

Promoting Critical Thinking in the Classroom

Stacy Walker, PhD, ATC, and Linda Gazzillo Diaz, EdD, ATC • William Paterson University

A MAJOR ROLE OF educators is to challenge and motivate students to become independent thinkers. There are teaching techniques and classroom-management strategies that can be used to encourage independent thought and enhance critical thinking (CT). The purpose of this article is to provide an operational definition of CT and highlight various teaching methods to promote it.

What Is Critical Thinking?

Watson and Glaser¹ define CT as the composition of skills and attitudes that involve the ability to recognize the existence of problems and to support the truthfulness of the problems. Paul² defines it as purposeful thinking in which individuals systematically and habitually impose criteria and intellectual standards on their thought. It is important to choose a definition that fits within a program or class and introduce that definition to the students. Sharing the definition with students gives them an idea of what is meant by CT and can also help them grasp this concept. Asking students to define CT in their own words or discuss with other students why it is important can help them develop an understanding of CT.

Orient Students to Critical Thinking

As important as it is to explain the concept of CT, it is also important to relay instructor expectations. Athletic training students should know from the beginning that they will be challenged to critically think about classroom content.³ Paul and Elder³ also emphasize the fact that if CT is valued by students they should imagine the classroom content as a form of thinking. Telling students that they are expected to practice CT skills during class and outside of class helps prepare them for future challenges, as well as communicating expectations of the instructor. Students should know that they will be expected to methodically analyze

issues and problems, weigh options, and look at assumptions and inferences made when forming a decision. Classroom activities and discussions are a means of practicing and improving CT skills. Students should be encouraged to use them not only to learn classroom material but also to practice and improve their thinking processes by working with other students.

Vary Teaching Techniques and Providing Opportunities for Feedback

Research has shown that to encourage CT, instructors should expose students to various teaching methods so that they have the opportunity to practice the skill.^{4,7} These methods range from traditional lecture to simulated experience and debates and include the following: case studies generated from texts or created by the instructor; questions posted on a list-serv; classroom discussion of concepts, current topics, and controversial treatments; using different questioning methods to promote the analysis, synthesis, and evaluation levels of Bloom's taxonomy; classroom debates about different modality and rehabilitation treatment techniques; written assignments that address the analysis, synthesis, and evaluation levels of Bloom's taxonomy; peer learning strategies such as debating topics and evaluating a peer's argument of an issue; and discussing how an athletic trainer would handle a situation, disgruntled parent, or miscommunication in the emergency action plan during an emergency. If students are expected to think critically, they must be allowed the opportunity to practice CT under guided instruction so they can improve their skills over time.

Instructor written and verbal feedback regarding all elements of classroom performance are also vital to help students develop CT skills. This feedback provides information regarding students' clinical skills

TABLE 1. EXAMPLES OF STUDENT WORK WITH COACHING COMMENTS

Students' Written Work	Coaching Comment	Follow-Up Questions
"It is used because it is one of the most accurate."	Please provide supporting data and written work to explain these statements in future work.	How do you know it is the most accurate? Where did this information come from?
Use of the word <i>better</i> (in reference to some foods being better than others for precompetition meals).	Try to avoid words that generalize. Not all foods, depending on the sport and the athlete, are appropriate for precompetition meal.	What does "better" mean? Do you agree that some foods are better than others, and why do you believe this?
Written definitions copied from a dictionary or textbook.	Put definitions in your own words; this gives me a clearer picture of your level of understanding of the material.	Can you rephrase this? How would you explain this concept to your family and friends?
Not answering the "why" part of a question.	Remember to always first identify the question to be answered.	Can you explain why this is used? Or how an athletic therapist would use this information?

and content knowledge. Students can then reflect on their answers and, one hopes, improve their thinking abilities in future work. If students are writing papers, it is suggested that educators respond to rough drafts with feedback so that students can improve on their thoughts before the final grading.⁸ With smaller written assignments, such as case studies, feedback should provide enough information to enable the students to make changes so that continuous improvement is evident on drafts over time. For example, when students are generating their résumés, feedback will help them make improvements. When the second draft is complete the student should hand in both drafts for comparison. It is important to point out that the feedback given should focus first on content, although some grammatical and spelling comments should be provided to help students improve the content of their résumés. Vigorously grading on grammar instead of commenting might discourage students, inhibiting their willingness to think critically.

If CT, as well as retention and understanding of content, is valued, this should be reflected in grading practices and student feedback. Instead of informing students that their answers are wrong, a different approach can be taken. Coaching comments along with follow-up questions can assist students in the CT process. Table 1 presents some examples of these comments. After reading the coaching comments, students can reflectively write on how they will use them for future improvement.

Summary

Critical thinking is a vital skill for professionals such as athletic trainers, who are exposed to multiple situations and rely on quick decision making. As educators we must promote and nurture CT skills by using various evaluation techniques and teaching methods. Educators must encourage CT instruction and skills in all aspects of students' education and integrate that knowledge regardless of the course or experience. ■

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Stacy Walker is an assistant professor and coordinator of athletic training clinical education at William Paterson University.

Linda Gazzillo Diaz is an associate professor and athletic training education program director at William Paterson University.

