IMPROVING CLINICAL education in athletic training is a complex issue. As clinical education evolves, it is critical to implement effective evaluative tools to determine the effectiveness of clinical-instruction practices. Athletic training educators can effectively use educational theory and pedagogical research to improve clinical education. The seven principles for good practice in undergraduate education,\(^1\) originally published in 1987, are widely recognized in educational research as the cornerstone for educational practice. In 1989, the seven principles evolved into two self-assessment inventories—the institutional inventory\(^2\) and the faculty inventory.\(^3\) The institutional inventory assesses whether an educationally powerful environment exists, and the faculty inventory addresses issues directly related to the interaction between students and clinical instructors. These two inventories can be used to provide feedback to clinical instructors and program directors regarding the use of quality indicators and as tools for improving clinical instruction in athletic training education.

**Background**

The development of the seven principles for good practice in undergraduate education\(^1\) has been a collaborative effort of researchers, faculty members, and administrators. Findings from decades of research on the undergraduate experience were condensed into seven basic principles that reflect the way teachers teach and students learn.\(^4\) Intended to improve teaching and learning, these seven principles (listed in the sidebar) employ six powerful forces in education: activity, cooperation, diversity, expectations, interaction, and responsibility. The principles are not based on content; they are based on process and can be applied to all academic programs to determine whether effective practices are being employed.

The faculty inventory uses the same seven elements. This inventory can be used clinically or didactically as a self-reflective tool regarding
The educational practices of faculty members or clinical instructors. It serves as a self-analysis of student–faculty contact in and outside of the classroom, use of cooperative and collaborative activities, use of active learning strategies, frequency and promptness of feedback, strategies for time management to ensure time on task, communication of high expectations, and use of a variety of teaching strategies to respect various ways of learning.

The institutional inventory addresses questions about the institution and program as a whole to focus more on policies and procedures that promote student success and educationally powerful environments. This inventory serves to analyze the climate with emphasis on diversity, student representation, and administrative involvement; academic practices related to load and graduation rates; curriculum to ensure active learning, curricular content, and interdisciplinary learning; faculty to determine accessibility and involvement in student-life activities; academic and support services to ensure access to campus resources; and facilities to monitor availability and accessibility. The institutional inventory was devised primarily as a reflective device to provoke thinking at the policy level and to evaluate environments to determine whether they foster the seven principles.1,5

Application

Supported by generations of educational research on learning and pedagogical theory, these principles have direct application to athletic training education programs. Poulsen6 summarized the applications of the faculty and institutional inventories to include faculty/teaching workshops, instructional improvement, departmental research, institutional assessment, strategic planning, and curriculum revision. The inventories can provide a valuable and easily administered self-diagnostic tool for individual and program improvement in athletic training.

Although traditionally applied in didactic settings, the application of these principles in clinical education is appropriate. Curtis et al.7 reported that athletic training students desired mentoring through explanation, demonstration, and constructive feedback in clinical settings. Laurent and Weidner8 contend that clinical-instruction characteristics such as student participation, attitude toward teaching, problem-solving opportunities, instructional strategies, humanistic orientation, and self-perception were all viewed as positive characteristics that facilitate student learning in the athletic training clinical environment. These findings indicate that the interaction between clinical instructors and students can have a significant impact on the development of athletic training students. Careful selection, matching, and training of supervising athletic trainers and clinical instructors are critical to ensure the optimal educational environment. By evaluating clinical-instruction methodologies, students will likely have a more positive learning experience.

Technology can also be used extensively to enhance clinical education though the application of these principles. Using technology to structure and monitor competency and mastery of clinical skills can help clinical instructors implement the seven principles into daily practice. Communication technologies (e-mail, video conferencing, and World Wide Web) can increase student–faculty contact to facilitate scheduling of competencies and to expose students to skills not readily accessible in the clinical setting (e.g., breath sounds, general medical conditions, surgical techniques). Relatedly, technology enables students to actively learn materials for mastery. Students must talk about what they are learning, write reflectively about it, relate it to past experiences, and apply it to their daily lives. Technology complements clinical education through the use of video, audio, and interactive activities. Although often thought of as being used in individual activity, technology facilitates student collaboration and cooperation. When used effectively, it develops a collaborative environment through

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**Seven Principles for Good Practice in Undergraduate Education**

- Encourage student–faculty contact.
- Encourage cooperation among students.
- Encourage active learning.
- Give prompt feedback.
- Emphasize time on task.
- Communicate high expectations.
- Respect diverse talents and ways of learning.

*Note: Adapted from Chickering and Gamson.*

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