. *J Athl Train*. 1992;27(4):298-302.
 17. Lauber C, Toth P, Leary P, Martin R, Killian C. Program directors' and clinical instructors' perceptions of important clinical instructor behavior categories in the delivery of athletic training clinical instruction. *J Athl Train*. 2003;38(4):336-341.
 18. Stemmans C, Gangstead K. Athletic training students initiate behaviors less frequently when supervised by novice clinical instructors. *J Athl Train*. 2002;37(suppl):S-255-S-260.
 19. Stith J, Butterfield W, Strube M, Deusinger S, Gillespe D. Personal, interpersonal, and organizational influences on student satisfaction with clinical education. *Phys Ther*. 1998;78(6):635-645.
 20. Swann E. Communicating effectively as a clinical instructor. *Athl Ther Today*. 2002;7(5):28-33.
 21. Carr D, Drummond L. Collaboration between athletic training clinical and classroom instructors. *J Athl Train*. 2002;37(suppl):S-182-S-188.
 22. Silverman S, Ennis C. *Student Learning in Physical Education: Applying Research to Enhance Instruction*. Champaign, IL: Human Kinetics; 1996.
 23. McKeachie W. *Teaching Tips: Strategies, Research, and Theory for College and University Teachers (10th ed.)*. Boston, MA: Houghton Mifflin Company; 1999.
 24. Randall L. *Systematic Supervision for Physical Education*. Champaign, IL: Human Kinetics
 25. Barnum M et al. Questioning and feedback in athletic training clinical education. *Athl Train Educ J*. 2009;4(1):23-27.
 26. Silverman S, Deviller R, Ramirez T. The validity of academic learning time-physical education (ALT-PE) as a process of measure of achievement. *Res Quart Exerc Sport*. 1991;62(3):319-325.
 27. Gardner G, Harrelson G. Situational teaching: Meeting the needs of evolving learners. *Athl Ther Today*. 2002;7(5):18-22.
 28. Kolb A, Kolb D. *Experiential Learning: Experience as the Source of Learning and Development*. New Jersey: Prentice Hall; 1984.
 29. Kolb A, Kolb D. Learning styles and learning spaces: enhancing experiential learning in higher education. *Academy of Mgt Learning & Educ*. 2005;4(2):193-212.
 30. Chickering A, Gamson Z. *Seven principles for good practice in undergraduate education*. AAHE Bulletin; 1987.
 31. Monaco M, Martin M. The millennial student: a new generation of learners. *Athl Train Educ J*. 2007;2(3):42-46.