

Research and Development with Interactive Learning Technologies: Introduction to the Special Issue of *CJEC*

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Long ago, media hardware lost its allure for educational technologists. Decades of comparative studies pointed to few robust differences in learning from different media (Moldstad, 1974; Clark, 1983). Yes, there were some differences reported, but most could be attributed to learner characteristics, instructional design variables, or the contexts of delivery. More recent calls for research in educational technology ask for studies which extend beyond attendant hardware, and rather focus on the characteristics of the instruction and how it differentially influences individuals (Clark, 1983; Misanchuk & Schwier, 1981) and applied developmental problems in instructional systems (Heinich, 1984). Thus, researchers in the field of educational technology have turned their attention to the very variables that seemed so troublesome in the comparative media studies. Interactivity (how individuals interacted with instruction) is a keystone feature of more recent studies. Ironically perhaps, these research questions have been accompanied by radical developments in instructional hardware which help make instruction developed on them much more responsive. Educational technologists are driven by the challenges delivered by researchers and the opportunities offered by hardware to design approaches which exploit interactive rather than passive designs.

But interactivity is only an intermediate step. Intra-activity is what we really hope for. Intra-activity (activity within an individual) is necessary before learning can occur; the statement is axiomatic. The difficulty comes in making intra-activity happen. How can we energize minds to the extent that learning happens? In two-step fashion, we introduce inter-activity, and hope it stimulates intra-activity.

This special issue of *CJEC* is devoted to interactive instructional technologies. During the last several months, I have been privileged to manage the review of a wide range of excellent manuscripts on this topic. Indeed, I have been tutored on the broad definitions of interactive technology that exist in our field. The articles selected for this issue reflect the wide-ranging definitions, but also flow together nicely in three sections. The first section (Hannafin,

"Interaction Strategies and Emerging Instructional Technologies: Psychological Perspectives") establishes a context for looking at interaction in instructional technology, including a review of traditional approaches to interaction, an analysis of qualitative and quantitative perspectives on the issue and recommendations for requiring the 'cognitive engagement' of the viewer in instruction. The second section includes two experimental pieces (Tovar, "Effects of Active vs. Passive Review Strategies on Recalling Information From an Interactive Video Instructional Programme"; and Misanchuk, "Learner/User Preferences for Fonts in Microcomputer Screen Displays") which sample concerns related to designing materials to promote meaningful interaction with learners. The third section (Alien & Eckols, "IMPART: A Prototype Authoring System for Interactive Multimedia Vocabulary Tutorials and Drills"; Engel & Campbell-Bonar, "Using Videodiscs in Teacher Education: Preparing Effective Classroom Managers") offers two case studies. The first describes the rationale, design and development of an authoring system for foreign language vocabulary training, and the second article describes the design and implementation of an interactive video-based approach to teaching classroom management.

So, in effect, we attempt to model the topic of this special issue in its construction. The feature articles address the topic of interactivity from a number of directions — conceptual, experimental and practical. I invite you to strike a path through the material, consume those elements that seem most relevant to you, and sample those which may provide a new challenge. The authors have given us a great deal to work with. In short, you should interact with this issue; be an assertive, rather than passive reader.

I would like to take this opportunity to thank Robert M. Bernard, Mandie Aaron, Mary Genova and Patricia Nickel-St. Onge for their help putting this issue together. They have made it a delightful experience, and I have come to know them as committed scholars and new friends.

I would also like to pay a special tribute to Robert Bernard in this, his final issue of *CJEC*. As Editor, Bob has done a remarkable job over the last four years, working tirelessly to improve the quality of *CJEC*. It has been an honour to work with him as a reviewer during his period of leadership. I think it is fair to say that no other individual in Canada has contributed as significantly as Bob to the development of our field during that time. As his colleague I admire him; as his friend I thank him; as his successor I fear his accomplishments. On behalf of the readership of *CJEC*, thank you, Bob, for the outstanding work you have done.

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