



Ethical Analysis of Publisher and Faculty Roles in Building and Using Electronic Educational Products

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ABSTRACT

Educational materials are developed by publishers but educational methods utilizing these instructional materials are selected and implemented by faculty members. This article examines ethical issues in developing and using electronic educational materials designed for healthcare education at the undergraduate level. An ethical framework called "the four principles with attention to scope" was used to examine the roles of publishers and faculty members in development and usage of electronic healthcare educational materials. In particular, we conducted an ethical analysis to explore the extent to which publishers and faculty achieve the four ethical principles of autonomy, beneficence, non-maleficence, and justice. The results of this analysis suggest that both publishers and faculty members do not achieve what is required by these four ethical principles. However, the analysis is complicated by confounding of publishers' roles in developing educational materials and faculty members' roles in selecting and implementing instructional materials for students.

Keywords: *educational ethics; electronic educational products; e-products for education; ethics and academic publishing; ethics and healthcare education*

ETHICAL ANALYSIS OF PUBLISHER AND FACULTY ROLES IN BUILDING AND USING ELECTRONIC EDUCATIONAL PRODUCTS

Development and usage of electronic educational products has dramatically increased at all academic levels, as well as in professional

development, continuing education, and industry training (Gibson, Aldrich, & Prensky, 2007; Selfe & Hawisher, 2007; Kapp, 2007). Publishers of electronic instructional materials have produced and marketed a diversity of educational products, including educational games, simulations, ebooks, course cartridges, and automated learning assessment tools. These products have been deployed by CD, DVD, on dedicated websites, and within learning management

systems. However, there is still scant evidence documenting these products' effectiveness, especially in critical skills development areas such as undergraduate healthcare education. The weak evidence base for effectiveness led us to apply an ethical analysis to the production and usage of electronic instructional materials developed for healthcare education.

Specifically, we asked the question, "What are the ethical implications that few instructional materials have an empirical foundation for their effectiveness?" This work began in 1996 when we explored an argument that the methods and materials of healthcare education should be held to standards analogous to those of evidence-based medicine. Such standards for healthcare education could reasonably be called a framework for *evidence-based learning*. Recently, Liberati and Vineis (2007) synthesized earlier definitions and described evidence-based medicine (EBM) as medical actions (diagnosis, therapeutic interventions, and prognosis) that are based on rigorous empirical foundations (also see earlier work by the Evidence Based Medicine Working Group, 1992). Over a decade ago Tashiro and Rowland (1997) argued educational methods and materials should be based on rigorous empirical foundations, at least sufficient to answer the confounded questions of what really works in education, for whom, how, when, and with what outcomes.

Of course, proponents of EBM believe it is possible to create and utilize empirical frameworks for medical practice. Practice is then based on quantitative data from rigorous clinical epidemiological research that utilizes randomized controlled trials (Liberati & Vineis, 2007). Analogous research for studying the efficacy of instructional methods and materials has not been well developed. The absence of such an empirical foundation raises questions about what ethical standards are used to evaluate publishers who create electronic instructional materials and faculty who use them.

Certainly, there are some evidence-based frameworks for education. The United States National Research Council (2000, 2001) reviewed a broad research literature and offered

a streamlined list of critical issues in developing educational materials. These issues can be expressed as seven questions that set standards for any kind of instructional materials: (1) How do the instructional materials enhance predisposition to learn? (2) How do the materials provide multiple paths for learning? (3) How does an instructional package help students overcome limitations of prior knowledge? (4) When and how do the educational materials provide practice and feedback? (5) Can the instructional materials help students develop an ability to transfer knowledge acquired by extending knowledge and skills beyond the contexts in which they were gained? (6) How will the instructional package incorporate the role of social context? (7) How and why will the instructional materials address cultural norms and student beliefs?

The vast majority of instructional materials (electronic and non-electronic) do not address all of these issues. With the proliferation of electronic educational materials we have an opportunity to examine emerging product development strategies within an ethical framework related to whether or not an electronic instructional product actually works to improve the learning outcomes for which it was designed. For example, the Federation of American Scientists (FAS) explored development and usage of electronic educational materials, particularly the roles of videogames and gaming technologies for improving education. FAS described ten specific educational attributes for application in learning, which were derived from advances in cognitive and learning science (Federation of American Scientists, 2006; see pages 18-20). FAS argued that electronic educational materials should provide: (1) clear learning goals; (2) broad experiences and practice opportunities that continue to challenge the learner and reinforce expertise; (3) continuous monitoring of progress and use of this information to diagnose performance and adjust instruction to a learner's level of mastery (see also research on adaptive learning and teaching); (4) encouragement of inquiry and questions, and response with feedback appropriate to learner and context;

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