Altering the Athletic Training Curriculum: A Unique Perspective on Learning Over Time

Kelly Potteiger, MS*, Christopher David Brown, MS, ATC†, Leamor Kahanov EdD, LAT, ATC*‡

*North Park University, Chicago, IL, †Sterling College, Sterling, KS, ‡Indiana State University, Terre Haute, IN

Context: The cohort athletic training curriculum features a competency-based approach that allows the student to matriculate through the program in a systematic fashion. This method is desired as it allows for efficient delivery and mastery of the educational content and associated clinical skills. The result may be an inflexible curriculum that can be unforgiving when unforeseen circumstances arise.

Objective: To introduce a unique curricular design to the undergraduate athletic training setting that is more flexible than the traditional curricular model.

Background: Athletic training education has expanded and proliferated greatly since 1998. The high rate of growth resulted in programs that are similar in design. The curricular structure is based on competency-based categories whose subjects rely on each other so strongly that there is little flexibility. This rigidity can create matriculation issues for students who are unable to proceed through the program at the required pace.

Synthesis: Review of the current curricular model and accompanying literature indicates a desire for a new curricular model to provide flexibility within the athletic training curriculum.

Results: The Adaptive Athletic Training model provides a flexible alternative to the cohort athletic training curriculum. This design uses a holistic and problem-based approach that is more closely associated with the entry-level workplace. Limitations include its ability to conform directly to the Commission onbetter Accreditation of Athletic Training Education competency matrix and the increased academic resources needed for implementation.

Recommendations: Professional athletic training education programs should examine whether their current curricular model benefits their student population in the greatest extent. If room for improvement is identified, then alternative curricular models should be explored.

Conclusions: The Adaptive Athletic Training model provides a flexible curricular option when examining alternative professional athletic training education program curriculums.

Key Words: curriculum; professional athletic training; holistic; problem based

Kelly Potteiger is currently an associate professor at North Park University. Please address all correspondence to Kelly Potteiger, 3225 W. Foster Ave Box 25, Chicago, IL 60625. kpotteiger@northpark.edu

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INTRODUCTION

thletic training education has evolved and proliferated significantly over the past two decades. In 1998, 82 accredited athletic training education programs (ATEPs) existed in the United States, and by 2005, 325 programs were accredited marking an increase of over 300% in a 7-year time span.¹ This rapid growth is attributed to the elimination of the internship route in 2004, thus leaving accredited academic programs as the only route to certification by the Board of Certification (BOC). This restructuring process was required to standardize the education process for athletic trainers in a similar manner as other allied health care professions.² The high rate of growth created educational issues whereby many institutions sponsoring internship programs quickly developed curriculums and hired faculty to meet the 2004 deadline. Due to various constraints (eq, institutional demands, lack of resources, lack of doctorate-prepared program directors), this accelerated growth prompted many programs to adopt a stock curriculum in order to quickly meet the accreditation standards. This standardized approach resulted in programs with courses based on competency categories (eg, prevention and care, modalities) as an approach to teaching or learning. The end product was a cohort curriculum designed with courses that rely on each other so strongly, it limits the flexibility of the entire curriculum. For example, courses on care and prevention techniques are offered prior to or at the same time as courses teaching students evaluation techniques. These classes serve as prerequisites for courses in therapeutic interventions such as rehabilitation and therapeutic modalities. Each "competency" course is linked with a clinical experience that allows the student to practice the skills learned during the didactic course. This continues in such a way that students are locked into specific course offerings each semester.

This lack of flexibility within the curriculum was most likely caused and continuously perpetuated by the structure of the Athletic Training Educational Competencies.³ The Professional Educational Council of the National Athletic Trainers' Association (NATA) recognized the lack of flexibility within the competencies and sought change them with the 5th edition.⁴ They cite that "acquisition and clinical application of knowledge and skills in an education program must represent a defined yet flexible program of study. Defined in that knowledge and skills must be accounted for in the more formal classroom and laboratory educational experience. Flexible in that learning opportunities are everywhere."4(p4) The Professional Education Council encourages programs to become more flexible by reorganizing the content area and corresponding clinical proficiencies. In the 5^{th} edition, the 12 content areas are condensed into 8 areas to better represent current clinical practice. Additionally, the clinical proficiencies previously listed at the end of each content area are now organized in their own section. Renamed Clinical Integration Proficiencies (CIP), "the reorganization reflects clinical practice and demonstrates the global nature of the proficiencies."4(p5)

In the effort to determine the use of the cohort curriculum, we used a qualitative paradigm to assess rich contextual curricular information until we achieved saturation (ie, repetitive curriculum). By alphabetical listing and using the CAATE website, we evaluated the curriculums of current Commission on Accreditation of Athletic Training Education (CAATE) accredited programs. We reached saturation at 115 of the curriculum programs. Of the 115 programs we surveyed, 113 (98.3%) consisted of the same set of cohort classes (Table 1).

To date, we have found no existing literature that assesses the effectiveness of the standardized cohort athletic training curricular design. However, a survey of employers' perceptions of the academic preparation of entry-level athletic trainers suggested that ATEPs are "adequately preparing students, both academically and clinically, for entry-level positions within the profession."5(p70) This evidence suggests that employers are satisfied with the competency-based approach to education despite a first-time pass rate on the Board of Certification (BOC) exam well below that of other health care professions.^{6,7,8} There is also some documented concern among employers regarding entry-level employees' interpersonal and communication skills.^{5,9} This literature suggests employers seek interpersonal and communication skills not evident in graduating athletic training students. Employers have also reported that personal characteristics such as leadership skills, self-confidence, and interpersonal skills are among the most heavily weighted criteria during the hiring process.⁹ Employer surveys conducted in 1998 and repeated in 2007 further suggest athletic training education programs are not improving in this area.9 Results from these surveys indicated that students consistently showed a decrease in personal characteristics such as assertiveness, initiative, and oral communication skills. Education programs must consistently prepare students to meet both the technical educational standards as well as employer expectations.⁵ Therefore, the purpose of this article is to review the evolution and limitations of the cohort athletic training curriculum, as well as propose a new and innovative curricular design.

DEVELOPMENT OF THE ATHLETIC TRAINING CURRICULUM

The NATA Committee on Gaining Recognition introduced the first athletic training curriculum model in 1959 (Table 1).¹⁰ Under the leadership of William Newell, this model encouraged athletic trainers to further their education by either obtaining a secondary-level teaching credential or continuing to physical therapy school. The result was a curriculum consisting of courses already existing in most four-year universities.

As the profession progressed, the athletic training curriculum continued to evolve. By the mid-1970s, there was less need for a path to physical therapy school; therefore, the curriculum evolved into subjects devoted to athletic training (Table 1). In 1983, the

Table 1. Evolution of Athletic Tra	ining Curriuculum Models		
1959	Mid 1970's	1983	Current
PT School Requirements	Anatomy	Prevention of Athletic Injuries and Illnesses	Introduction to Athletic Training
Biology/Zoology	Physiology	Evaluation of Athletic Injuries and Illnesses	Care and Prevention of Athletic Injuries
Physics and/or Chemistry	Physiology of Exercise	1st Aid and Emergency Care	Orthopedic Evaluation I
Social Sciences	Applied Anatomy and Kinesiology	Therapeutic Modalities	Orthopedic Evaluation II
Electives	Psychology	Therapeutic Exercise	Therapedic Modalities
Specific Course Requirements	1st Aid and Safety	Administration of Athletic Training Programs	Therapeutic Exercise
Anatomy	Nutrition	Human Anatomy	Administration of Athletic Training
Physiology	Remedial Exercise	Human Physiology	Capstone Course
Applied Anatomy and Physiology	Personal Community and School Health	Exercise Physiology	Assorted Clinical or Practicum Courses
Laboratory Physical Science	Basic Athletic Training	Kinesiology or Biomechanics	
Coaching Techniques	Advanced Athletic Training	Nutrition	
1st Aid and Safety	Laboratory or Practical Experience in Athletic Training (600 hours under AT)	Psychology	
Nutrition and Foods		Personal and Community Health	
Remedial Exercise		Instrcutional Methods	
Org and Admin of Health and P.E.			
Personal and Community Hygiene			
Techniques of Athletic Training			
Advanced Athletic Training Techniques			
Laboratory Practices			
Recommended Courses			
General Physics			
Pharmacology			
Histology			
Pathology			

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NATA published Guidelines for Development and Implementation of NATA Approved Undergraduate Athletic Training Education Programs.¹¹ This report aimed to specify subject matter (versus courses) as well as introduce a competency-based approach to athletic training education. The subject matter outlined in this report (Table 1) would lay the curricular foundation for the first athletic training accreditation handbook, Essentials and Guidelines for an Accredited Educational Program for the Athletic Trainer.¹²

The recommended competencies have evolved; however, our online evaluation of accredited programs suggests that the cohort curriculum has not. The National Athletic Trainers' Association Executive Committee for Education (NATA-ECE) encouraged education programs to "exceed these minimum standards to provide their students with the highest education possible" using "innovative teaching and learning methodologies"^{4(p4)} in both the classroom and clinical settings whenever possible to further enhance professional preparation. Evidence^{5,6,9} exists to suggest the cohort curriculum is meeting the technical needs of employers; however, the interpersonal expectations are still lacking. Critics of competency-based education feel that the approach may "limit the reflection, intuition, experience, and higher order competence necessary for expert, holistic, or well-developed practice."13(p587) Furthermore, the cohort curriculum may be inflexible for students who desire to supplement their education with extracurricular experiences or necessities. With the cohort curriculum design, the rigid class sequence combined with ongoing clinical rotations may create difficulties for students attempting to participate in customary collegiate experiences such as intercollegiate athletics, Greek life, study-abroad opportunities, and employment. With the rising costs of tuition, the current design of the cohort curriculum may propel students toward other professions because of a need to work while in school. This may become increasingly evident as tuition rates increase and the availability of student loans decreases.

THE ADAPTIVE ATHLETIC TRAINING MODEL: A NEW CURRICULAR DESIGN FOR PROFESSIONAL ATHLETIC TRAINING EDUCATION

Our objective is to construct a new curricular model to provide programs the option for more flexibility in the education of entrylevel athletic trainers as well as encourage higher level cognition by use of reflection, peer-assisted learning (PAL) and problem solving. The underlying philosophy for this curriculum is to provide the opportunity for students to matriculate through an ATEP while preserving the concept of learning over time. This model is meant to provide a conceptual framework for athletic training educators to use when designing or altering their curriculum. This model is not meant to be prescriptive. Organizational policies vary across institutions of higher learning. Before attempting to design (or redesign) a curriculum, faculty should thoroughly investigate their institution's curricular policies, such as general education requirements, number of credit hours required for graduation, maximum number of credit hours for financial aid, and clinical education guidelines. Reviewing similar programs at your institution may assist in this process.

The Adaptive Athletic Training (AAT) curricular model is divided into 3 distinct phases: the preprofessional phase, the professional

Figure 1. Adaptive Athletic Training Curricular Model



phase, and the capstone experience (Figure 1). The model uses educational constructs to emphasize philosophies that are important or unique to the program. Institutions often use educational constructs to meet organizational missions or objectives. Educational constructs can be threaded throughout the curriculum to provide the student with multiple opportunities to develop foundational behaviors, and as applicable, clinical skills commonly associated with each philosophy (Table 2). Throughout each phase, an emphasis is placed on 3 key educational constructs: holistic approach to health care, promotion of interprofessional behaviors, and evidence-based practice (EBP). We chose these concepts due to their emphasis in the 5th edition of the education competencies.⁴

Holistic Approach

Hippocrates first mentioned the idea of holism, or the philosophy of understanding people by addressing factors that affect people in all situations, when he proposed the idea that mind and body affect each other.¹⁴ Since then, many medical and allied health professions have centered upon the holistic approach (ie, osteopathic medicine, nursing). Framing each course in the AAT model with a holistic approach allows students to approach the patient as a whole being, taking into consideration the patient's thoughts, feelings, culture, beliefs, and attitudes in harmony with the body and spirit.

Interprofessionalism

Interprofessional behaviors or attitudes that promote allied health and medical professionals to work together to provide patientcentered care are also emphasized throughout the curriculum. Interprofessional behaviors may include the development of various personal characteristics, such as oral and written communication techniques, leadership skills, initiative, professionalism, medical ethics, and assertiveness. **Evidence-Based Practice**

The use of EBP techniques will teach the future clinician to combine the best research evidence with his/her own clinical expertise and the patient's own unique values to guide clinical decision making.¹⁵

Example of the AAT Curriculum

We have included a sample course module in Figure 2. Structuring the curriculum in this way will allow the student to be fully immersed into the course content. It will provide the opportunity for the student to progress through the entire injury and recovery process using similar learning processes such as critical thinking, problem-based learning, and self-reflection. The course's content should be delivered using a similar structure to maintain a consistency of learning while allowing students to take courses in any order.

Table 2. Foundational Behaviors and Clinical Skills ⁴ Associated with Ke	v Educational Constructs
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Holistic Approach to Health Care	Interprofessionalism	Evidence-Based Practice
Recognize sources of conflict of interest that can impact the patient's health	Advocate for the needs of the patient	Critically examine the body of knowledge in athletic training and related fields
Provide the best health care available for the patient	Recognize the unique skills and abilities of other health care professionals	Use evidence-based practice as a foundation for the delivery of care
Administer testing procedures to obtain a baseline data regarding a patient's general level of health	Understand the scope of practice of other health care professionals	Promote the value of research and scholarship in athletic training
Perform a comprehensive clinical exam	Execute duties within the identified scope of practice for athletic trainers	Develop clinical questions
Integrate appropriate psychological techniques into a patient's treatment program	Include the patient (and family, where appropriate) in the decision making process	Answer clinical questions by examining research and literature resources such as databases and online clinical appraisal libraries
Recognize and refer at-risk individuals with psychosocial and/ or mental health emergencies	Work with others in effecting positive patient outcomes	Conduct literature searches
	Advocate for the profession	Determine the effectiveness of an athletic training intervention using evidence-based concepts
	Demonstrate honesty and integrity	Apply and interpret clinical outcomes to assess patient status
	Exhibit compassion and empathy	
	Demonstrate effective interpersonal communication skills	
	Disseminate new knowledge in athletic training to fellow athletic trainers, clients/patients, other health care professionals, and others as necessary	

Figure 2. Sample Teaching Module for Care of Injury to the Knee



In order to be successful in this type of curricular structure, the student will need certain foundational knowledge. Therefore, the first phase (preprofessional phase) is devoted to developing this prerequisite knowledge. We recommend 3 courses to establish this foundation: Introduction to Evaluation of the Patient, Introduction to Therapeutic Interventions, and Introduction to Research for the Health Care Professional. We have provided an example of recommended course content in Table 3. The goal of this stage is to prepare the student to be successful in phase 2 (ie, the professional phase). The courses in the preprofessional phase can be taken in any order and may not be limited to athletic training preprofessional students. Program administrators may also elect to design this phase around their institution's general education requirements.

The second phase, the professional phase, consists of a series of courses that use a holistic and problem-based approach to focus on a singular body part or area (Figure 2). Pathological processes of illnesses and injuries are imbedded into each course as appropriate, including diagnosis, treatment, and rehabilitation. Both general medical and orthopedic conditions are explored as they relate to each anatomical area. Selected administration issues are peppered within each course to allow the student to naturally assimilate administrative skills into the care of the patient. The purpose of this format is to better represent the realworld environment. For example, a course on the knee will allow the student to progress through the anatomy, common injuries and illness, and evaluation techniques common to the knee. The student will explore the treatment of common injuries/illnesses (eg, bracing, surgical techniques, and rehabilitation concepts) and injury prevention strategies (eq, anterior cruciate ligament [ACL] prevention strategies and jump training techniques). A holistic approach may be taken to explore the knee's function within the confines of the body. Potential topics could range from addressing issues of depression following a traumatic injury to the hormonal influence of ligament injuries, as well as the role of the knee within the kinetic chain and its influence on gait. The student's interprofessional behaviors (Table 2) will be challenged using various situation-based scenarios that might range from investigating the economic impact of the ACL injury epidemic to examining what happens when a patient rejects an ACL reconstruction. An example of an EBP activity would be to formulate and investigate an evidence-based question. Types of evidence-based questions for the knee may include the following: (1) What type of surgical technique has the greatest success rate for adolescent athletes? (2) What is the prognosis of electing not to have an ACL reconstructed? Students would then search for the evidence regarding their clinical question and formulate a clinical plan. An additional challenge to this activity may include altering the clinical plan to accommodate various patient values.

Phase three of the curriculum is a finishing or capstone experience. During this stage, students complete coursework that focuses on refining their professional roles and responsibilities in addition to their clinical coursework. By situating clinical rotations at the conclusion of the curriculum, students will experience a full-time (30-40 hours per week) immersion into the field. This may afford the student a more realistic experience of the athletic training profession by incorporating tasks such as organizing drug testing and physician visits, maintaining documentation, coordinating insurance claims, ordering supplies, and managing inventory.

Table 3. Recommended Phase 1 Course Content				
Introduction to Evaluation of the	Introduction to Therapeutic	Introduction of Research for the Health Care		
Patient	Interventions	Professional		
Review of body systems	Introduction to diagnostic testing	Elementary statistics		
Prevention of communicable disease	Understanding pain	The scientific method		
Taking a medical history	Stages of healing	Performing a data-base search		
Process of documenting an evaluation	Physics associated with therapeutic interventions	Differentiating between types of research		
Directional terms/cardinal planes	Mechanical properties associated with therapeutic interventions	Cardinal evidence-based rules		
Primary first aid techniques	Physiological responses associated with therapeutic interventions	Process of evidence-based approach		
Measuring vital signs	Physiological response of inactivity	Translation of evidence-based information into clinical practice		
Growth and development characteristics/gender differences	Concepts of pharmacokinetics			
Communicating with the patient and family	Concepts of pharmacodynamics			
Medical referral process				

This type of socialization is thought to better prepare students for the day-to-day operations required of the athletic trainer, which may decrease role strain after graduation.¹⁶ Students will be able to participate in staff and department meetings, observe more patient education opportunities, and communicate directly with physicians. Evidence suggests this combination of networking and peer interactions can assist the student with socialization into the profession and increase the student's interpersonal skills.^{17,18} This early socialization may assist in the prevention of reality shock that many new graduates face when first entering the athletic training profession.¹⁸

The content of the course associated with the third phase should complement the student's clinical experience. The course should allow students the opportunity to reflect on their on-going clinical experience and serve as opportunities for students to strategize with peers and the instructor about on-going clinical cases. This type of environment will offer support to students who are struggling while providing insight to other professional opportunities through their classmates' experiences. This shared experience is the primary focus of PAL, which has been used in many medical and scientific fields of study¹⁹⁻²¹ as well as athletic training,²²⁻²⁵ and has been found to enhance the overall learning process,23-25 facilitate learning over time,²⁴ increase student confidence,²⁵ and decrease student anxiety.^{22, 25} To accommodate varied schedules, this coursework could be offered during off hours or via distance education, which has been shown to be as effective as classroom learning in medical education.²⁶⁻²⁸ Institutions may also consider developing a qualifying examination prior to initiating this phase to better ensure the student's readiness for the clinical setting.

DISCUSSION

The individuality of this curricular model showcases several benefits not available in the cohort model while still affording a student the opportunity to grow their knowledge and skills.

Cohort models rely on a specific course sequence that restricts, and sometimes inhibits, a student's academic progress. The greater flexibility of scheduling within the AAT model allows for specificity of learning designed around the individual student (Figures 1 and 2). This provides students with an individualized educational experience. The benefits of the cohort model include its popularity and corresponding ease of use, the ease of documentation within the current CAATE competency matrix, and a set approach to the curriculum that relies upon the uniformity of coursework to provide a finished product of a reliable quality. However, students who encounter difficulties (illness, financial, and other factors) in completing the course sequence often extend their education and increase their costs due to the inflexibility of the curriculum. Nontraditional students, increasingly common in undergraduate ATEPs,²⁹ may adapt more easily to the AAT model because of its flexibility. The added incentive of freedom for student employment to fund scholastic endeavors is also a benefit. The AAT model allows students more time to participate in extracurricular activities, which are positively correlated with an increased retention of students in their first year of college³⁰ as well as matriculation rates of junior- and senior-level students.³¹

Another benefit of the AAT model is that it allows for a holistic and problem-based approach to health care education. Each course in the professional phase focuses on a specific region of the body, which permits students the opportunity to apply a wide range of knowledge and skills to that area. Instead of the cohort curriculum, which focuses on a certain skill set such as evaluation, modalities, or therapeutic exercise, the professional courses are designed to combine clinical skills using problem-based learning specific to the course's focus. This conceptual model is already used in other health professions.³² It would be a valuable tool to incorporate into an ATEP as it encourages students to view their education as a whole instead of struggling to combine information from separate courses with a lack of collaboration and standardization (ie, a silo approach). The AAT model may also assist with the integration of the students into the athletic training workforce by providing a more realistic educational experience,¹⁸ a concept that is reinforced by the NATA's restructuring of the Athletic Training Education Competencies.⁴

A secondary benefit of this curricular design is that it can foster an exchange of information between students during the professional portion of the program. Interactions between students with varying degrees of seniority within the curriculum, enrolled in the same courses, would potentially allow for greater levels of PAL. Evidence suggests the use of PAL increases confidence and decreases anxiety during practice of clinical skills in undergraduate athletic training students.²⁵ This commingling of upper and lower classmen could foster an exchange of knowledge among students because upperclassmen should be more knowledgeable due to their experiences. This varying level of knowledge should also increase their ability to use PAL techniques.

One final benefit of the AAT model is the capstone experience. By shifting the clinical rotations to the end of the curriculum, students will be prepared to attend to any clinical situation due to the comprehensive and holistic nature of the professional courses. In contrast, the cohort curriculum places students in the clinical setting with varied levels of clinical skills. If a situation arises in which the student does not possess the necessary clinical skills, the student transitions into a purely passive observational role. By entering a clinical setting with all the necessary clinical skills, students will no longer be forced to take a passive role but instead can participate fully in the experience. This also eases the burden on clinical instructors to remember the current level of each student when supervising multiple students.³³

LIMITATIONS

A limitation to the implementation of the AAT model is personnel and budgetary constraints similar to that of any new curriculum. This includes determining the course sequence and amount of course offerings and securing quality faculty to lead courses in the new structure. The constructs of this curriculum include a holistic and problem-based approach to athletic training education. Therefore, the faculty would be charged with creating comprehensive learning experiences for each anatomical area. Tasks would include identifying didactic and clinical skills in areas such as modalities, therapeutic exercise, pathopharmacology, and other factors regarding the condition. This delivery style eliminates the traditional model of faculty specialization. This loss of immersion by faculty may decrease the individual prestige commonly earned by becoming experts in a given area. An associated decrease in student numbers may occur if a program is heavily dependent on attracting students based on the allure of a specific faculty member. Programs choosing to implement this nontraditional design may also experience transitional resistance. In the transition, the faculty would be charged with redesigning their courses. This type of evolution would best take place as a slow and gradual change with sufficient communication between the program director, academic administration, and faculty. Additionally, most textbooks are designed for a cohort model of athletic training education; however, many publishing companies will work with educators to design online textbooks that incorporate the materials desired. In addition, some emerging texts are approaching athletic training education in a holistic manner.

Offering the clinical education component at the end of the curriculum eliminates the opportunity for students to initially practice their clinical skills on a real patient. This could be perceived as both a limitation and a benefit. The Professional Education Committee recommends assessing students on their performance of CIPs with actual patients. Placing the clinical education component at the end of the curriculum would require judging students competent in their clinical skills prior to placement in a clinical environment. This may require the use of standardized/simulated patients or scenarios, which have been found to be successful teaching tools throughout the medical education field $^{\scriptscriptstyle 34\text{-}37}$ and was recommended in the 4^{th} edition of the Athletic Training Educational Competencies.³ Also, due to its holistic nature, the responsibility of evaluation would need to be carefully assessed and assigned by each institution based upon workload, knowledge, experience, and other job characteristics of the faculty or the ACIs. As a benefit, simulations/case scenario mastery would afford an additional layer of patient safety within the curriculum.

Another potential limitation is the number of general education credits required for a student to graduate. If an institution requires set enrollment requirements of its senior level students, this could hamper the creation of the capstone experience. Depending on the activities of an institution, creative scheduling that takes advantage of online, early morning, and evening course offerings may alleviate scheduling issues while still allowing for the student to participate in a full-time clinical experience during the third phase of the curriculum. Institutions will need to develop advising and general education strategies that integrate well with the proposed curriculum to prevent these issues.

Finally, the proposed AAT model may prove difficult to document using the curricular mapping format recommended by the CAATE.³⁸ Currently, educational programs are given more liberty in choosing a curricular mapping strategy by accepting ATrack's course matrix as an alternative to their own mapping spreadsheet.³⁹ ATrack is the NATA's student tracking system.40 Its course matrix function is available for free to all professional education programs.³⁹ The use of the ATrack matrix may be preferred over the CAATE matrix for the AAT model as it allows you to assign up to 8 courses per competency. Currently, the CAATE spreadsheet only allows programs to document the one course in which the competency is primarily instructed or evaluated.³⁸ Also, it may be difficult to conform the capstone experience to the CAATE standard that students complete two full years of clinical experiences. We posit that the students would be undergoing a similar amount of clinical experiences in a reduced, or concentrated, format during their final year. Theoretically, this type of program would comply with CAATE standards. However, we recommend that programs contemplating this type of clinical design contact the CAATE early in the planning process to ensure compliance with the standards.

What is unknown regarding the AAT curriculum is whether the lack of immediate clinical experience affects retention. Shadowing or minimal clinical interface may be needed to retain students who are ready to interact with patients.

CONCLUSION

The AAT curriculum model is designed as a flexible alternative for ATEPs and students that struggle with the rigid and inflexible environment created by the cohort approach to curricular design. Several perceived benefits of the curriculum exist including the creation of a holistic and problem-based learning environment that has the potential to increase professional socialization, provide increased opportunities for PAL, and add an in-depth capstone experience. Finally, the key to the AAT model is the greater sense of curricular flexibility that currently hinders cohort curriculums. The AAT model may assist nontraditional students who are unable to commit to a cohort ATEP because of scheduling and curriculum conflicts. Schools that emphasize flexibility in scheduling and learning may find that this model provides a high standard of learning while conforming with their pedagogical traditions. Institutions currently engaged in a cohort athletic training curriculum should contact the CAATE to evaluate the compliance of any proposed changes. Programs should also proceed cautiously when implementing a nontraditional design because of the potential strain it could place on faculty. Change should be phased with appropriate communication through a well-developed strategic plan.

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REFERENCES

- 1. Commission on Accreditation of Athletic Training Education. Athletic training programs. http://www.caate. net. Accessed December 27, 2010.
- Brown-Benedict D. The doctor of nursing practice degree: lessons from the history of the professional doctorate in other health disciplines. J Nurs Educ. 2008;47(10):448-457.
- National Athletic Trainers' Association. Athletic Training Educational Competencies. 4th ed. Dallas, TX: National Athletic Trainers' Association; 2005.
- 4. National Athletic Trainers' Association. Athletic Training Education Competencies. 5th ed. Dallas, TX: National Athletic Trainers' Association; 2011.
- 5. Massie J, Strang A, Ward R. Employer perceptions of the academic preparation of entry-level certified athletic trainers. Athl Train Educ J. 2009;4(2):70-74.
- 6. Johnson B. Examination Review for 2009-10 Testing Year: Board of Certification (BOC) Examination for Athletic Trainers: Omaha, NE: Board of Certification;2010.
- 7. The Federation of State Boards of Physical Therapy. NPTE Pass Rate. 2010; https://www.fsbpt.org/ ForCandidatesAndLicensees/NPTE/PassRates/index. asp. Accessed December 21, 2010.
- National Council of State Boards of Nursing. NCLEX statistics for NCSBN. 2010; https://http://www.ncsbn.org/ Table_of_Pass_Rates_2010.pdf. Accessed December 21, 2010.
- 9. Kahanov L, Lamarre W. What does it take to get a job? NATA News. May 2008:14-17.

- 10. Delforge G, Behnke R. The history and evolution of athletic training education in the United States. J Athl Train. 1999;34(1):53-61.
- National Athletic Trainers' Association. Guidelines for Development and Implementation of NATA Approved Undergraduate Athletic Training Education Programs. Greenville, NC: National Athletic Trainers' Assocation; 1983.
- 12. Committee on Allied Health Education and Accreditation. Essentials and Guidelines for an Accredited Educational Program for the Athletic Trainer: Committee on Allied Health Education and Accreditation; 1991.
- 13. Talbot M. Monkey see, monkey do: a critique of the completency model in graduate medical education. Med Educ. 2004;38(6):587-592.
- Selimen D, Andsoy I. The importance of a holistic approach during the perioperative period. AORN J. 2011;93(4):482-490.
- 15. Guyatt G, Rennie D, Meade M, Cook D. Users Guide to the Medical Literature: A Manual for Evidence-Based Clinical Practice. 2nd ed. New York: McGraw-Hill Medical; 2008.
- 16. Pitney W. Organizational influences and quality of life issues during the professional socialization of certified athletic trainers working in the National Collegiate Athletic Association Division 1 setting. J Athl Train. 2006;41(2):189-195.
- 17. Pitney W, Ilsley P, Rintala J. The professional socialization of certified athletic trainers in the National Collegiate Athletic Association Division 1 context. J Athl Train. 2002;37(1):63-70.
- Pitney W. Entering an athletic training practice setting: how to address three common experiences. Athl Train Sports Health Care. 2009;1(4):151-153.
- 19. DeClute J, Ladyshewsky R. Enhancing clinical competence using a collaborative clinical education model. Phys Ther. 1993;73(10):683-689.
- 20. Walker-Bartnick L, Berger J, Kappelman M. A model for peer tutoring in the medical school setting J Med Educ. 1984;59:309-315.
- 21. Loke A, Chow F. Learning partnership- the experience of peer tutoring among nursing students: a qualititative study. Int J Nurs Stud. 2007;44:237-244.
- 22. Henning J, Weidner T, Jones J. Peer-assisted learning in the athletic training clinical setting. J Athl Train. 2006;41(1):102-108.
- Mensch J, Ennis C. Pedagogic strategies percieved to enhance student learning in athletic training education. J Athl Train. 2002;37(4)(suppl):S199-S207.
- 24. Knight K. Assessing Clinical Proficiencies in Athletic Training. 3rd ed. Champaign, IL: Human Kinetics; 2001.
- 25. Weidner T, Popp J. Peer-assisted learning and orthopedic evaluation psychomotor skills. J Athl Train. 2007;42:113-119.
- 26. Hadley J, Kulier R, Zamora J, et al. Effectiveness of an e-learning course in evidence-based medicine for foundation (internship) training. J R Soc Med. 2010;103:288-294.

- 27. Rehberg R, Diaz L, Middlemas D. Classroom versus computer-based CPR training: a comparison of the effectiveness of two instructional methods. Athl Train Educ J. 2009;4:98-103.
- 28. Mancuso-Murphy J. Distance education in nursing: an integrated review of online nursing students' experiences with technology-delivered instruction. J Nurs Educ. 2007;46:252-260.
- 29. Martin M, Buxton B. The 21st-century college student: implications for athletic training education programs. J Athl Train. 1997;32(1):52-54.
- Fredricks J, Eccles J. Is extracurricular participation associated with beneficial outcomes? Concurrent and longitudinal relations. Dev Psychol. 2006;42(4):698-713.
- Pope J, Gines D. Correlates of success of graduates of a coordinated undergraduate program. J Am Diet Assoc. 1986;86(8):1022-1027.
- 32. Rochmawati E, Wiechula R. Education strategies to foster health professional students' clinical reasoning skills. Nurs Health Sci. 2010;12(2):244-250.
- 33. Levy L, Gardner G, Garnum M, et al. Situational supervision for athletic training clinical education. Athl Train Educ J. 2009;4:19-22.

- 34. Ebbert D, Connors H. Standardized patient experiences: evaluation of clinical performance and nurse practitioner student satisfaction. Nurs Educ Perspect. 2004;25:12-15.
- 35. Gimpel J, Weidner A, Boulet J, Wilson C, Errichetti A. Standardized patients and mechanical simulators in teaching and assessment at colleges of osteopathic medicine. J Am Osteopath Assoc. 2007;107:557-561.
- Walker S, Weidner T, Armstrong K. Evaluation of athletic training students' clinical proficiencies. J Athl Train. 2008;43:386-395.
- 37. Yoo M, Yoo I. The effectiveness of standardized patients as a teaching method for nursing fundamentals. J Nurs Educ. 2003;42:444-448.
- Commission on Accreditation of Athletic Training Education. Instructions for use of the 5th edition competency matrix for 2012-2013 self-studies and audits. 2012. http://www.caate.net/imis15/CAATE/Forms/ CAATE/Forms/Forms.aspx?hkey=1ec27fcc-9a33-4d74-8660-975d67e610a0. Accessed March 3, 2012.
- ATrack Online. ATrack's course matrix is now free to use! 2012; http://hosted.verticalresponse.com/445872/ ec476b4b50/1502508749/d50cf25c60/. Accessed March 3, 2012.
- 40. ATrack. http://www.atrackonline.com/. Accessed March 3, 2012.