BOOKS: INFORMATION TECHNOLOGY

Learning by Text or Context?

Bruce R. Schatz

The traditional model of learning is the "empty vessel." The student is the vessel and is filled with the knowledge of the teacher. This learning exists in a vacuum, as the information pours from teacher to student. When the student is studying alone, as when reading a book, such learning takes place by "text." That is, the text of the book itself provides the complete environment for the acquisition of the knowledge.

The Social Life of Information
by John Seely Brown and Paul Duguid
Harvard Business School Press, Boston, 2000. 332 pp. $25.95. ISBN 0-87584-762-5.

A different model is "situated learning." Espoused in the early 20th century by John Dewey, this interpretation of learning has become a widely accepted point of view in recent years. According to this model, the student learns by sharing knowledge with other students. In its extreme form, there is no explicit teacher and learning can only take place in the presence of other students. When the student is studying alone, such learning takes place by "context." That is, the context of the book is more important than its text. In this model, the best learning occurs by situating new knowledge with relation to existing knowledge in the student's mind.

Two leaders in the field of instructional technology, John Seely Brown and Paul Duguid, have written a popular book on this second view of learning. They are authors of influential articles on situated learning (*1*) that draw on striking examples from the world of modern business, rather than the world of cultural anthropology. They have discussed the learning processes of copier repairmen, rather than native tribesmen.

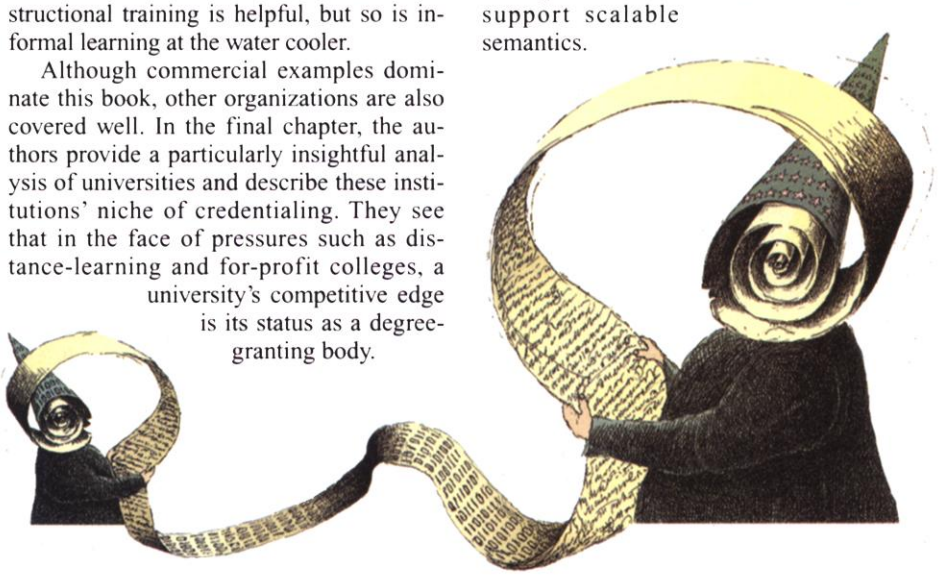
One suspects that this business orientation plays a large role in the broad appeal of *The Social Life of Information*. Brown is the chief scientist at Xerox Corporation and director of its famed Palo Alto Research Center. There, he has pushed for applications of social science to business models, particularly through the establishment of the Institute for Research on Learning as a home for studying the cultural anthropology of business organizations.

The author is at the CANIS Laboratory (Community Architectures for Network Information Systems) and the Graduate School of Library and Information Science, University of Illinois at Urbana-Champaign, 704 South Sixth Street, Champaign, IL 61820, USA; www.canis.uiuc.edu. E-mail: schatz@uiuc.edu.

Although it seems strange to believers in the empty vessel model (who include most scientists), this anthropological point of view has many adherents. The authors discuss the famous lament of Lew Platt, chairman of Hewlett-Packard, who considered how much better his firm would be "if only we knew what we know at HP." Even within the widely admired Hewlett-Packard corporate culture, nobody really knows where the organizational memory is. Anthropologists at Xerox concluded that service technicians learn most from each other, rather than from trainers or manuals. When situations to encourage peer contacts are instituted, learning increases and so does productivity.

Even so, extreme views do not match the real world, and the authors are even-handed in discussing different forms of learning and their applicability. The most effective combinations seem to include teachers and students as vessels within situations. Formal instructional training is helpful, but so is informal learning at the water cooler.

Although commercial examples dominate this book, other organizations are also covered well. In the final chapter, the authors provide a particularly insightful analysis of universities and describe these institutions' niche of credentialing. They see that in the face of pressures such as distance-learning and for-profit colleges, a university's competitive edge is its status as a degree-granting body.



As befits a book intended for a broad audience, the authors' writing is clear and self-contained. Their style is thoughtful and measured, not polemic as is common in books on information technology. Many scientists, however, may find the discussions superficial—with brief examples and broad presentations. The authors' earlier articles have discussed detailed examples within theoretical frameworks. This book has the flavor of a high-level slide show, one offering as many sound bites as possible.

The best books on new points of view present themes clearly and marshal examples to clarify the unusual for divergent audiences. There is much philosophy in this book, but the presentation meanders significantly through a wide range of current examples. Some of the discursions may be intentional, as the jacket cover proclaims "the way forward is paradoxically to look not ahead, but to look around." But the lack of structure prevents these experts from producing the classic book on the new paradigm that they could have. Instead, the book reads like this year's business model, rather than this decade's scientific model.

In this respect, it is surprising that the authors touch so lightly on the future implications of the Net. The evolution of the Net is an example of the trend of moving from text to context (*2*). In transforming from the ARPAnet to the Internet, the transmission of bits has moved from unstructured files existing in a vacuum to structured documents embedded within relationships. The next wave on the Net will transform the Internet into the "Interspace," where users navigate across abstract spaces of concepts instead of across concrete links of documents. In the Interspace, context is used to approximate meaning (*3*). The contextual frequency of word phrases within documents is used to support scalable semantics.

As Brown and Duguid say concisely, "context shapes content." Both the text of a document and the context of a learner are important. In this book, the authors navigate the highway of knowledge by deliberately wandering along the side of the road. As a thoughtful context to the emerging Net Millennium, *The Social Life of Information* serves well. Readers seeking a systematic text must look elsewhere.

References
1. J. Brown and P. Duguid, *Educ. Res.* **18**, 32 (1989); *Organ. Sci.* **2**, 40 (1991).
2. B. Schatz, *Science* **275**, 327 (1997).
3. B. Schatz *et. al.*, *Computer* **32**, 51 (1999).

CREDIT: TJANUSZ KAPUSTA/THE STOCK ILLUSTRATION SOURCE