Maintenance of Certification

Has MOC Gone Amok?

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DOES mandatory anesthesiologist education and recertification improve performance? This controversial, newsworthy, and important topic is addressed in an indirect fashion by Zhou *et al.* in this issue of the journal.[1] We will assess the findings of Zhou *et al.* within the context of the history of the American Board of Anesthesiology and within the context of investigative work related to adult education.

"…[D]oes (or can) Maintenance of Certification in Anesthesiology [MOCA]…increase the quality of care provided by the anesthesiologist?"

A consensus was reached in the first half of the twentieth century that specialists should undergo examinations composed and directed by experts in their specialty. Thus, the American Board of Anesthesiology, created in 1937, became an independent certifying board in 1941.[2] Throughout the twentieth century the process of certification by any of the (currently) 24 American Board of Medical Specialties Member Boards required completion of the following steps:

- A medical degree from a qualified medical school approved by an American Board of Medical Specialties Member Board;
- Completion of the requisite full-time experience in a residency program accredited by the Accreditation Council for Graduate Medical Education;
- Letter(s) attesting to clinical competency from the residency program;
- An unrestricted license to practice medicine in any one of the United States or in Canada;
- A passing score on examinations created and administered by an American Board of Medical Specialties Member Board.

The American Board of Anesthesiology and most surgical boards required passage of both a written and oral examination. Most candidates who passed the examinations and became a diplomate had no further contact with the certifying board.[3]

In 1995 the American Board of Anesthesiology approved a plan for issuing time-limited (10-yr) certification starting in 2000. The American Board of Medical Specialties approved the American Board of Anesthesiology's plans for recertification by examination in 1996. In 2004 the American Board of Anesthesiology began phasing out recertification by examination and phasing in maintenance of certification in anesthesiology.[4] The current process is designated as "Maintenance of Certification in Anesthesiology 2.0" and is described by the American Board of Anesthesiology in the following way: "The redesigned Maintenance of Certification in Anesthesiology™ (MOCA®) program, MOCA 2.0®, provides diplomates with opportunities to continuously learn and demonstrate proficiencies to provide better patient care." Interestingly, maintenance of certification in anesthesiology requirements have been imposed without any evidence that confirms their value to doctors or patients. Thus, it is only appropriate that the American Board of Anesthesiology conduct research to determine whether Maintenance of Certification in Anesthesiology 2.0 is fulfilling its promise.

But does (or can) Maintenance of Certification in Anesthesiology 2.0 increase the quality of care provided by the anesthesiologist? From the study in this issue of Anesthesiology by Zhou *et al.*, one can conclude that those who voluntarily participated in maintenance of certification in anesthesiology when it was not required to maintain American Board of Anesthesiology diplomate status were less likely to have adverse state medical licensure board actions.[1] Moreover, the

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implication is that those who did not participate in maintenance of certification in anesthesiology when it was required to maintain American Board of Anesthesiology diplomate status were more likely to have adverse medical license board actions. Unfortunately, neither of these findings indicate that maintenance of certification in anesthesiology *per se* has value as a strategy to improve patient care.

Left unanswered is whether mandatory physician education improves performance. More generally we can ask whether mandated education leads to desirable and durable changes in beliefs, values, and actions (effective learning) in adults. We may not be able to answer the former question directly, as Zhou *et al.* admit. Conversely, issues related to the latter question were hotly debated when Malcolm Knowles first proposed distinct differences between the learning of children and those of adults more than 40 yr ago.[5] His observations have been so readily accepted as the bedrock of adult learning principles of practice over the decades that they are no longer questioned; yet time and time again there is evidence that that they are largely ignored in professional certification processes to examine competence. Knowles contrasted how adults learn as compared to how children learn. The latter process, termed "pedagogy," describes methods used in compulsory education programs, *i.e.*, K–12, or any other program in which the pupil is bound by rules or powerful societal expectations to participate.

Adult learners are distinctly different from adolescent or child learners. In an educational context, adults are defined by two criteria: they perform roles associated by our culture for adults (worker, spouse, parent, soldier, responsible citizen), and they perceive themselves to be responsible for their own lives.[6] Knowles was greatly influenced by Eduard Lindeman who envisioned adult learning (or andragogy) as a lifelong process.[7] Knowles identified six principles that form the basis for andragogy and are listed below.[5]

1. Adults have a self-concept of being responsible for their own decisions. Once they have arrived at that self-concept they have a deep need to be seen and treated as capable of self-direction; they will resist situations in which they perceive others are imposing their will on them.
2. Adults are responsive to some external motivators (better jobs and promotions, among others), but their most potent motivators are internal (desires for increased job satisfaction, self-esteem, quality of life, and so on).
3. Adults come to the educational environment with experiences that are a rich resource for learning.
4. Adults come ready to learn those things they need to know to cope effectively with real-life situations.
5. Adults are problem centered and are motivated to learn to deal with problems that they face in life.
6. Adults need to know why they need to learn something before undertaking to learn it.

Keeping these six principles in mind, one can conclude that mandatory learning experiences for physicians embody the ideas associated with pedagogy more than the andragogical principles that have become associated with the tenets of adult learning. Adult learners today, as in Knowles' time, can be seen to possess a deep need to be treated as capable of self-direction, and, therefore, they will resist situations in which they perceive that others are imposing their will on them. In fact, mandating an adult to do something (learn) can actually increase resistance to doing what is being mandated, a principle discovered by the pioneering work of Kurt Lewin in his articulation of field theory in the 1930s and 1940s.[8] This is readily observed by any parent of an 18 yr old. Learning based in principles of pedagogy will inevitably be unpopular with adults. These concerns likely stoked the resistance to the introduction of maintenance of certification that has been widely reported.[9]

External motivators such as reward or punishment are important motivators of pedagogy, but not of andragogy. More powerful internal motivators for anesthesiologists might include a desire to obtain knowledge necessary to treat patients with complex conditions, reduce costs for patients and the health system, or invent or investigate new methods to improve perioperative outcomes. This list is not exclusive; moreover, these motivators are the same ones that led physicians to enter the profession.

Adult learners are also motivated by a real need to know, based on actual problems they face in real-life situations. Simulation would seem well suited for this aim, but only if the scenarios are based on issues the learner has already experienced or already recognized as important.

Taken as a whole, the available evidence across multiple fields shows that there is scant learning when methods appropriate for pedagogy, particularly compulsory education, are imposed on adults, no matter how complete or well designed the curriculum.[10–13] It is simply not the way to stimulate effective learning in adults. The findings by Zhou *et al.* clearly identify that when learning is voluntary, adults respond positively, as was demonstrated by the comparison between voluntary participants and nonparticipants in maintenance of certification in anesthesiology.[1] When learning is mandated, it is reduced to an exercise based in pedagogy and has little positive effect. But the final and most important question is whether mandated Maintenance of Certification in Anesthesiology 2.0 may actually decrease what we are trying to create: an internally motivated, capable practitioner, who perceives him- or herself as responsible for performing their societal role as a competent physician. This is the question those who are mandating maintenance of certification in all medical specialties, not just anesthesiology, should be asking themselves.

So what happened to the former recertification examination? Why was it replaced with a mandatory learning model? Leaving aside the question of whether mandatory learning is effective, determination of competency is valuable to adults and is the foundation of competency-based learning.[14] The validity of the former "high stakes" recertification examination may have been criticized, a criticism likely more valid for examinations that attempt to stratify applicants to receive valuable resources such as medical school admission or admission to a residency

program.[15,16] Such criticism would unlikely be warranted for an examination that assesses but does not stratify competence.[17] Since direct observation would be impractical, the current initial board certification process followed by periodic examination over new areas in which a competent physician should be knowledgeable would be a viable and practical alternative to maintenance of certification in anesthesiology.

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