Athletic Training Education Journal; 2009;4(2):46-51

www.nataej.org

Promoting Coherence in Athletic Training Education Programs

Thomas M. Dodge, PhD, ATC, CSCS*; Stacy E. Walker, PhD, ATC†; R. Mark Laursen, MS, ATC‡

*Springfield College, Springfield, MA; †Ball State University, Muncie, IN; ‡Boston University, Boston, MA

Objective: To present athletic training educators with guidelines for developing coherent athletic training education programs.

Background: Coherent athletic training education programs are marked by a clear relationship between program goals and learning activities. These learning activities follow a logical progression that facilitates knowledge and skill development and enhances professional preparation. Coherent programs also work to socialize athletic training students in purposeful and positive ways. We have identified fourteen indicators of coherence in teacher education programs that are applicable to athletic training education. Both teacher certification and athletic training programs are similar in that they serve as professional preparation for their respective fields and have practical application (i.e., clinical education or student teaching practicum) components.

Description: Coherence begins with a clearly defined mission statement. The academic faculty and clinical staff/instructors strive to achieve the mission and goals of the athletic training education program. Next, the coursework must follow a logical progression to allow students to make connections between subject matter. Clinical learning experiences should compliment academic learning experiences. In addition, clinical education experiences should follow students' skill levels and needs. Finally, the students themselves are encouraged to interact with their fellow students and form learning communities.

Clinical Advantages: Coherent education programs have the most potential to produce athletic trainers who are competent and well socialized into professional practice. We believe graduates of such programs are properly prepared to be certified athletic trainers.

Key Words: Professional socialization, athletic training student, clinical education

Athletic training education programs (ATEPs) prepare students to be competent health care providers. In order for this preparation to occur, ATEPs must possess curricula that are coherent and well structured. For the purposes of this article, the term coherence refers to "a consistency between what is published or espoused as program mission and goals and what is delivered in courses and other learning experiences".[1(p2)] For example, ATEPs might have the goal of preparing their students to be autonomous competent practitioners as evident by passage of the Board of Certification (BOC) exam. Coherent programs not only express this goal, but also have developed appropriate learning experiences that foster the development of autonomous competent practitioners who are capable of achieving certification as athletic trainers.

Dr. Dodge is an Assistant Professor and Asst. Athletic Trainer at Springfield College.
Thomas_M_Dodge/Springfield_College/US@spfldcol.edu

Dr. Walker is an Assistant Professor at Ball State University.
sewalker@bsu.edu

Mr. Laursen is a Clinical Assoc. Professor and the Director of Athletic Training Services at Boston University.
rmarkl@bu.edu

Advocates of creating coherent teacher education programs argue that traditionally there was a disconnect between the content taught in the classroom and student teaching practicum experiences.[2] This disconnect between learning experiences tended to confuse students with contradictory theories and messages regarding the professional practice of teaching.[2] Though high-quality empirical evidence of the positive benefits of program coherence is scarce, numerous authors[1-4] stress the importance of creating entry-level programs that are organized and coherent. One potential reason for a lack of research is the inability to clearly identify and/or define effective programs.[5] Advocacy for coherent programs is based on an acceptance of the theories that coherent programs lead to more powerful learning,[2] and have the potential to exert a greater impact on students.[6]

Coherent programs are organized so that learning experiences (academic and clinical) are properly sequenced and are specifically designed to meet the program mission and goals.[3] The didactic and clinical education experiences complement each other appropriately. Students understand the relationships among learning experiences in such a way that they are able to recognize the applicability of those experiences to the practice of athletic training. For example, consider educating students on the importance and implementation of pre-participation screenings. In the classroom students learn about proper organization and implementation of pre-

participation screenings based on current research and recommendations. In the laboratory they receive instruction on how to assess vital signs. Those programs can then use their actual pre-participation screenings of athletes as a student learning opportunity. Students therefore see the direct connection between classroom, laboratory, and clinical learning experiences. Events such a pre-participation screenings also serve as socialization experiences for students as it exposes them to an important aspect of professional practice.

Coherent programs are significant because they also help to socialize entry-level students in purposeful and positive ways.[7] Socialization includes the learning of particular skills, values, attitudes, and norms of behavior associated with a particular field.[8,9] This process is considered a key component of professional preparation and continued development in health and medical disciplines.[8] Athletic training literature suggests the socialization process has the potential to greatly influence career path and eventual career success.[10] Specifically, socialization processes help aspiring athletic trainers envision their eventual professional roles and develop a plan for achieving their professional goals.[10] Some examples of socializing experiences might include attending professional conferences, interacting with coaches and/or other health care professionals, and witnessing the educational collaborations that occur between clinicians and physicians. One such collaboration might be a discussion between clinicians and physicians regarding the management strategies for mild traumatic brain injuries. The management of these injuries is often a complex process, and the research in this area is constantly evolving. Therefore, there is a need for clinicians and supervising physicians to review their standards of care on a regular basis. Interactions between clinicians and physicians are a normal part of the athletic trainer's day and/or week, and through exposure to such interactions, entry-level students can develop an understanding of how they fit into the greater scope of professional practice.

The teacher education literature has presented fourteen indicators (Table 1) of program coherence.[4] These indicators serve as a guideline for coherent programs that aim to enlighten and properly socialize aspiring teachers.[4] The 14 indicators highlight the importance of having a clear understanding of the professional field, having well-defined programmatic goals, making direct connections among academic courses and clinical experiences, and emphasizing evidence-based practice. These concepts are quite relevant to athletic training education as both teacher education and ATEPs face many of the same challenges (eg, matching learning experiences with program goals, facilitating communication between faculty and clinical instructors, and fostering the development of evidence-based professionals). Therefore, it is appropriate to adapt the indicators to promote coherence in ATEPs (Table 1). The purpose of this article is to discuss methods to foster coherence in ATEPs, and to provide examples for achieving coherence. The following discussion will highlight the indicators to apply in the following categories: (1) program mission and goals, (2) curriculum development, (3) communication between clinical and academic instructors, (4) development of learning communities, and (5) program evaluation.

Promoting Program Coherence Through the Program Mission and Goals

The development of a clear program mission statement and program goals encourages program coherence. The program mission and goals serve as a framework for all aspects of the ATEP. The program mission and goals should be relevant and realistic with regard to the field of athletic training. Program members, including all faculty, clinical staff/instructors, team physicians, and the medical director, should constantly review and revise the mission and goals to reflect changes in the field. In addition, there must be collaboration with other faculty, department chairs, and/or higher level administrators to ensure the program mission statement and goals align with those of the department, school, and institution. Collaboration encourages an atmosphere of ownership and accountability for all parties invested in the ATEP.

The mission statement should be clear and concise, and once completed, should be displayed in highly visible areas such as the athletic training room, program website, and student handbook. In addition, policy and procedure manuals should communicate the mission statement to all faculty, clinical staff/instructors and students. Clinical instructor workshops and student orientation activities also serve as opportunities to communicate the program mission to instructors and students respectively.

After developing the program mission statement and goals, it is important to create an academic environment that reflects the program mission and goals. Specific didactic and clinical education experiences must integrate with the program mission and goals. For example, one specific goal might be the development of students' problem-solving skills. A way to foster students' problem-solving skills is for faculty and clinicians to have students work through difficult case studies to determine a proper clinical intervention. Such case studies can range from specific emergencies to uncommon rehabilitation cases. This type of problem-solving activity directly links the mission and goals of the athletic training program with its curriculum.

Promoting Coherence Through Academic and Clinical Curricula

A program with a coherent curriculum is intellectually challenging and provides a positive and rewarding learning experience. Curriculum refers to the combination of both the didactic and clinical components of the program.[4] In order to achieve the best educational outcomes, learning experiences must be highly organized.[3] In athletic training, organization manifests itself in proper course progression, appropriate and clearly identified course objectives, and appropriate clinical education experiences. It also includes the repetition of concepts and then building on those concepts throughout all program clinical experiences and courses. For example, first year students might

receive their initial exposure to emergency procedures via an introduction to the concept of emergency action planning and emergency cardiac care certification. The following year, program members further discuss emergency procedures and emergency cardiac care as a component of the emergency action plan. Students and clinical instructors may revisit emergency procedures in the clinical experience as they discuss venue-specific emergency action plans and engage in simulations aimed at practicing different components of the plan. As clinical learning is an essential part of entry-level athletic training education, coherent programs should have a strong clinical component that reinforces material and concepts learned in the classroom.

A coherent curriculum is more than just an organized collection of well designed courses and clinical experiences. The curriculum should follow a logical progression from foundational courses (i.e., basic sciences and clinical skills courses) to advanced courses that place more emphasis on critical thinking and discussing evidence-based techniques. Clinically, students begin with experiences that stress the importance of learning and refining basic skills and progress to experiences that require more autonomous decision making. This type of progression allows students to make connections between topics learned, which potentially deepens their understanding and makes learning experiences more meaningful.[7] An example of academic progression is the relationship between anatomy and physiology, orthopedic evaluation, and therapeutic modalities and rehabilitation. Students who complete anatomy and physiology courses prior to learning about orthopedic evaluation, therapeutic modalities and rehabilitation are able to apply that information when performing clinical evaluations, providing care, and creating rehabilitation and treatment plans.

Progression of clinical experiences should follow a systematic approach aimed at making clinical skill application increasingly more challenging and realistic. For example, while enrolled in the therapeutic modalities course, the educational goal for the student might be to simply familiarize oneself with different modalities and develop an understanding of the various treatment principles for each modality. The logical progression would then be to challenge the student to utilize information from a patient evaluation, compare that with their knowledge about treatment principles, and make appropriate clinical decisions regarding proper modality-based interventions for the patient. During the final clinical experiences, students should expect to exhibit critical thinking and utilize advanced skill sets (e.g., choosing and implementing joint mobilization interventions, using specific therapeutic modalities to augment a rehabilitation program).

The coherent curriculum must also have a sense of balance. One form of balance exists in the relationship between scientific knowledge and practical knowledge. In the classroom students will learn about numerous theories associated with the care and treatment of athletic injuries. They will also learn about the cellular processes that govern the care and treatment of athletic injuries. Clinical experiences should present students with learning opportunities that allow them to make connections between foundational science and clinical practice. For example, when assisting a clinical instructor with an injury treatment, the student and clinical instructor can engage in a conversation about the cellular processes that govern this specific treatment and why it will be efficacious based on those principles.

Balance also manifests itself in the daily demands placed on students. Learning requires students to have ample opportunities to reflect on what they have been taught. To allow for learning material over time, a curriculum should sequence the students' courses and learning experiences appropriately.[4] It is also appropriate to advocate for a clinical component to the curriculum that allows students the opportunity to process and reflect on what they have learned. Keeping clinical demands at manageable levels will also allow students more time to engage in other activities outside of athletic training. This approach helps students to engage more fully in the institution as a whole, enjoy their time in higher education, and develop as individuals and professionals.[11]

Barnes advocates utilizing a thematic approach to curriculum as themes "provide a clear direction for structuring of the program."[12 (p15)] With such an approach, themes are developed by program administrators and tend to run throughout the curriculum.[4] The thematic approach should therefore promote coherence by providing direction and connecting learning experiences to program goals. For example, one program goal might be for students to display moral and ethical behaviors as healthcare providers. Rather than focusing on the concept of ethics in one specific course (e.g. organization and administration), ethical practice could be discussed when appropriate. There are aspects of orthopedic evaluation, therapeutic modalities, prevention of athletic injury, and/or orthopedic rehabilitation that challenge the morals and ethics of athletic trainers. Consider a simple example of patient education. Upon completing an injury evaluation, it is the ethical duty of the athletic trainer to educate this patient about the severity of the injury and the potential for reinjury upon return to competition. When choosing an appropriate intervention for this patient, it is also the ethical duty of the athletic trainer to properly educate the patient about the risks of that chosen intervention. The ethical principle of patient education, therefore, runs throughout the curriculum.

Another theme associated with coherent programs may be a focus on evidence-based practice. Sackett defines evidence-based practice as "the conscientious, explicit and judicious use of current best evidence in making decisions about the care of the individual patient."[13(p71)] Healthcare professionals incorporate evidence-based techniques into their clinical practice. The skill of reviewing the literature for the best practice techniques is essential for the development of evidence-based healthcare providers and is therefore important to teach to future athletic trainers.

During their didactic education, students can learn about the five steps of evidence-based practice.[14] Students can also learn about research techniques and appropriate ways to evaluate evidence, which is crucial for the development of evidence-based practitioners. For example, in lower-level courses, such as introduction to athletic training and care and prevention, the

concept of evidence-based practice, basic definitions (eg, gold standard, specificity, sensitivity) and an overview of the different types of research articles (eg, case studies, literature reviews, original research, etc.) could be introduced. Then, when students are in orthopedic evaluation and modalities courses, they may apply this information to the development of clinical questions and critically review the literature concerning those questions. Concurrently during clinical experiences, students can discuss clinical practices and evidence with their clinical instructors.

A well-organized curriculum serves as the backbone of a coherent ATEP. Highlighting important themes such as evidence-based practice across the curriculum will provide students with consistent messages throughout their learning. Framing learning experiences to achieve the program mission and goals can establish consistency; .however, the different individuals delivering those messages must effectively communicate..

Communication Between Educators

Though it is not a specific indicator of coherence, communication between all educators including the faculty, clinical staff/instructors, and physicians is a key component to ensuring program coherence.[4] Through communication (eg, regular meetings, clinical instructors teaching courses, academic presence in the clinical sites) clinicians and faculty can design educational experiences that complement each other and provide a challenging yet positive overall learning experience for students.

Frequent collaboration and communication between faculty and clinical instructors regarding programmatic issues is critical. Realistically, finding a convenient time to meet can be difficult. If a meeting between all faculty and clinical staff is not feasible, one suggestion is to invite a representative from the clinical staff to attend and participate in academic program meetings. Such a practice keeps clinical instructors abreast of academic happenings or changes that are occurring in the program. Programs can also benefit from a faculty member participating in clinical staff meetings. At these meetings faculty can further their understanding of the education that is occurring in the clinical sites and any potential learning experiences that might be on the horizon, such as a specialty in-service (ie, a workshop on manual therapy for the lower back directed by a doctor of osteopathy) or a difficult patient case.

A monthly journal club meeting is another option for collaboration between faculty and clinical staff. Journal club meetings can take different forms, but an accepted definition is a regular meeting in which participants review the literature on a specified topic and then meet to discuss the implications of this literature for professional practice.[15] Such meetings are useful for a couple of reasons. First, they serve as an opportunity to discuss medical care and promote evidence-based practice.[16] Second, such meetings encourage interaction with all involved parties and can reinforce the team approach to clinical care and education. Ideally, such meetings would not only inform professional practice through discussions of evidence-based techniques, but also lead to additional conversations between academic and clinical instructors about other topics related to athletic training education. In some cases finding time to get together for these journal club meetings can prove difficult. However, email, blogs, discussion boards, and listservs can facilitate an exchange of ideas.

Encouraging clinical instructors to teach in the athletic training curriculum can be another useful strategy to promote communication and ownership of the program. Clinical instructors may be attracted to the opportunity to teach a course in the academic program as it serves, in some cases, as an opportunity to earn additional income. In addition, teaching provides clinicians with an opportunity to get involved with the athletic training students in a formal learning environment. Clinical instructors can possess a wealth of clinical experience and specific interests or skill sets (e.g., specialized training in joint manipulation or soft tissue mobilization) that will enhance student learning. In such cases the academic program and students can benefit greatly from the expertise of the clinician. Ultimately, encouraging clinical instructors to serve as classroom teachers could potentially bridge the gap between academic and clinical education, lead to a better exchange of ideas between faculty and clinical instructors/staff, and foster program coherence.

The presence of athletic trainers who have dual-role contracts, that is they serve as both faculty and clinicians, can also help to bridge the gap between the classroom and clinical education. More specifically, athletic trainers in dual roles can participate in both academic and clinical staff meetings, which may facilitate communication between the two groups. Athletic trainers in dual roles can serve as a liaison between academic and athletic departments, and they can be instrumental in helping programs achieve coherence.

Faculty members with clinical responsibilities are also in a position to reinforce their own academic teaching in a clinical setting with their students. The clinician-educator model is common in many medical schools. Clinician educators are similar to dual-role athletic trainers in that they often spend a portion of their time (50-80%) managing a patient load, and the remainder of their time teaching and/or advising students.[17] The University of Pennsylvania reported in 1998 that 58% of their medical school faculty were clinician-educators and outnumbered their total number of medical students.[18] These clinician-educators have been described as leaders in medical education, the best teachers, and strong role models.[17] In the athletic training field, the clinician-educator model encourages faculty to keep current in their clinical practice and provide opportunities to incorporate evidence into the clinical practice of athletic training.

The management of a coherent program is an ongoing and dynamic process. Regular in-depth communications between clinicians and faculty regarding day-to-day issues as well as student performance are vital for the success of the program. In addition to collaborating throughout the development of program missions and goals, faculty and clinicians must continually work together to improve upon the delivery of material and the clinical experiences

of students. Through collaboration with clinicians, program administrators can also develop a better understanding of how well their students are being prepared to face the challenges of the constantly changing field of athletic training. Ideally, frequent collaboration between faculty and clinical instructors would lead to discussions about many topics and resolution on any programmatic challenges.

Developing Peer Support Groups and Learning Communities

The term peer group has different connotations, but is loosely defined here as a group of students with common goals[19] (eg, studying for exams, completing certain courses, completing clinical experiences together), or more informally, as a group of friends or colleagues.[20] Membership in a peer group has the potential to enhance pride and appreciation among students in the academic program.[4] The pride with which students in these groups approach their studies also tends to enhance accountability among faculty members for their teaching.[4] Faculty feel more of a connection and obligation to a cohort group than they would a diverse group of individual students. Therefore, faculty tend to exert more effort and take more responsibility for the overall learning achievements of the entire group.[4] Furthermore, it is speculated[21] that peer group membership can assist students with personal skill development and clarification of their own beliefs and ideas. Therefore, it may be appropriate to view peer group membership as an essential component of the coherent and effective athletic training education program.

A cohort is one type of peer group that can form among students entering the academic program at the same time. These students share experiences and various milestones in their education, such as completion of their first semester in the program.[19] Cohorts of students complete courses together, complete group projects together, and often study collectively. Some of the milestones that a cohort of athletic training students might share are commencing clinical experiences, successfully passing courses or practical exams, helping with the management of an on-field emergency, graduating from the program, and completing the BOC exam. Peer groups such as these provide students with supportive learning environments, and the cohort model appears to be appropriate for professional schools.[19]

Another form of a peer group is the less formal, yet cohesive, group of friends and colleagues. Students in the same level or semester in the program often form this type of peer group; however, it can include students from other cohorts. The relationships in this case are generally more personal. These students choose to support one another, both academically and/or personally. These groups can also be essential for a student's academic growth.[20,21]

The presence of both types of groups (cohort groups and peer support groups) allows students to engage more fully in the academic life of an institution.[20] Fostering a collaborative environment that encourages peer mentoring and learning is not a foreign concept to athletic training educators. Peer collaboration and mentoring can be very useful for the refinement of psychomotor skills.[22] Peer collaboration also facilitates decision making and fosters autonomy among students. In the athletic training literature, both students and clinical instructors have identified the importance of strong peer relationships for enhancing student learning. The presence of positive peer relationships helps to create a positive educational environment in the athletic training program.[23]

Program Evaluation

The final indicator of program coherence highlights the importance of constant program evaluation. According to academic standards at most institutions, each semester students evaluate faculty members on their classroom teaching .[24] Some institutions also require less frequent, but equally important, peer evaluations. In accordance with Commission on Accreditation of Athletic Training Education (CAATE) standards, students, clinical sites, and instructors are also evaluated on a regular basis. CAATE standards require athletic training programs to have a clear mission statement and specific methods for evaluating outcomes.[25] It is through constant evaluation that program deficiencies can be identified and resolved. As athletic training programs continue to evaluate themselves and strive to provide their students with better educational experiences, a consideration of overall program coherence can help to identify areas of weakness that are not easily identified through other evaluative procedures. For example, program administrators might consider the quality of communication that exists between faculty and clinical instructors. Administrators might also consider the presence and success of cohort groups and specific milestones that exist in the program for those groups of students.

Regular meetings with faculty and clinical staff/instructors, and/or yearly retreats, to evaluate the success of the program are necessary. The objective of such meetings is to ensure that the focus is on adhering to the program mission statement and goals. During these meetings, ATEP members may utilize and discuss various program evaluation methods , such as the results of alumni surveys, employer surveys and senior exit interviews. These programmatic discussions also serve to document progress as well as allow for the generation of new ideas. One necessary participant in such meetings is the program's medical director, as this individual serves as a resource and expert for medical content that delivered both academically and clinically in the ATEP.[25]

Annually, athletic training education programs should reflect on their adherence to the program mission and goals. A measurement of the ability to meet the mission statement and program goals provides an indication of program coherence. One measure is the success rate on the BOC exam. If the program is truly preparing their students for entry-level practice, the program should have a satisfactory passing rate on the BOC exam. Another method for assessing the quality of program graduates is to survey the employers of these graduates with the intention of determining strengths and weaknesses in the professional preparation process.

Aside from larger scale evaluative procedures, Howey and

Zimpher[4] advocate the use of different formative measures for program evaluation. The purpose of the formative evaluation is to assess student learning and make positive changes.[26] Formative feedback is used to make immediate adjustments in educational practices in order to adapt to student needs.[26] One large-scale formative assessment might include using focus groups to better understand the learning that is occurring in clinical sites. On a smaller scale, faculty can obtain feedback from students in advising meetings and/or other less formal conversations. Even simple procedures like checking for understanding following a lecture can provide faculty with feedback about how the students are progressing.

Summary

Sound educational practices and the creation of coherent athletic training education programs can produce competent practitioners. The coherent athletic training education program must possess a clear program mission and goals. The mission must be relevant to the scope of athletic training practice, and should serve as the framework for all other learning and socialization activities that take place in the entry-level program. In the coherent program, academic and clinical learning experiences should come together to form a well-organized curriculum with key themes that are highlighted numerous times. Communication between clinical instructors and faculty facilitates the cohesiveness of the curriculum, and students receive consistent messages throughout learning experiences. The program itself should encourage the formation of student cohort groups as they allow students to both support each other and learn from each other. Lastly, methods should be in place for the systematic and ongoing evaluation of the program. Students in coherent athletic training education programs stand to benefit from organized learning experiences. This organization helps to properly socialize students into the field, and learn the necessary skills required for success. Entry-level athletic trainers who are well-prepared to face the challenges of professional practice will help to elevate the athletic training profession as a whole.

References

1. Mitchell MF. Assessing program coherence as one tool for examining effectiveness. Paper presented at: Seoul International Sport Science Congress; August 24, 2001; Seoul, Korea.
2. Hammerness, K. From coherence in theory to coherence in practice. *Teachers Coll Rec.* 2006;108:1241-1265.
3. Tatto M. Examining values and beliefs about teaching diverse students: understanding the challenges for teacher education. *Educ Eval Policy Analysis.* 1996;18:155-180.
4. Howey KR, Zimpher NL. *Profiles of Preservice Teacher Education: Inquiry into the Nature of Programs.* Albany, NY: State University of New York Press; 1989.
5. Graber, KC. Influencing student beliefs: the design of a "high impact" teacher education program. *Teaching and Teacher Educ.* 1996;12:451-466.
6. Lawson HA. Toward a model of teacher socialization in physical education: the subjective warrant, recruitment, and teacher education (Part 1). *J Teaching Phys Educ.* 1983;2(3):3-16.
7. Howey KR. Designing coherent and effective teacher education programs. In: Sikula J, ed. *Handbook of Research on Teacher Education.* New York, NY: Macmillan; 1996:143-171.
8. Pitney WA. Professional socialization of certified athletic trainers in high school settings: a grounded theory investigation. *J Ath Train.* 2002;37:286–292.
9. Klossner J. The role of legitimation in the professional socialization of second-year undergraduate athletic training students. *J Ath Train.* 2008;43:379-385.
10. Pitney WA, Isley P, Rintala J. The professional socialization of certified athletic trainers in the National Collegiate Athletic Association Division I context. *J Ath Train*. 2002;37:63-70.
11. Gellin, A. The effect of undergraduate student involvement on critical thinking: a meta-analysis of the literature 1991-2000. *J College Student Development.* 2003;44:746-762.
12. Barnes, HL. The conceptual basis for thematic teacher education programs. *J Teacher Educ.* 1987;38(4):13-18.
13. Sackett DL, Rosenberg WM, Gray JM, Haynes RB, Richardson WS. Evidence based medicine: what it is and what it isn't. *Br Med J*. 1996;312:71–72.
14. Strauss SE, Richardson WS, Glasziou P, Haynes RB. *Evidence Based Medicine: How to Practice and Teach EBM.* Toronto, ON: Elsevier: 2005.
15. Mensch JM, Mitchell MF. Journal club as professional socialization. *ATT.* 2003;8(4):68-70.
16. Swift G. How to make journal clubs more interesting. *Adv Psychiatr Treatment.* 2004;10:67-72.
17. Levinson W, Rubenstein A. Integrating clinician-educators into academic medical centers: challenges and potential solutions. *Acad Med.* 2000;75:906-912.
18. Barachi RL, Lowery BJ. Scholarship in the medical faculty from the university perspective: retaining academic values. *Acad Med.* 2000;75:899-905.
19. Barnett BG, Muse ID. Cohort groups in educational administration: promises and challenges. *J Sch Leadership.* 1993;3:400–415.
20. Tinto V. Classrooms as communities: exploring the educational character of student persistence. *J Higher Educ.* 1997;68:599–623.
21. Norris CJ, Barnett B. Cultivating a new leadership paradigm: from cohorts to communities. Paper presented at: Annual Meeting of the University Council for Educational Administration; October 28, 1994: Philadelphia, PA.
22. Henning JM, Weidner TG, Jones J. Peer-assisted learning in the athletic training clinical setting. *J Ath Train.* 2006;41:102–108.
23. Mensch JM, Ennis CD. Pedagogic strategies perceived to enhance student learning in athletic training education. *J Ath Train.* 2002;37 (suppl 4):S-199–S-207.
24. Smith BP. Student ratings of teaching effectiveness: an analysis of end-of course faculty evaluations. *Coll Student J.* 2007;41:788-800.
25. Commission on Accreditation of Athletic Training Education. Standards for the accreditation of entry-level athletic training education programs. **http://caate.net/documents/standards.12.7.07.pdf**. Accessed February 14, 2009.
26. Boston C. The concept of formative assessment. *Practical Assessment, Research & Evaluation*. 2002;8(9). **http://PAREonline.net/getvn.asp?v=8&n=9**. Accessed February 15, 2009.