Book Reviews

Mary Kennedy, Editor

Visuals for Information Research and Practice by Rune Pettersson, Englewood Cliffs, NJ: Educational Technology Publications, 1989. 316 pp · $US 37.95.

Reviewed by Earl R. Misanchuk

Four chapters comprise the book: Communication; Perception, Learning and Memory; Literacy; and Designing Visuals for Information. Each chapter is followed by its own list of references; the last chapter is followed by an extended reference list, which is sub-divided into a number of categories (e.g., content, structure, realism, degree of detail, objects, time, statistics, motion, sound, etc.)

In Chapter 1, ***Communication,*** the first section, ***Media and Representations,*** consists of a very cursory review of a few communication models a post-MacLuhan analysis of the medium and the message, and a sub-section &titled "Production of need-oriented information". The second section, ***Media Consumption,*** discusses media market size and media-industry mapping (a classification scheme relating live media, sound media, film media, broadcast media, video media, models and exhibitions, graphical media, and telecommunications media). The third section, *New Media,* deals with electronic publishing, video, teletext, videotex, cable TV, databases, and mediateques. Both the latter two sections provide a distinctly European flavor (indeed there is considerable reference to Sweden throughout the book), but also show good awareness of North American activity. The fourth section of Chapter 1 *The Information Society,* discusses how humans evolved over the years Born writers to readers, some of the consequences of electronic publishing changes in media consumption, and the effects of the introduction of new media. The final section of the chapter, ***Screen Communication,*** focuses on the increasing prevalence of computers in information-provision, and includes discussions of

visual displays, color description systems, the message on the screen, and computer print-outs.

Chapter *2, Perception, Learning and Memory,* is more research-based than the first chapter, and has sections on *Our Senses* (but limits discussion to hearing and vision), *Listening and Looking* (including perception "laws", choice of information, the brain, picture perception, and a cognitive model), and *Learning and Memory* (a very cursory introduction to learning models, a more complete description of the current information-processing model of memory, an examination of the effects of human development, and a quite spurious section on illusions).

Chapter 3, which is nearly twice the length of the other three chapters, is entitled *Literacy,* and consists of sections on *Language, Verbal Languages, Visual Languages, Linguistic Combinations,* and a review of Current Research. Thesectiononverbal languages, after averyquickreviewofthe history of both spoken and written language and an equally quick cross-cultural comparison of languages, contains a demonstration whose point initially may be lost on the reader (as it was on me), but which begins to make some sense later, in the section on visual languages: all the characters in a paragraph of text, then all the words-first without, then with, punctuation-are sorted in differing orders. Then a sentence is depicted in several different fonts (type styles) and sizes, and another is shown upside down and in mirror image. The demonstrations are easy to accomplish on a microcomputer, but aside from being somewhat dramatic, do not really seem to lead anywhere (at least until later). More foreshadowing of the purpose of these demonstrations might have helped the reader make more sense of this section. The section *Visual Languages* discusses functions, levels of meaning, structure, properties, picture readability, classification of visuals, picture dimensions, and characteristics of visual languages. This section is much too long, and contains some material which, if sacrificed, would not be missed: measuring picture properties, which pedantically discusses properties of pictures in general and vague terms, but does not provide much useful information to either the practitioner or the researcher; the discussion of the picture circle, which borders on the pedantic; and the several pages of description of picture archives and databases (whose logical relationship to visual language is nebulous in any event).

Chapter *4, Designing visuals for Information,* has sections on *Content, Execution, Context, and Format.* Under *Content* are discussed such factors as structure (including reference to degree of realism and of detail); factual content (the influence of characteristics of the objects used to depict something, time, place, and statistics); events (motion, sound, humour and satire, and relationships); credibility; and viewer completion. *Execution* deals with graphical elements, types of visuals, subjects, light, shape, size, color, contrast, emphasis, composition, perspective, technical quality, symbols and explanatory words, mixing and zoom, picture editing, and copyright. *Context* looks at the interplay of words and visuals, the interplay of visuals, and layout considerations. *Format* discusses image morphology, analogue and digital

coding, perception of pixels, and image format categories.

I approached this book with the expectation and hope that it would provide useful advice to a practising instructional designer with an active interest in research on matters relating to instructional design. I was disappointed.

In the first place, there appears to have been a mismatch between my expectations and the author's intentions; after having read the book, I concluded that the book was probably less likely to have been aimed at a professional readership (e.g., practising instructional designers or message designers) than it was to have been intended as a text-book for a basic course in visual literacy (an idiosyncratic one, at that). In my own defense, although I have long since learned not to judge either the proverbial or the actual book by its cover, both the publisher's notes on the flyleafand the author's preface appeared to promise something other than what was delivered. Indeed, neither the flyleaf nor the preface suggests that the book might be approached as an undergraduate text for a visual literacy course (a judgment of worth for which function I will have to leave to someone teachingsuch a course), but the preface explicitly states 'This book is useful to practitioners as well as to researchers" (p. vi).

Secondly, the quality of the book, both in terms of the language used to express ideas (particularly in the first chapter) and in terms of the production values of the text itself, was-at best-quite uneven. Whether the responsibil- ity for this should be borne by the author or the publisher is moot; it should not be inflicted upon a reader. A handful of examples will illustrate why I found it very difficult to immerse myself in the book:

"Information processing is a scientific discipline comprising e.g. mathe- matical and numerical analysis plus methods and technics [sic] for administra- tive data processing." (p. viii)

'A representation, e.g. a visual, which is to be used to convey certain information, has a sender, one or more receivers and even a content, of course, a structure, a context and a format." (p. 4)

". . .my view of the interrelationships of various media in a twodimen-sional [sic] representation [sic] of a multidimensional reality" (p. 9) [Although the effect may have been lost in the transition to thispagein thejournal, thesecond hyphenated word was in the middle of a line in the book.]

Typographic errors in a published work are, of course, not unheard of, but the frequency with which they occur in the first chapter suggests a very rushed job which is sorely in need of editorial attention. Pettersson also has a penchant for over-using quotation marks, which adds to the difficulty of reading.

Another point relating to the technical aspects of writing is that some sections are written in quite a scholarly manner, with full documentation of sources and citations, while other sections-only pages away-contain pro- vocative statements or ideas which the reader may wish to follow up on, but which have no attribution or amplification whatever. Examples of the latter are:

"Very small children view the world as being up-side-down. After a time,

however, the brain somehow learns to process retinal images so that they are perceived to be right-side-up." (p. 63)

'When we look at a person who is walking or running, the eye records a series of stills which ultimately blend into one another and form a moving image." (p. 64)

"Our Western society is dominated by the written word and extremely quadrangular. It is a society in which bureaucrats occupy quadrangular cells in such a way that creative and intellectually lively people are perceived as disturbing and disruptive features of the prevailing order. New ideas are effectively stifled. This leads to stagnation, industrial crises and a breakdown of the social fabric." (p. 78)

'If people like the content in a visual, they like it even more when the visual is presented in color and vice versa." (p. 233)

"Substantial research has clearly shown that learning efficiency is much enhanced when words and visuals interact and supply redundant information. The improvement sometimes exceeds sixty percent and averages thirty percent." (p. 268)

How much more useful Pettersson's summary statements would have been if they had had supporting references to the research from which the statements were abstracted!

A noteable inconsistency appears within little more than the space of a page: "A visual should usually be in color but not in unrealistic colors" (p. 250; emphasis mine); but "[s]ometimes color enhances learning but in many cases black and white would be better" (p. 251-252). My reading of the literature certainly supports the latter statement, but not the former. The former statement, taken out of context and attributed to a widely published scholar, may be decidedly misleading.

Another feature of the book that needs to be improved considerably is the use of graphics. While they are numerous, and well spaced throughout the four chapters, they are also of uneven quality, particularly with respect to complexity and interpretability The only uniform features of the illustrations are that they are neither numbered for ease of reference, nor provided with adequate captions, nor-in the overwhelming majority of cases-referred to in the accompanying text. Pettersson, in summarizing research, notes that "[i]t was also concluded that when illustrations are not relevant to the prose content no prose-learning facilitation is to be expected, on the contrary there can be a negative effect [sic]" (p. 106), and that "[m]any illustration [sic] (often without legends) in contemporary textbooks appear to serve no useful purpose whatever" (p. 145). However, for many illustrations in his book, it is difficult to discern what the relationship is between an illustration and the text surrounding it, and sometimes even why the illustration was included at all. Exceedingly complex diagrams are left to stand on their own, with little or no accompanying explanation. One could imagine some of them being effective as overhead transparencies, bolstered by considerable verbiage from an instructor, but few of them seem capable of delivering a message on their own.

Some of the illustrations are less than effective in other ways. In one, Pettersson attempts to illustrate that, in his words, "...image design can be changed a great deal without any major changes in the perception of image content" (p. 159; emphasis his). He illustrates his point with reference to three computer-generated graphics which differ, he states, by virtue of having changed 100 pixels. He neglects to mention that those 100 pixels represent something in the order of 1.2% of the pixels comprising the drawing (at least by my admittedly crude measurements, made from the printed page). Whether 1.2% constitutes "a great deal" might be arguable; elsewhere, he notes that "[t]he use of misleading illustrations in comparisons and statistics reduces the credibility of the message itself" (p. 233).

Pettersson does provide considerable technical detail in a number of places, which may be of use to those interested in making comparisons between different technologies (e.g., between the efficiency of storage of print vs. computerized text) or between different standards within similar technologies (e.g., NTSC and PAL television standards). Because of his relatively international perspective, he provides fodder for comparisons of other kinds, as well (e.g., copyright laws; picture database access). There are other bits and pieces scattered throughout the book that will likely interest those who examine media from a cross-cultural perspective.

REVIEWER

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Opening Minds: The Evolution of Videodiscs and Interactive Learning by George Haynes, foreword by Rockley L. Miller, Future Systems, Inc., Dubuque, IA: Kendall/Hunt Publishing Company, ISBN O-8403-5191-7

Reviewed by Jonathon Marsh

It is made abundantly clear, from the opening quotation to the final summary, Dr. Haynes' primary intention in this book is to sell the idea of interactive videodisc (IV) technology as a means to educational revolution. While the book is a cleverly crafted, informative, and up to date overview of developments in the IV world, the force of the argument presented is not sufficient to support such a grandiose concept. It may well be that the impressive and disturbing set of figures provided by Rockley L. Miller (editor of the videodisk Monitor) in the forward are good indicators of future developments and trends in training and education. It is also possible that much of Haynes' vision of the future of education may be accurate. However, significant