

## RESEARCH ARTICLES

### Professional Technical Standards in Colleges and Schools of Pharmacy

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**Objective.** To determine the prevalence, characteristics, and use of professional technical standards among colleges and schools of pharmacy accredited by the Accreditation Council for Pharmacy Education (ACPE).

**Methods.** The Web site of every college and school of pharmacy accredited by ACPE was searched to identify information regarding the availability, content, and use of technical standards and to obtain demographic information.

**Results.** Information was obtained from all of the 114 colleges and schools of pharmacy and 67 (59%) had technical standards in place. Common themes for technical standards were: observation; communication; motor; intellectual, conceptual, integrative and quantitative abilities; and behavioral and social attributes. Of those colleges and schools with technical standards, 61 (91%) had standards that addressed all 5 of these themes and 34 (51%) specified that the technical standards were used in their admission, progression, and graduation procedures.

**Conclusion.** More than half of the colleges and schools of pharmacy examined in this study have technical standards; however, 41% have yet to develop and implement them. Colleges and schools of pharmacy looking for guidance in technical standards development could use the technical standards themes identified in this study.

**Keywords:** technical standards, accreditation, disability, admission

## INTRODUCTION

The term *technical standards* refers to the skills and abilities required for a graduate of a health professions program to function as a health professional.<sup>1</sup> These standards are established by individual colleges and schools and are based on the range of physical and mental skills and abilities needed to function competently in the profession. Many health professions colleges and schools use technical standards as a benchmark for admission, progression, and graduation of students. Students who have disabilities may have trouble meeting technical standards

established by colleges and schools; thus, in specific instances, technical standards may represent a barrier for these students to enter a health profession.<sup>2-4</sup>

Federal law prohibits discrimination against individuals with disabilities. The Rehabilitation Act of 1973 was a broad legislative act intended to prevent discrimination in a variety of areas and required regulatory implementation by a number of federal agencies including the Department of Education, Department of Health and Human Services, and the Department of Labor.<sup>5</sup> Section 504 of the Rehabilitation Act of 1973 specifically affects institutions that receive federal funds by requiring that “no otherwise qualified individual with a disability” could be excluded from participation in any program solely on the basis of the disability. The Americans with Disabilities Act of 1990 (ADA) further strengthens the provisions of Section 504.<sup>6</sup> Essentially, the ADA requires colleges and

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schools to extend their programs to qualified individuals and to provide reasonable and inclusive accommodations to those having disabilities. Because a multitude of different mental and physical conditions qualify as disabilities, accommodations are typically determined on a case-by-case analysis.

Medical schools have examined how Section 504 of the Rehabilitation Act of 1973 impacts the admission of disabled students into their programs and have suggested common approaches to admitting these individuals. In 1979, an advisory panel of the Association of American Medical Colleges (AAMC) on Technical Standards for Admissions recommended that medical school candidates have abilities and skills in the areas of: (1) observation, (2) communication, (3) motor, (4) intellectual-conceptual, integrative and quantitative abilities, and (5) behavior and social attributes.<sup>7</sup> In 1993, the AAMC made these 5 abilities and skills a requirement for an applicant's acceptance.<sup>8</sup>

The Association of Academic Physiatriests (AAP) published a white paper regarding allegations that physically disabled students were being denied entrance to medical colleges and schools solely because of their disabilities.<sup>9</sup> AAP suggests that medical schools should approach students with deficiencies in the 5 ability and skills areas with greater flexibility. This paper states that not all medical student graduates are expected to acquire all technical skills; however, some skills are "so essential they must be gained, with the assistance of reasonable accommodations where necessary."<sup>9</sup> The AAP recommends that all medical colleges and schools should develop specific written policies to guide the admission process, create a system for advocacy and support of students with disabilities, and provide accommodations to facilitate these students' matriculation. For each of the 5 ability and skill areas noted in the 1979 AAMC advisory panel report, recommendations for possible accommodations were provided. For example, a recommendation in the area of observation was that if a candidate's ability to observe or acquire information through sensory modalities is compromised, the candidate must demonstrate alternative means and/or abilities to acquire and demonstrate the essential information conveyed in this fashion. In describing the motor skills necessary for physicians, the paper recommends that candidates unable to perform activities such as percussion, auscultation, intravenous catheter placement, and cardiopulmonary resuscitation in an independent manner should be able to at least understand and direct the methodology involved in such activities.<sup>9</sup>

Since the passage of the ADA, there have been several court decisions dealing with health professions students that affect the admissions process. Watson and Hutchens reviewed the management of disabled students

and how practices have changed as a result of case law.<sup>10</sup> They offered practical tips for dealing with medical students with disabilities. As schools are not required to modify their admission standards for students with disabilities, they suggested that "skills and abilities required for admission should be tied directly to those required for graduation. Any skill or ability required for admission should be tied directly to what is taught and assessed in the curriculum or it should be removed from the technical standards."<sup>10</sup>

There is a paucity of information in the literature regarding how colleges and schools of pharmacy deal with students with disabilities. Abood and Iovacchini discussed issues associated with the admission of handicapped students into pharmacy programs under Section 504 of the Rehabilitation Act of 1973 and concluded that the schools are required to make reasonable accommodations for students with disabilities and that "each educational institution should make a good faith effort to comply, rather than search for legal loopholes."<sup>11</sup> In 1979, the House of Delegates of the American Association of Colleges of Pharmacy (AACCP) endorsed a policy statement on the admission of disabled students, which indicated that schools should use competency-based outcome statements as technical standards for incoming students.<sup>12</sup> To date, no white papers or position statements have been published regarding the use of technical standards in pharmacy education.

Interest in technical standards for colleges and schools of pharmacy has increased based on recent changes in standards set forth by the Accreditation Council for Pharmacy Education (ACPE). Guideline 16.1 of these accreditation standards states "a college or school should ensure that the organizational element devoted to student services, in general, . . . identifies the professional technical standards required as part of the admissions and progression procedures."<sup>1</sup> Professional technical standards are further described as standards established by a college or school "based on the physical and mental attributes required of students to be able to function competently as a pharmacist upon graduation."<sup>1</sup> The ACPE Self-Study Template, which was updated in June 2010, includes a checkbox for "Professional Technical Standards for the school, college, and/or university (as they relate to the professional degree program in pharmacy) (if available)" under the Documentation and Data section of Standard 16.<sup>13</sup> While the statement "if available" suggests that establishing technical standards is not mandatory, many colleges and schools of pharmacy have begun to examine the need for technical standards. In this study, we assess the prevalence, characteristics, and use of technical standards among colleges and schools of pharmacy accredited by ACPE.

## METHODS

Faculty members representing 7 US colleges and schools of pharmacy collaborated on this research as a component of the AACCP Academic Leadership Fellows Program in the 2009-2010 academic year. Because this study involved an evaluation of policies and procedures and not human subjects, approval by an institutional review board was not needed. Using the ACPE Web site ([www.acpe-accredit.org/deans/schools.asp](http://www.acpe-accredit.org/deans/schools.asp)), investigators identified colleges and schools of pharmacy accredited by ACPE that had students matriculating in fall 2009. The investigators evenly divided the colleges and schools among themselves and searched each Web site for information regarding the availability, content, and use of technical standards. When searching for information regarding the use of technical standards at the college or school of pharmacy, the investigators focused on whether these standards were used for the admission, progression, and/or graduation of pharmacy students.

The content of the technical standards obtained was evaluated for common themes. To address the potential variability in each investigator's interpretation of the technical standards, if one of the common themes was not present, another investigator reviewed those technical standards to verify these findings. If the information regarding technical standards could not be found on the college or school of pharmacy's Web site, an individual from the admissions department or an assistant or associate dean from the college or school of pharmacy was contacted to verify whether their institution had technical standards and to obtain a copy of the technical standards, when applicable. The following characteristics for each college or school of pharmacy also were collected from the Web sites of the institution and ACPE: (1) type of institution (public or private); (2) year of initial ACPE application; and (3) presence of a medical college or school on campus. These specific factors were examined because the investigators hypothesized that they might influence the development of technical standards at a college or school of pharmacy. Data were collected from October 2009 through June 2010.

Descriptive statistics were used to analyze the characteristics of the colleges and schools of pharmacy. In addition, chi-square analyses were performed to assess the relationship between the presence of technical standards and the following characteristics of the colleges and schools of pharmacy: (1) type of institution (public or private); (2) year of initial ACPE application; and (3) presence of a medical college or school on campus. With regard to the year of ACPE application, each college or school of pharmacy was categorized as being either legacy or new,

with the designation of new referring to those colleges and schools of pharmacy with initial ACPE applications occurring since 2000. Statistical significance was defined *a priori* as  $p < 0.05$ . Statistical analysis was performed using SPSS, version 17.0 (SPSS, Chicago, IL).

## RESULTS

One hundred-fourteen colleges and schools of pharmacy with students matriculating in fall 2009 were identified. This group included the University of Puerto Rico School of Pharmacy and Lebanese American University School of Pharmacy, as these schools are accredited by ACPE. Complete information regarding technical standards was collected on all 114 colleges and schools of pharmacy, of which 58 (51%) were public colleges and schools and 56 (49%) were private colleges and schools. Of the colleges and schools of pharmacy identified, 67 (59%) had technical standards as of June 2010 when data collection was completed. Of the 67 colleges and schools of pharmacy with technical standards, 55 (82%) had them available on their Web sites.

Of the 114 colleges and schools of pharmacy, a slightly higher percentage of public colleges and schools of pharmacy had technical standards (62%) compared with private colleges and schools of pharmacy (55%). Similarly, a slightly higher percentage of "new" colleges and schools of pharmacy (62%) had technical standards, as compared to "legacy" colleges and schools of pharmacy (58%). Lastly, a higher percentage of colleges and schools of pharmacy that also had a medical college or school on campus had technical standards (65%), as compared to colleges and schools of pharmacy without a medical college or school present on campus (53%). A similar analysis was conducted that examined only those colleges and schools of pharmacy that had technical standards ( $n = 67$ ) (Table 1). Of the 67 colleges and schools of pharmacy with technical standards, a slightly higher percentage of public schools (54%), legacy schools (69%), and colleges and schools of pharmacy with a medical school or college present on campus (54%) had technical standards, as compared with private schools (46%), "new" schools (31%), and colleges and schools of pharmacy with no medical college or school presence on campus (46%) ( $p > 0.05$  for all comparisons).

In terms of content of the technical standards of the college or school of pharmacy, common themes were identified including: (1) observation, (2) communication, (3) motor, (4) intellectual, conceptual, integrative and quantitative abilities, and (5) behavioral and social attributes (Table 2). Of the 67 colleges and schools of pharmacy with technical standards, 61 (91%) had technical standards that addressed all 5 of these themes. All 67

Table 1. Characteristics of Colleges and Schools of Pharmacy With Technical Standards (n = 67)

<b>Characteristics of Colleges and Schools of Pharmacy</b>		
	<b>No. (%)</b>	<b>p</b>
<b>Type of Institution</b>		
Public	36 (54)	0.47
Private	31 (46)	
<b>Year of Initial ACPE Application<sup>a</sup></b>		
Legacy	46 (69)	0.67
New	21 (31)	
<b>Presence of Medical School on Campus</b>		
Yes	36 (54)	0.16
No	31 (46)	

Abbreviations: ACPE = Accreditation Council for Pharmacy Education.

<sup>a</sup> New schools were those that had submitted an initial ACPE application after 2000.

colleges and schools of pharmacy with technical standards had motor requirements specified.

Data collected from the documented technical standards showed that of the 67 colleges and schools of pharmacy that had technical standards, 62 (93%) reported using them for admission; 37 (55%) for progression; 41 (61%) for graduation; and 34 (51%) for admission, progression, and/or graduation. The technical standards for 3 colleges and schools of pharmacy did not document how the standards were being used.

## DISCUSSION

ACPE standards state that colleges and schools of pharmacy should identify professional technical standards required as part of their admissions and progression procedures.<sup>1</sup> In addition to defining technical standards, other health profession accreditation standards specify that the academic standards and technical standards must be published and readily accessible to prospective students and the public.<sup>14-16</sup> In our study, only 82% of the colleges and schools of pharmacy with technical standards had them publicly available on their Web sites. In an effort to disclose this important information to potential applicants,

current students, and the public, technical standards information should be available in an easily accessible location on the college or school of pharmacy's Web site and in other official college or school of pharmacy documents (eg, catalog, handbooks).

While just over half of colleges and schools of pharmacy had technical standards in place at the time of this study, we anticipate continued growth in the percentage of colleges and schools that implement technical standards. Five representatives from the colleges and schools of pharmacy that were contacted by an investigator reported that their college or school was in the process of initiating technical standards (eg, drafting technical standards, awaiting faculty approval or undergoing legal review). Given that accreditation agencies for other health professions now include technical standards as an accreditation requirement, pharmacy accreditation standards may evolve further to include technical standards as a required rather than as a suggested component.<sup>14,15</sup>

The 5 themes frequently identified in technical standards of colleges and schools of pharmacy in this study (observation; communication; motor; intellectual, conceptual, integrative and quantitative abilities; and behavioral and social attributes) were consistent with the technical standards recommended by AAMC for medical school admission.<sup>7</sup> For the 6 colleges and schools with technical standards that did not address all 5 themes, there was no apparent pattern of omission. The terminology used by the colleges and schools to describe the 5 common themes varied greatly. Some were vague in the explanations of technical standards while others were specific. An example of a general description is "functional use of touch and vision" and an example of a specific description is "ability to perform auscultation and percussion." Table 3 details common language observed within the technical standards and examples of unique requirements listed by some colleges and schools of pharmacy.

Of the 67 colleges and schools of pharmacy that had technical standards, most (96%) reported using them for admission, progression, and/or graduation. Nearly all colleges and schools reported using technical standards in the admission process, while slightly more than half specifically stated using them as progression or graduation criteria. About half of colleges and schools of pharmacy reported using technical standards for admission, progression, and graduation purposes. Because ACPE Standards suggest that technical standards be used for admission and progression purposes, colleges and schools of pharmacy should consider examining the policies and procedures related to technical standards to ensure compliance with the ACPE standards and address both admission and progression with their technical standards.<sup>1</sup>

Table 2. Common Themes of Technical Standards Among Colleges and Schools of Pharmacy (n = 67)

<b>Themes</b>	<b>No. (%)</b>
Observation	64 (95.5)
Communication	65 (97.0)
Motor	67 (100)
Intellectual, Conceptual, Integrative, and Quantitative Abilities	65 (97.0)
Behavioral and Social Attributes	64 (95.5)

Table 3. Common Language and Specific Requirements in Colleges and Schools of Pharmacy Technical Standards

Theme	Basic Description	Common Language	Examples of Unique Requirements
Observation	Use of the sense of vision	<ul style="list-style-type: none"> <li>● Observe demonstrations/experiments in the basic sciences.</li> <li>● Observe a patient accurately at a distance and close at hand.</li> <li>● Observation necessitates the functional use of the sense of vision and other sensory modalities.</li> </ul>	<ul style="list-style-type: none"> <li>● Accurately read 6-point type with a magnifying glass.</li> </ul>
Communication	Speech, reading, and writing	<ul style="list-style-type: none"> <li>● Communicate effectively and sensitively with patients in the English language.</li> <li>● Communicate effectively and efficiently in oral and written forms with all members of the healthcare team.</li> <li>● Communication includes speech, reading, writing, and computer literacy.</li> </ul>	<ul style="list-style-type: none"> <li>● Participate in large and small group discussions.</li> <li>● Interact with patients individually and in groups.</li> </ul>
Motor	Physical ability and coordination	<ul style="list-style-type: none"> <li>● Sufficient motor function to execute movements required to provide care.</li> <li>● Required coordination of both gross and fine muscular movements, equilibrium, and functional use of the senses of touch and vision.</li> </ul>	<ul style="list-style-type: none"> <li>● Ability to exert up to 50 pounds of force.</li> <li>● Physical activity requirements (standing, walking, reaching, lifting) for 67-100% of workday.</li> <li>● Administer immunizations, perform cardiopulmonary resuscitation, place an intravenous line, perform palpitation, auscultation, and percussion.</li> <li>● Transport themselves to rotations.</li> </ul>
Intellectual, Conceptual, Integrative and Quantitative Abilities	Ability to problem-solve	<ul style="list-style-type: none"> <li>● Measure, calculate, reason, analyze, and interpret data.</li> <li>● Synthesize and apply complex information.</li> <li>● Ability to integrate and process information promptly and accurately.</li> </ul>	<ul style="list-style-type: none"> <li>● Critical thinking ability sufficient for good judgment.</li> <li>● Ability to think quickly and accurately in an organized manner.</li> <li>● Fully alert and attentive at all times in clinical settings.</li> </ul>
Behavioral and Social Attributes	Emotional stability and stamina	<ul style="list-style-type: none"> <li>● Possess the emotional health required for full utilization of intellectual abilities.</li> <li>● Tolerate physically, mentally and emotionally taxing workloads and function effectively under stress.</li> <li>● Possess compassion, integrity, interpersonal skills, and motivation to excel in the practice of pharmacy.</li> </ul>	<ul style="list-style-type: none"> <li>● Adapt to changing environments and display flexibility to learn in the clinical setting.</li> <li>● Submit drug testing.</li> </ul>

Despite how colleges and schools of pharmacy reported using technical standards, it was often unclear as to how and when students were evaluated on their abilities to perform these essential functions. In some cases, students provided a self-attestation on admission that they could fulfill these criteria, while other colleges and schools of pharmacy did not describe any aspect of the procedures used to evaluate

technical standards at admission, progression, or graduation. Colleges and schools may encounter numerous challenges when attempting to assess students' ability to meet technical standards at admission as many of these requirements (eg, assessing emotional health) are quite subjective and difficult to measure. In addition to defining and publishing the technical standards, colleges and schools of

pharmacy should consider describing and disclosing the policies and procedures for implementing technical standards to improve the clarity and transparency of these processes for potential and current students as well as the public.

The obligation to offer accommodations for meeting technical standards is specific to qualified students with documented disabilities.<sup>6</sup> A student is considered qualified if they otherwise meet the academic requirements for admission to the college or school of pharmacy. The ADA states that applicants cannot be asked questions about their abilities or inabilities to fulfill the requirements of the program during the application and interview process. The exception is if the applicant discloses the disability to the program on his or her own. Only after acceptance to the program can a student be asked if there is any reason they will not be able to fulfill the technical standards of the program.<sup>6</sup> For this reason, some programs use the term “provisional acceptance” between notice of acceptance and questioning the student regarding technical standards.

The ADA states that programs must make reasonable accommodations for qualified students with appropriately declared disabilities.<sup>6</sup> Examples of reasonable accommodations include, but are not limited to: changing the length of time required to obtain a degree; preferred seating in the classroom; allowing tape recorders; making adjustments to time allowed for completing examinations; and providing readers or sign language interpreters.<sup>6,11,16,17</sup> Programs are responsible for establishing policies and procedures to determine fair and reasonable accommodations and bearing the financial responsibility for making these accommodations for students with appropriately declared disabilities.

An institution’s failure to fully understand the law will increase the chances of lawsuits between the student and program.<sup>16</sup> Although there are no specific legal cases noted related to colleges and schools of pharmacy, the following case sets the precedent for technical standards in a health profession program. In the case of *Southeastern Community College v. Davis*, a licensed practical nurse with severe, bilateral hearing loss applied for admission to a program in registered nursing.<sup>2</sup> The applicant disclosed on the application her need for special accommodations, which included lip reading and provision of close personal supervision by nursing instructors during clinical training. The nursing school denied admission to this applicant because she would not have been able to complete the clinical training portion of the program due to her disability. The applicant sued on the basis that the program could have been modified to accommodate her to safely complete the program. The United States Supreme Court rejected the applicant’s arguments and established

the precedent for accommodations and technical standards. The principles that emanated from this United States Supreme Court precedent include: (1) a program is free to create technical standards of essential functions to participate in the academic program; (2) institutions are not required to fundamentally alter the program, or accept undue financial and administrative burdens to accommodate a student; and (3) a program is not required to modify its curriculum just because a student can perform effectively in some areas of practice, but not in others.

Even though data from each college or school of pharmacy with students matriculating in the fall 2009 were obtained, several limitations have been identified in our study. Each investigator searched the college or school of pharmacy Web site and subsequently contacted individuals at the college or school of pharmacy if technical standards information was not available on the Web site. However, the individual in the admissions office or the assistant or associate dean contacted at the college or school may not have been aware of the use of technical standards at the college or school of pharmacy. For colleges and schools of pharmacy with technical standards information available on their Web site, the investigators would not have been aware of potential revisions in process or newly approved versions of technical standards not published on the Web site. Furthermore, the description on the Web site regarding the use of technical standards at a college or school of pharmacy may not have depicted all of the applications of the technical standards (eg, the document described their use for admissions only, when in fact they were used for admissions, progressions and graduation).

Ideally, technical standards should facilitate development of a qualified pharmacy workforce. As the role of the pharmacist continues to evolve, existing technical standards may become outdated and new technical standards may need to be developed. The specific competencies that are to be considered essential requirements will be determined by individual colleges and schools of pharmacy, according to the ACPE Standards and the legitimate needs of our profession. Although technical standards are currently suggested by ACPE to be used for admission and progression, colleges and schools of pharmacy may consider drafting or revising standards to meet their own needs. Resources such as the AAMC Report of the Special Advisory Panel on Technical Standards for Medical School Admissions, federal disability law, and professional literature can guide colleges and schools of pharmacy in the development and revision of technical standards. Using a similar approach to other professions, an AACP standing committee or special task force also could be charged with drafting technical standards for the

profession of pharmacy to be adopted and used by colleges and schools of pharmacy.

## CONCLUSION

More than half of the colleges and schools of pharmacy examined had technical standards; however, 41% have yet to develop and implement technical standards. Colleges and schools looking for guidance in technical standards development could use the technical standards themes identified in this study. Important topics for future research include the methods that colleges and schools use to evaluate candidates' abilities to meet technical standards in the evolving profession of pharmacy, as well as how technical standards are specifically used for admission, progression, and graduation among colleges and schools of pharmacy. When colleges and schools of pharmacy have technical standards, the policy and procedures should be fully described and publicly available to ensure clarity and transparency of these processes.

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## REFERENCES

1. Accreditation Council for Pharmacy Education. Accreditation Standards and Guidelines for the Professional Program in Pharmacy Leading to the Doctor of Pharmacy Degree (Guidelines Version 2.0). <http://www.acpe-accredit.org/pdf/FinalS2007Guidelines2.0.pdf>. Accessed March 23, 2011.
2. *Southeastern Community College v. Davis*, 442 U.S. 397 (1979).
3. *Doe v. New York University*, 666 F. 2d 761 (1981).
4. *Ohio Civil Rights Commission v. Case Western Reserve University*, 666 N.E. 2d 1376 (1996).
5. Section 504 of the Rehabilitation Act of 1973, as amended. 29 U.S.C. § 793.
6. Americans with Disabilities Act of 1990. 42 U.S.C. §§ 12101 et seq.
7. Association of American Medical Colleges: *Report of the Special Advisory Panel on Technical Standards for Medical School Admission*. Washington, DC, Association of American Medical Colleges; 1979.
8. Association of American Medical Colleges: *Americans with Disabilities Act (ADA) and the Disabled Student In Medical School: Guidelines for Medical Schools*. Association of American Medical Colleges, Washington, DC; 1993.
9. Association of Academic Physiatrists. Recommended guidelines for admission of candidates with disabilities to medical school. *Am J Phys Med Rehabil*. 1993;72(1):45-47.
10. Watson JE, Hutchens SH. *Medical students with disabilities: a generation of practice*. Washington D.C.: Association of American Medical Colleges; 2005. [https://services.aamc.org/publications/showfile.cfm?file=version37.pdf&prd\\_id=131&prv\\_id=150&pdf\\_id=37](https://services.aamc.org/publications/showfile.cfm?file=version37.pdf&prd_id=131&prv_id=150&pdf_id=37). Accessed March 23, 2011.
11. Abood RR, Iovacchini EV. Admission of handicapped students into pharmacy schools under section 504 of the rehabilitation act of 1973. *Am J Pharm Educ*. 1980;44(2):128-133.
12. Berardi RR. Chair report for the committee on professional affairs. *Am J Pharm Educ*. 1979;43(4):401-404.
13. Accreditation Council for Pharmacy Education. Self-Assessment Instrument for the Professional Degree Program of Colleges and Schools of Pharmacy (Standards 2007) Version 3.0. [http://www.acpe-accredit.org/pdf/Word%20Documents/Rubric\\_3.0.doc](http://www.acpe-accredit.org/pdf/Word%20Documents/Rubric_3.0.doc). Accessed March 16, 2011.
14. Liaison Committee on Medical Education. Functions and Structure of a Medical School: Standards for Accreditation of Medical Education Programs Leading to the MD Degree. <http://www.lcme.org/functions2010jun.pdf>. Accessed March 16, 2011.
15. Accreditation Review Commission on Education for the Physician Assistant. Accreditation Standards for Physician Assistant Education. <http://www.arc-pa.org/documents/Standards4theditionFINALwithclarifyingchangesJuly2010.pdf>. Accessed March 16, 2011.
16. Corso T. Thinking and rethinking technical standards. *Perspect Phys Assist Educn*. 1998;9(1):17-19.
17. Watson PG. Nursing students with disabilities: a survey of baccalaureate nursing programs. *J Prof Nursing*. 1995;11(3):147-53.