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Book Review – Web-based Learning through Educational Informatics: Information Science meets Educational Computing

Griff Richards

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Author: Nigel Ford (2008). *Web-Based Learning through Educational Informatics: Information Science meets Educational Computing*, Hershey: PA IGI Global. (389 pages) ISBN 978-1-59904-741-6

Reviewer: Griff Richards, Technology Enhanced Learning Research Institute, Athabasca University, Alberta, Canada

Pask to the Future

In 1979, I helped welcome the British cyberneticist, Gordon Pask, to Montréal. He stood out from the crowd, sporting a powder blue riding jacket, derby, and the mandatory English brolly. Over lunch, he animatedly expounded on his ideas of educational cybernetics, knocking the wine onto the table and his p-soup into his lap. After clearing the collateral damage, we carried on to the Concordia University TV studio to record his presentation on conversation theory. Whether due to the audience, the lights, or the lunch, the talk quickly disintegrated into a disjointed ramble and was never edited into a final program. Gordon stayed in Montréal for a few years, building prototypes of conversationally linked documents and sharing his philosophy of serialist versus holist learning styles in well-lubricated graduate seminars. Unfortunately, his ability to express his ideas was severely limited by the technology of the day, his confusing notational system, and the spirits of Montréal. So few comprehensive works emerged that Nigel Ford's book might well be valued as the best beginners' guide to Pask's ideas.

Web-Based Learning through Educational Informatics is an eclectic run at making sense of the research activity in applying information science in the educational domain. The primary educational contexts explored are intelligent tutoring systems and the management of educational content. As a librarian, Professor Ford also examines elements of search and retrieval of information across multiple systems that were never designed to work together. Much of the book is devoted to brief overviews of systems that propose to present the right content in the right way at the right time.

The first part of the book starts with an overview of learning theory, machine learning, and neural networks (but sparing us the math) and is followed up with a discussion of Pask's conversational entities and the way connections form between ideas to create new knowledge. Along the way

there is fleeting mention of several other learning theorists, but they are not sufficiently detailed to have anyone but Pask listed in the index. At one point the text is a bit confusing; for example, metacognitive learning is attributed as originating with Anderson and Krathwohl (2001) on one page then to another researcher with an earlier date on another page. However, this is inconsequential if the main goal of the reader is to learn about Pask.

The next section, comprised of chapter 4, Library and Information Science, and chapters 5 and 6, ICT Developments, diverts to a discussion of informatics: library indexing systems, metadata and semantic tags, and resource discovery. Here, Professor Ford makes a good effort to render comprehensible the logic underlying metadata, the evolution of intelligent tutoring systems, and the mechanisms of the semantic web.

The third logical section, Educational Informatics, is covered in chapters 7 and 8. It provides an overview of current research in educational informatics, which is the use of computing systems for instruction. Here, Ford follows the last 10 years of research in individual and social approaches to learning object interoperability, ontologies, and the many layers of ideas to bring the right information in the right form to the learner at the right time. I cannot think of any other source that would bring so many of these ideas together.

In the concluding section, chapter 9, Real World Learning, and chapter 10, Going Forward, Ford describes the difficulties of actually implementing these systems and proposes a road map of emerging research issues. Ford acknowledges that one of the difficulties in implementation is simply that the computer scientists are not versed in a critical understanding of the educational theory (and vice versa). I would tend to agree with him on this point particularly when it comes to deciding what "types" of factors should be chosen for personalization. When Pask was talking about serial and holist learners, learning styles were very popular, enough that Entwistle (1988) observed that there seemed to be as many dimensions of learning styles as there were researchers studying them. Sometimes, promising common sense paradigms for understanding the world just don't have the construct validity nor the statistical reliability to be retained over time. While most educators moved on from learning styles because diagnoses made about soft preferences were not reliable indicators of the hardwiring (Cromley, 2000, p. 197), many computer scientists continue to refine their measures of cognitive styles and to search inductively for ways to optimize best-fit matches between latent aptitude and media treatment. Meanwhile, the educators were looking for ways to make the learners smarter, either collectively through collaborative learning or individually through enhanced metacognitive strategies. Thus, educators are growing more interested in the emerging research around social networking and the potential intelligence that can be data-mined out of the patterns of learners interacting with online resources, intelligent agents, and each other. I think Ford captures the essence of these trends and emerging issues quite well.

I once asked my daughter why she never asked me for help with her homework. "I don't want to know that much," she replied, "I just want to understand." Thus is the frustration of every expert become teacher – you can't pass along all your detailed knowledge. In this regard, I think Professor Ford has done a good job of trying to cover the basics of a wide range of computer

approaches to managing information in an educational context. For the educator unfamiliar with informatics, there is possibly too much detail and not enough conceptual explanation. For the computer scientist, there is probably insufficient detail to move to implementation. But for a graduate student encountering informatics in library science or educational technology, the porridge is just right.

References

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Griff Richards confesses to being a holist in the morning but a serialist as the day progresses.

Athabasca University