

Commentary on:  
“Technology in the Classroom:  
Teaching Business Marketing  
in the 21st Century,”  
by Richard P. Vlosky and David T. Wilson

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The authors bring to marketing educators the opportunity to analyze and evaluate the positive impact of technology in education and learning. The central statement is that instructional technology has not been widely adopted and integrated into the marketing curriculum. The purpose of their work is to review current technology-driven instructional methods and project the role of technology in teaching marketing in the future. The essay discusses the alternative educational technologies available as Advanced Technology Classroom (ATC) developed initially by IBM, Integrated Software, Internet (WWB) and Distance Learning to enhance the learning experience. However, it falls short in connecting how these technologies may be used to enhance the learning experience as a process.

Instructional technologies may be used as delivery systems, or enhance learning mediators. Ronchetto et al. (1992) suggests that multimedia technology may be used as delivery systems to accomplish a learning objective. Once learning outcomes are defined, the learning process is a function of the learning environment, teaching method, and student learning style (Frontezak, 1990). Student learning and study styles, methods of instruction, and educational objectives are components of the learning process (Rumelhart and Norman, 1981). Thus,

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there are several dimensions that define the learning experience and the design and adoption of technology in the classroom should be observed within a holistic view of learning as a process. These dimensions are: student learning style, content area to deliver, learning outcomes, nature of skills to develop, and degree of intrinsic motivation to learn.

The identification of student learning styles is critical for the design and success of technology educational strategies. According to Wynd and Bozman (1996) student learning style can be related to identifiable demographic traits. There are four types of learners: *accomodators*, who learn by concrete experience, *assimilators* who use deductive reasoning to conceptualize, *convergers* who focus on problems and apply ideas through active experimentation, and *divergers* who develop ideas from concrete experience through reflective observation.

There is no agreement about what is the style that characterizes marketing students. Biberman and Buchanana (1982) suggest that students in marketing tend to be divergers, compared to students in finance and economics who are accommodators, and students in accounting characterized by being covergers. Wynd and Bozman (1996) distinguish learning styles of traditional students from adult learners. Overall traditional students, being assimilators, learn better when exposed to experiences that involve reflective observation and abstract conceptualization. On the other hand, non-traditional students being convergers respond better when dealing with activities that include abstract conceptualization through active experimentation.

Marketing requires that students develop critical thinking capabilities. It emphasizes knowing and comprehension of concepts (as in a typical introductory marketing class), application skills (as in marketing research), analysis, organization, synthesis, and evaluation (as in marketing strategy). This suggests that instructional technology should be seen as enhancing learning mediators and not simply as delivery systems (Ronchetto et al. 1992). Benefits derived from multimedia technologies are: multisensory delivery (assimilation of information through multiple sensory channels: audio, visual, and kinesthetic), critical thinking (promotion of higher-level thinking skills), active learning (stimulation and involvement), motivation (make learning exciting and relevant), and individualization (self-paced learning) (Barron and Orwing, 1995). Then, the question is: How can technology assist marketing instructors in adding value to the learning process?

The design of instructional methods must be based on sound learning principles (Rockman, 1992; Clark, 1989). Technology should be organized around the level of thinking, questioning, and learning. It is useful to develop application, analysis, and synthesis skills (Bloom's Taxonomy). Students will enhance their applications skills through using previously learned material to solve problems (software business application); analysis through identification of reasons, causes, motives used to reach a conclusion, and inference or generalization. Synthesis is attained through skills to combine ideas, make predictions and solve problems using different sources. Different media delivery systems such as audio/visual aids, interactive computer simulations, and multimedia are more appropriate for certain learning styles (Ronchetto, Buckles, and Barath, 1992).

Instructional technology strategies for the classroom should blend with a process that starts from a concrete experience that induces reflective observation. Later, students develop comprehension and analytical skills following the development of abstract conceptualization generally through processes that foster synthesis. Finally, students get involved in active experimentation in which models learned are continuously evaluated.

Educational systems should enhance the value creation and build on traditional instructional activities used in the classroom. For example, reflective observation is achieved through group discussions and participative question-answer sessions, while active experimentation can be attained through case analysis, field work and simulations. For instance, distance learning environments and technology are adequate to develop problem-solving and critical-thinking skills and foster a multicultural education. Each learner must be able by himself/herself to analyze the problem, prepare a diagnostic and implement a solution (Levenburg and Major, 1998).

Ultimately, we as marketing instructors have to be educated in the new developments in educational technology and its benefits to enhance the learning process. Moreover, be alert not to overemphasize the use of multimedia instruction in the classroom. Still, there is tremendous need for one-to-one interpersonal encounters to build knowledge and skills in the marketing students of the 21st century. The challenge is to balance "high tech" with "high touch" (Barron and Orwig, 1995).

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