

Clinical Instruction for Professional Practice

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Objective: To present the principles of adult learning and mentoring to help clinical instructors better educate athletic training students (ATs) during their clinical experiences, with the end result being a better prepared, competent entry-level practitioner.

Background: The principles of adult learning must be applied to ATS clinical education in order to develop more task mature and knowledgeable entry-level practitioners. Because clinical instructors are typically educated as clinicians rather than educators, they are generally not well-versed in the principles of adult learning, and generally do not spend a great deal of time designing learning experiences, appropriate supervision techniques, or mentoring strategies within the students' clinical experiences.

Description: Concepts of adult learning, such as task maturity, self-concept, and self-directed learning, are keys to

the development of competent practitioners. As espoused by Knowles, the Dreyfus five stage model of skill acquisition supports the concepts of adult learning and is easily applied to clinical education of the ATS. Modifications of this model and other adult learning models place students along a learning continuum where their progress can be enhanced or delayed depending on the instructional strategies employed by their clinical instructor (CI).

Clinical Advantages: If instructional strategies are changed to correctly match the learner's progression, the learner will continue to move toward becoming a competent entry-level practitioner. These instructional adjustments will also allow the student to become more competent and self-confident in his or her clinical and decision-making skills.

Key Words: Clinical education, skill acquisition, adult learning

Entry-level education programs for athletic training and other health care professions struggle to combine textbook knowledge, laboratory experiences, and clinical skills with the ultimate goal of producing well-rounded practitioners who can think critically and act functionally. Structured clinical education experiences play a vital role in helping students develop their critical thinking and clinical decision-making skills. Equally important, the clinical education setting also provides the professional socialization needed for students to successfully transition into the role of entry-level practitioner.¹ To ensure

continuous student development through their clinical experiences, educators and clinical instructors should incorporate the principles of adult learning theory. This paper will identify the needs of the adult learner and present a model for skill acquisition and clinical performance that can be used by athletic training educators and clinical instructors when designing students' clinical experiences.

Researcher and educational theorist Malcolm Knowles² has postulated some of the most recent and widely accepted theories of adult education. It must first be clarified that the adult classification used here does not necessarily refer to the chronological age of the learner. In fact, a learner may demonstrate the characteristics of a young learner or child and be more appropriately taught using pedagogical concepts relevant to their respective level of task maturity. Task maturity is simply the level of learning or experience a learner possesses relative to the task in question. However, the same learner may possess a high level of task maturity relative to a second, completely different task. For example, a first-year athletic training student may have high task maturity with taping and wrapping skills, yet low task maturity with orthopedic evaluation skills.

The self-concept of the adult learner is also important and must be considered. Adult learners need to know the value and utility of



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what they are learning, and have a very strong need to perceive themselves and to be perceived by others as a self directed and autonomous. Instructional strategies that fail to recognize or acknowledge that task maturity changes in learners run the great risk of producing learners that are passive and dependent upon the instructor.³ As task maturity increases, learners become self directed, autonomous learners. Experience is also important to adult or task mature learners.⁴

Dreyfuss⁴ developed a five stage model of skill acquisition that meshes very well with the basic concepts advocated by Knowles (see Table 1). Stage 1 of the Dreyfuss Model identifies the characteristics of a novice learner. Novice learners have no experience relative to the task they are learning, and as such, are very dependent upon context free rules. A novice is given rules to guide their actions, and if left to their own devices, will invariably follow those rules regardless of the external circumstances. The Stage 2 learner, the Advanced Beginner, has experienced a sufficient number of examples and begins to develop knowledge of relevant context. The transition from Novice to Advanced Beginner is partly dependent upon sufficient task repetition; however, an instructor who specifically identifies meaningful aspects of the task to the learner heavily influences this transition as well. A learner in Stage 3, the phase of Competence, experiences so many relevant contextual factors that they potentially become overwhelmed. As a strategy to deal with this, the learner begins to organize contextual factors and develop a plan to place those factors on a hierarchy of importance and/or relevance. A critical characteristic of learners in this stage is that the outcomes of decisions made by the learner become personal to the learner and they begin to feel responsible for their actions and accept responsibility for their consequences. The positive and negative emotional experiences encountered during Stage 3 act to strengthen successful decisions and inhibit unsuccessful decisions. Such emotional experiences are vital to the learner's progression from Competence to Stage 4 Proficiency. During this next stage, the learner is capable of seeing and understanding different aspects of the situation and can further discriminate important variables from less important variables and

Table 1. Dreyfuss Five Stage Model of Adult Skill Acquisition

!	Stage 1: Novice
"	Rule dependant, unable to recognize context
!	Stage 2: Advanced Beginner
"	Beings to recognize and understand context and environment considerations
!	Stage 3: Competence (2-3 years' experience)
"	Begins to develop schemes to distinguish less important from more important context
!	Stage 4: Proficient (3-5 years' experience)
"	Actions guided by situational discriminations
!	Stage 5: Expert (5+ years' experience)
"	High level of situational discrimination and immediate determination of action

act accordingly. However, the learner must still consciously make decisions as to the best course of action based on the contextual factors. Finally, an individual in Stage 5 of the Dreyfuss Model is identified as an Expert whose actions are characterized by the ability to recognize the contextual information and instinctively respond with little or no conscious thought in reaching the decision to respond or deciding which action is best given the circumstances.

Benner⁵ applied the Dreyfuss model specifically to nursing using the same basic phases or stages. Benner described the novice nurse as greatly dependent upon rules and directions that are easily followed. It is critical in this stage that rules and directions are not dependent upon prior circumstances, as the novice simply has content knowledge for a basis of comparison and displays very rigid and inflexible behavior. A sound instructional strategy may involve comparing the present case or situation to a similar case from the textbook. Patient care situations that are very stable, simple, and straight forward are best suited for a novice learner. The advanced beginner, according to Benner, displays a heightened awareness of performance feedback, and is very cognizant of the performance of their colleagues and peers. As in the Dreyfus model, the advanced beginner is able to recognize contextual information; however, he or she is not yet capable of fully processing the information. The volume of information the advanced beginner is trying to process may become overwhelming. In this stage, Benner alludes to the importance of the supervisor helping the learner keep anxiety at a manageable level and maintaining a calm environment while being supportive or nurturing.^{6,7}

Benner's modification of the Dreyfuss model compliments the concepts presented in the strategic questioning model. The underlying premise is that learners move or progress from lower, rote levels of knowledge to higher levels of cognitive processing. This transition is critical. The ability to repeat cognitive material or perform a clinical skill merely reveals the learner is at a minimal level of cognitive and psychomotor proficiency. Transitioning learners from lower levels to higher levels of thinking and performing requires active strategies from the clinical educator.

The critical theme gained from analysis of the Dreyfuss, Benner, and situational supervision models is that instructional strategies must change as the learner moves from one phase or stage to the next. In fact, if instructional strategies do not change, the result will very likely be that the learner is hindered from progression to the next phase or stage. The impact of this is heightened by misconceptions regarding direct supervision and what are appropriate and inappropriate instructional behaviors given the learner's level. If the supervising clinical instructor does not allow students to make decisions or follow through on plans of action, their progression as a learner may be delayed. Likewise, failure to supervise by simply leaving a student unattended eliminates any opportunity for feedback and confirmation or correction of behaviors and decisions.

One very important aspect of the work done by Benner is that competence exists on a continuum. Most educators would readily

agree that a first semester student is quite different from a senior student in terms of skill and ability; however, the continuum advocated by Benner proposes that a learner does not reach Expert, Stage 5, until he or she has been practicing in the profession for 3 to 5 years. This concept may prove to be a critical element in resolving a current issue in athletic training education. A common charge against entry-level athletic training education programs is that entry-level graduates are often incapable of functioning in a work setting. While this alleged shortcoming has yet to be documented, further examination of such concerns may help direct further enhancement of current educational practices.

A certain level of dissatisfaction with the performance of entry-level clinicians is not unique to athletic training. Ramritu and Barnard⁸ reported entry-level nurses self identified their ability to provide care as limited. Additionally, the new clinicians reported difficulty in organizing their workload and cited an inability to prioritize treatment needs of multiple patients. Subjects in the study also indicated there were certain entry-level skills that they could reasonably be expected to perform; however, more advanced skills required additional practice and time to master. Messmer, Jones and Taylor⁹ outline a shadowing program designed to train entry-level nursing graduates to work in an Intensive Care Unit. Messmer et al⁹ cite a shortage of entry-level nurses and the need for rapid skill acquisition as the rationale for the program. The very fact that there is a need for such a program speaks equally to the educational process and the clinical environment the graduates are entering. Langdale et al¹⁰ studied 39 medical residency programs and found a wide variability in the perceived importance of specific clinical skills among the residency directors. Again, the complex, even somewhat ambiguous, nature of the clinical environment has the potential to significantly influence the performance of the entry-level practitioner. Del Bueno¹¹ reported only 30% of inexperienced nurses, in a sample of over two thousand, possessed a sufficient level of critical thinking ability relative to clinical practice. Entry level dieticians self reported a level of "well prepared" on only 56% of 145 competencies used in a survey by Rose, Mcalpine, and Strychar.³ Keller and Ward¹² investigated whether or not educational programs in physical therapy and occupational therapy sufficiently prepared graduates in the area of managing burn patients. The graduates reported being well prepared in the areas of basic science, but not well prepared in the area of burn management, unless they had completed a specific rotation dealing directly with burn patients.

Historically, much research has been done with clinical education in allied health education.¹³ Field¹⁴ refers to the knowledge needed to move from novice to expert as clinical acumen and contends that such knowledge is more easily obtained by students if they are allowed the freedom to function more autonomously in a clinical environment. Current direct supervision guidelines do not dictate that students cannot function autonomously while they are being directly supervised; rather, students must be given the support and allowed the freedom to

progress from one phase of learning to the next. Both the absence of clinical supervision and inappropriate instructional behaviors can inhibit this progression. Students need guidance and appropriate feedback as they begin to recognize and assimilate contextual clues in clinical experiences. The sheer volume of contextual clues can overwhelm a student, making it necessary for the clinical instructor to assist them in identifying those bits of information most salient given the specific situation. The knowledge obtained through this process acts as the foundation for future effective clinical decision making. These are complex interactions, and as such, they require continued examination of the entire educational process and development of new strategies for mentoring entry-level practitioners. Athletic Training's body of knowledge has evolved as rapidly as the demands of the clinical setting. Athletic training education has also evolved; however, it may be time to evaluate the expectations placed on the entry-level athletic trainer and the realistic capability of the entry-level education program.

The content in this series of articles shares similarities and differences. To a large degree, the articles share a common thread that supports the existence of both a knowledge and skill continuum in learners. Regardless of how the phases or stages are labeled, the very fact that they exist merits consideration in and of itself. Recognizing each student's location along the continuum is the first step in facilitating their progress from one phase to the next. Specific strategies have been presented to help students progress through the stages of learning. The desired outcome of entry-level athletic training education programs should be an entry-level athletic trainer that can think critically, make sound clinical decisions, and function appropriately within the real-world clinical setting.

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