
Letter to the Editor

After having read Mr. Dearing's rather emotionally laden response to our article (The Relationship of Duration of Training to American Board of Cardiovascular Perfusion Written Certification Examination Scores), I find myself at somewhat of a loss as to what, specifically, the objections to the article were. Certainly, an objection to the research that we reported has been lodged. The question remains; were the objections based on our methodology, or on generalized anxiety.

Initially, it was suggested that the subject article was rife with errors (specificity regarding error allegation was provided after Mr. Dearing presumed to establish what he considered to be inadequacy among the authors). In point of fact, the authors each contributed expertise from diverse educational and training backgrounds. Dr. Richmond has been a practicing educational researcher for eight years, after having completed eight years of study in the areas of psychology, research design and statistical analysis. Dr. Arnold has had extensive training in the areas of education and testing and evaluation, as well as fifteen years of professional practice. Mr. Kurusz, on the other hand is a certified cardiovascular perfusionist and an AmSECT member in long standing who has been highly active in research and publication. Regarding the allegation of poor scientific reasoning, a charge of that type is analogous to suggesting that Mr. Dearing knows very little about acid base balance. We feel there is no need to defend our capability in the area of "scientific reasoning."

The first problem Mr. Dearing encountered with the article was that the hypothesis stated was based on an unproven assumption. A popular myth exists that research is designed to prove or disprove specific "facts." While the tendency of compiled research may lend support for validity or invalidity of certain beliefs, the scientific method merely lends a common set of rules by which to ensure generalizability of findings among studies. In specific response to his speculations regarding our hypothesis and its basis on an unproven assumption (exclamation point?), it would seem that an educator who can see no cause for believing in the relationship of paper and pencil demonstration of

knowledge and competency *in any area of preparation* must have very little faith in the discipline he espouses.

Much can and should be said about performance based education, and criterion referenced testing. For the sake of brevity, only three points will be made here:

1) It is widely held that PBTE (Performance Based Teacher Education) and its concomitant practice of criterion referenced testing are two very active contributing factors to current problems in teacher education, and

2) It is accepted among most educational psychologists, that when you establish minimum competencies (or performances) rather than establishing excellence as a goal, you severely limit motivation to perform beyond minimal accepted criteria.

3) Finally, regarding domains of knowledge, it would seem only logical that a science, discipline or activity must be fully understood—that knowledge about the particular area is no longer increasing before minimum competencies can be demonstrated and criteria, against which to test, established. The evidence strongly suggests that knowledge about perfusion has not yet stagnated. As the field of perfusion has evolved, so has the ABCP exam; neither the profession nor the exam is static.

Several alleged weaknesses are embedded in the middle of the response to the article. We shall briefly deal with each:

1) The article as published was not an attempt to vindicate the 1981 deadline; instead, it was published to present information which was accessible to the ABCP, but had not been made available in usable form to the general public of perfusionists. It was our intent to provide information, not to "prove a point." In point of fact, decisions regarding the 1981 deadline had been long established, and have, on the whole, been strongly supported by the perfusion community in general.

2) The authors of the article still contend that in B.S. programs, training lasts four years. While a student does not spend four years in performing perfusions, the universal requirement for a baccalaureate is four years of academic preparation. That this training

occurs in a 2 + 2 paradigm does not mitigate the as yet unchallenged assumption that $2 + 2 = 4$.

3) Regarding definition of the terms “OJT” and “AP,” there are no firmly established lengths of training programs. Many “OJT” training programs are simply as the name implies. Other “OJT” programs involve fairly extensive academic requirements. As knowledge about “OJT” programs is outside the purvey of any accrediting organization, no claims were or are made regarding length of training. Accredited programs (AP) have specific curricula and meet accreditation requirements. The intent of the study, phrased here for those who apparently missed the point, was to determine if differences existed in measured knowledge about perfusion, among perfusionists trained (1) under conditions where no published controls existed, (2) under conditions where accreditation standards were determined to be met and (3) among programs set within an academic environment and requiring four years of schooling.

4) Mr. Dearing’s pronouncements about the invalidity of conclusions (based on the unfounded suggestion that the entire articles was proven invalid), is entirely without merit. The authors demonstrated a strong

positive relationship (correlations were not used in the study, despite repeated references) between Board examination scores and duration and intensity of training, based on the best available measures—i.e. type of program. To deny the existence of statistical evidence indicating that type of training does make a difference would seem to indicate the existence of underlying motives.

The statement that “It is unproven conjecture that ‘schools of perfusion are themselves undergoing growth as sound education practices and clinical training programs are established’ ” is a truly amazing statement from a school director. It is difficult to believe that any school of perfusion, including Mr. Dearing’s, is using the same curriculum, methodology, and/or domain of knowledge as was used fifteen years ago.

Finally, Mr. Dearing’s (three exclamation point?) assertion that the exam does not discriminate indicates a lack of knowledge regarding statistical tests. That scores differ significantly among the three groups is most assuredly, *ipso facto* discrimination.

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