

## Education and Standardized Testing: The NBCE Perspective

Editor's note: Because [Dr. Guy Riekeman's article](#) discusses the National Board of Chiropractic Examiners and its current testing system, we contacted the NBCE and solicited its input on these issues. The following was submitted by NBCE Executive Director Horace Elliott; it appears verbatim and in its entirety.

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The interactions between the educational process and the assessment of educational outcomes are perennial concerns in all fields of study, particularly so in the professions. Dr. Riekeman has therefore addressed an issue that is of ongoing concern: the appropriate relationship between chiropractic education and standardized testing.

The NBCE examinations were developed and are statistically analyzed to assist state licensing boards who regulate the chiropractic profession in identifying those individuals who have the knowledge and skills to be safe and effective practitioners. The value of NBCE exams is that they are designed as a third-party assessment of candidates' knowledge of core concepts and evaluate their ability to apply these concepts in a clinical setting, with no bias toward any school or curriculum. They are intended to protect the general public by assessing the clinical and practical readiness of a doctor to practice; the NBCE exams have never been intended to prescribe educational approaches.

In response to requests of chiropractic institutions, there is now considerable flexibility in the NBCE testing sequence. The only significant restriction is that an examinee must pass all six basic science components of Part I prior to taking the clinical competency exams of Part III and Part IV. Passing all six basic science examinations provides a foundation for the clinical sciences. Other than meeting the basic science requirement, the sequencing of the examinations is up to the individual student and the college.

During the past six years, the NBCE has conducted two major studies of computer-based testing (CBT); the investigation panels included educators, a newspaper editor, and NBCE directors and staff. The panels found that all testing organizations that transitioned from paper-and-pencil to CBT report that computerization at least doubles the costs of testing. When chiropractic students were asked whether they would like to have the flexibility of CBT, but with a substantial increase in costs, 75 percent indicated they would prefer the current system. Recently, Dr. Ronald Hambleton, distinguished university professor and international consultant in test development and CBT, strongly endorsed the NBCE's current on-campus, paper-and-pencil test delivery approach because of its significant economy and convenience to students.

The NBCE has anecdotal evidence of several professions that have converted to CBT only to return to paper-and-pencil testing due to increased security concerns, increased costs of administration, and substantial costs required to develop CST item pools. However, we continue to research CBT and we have successfully transitioned two post-licensure examinations, the Special Purposes Examination for Chiropractic and the Ethics and Boundaries Examination. The directors and staff

of the NBCE regularly review the trade-offs between CBT and paper-and-pencil testing and make transitions to CBT - but only when CBT is in the best interest of candidates, regulatory boards, and the public's health and safety.

It is commonly agreed that the assessment of adequate preparation for licensure as primary care doctors must be based on standards that protect the public's health; and we agree that bringing underserved segments of the population into the chiropractic profession is laudable and should be an ongoing goal. Still, the duty of every chiropractic training program is to ensure that its students are properly prepared to meet licensure requirements. Since pre-chiropractic GPA correlates with success in chiropractic training and on NBCE exams, additional intake assessments, such as the Chiropractic College Admissions Test (CCAT), may be necessary for some applicants. Such assessments may help to identify which students will require remediation and additional formative testing to monitor their progress.

In discussions and observations of several chiropractic colleges over the past 20 years, the NBCE has noted that chiropractic programs use a variety of approaches in curricular design and instruction. Colleges that have transitioned to problem-based learning demonstrate that NBCE scores may not be negatively impacted by curriculum modifications; in fact, there are instances where students' scores increased when programs moved to a more integrated curriculum. An important and necessary step is to map the curriculum to include the teaching of core areas of knowledge and skills; the test blueprints of the NBCE exams can be a useful component in this process.

The NBCE relies on the contributions of many faculty members who write test questions, select examinations, serve on test committees, and participate in Delphi studies which determine the content and emphasis of the Part I, Part II, and Physiotherapy examinations. In addition, the NBCE maintains an ongoing dialogue with all North American chiropractic programs through two meetings each year with the chief academic officers - one in the spring at the ACC-RAC meetings, and one in the fall frequently hosted by the NBCE. We are a partner in education, assessment, and regulation of chiropractic and are committed to future collaboration on all issues affecting the safe and effective practice of chiropractic.

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