Take a Page from Your Coach's Play Book: Teaching Technical and Tactical Skills in Athletic Training

Jeremy R. Hawkins, PhD*; Elizabeth B. Sharp, PhD*; Skip M. Williams, PhD[†] *Department of Kinesiology, Colorado Mesa University, Grand Junction; [†]Department of Kinesiology and Recreation, Illinois State University, Normal

Context: The ability to demonstrate sound clinical reasoning is needed for a practicing athletic trainer. However, instruction on how to make a correct clinical decision may be deficient in many athletic training programs.

Objective: To provide an overview of how to teach technical and tactical skills, using both a tradition and a nontraditional approach, and to apply this teaching method to athletic training education.

Background: The teaching of technical skills involves four steps: (1) introduction, (2) demonstration and explanation, (3) practice, and (4) error correction. The teaching of tactical skills takes technical skills a step further by putting them into action. To teach a tactical skill, coaches (1) identify the decision to be made, (2) determine knowledge needed to make a good decision, (3) identify cues that should or should not be attended to, and help to ensure the cues are interpreted correctly, (4) determine appropriate tactical options, and (5) design an opportunity to practice reading the situation and choosing appropriate tactics. Applying this approach to athletic training, students may be better prepared to make good decisions when placed in a situation to do so.

Description: This paper discusses how applying a methodology for teaching technical and tactical skills will help athletic training students to become better at clinical decision making. It also provides an application example that can be adapted to other situations aiding in the implementation of this approach.

Clinical Advantage(s): This approach can be applied to numerous situations and scenarios, preparing athletic training students to be better clinicians through proper clinical reasoning and decision making.

Conclusion(s): The ability to reason clinically is a foundational skill that needs to be taught in athletic training programs. Teaching technical and tactical skills is a viable method to help athletic training students develop this skill.

Key Words: Critical thinking, instructional techniques, clinical reasoning

Dr Hawkins is currently an Assistant Professor of the Department of Kinesiology and Director of the Athletic Training Program at Colorado Mesa University. Please address all correspondence to Jeremy R. Hawkins, PhD, Colorado Mesa University, Department of Kinesiology, 1100 North Avenue, Grand Junction, CO 81501. jrhawkins@coloradomesa.edu.

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INTRODUCTION

Scenario: This past spring you graduated with your degree in athletic training and passed your certification exam. Your first job is at the high school in your home town. The first few weeks have been a bit rocky, but you are managing because you are doing what you love. You are in the athletic training room preparing for football practice when a volleyball player is carried in by 2 of her teammates. The teammates set her on a treatment table and head back to practice. What do you do?

Although the scenario above is fictional in nature, situations like this occur frequently in the athletic training setting. Some have expressed concern that newly credentialed athletic trainers lack the decision-making skills to handle these situations.^{1,2} The concerns are attributed to a lack of decision-making skills to inexperience in situations where an athletic training student is asked to make a clinical decision, ie, a lack of autonomy under direct supervision.^{1,3} Individuals from the field of medicine question how well decision-making skills are being taught,^{1,4,5} a question that most likely is applicable across health care professions.

In 2009, Geisler and Lazenby discussed "the need to develop and implement a pedagogy of thinking that's capable of bridging classroom knowledge to clinical education through experiential thinking."6 They elaborate on the concept of clinical reasoning, citing the work done by Groopman,⁴ and define clinical reasoning as "a multifactorial and complex mental process inclusive of multiple methods for diagnosis formulation; each with their own strengths, limitations, and applications depending upon the individual and context under study."⁶ Please note, for the purposes of this paper, clinical reasoning and decision making are used interchangeably. Geisler and Lazenby⁶ introduce 2 different methods to reason clinically, hypothetico-deductive reasoning and case pattern recognition, and discuss their application during didactic and clinical education. Sibold⁷ and Speicher et al⁸ have also presented ideas to facilitate learning how to reason clinically. Inherent in each of these approaches is foundational knowledge, which is used to reason clinically. Little is said concerning how to build this foundation. An approach commonly used in coaching for teaching decision-making skills may fill this void.

Coaches routinely teach technical and tactical skills to enhance athlete success. Technical skills refer to specific procedures to move one's body to perform an action.⁹ Examples of technical skills in the sport of basketball are dribbling, passing, and shooting. In athletic training education, technical skills can include taping, performing special tests, and splinting among many others. The teaching of tactical skills takes technical skills a step further by putting them into action. In sport, this is done to give one team an advantage over the other team.^{9–12} Some tactical considerations in basketball are types of defense, offensive schemes/ plays, and deciding whom to guard on a fast break. Within

athletic training education, the proper use of tactical skills should lead to appropriate clinical practice. For example, using the same technical skills listed previously, the associated tactical skill includes how to tape one injury differently than another, which special tests to perform in a given situation, and what type of splint to use, and how it needs to be applied, depending on the injury.

The purpose of this paper is twofold. First, we will provide an overview of how to teach technical and tactical skills following a traditional approach. We will also present a nontraditional approach for teaching technical and tactical skills called the tactical games approach.^{11,12} Basketball skills and a sprained ankle will be used as examples for clarification. Second, we will return to the opening scenario to demonstrate how these skills can be applied to prepare athletic training students for clinical practice, following both the traditional and nontraditional approaches. The intent in doing these 2 things is to introduce educators (classroom instructors and clinical preceptors) to a new or different way to prepare athletic training students for decision-making situations, while under direct supervision. Using these approaches, we believe athletic training students may be better prepared to make good decisions when placed in a situation to do so.

TEACHING TECHNICAL SKILLS

The techniques or technical skills of athletic training are foundational just as dribbling, passing, and shooting are central in the game of basketball. Whenever someone learns a new motor skill, 3 stages of learning occur: a mental (cognitive) stage, a practice (associative) stage, and an automatic (autonomous) stage.^{9,13} In the mental stage, the performer relies heavily on the cognitive understanding of what they are to do. The brain actively seeks connections with previously learned activities. During the practice stage, less mental energy is used, but the performer focuses on refining of timing, coordination, and the quality of feedback. Sensory feedback, both visual and kinesthetic, is very important in this stage. Performance becomes reliable in the automatic stage as mental capacity is freed up to focus on more critical elements or the tactical application.

For illustration, when an athlete is first learning to shoot a basketball, they have to focus on many cues (mental stage).^{9,13} They are making sure that their feet are placed correctly, hand is positioned on the ball, eyes on the basket, and that they use the correct form when shooting. The brain is constantly trying to send signals to the body to complete these tasks correctly. After the initial form is learned, the athlete continues to practice the skill (practice stage)^{9,13} while making some refinements such as bend the knees more or hold the follow-through. Eventually, the body is able to perform the task of shooting without much mental input (automatic stage),^{9,13} and an athlete can shoot with proper form in multiple situations. Likewise, when an athletic training student is first learning how to evaluate an injury, they are trying hard to

remember all of the history questions they need to ask and when to inspect and palpate (mental stage).^{9,13} Once they get down the pattern of an evaluation, they are able to recognize which questions are important during the history portion and which are not. They become more guided in their inspection and palpation, realizing that not everything needs to be done every time (practice stage).^{9,13} Over time, this process becomes automatic (automatic stage),^{9,13} and they are able to utilize the same steps not only with additional ankle injuries, but also with injuries to other body parts. The 4 steps to teaching a new technical skill in sport⁹ help individuals transition through the 3 stages of learning. When introducing the technical skill, be brief with explanations but

individuals transition through the 3 stages of learning. When introducing the technical skill, be brief with explanations but include how the skill will be used. The second step includes demonstrating the technique properly several times while explaining the different parts. It is important to tell athletes what to look for (1-2 cues) during the demonstration as well as how to relate the technique to previously learned skills. The third step involves the athletes practicing the technical skill. It is essential to keep practices short and frequent while the skill is new, practice in gamelike or tactical situations as soon as possible, and make sure that the athletes experience some success at each practice. The final step of correcting errors includes providing feedback on how the performance compares with the desired outcome and tips on how to change or improve the performance. When giving feedback, remember to only correct 1 error at a time and keep feedback simple and precise.

This method of teaching technical skills, both cognitive and psychomotor, is a very common approach in traditional classrooms. Students are given information, they are asked to apply that information to a task, they are given feedback, and the cycle repeats as more information is given. As information is added to an athletic training student's content knowledge, they move between the mental, practice, and automatic stages in the application of those technical skills. However, it is important to not just be able to perform a technical skill, but also be able to make decisions on how and when to perform it within a specific context or a tactical situation.

TEACHING TACTICAL SKILLS

Technical skills are foundational in sports and athletic training, but without the tactical ability of applying those skills, they become useless and mundane. Teaching tactical skills includes the involvement of 3 key components that makes up the tactical triangle.⁹ The first component is the ability to read the situation. Athletes need to be able to gather information, assemble the information in a meaningful way, and focus on the relevant cues to be able to identify the problem. The second component is having knowledge about the rules, game plan, strengths and weaknesses of opponents and self so that they can determine the tactical options that are available to them. The final part of the tactical triangle is the skill of making decisions. Coaches are encouraged to teach athletes to make decisions by using different types of practice, teaching tactics, and using questioning techniques. The use of questioning techniques in particular provides feedback to ensure the decisions that are being made are correct decisions.

For illustration, during a basketball game, athletes are constantly using the tactical triangle to make decisions based

on the information that they receive. When a point guard is bringing the ball up the court, they read the situation by seeing how the other team is placed on the court and knowing what the score is. The guard knows they have to keep dribbling (game rules) until they get it to the post player (game plan) for the layup. Finally, the guard needs to make the decision to pass to the post player or pass to another guard if the post player is covered. Without practicing these tactical skills, while receiving appropriate feedback, the guard would be overloaded with information and not be able to make a decision. Similarly, an athletic training student must make decisions based on the information they receive. What is the mechanism of injury? To what extent is the ankle injured? If there is an open fracture, the ankle would be properly splinted (game rules) and the emergency action plan (game plan) implemented. As with the basketball example, regularly practicing these skills with feedback at the appropriate time will help an athletic training student know what decision to make and when.

Development of a tactical skill plan is a good way to organize the teaching of tactical skills. The teaching of tactical skills requires the instructor to (1) identify the decision to be made, (2) determine what knowledge is needed to make a good decision, (3) identify cues that should or should not be attended to, and ensure that the cues are interpreted correctly, (4) determine appropriate tactical options, and (5) design an opportunity to practice reading the situation and choosing appropriate tactics.⁹ A tactical skill plan will allow the instructor to determine and incorporate the teaching of the most important tactical skills that should be learned sequentially in each course as well as by graduation.

TACTICAL GAMES APPROACH

The teaching of technical and tactical skills as outlined is a common approach in gyms and classrooms. Instructors drill athletes and students on technical skills first and then teach them to apply the skills in tactical situations. We refer to this as a traditional approach. However, the nontraditional tactical games approach^{11,12} suggests teaching and developing technical skills at the same time as tactical skills. This allows for athletes and students to better understand how the technical and tactical skills fit together, becoming better prepared to make improved decisions.

The tactical games approach^{11,12} is a method for teaching skill, primarily sports skills, within a tactical context. The purpose of this approach is to link tactics and skills through emphasis on the appropriate timing of skill practice and application while in the tactical framework of a game. The method starts with a game situation. This typically is a modified game with exaggerated rules, space, numbers, or other modifications. Athletic training students are then asked questions about tactical problems within the game. Through the questioning, students identify needed skills and then participate in practicing those skills. Finally, the game is played again with the opportunity for the students to apply their newly learned skills.

An example of this in sports would be the skill of how to maintain possession in the game of basketball. Students would play a game that would emphasize keeping the ball. Questions would be asked such as: "How do you keep the ball safe?",

"When is the best time to pass?", "Which is the best choice between passing and dribbling?" Through the discussion, students would identify that they need to work on passing and ball control. The teacher would then lead the students through drills that practice the skills. Finally, the athletic training students would play the same game again, apply their skills, and measure their improvement. With the sprained ankle example, a similar approach can be taken. An aspect of the evaluation would be identified (eg, special tests). Questions may include: "What would you do first?", "How would you perform that special test on the field versus off?", "Which special test would you perform if you only were going to do one special test?", etc. The educator would lead this discussion, and the students would identify what they need to work on. The educator would then help the athletic training student practice the skills. Following this practice, another scenario would be presented with an opportunity to implement what was learned.

The quality of the questions is a critical part of making the tactical games approach work.^{11,12} Questions need to be planned, and they need to lead towards the planned lesson focus for that day. There are 5 categories that most tactical questions fall into: (1) tactical awareness (what do you...?), (2) skill and movement execution (how do you...?), (3) time (when is the best time to...?), (4) space (where is...?), and (5) risk (which is the best choice between...?). A combination of these 5 question types allows for a stronger association of the technical skills within tactical situations.

APPLICATION

In the traditional method of teaching technical and tactical skills, the opening scenario would not be presented until foundational technical skills have been taught and practiced. Initially, the educator presents the basics of the evaluation process (history, inspection, palpation, range of motion, special tests, etc). During the mental stage, an athletic training student may experience a cognitive overload as they learn what to look for during the evaluation process and the steps that they should take. It is common for the educator to quiz the athletic training student over these things and review them repeatedly until they were ready to practice them. In the practice stage, the athletic training students begin to apply the information to case studies and in their clinical practice; however, they would still have to use their resources as they worked to get satisfactory outcomes. A tactical skill plan would be implemented at this stage, helping the students to know what to apply and when. The use of a tactical skill plan helps the student move into the automatic stage. In this stage, they would read the situation, paying attention to the aspects of the evaluation process that help them to understand what they need to do next. With their foundational knowledge of acute injury assessment and treatment, they will determine the best approach to take with this patient now and in the near future. A clinical decision will follow as they apply their skills tactically, balancing the evaluation and treatment of the acute injury with what she was doing in preparing for football practice.

Using the nontraditional tactical games approach,^{11,12} the opening scenario would be presented at the beginning of a course. The scenario can be presented as a real or fictional case study (as done herein) or by an actor playing the role to set up the situation. As athletic training students attempt to

solve the case study, the instructor could ask questions such as: "When is the best time to evaluate this athlete?", "How do you evaluate this particular patient?", and "Which is the best approach to take with your injured volleyball player at this time?" Through the discussion, the students would ask for more information, and the instructor would give them the information (the technical skills) as well as skill practice (tactical skills) to manage this situation correctly. The students would then be given a similar case study on which to apply their new skills and tactical knowledge.

Utilizing the tactical games approach^{11,12} may seem daunting at first. Foundationally, this approach is not unlike how patients present in the athletic training room on a daily basis. Hopefully, an educator would not shy away from having an athletic training student do what they can in an injury evaluation and then guide them through the rest until an accurate assessment is made. A novice student will likely need more guidance than a senior student. With the tactical games approach, the educator begins with the end in mind (patient walking in to the athletic training room), and asks the students to do what they can. The challenge comes from asking students to reason with knowledge that they may or may not have (ie, critically think) and utilize technical and tactical skills that they may or may not have been introduced to. The key to overcoming this challenge is adjusting the depth or thoroughness of the questions according to the level of the athletic training student (questioning for athletic training students further into their education should be more advanced than for those just beginning their education). In doing so, the educator will help the student to discover what they need to do to manage the scenario correctly. Once on the right track, the educator must be prepared to walk them through the mental, practice, and automatic stages associated with acquiring the necessary technical skills to be successful tactically. Working through the scenario in this way, the student is being taught what decisions need to be made when, preparing them to do the same when a real-life situation arises.

CONCLUSIONS

In discussing the need for clinical reasoning, Geisler and Lazenby state that "there is significant debate as to the precise mental processes involved, how to best teach students, and how to evaluate this requisite ability in objective manners."⁶ The methods of teaching technical and tactical skills, whether using traditional methods or the nontraditional tactical games approach, provide a viable option "to best teach students." The principles of hypothetico-deductive reasoning as well as case pattern recognition are easily applied using either approach. The same can be said of the proposals presented by Sibold⁷ and Speicher et al.⁸ Of the approaches we present, we believe the tactical games approach is the ideal method to implement these clinical reasoning strategies. Inherent in the tactical games approach is the need to reason clinically throughout, fostering the use of critical thinking skills. Using this approach may help athletic training students think through cases, whether real or fictional, as they would as a clinician. Doing so may help these future clinicians make correct decisions when placed in a position to do so. Recognizing that research in this area is lacking, future efforts should focus on determining whether clinical decision making is improved with a greater emphasis on how to teach technical and tactical skills.

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