

Producing Instructional Systems, by Alexander J. Romiszowski. London: Kogan Page/New York: Nichols Publishing, 1984. 286 pages.

Reviewed by Suzanne Daningburg

Producing Instructional Systems deals with systematic lesson planning and should be required reading for any professional directly or indirectly involved in some aspect of the educational planning and producing process. It is an exhaustive "how to" book which includes references to historical background as well as examples of practical applications. Romiszowski paves the way for the serious-minded to make clear and pragmatic decisions at the level of day-to-day instructional implementation. The prose, appearing deceptively simple at a glance, is comprehensive. The author does not provide fluff for the uninitiated weekend reader, but rather specifies that the intended readership consists of "teachers, instructors, training analysts and others who plan the detailed tactics of instruction."

Producing Instructional Systems is the first volume of a planned two-volume set and deals with lesson planning for individualized instruction in the conventional classroom environment as well as for small group learning situations. It also explores the producing of educational simulations and games. The forthcoming volume 2, *Developing Auto-Instructional Materials* will deal, as its name suggests, with the development of many different types of materials, including programmed instruction, structural communication, audio and audio visual instruction and computer-based materials. Both books may be considered as companions to an earlier work, *Designing Instructional Systems* (Romiszowski, 1981), which dealt with the decision-making process involved in overall course planning and curriculum design. This conceptualization of instructional design in its beginning phases is what Romiszowski calls the "initial macro-design stages of lesson and instructional materials development". Basically, macro-design deals with the overall objectives (what should be achieved), the principal inputs (content, learners and resources) and the environmental climate and constraints (context).

Producing Instructional Systems continues, where *Designing Instructional Systems* left off, to deal with the "micro-design system", providing extensive coverage of practical techniques for the development of instruction. Micro-level tactics are meant for the lesson plan itself and the individual exercise. The book concentrates on the analysis and design of the lesson plans.

In writing for a professional audience, the author assumes a reasonable level of prior knowledge of instructional design and development on the part of the reader. He has structured the book to be easily accessible to the professional looking for a specific treatment. Numerous structured "maps" and charts indicate at a glance how relevant material is organized. A caveat for the busy professional is that individual sections of the book may be read independently without any loss of meaning.

The philosophical approach is a systemic one. Individualized instruction is seen as a cybernetic system which, while sensitive to the needs of individual students, must also have the capacity to correct and adapt itself on an instructional level.

The book is divided into three major sections: theory, strategy and tactics. Each section is in turn structured into three parts: 1) an analysis of the basic concepts and principles; 2) a synthesis of schemata, strategies and techniques used; and 3) an evaluation of these planning tools.

Part 1 begins with an examination of the theoretical base for the individualization of instruction. A brief and selective historical review of previous attempts at individualization

is presented. Romiszowski describes a classification system based on four key factors: 1) what is to be individualized; 2) when or with what frequency will the course adapt to the individual; 3) who decides; and 4) how the system adapts to the individual.

Control of individualized instructional systems is categorized into three basic approaches. The prescriptive approach, characterized by both Ausubel and Gagne, supports individualization on the basis of a comparison between the individual student's profile and some ideal model. The democratic approach, favored by the discovery learning school, supports individualization for the student's own sake. The cybernetic approach, exemplified by Pask, suggests that machine-based systems can be constructed which can learn from the learner, adapt to the learner's strategy for learning and can redesign presentations in ways superior to those achieved by human tutors.

A variety of well-known North American and European innovatory systems of individualized instruction, including print, multi-media and computer-based categories are evaluated. Examples discussed include the Personalized System of Instruction (PSI) associated with Keller, information mapping techniques and the Kent Mathematics project.

Part 2 deals with strategy and presents a condensed version of the concepts and techniques of systems thinking and the systems approach considered necessary to the production of instructional systems. The chapters are, however, detailed in *Designing Instructional Systems* and readers familiar with the latter may well find the material redundant. The methodology of knowledge and skills analysis is summarized. Guidelines for evaluating macro-level design are outlined and two instructional plans are provided as examples.

Moving beyond the theoretical bases and overall strategies, Romiszowski addresses the issues of micro-level analyses in Part 3. The main part of this section is devoted to the development and practical application of a lesson planning model. Emphasis is focused on the selection and implementation of specific instructional tactics based on the content and objectives of the proposed lesson together with the characteristics of the target population. A general model for lesson planning is developed which considers both the instructional system and the sequences of the lesson itself. Production and testing are highlighted, with further aspects of detailed design decisions presented as tactics. The production decisions involved at this stage are classified into two levels: the planning details of lessons; and the actual preparation of instructional materials.

Perhaps the most interesting sections of *Producing Instructional Systems* are the chapters covering simulations and gaming and the dynamics of group learning. While the author's comments on much of this material may be familiar, his way of dealing with it in relation to specific instructional situations is new (for the reader) and thought provoking.

As Romiszowski exposes practical guidelines for concise and clearly thought-out methods, he leads the reader to understand the answers to everyday questions of instructional implementation. In doing so he exposes a wealth of wisdom from major figures in instructional theory and design, including Bloom, Krathwohl, Gagne and Gilbert. As the author outlines the contribution and stance of each one, the reader is left with a rich synthesis of the background of his or her craft and profession.

Those readers accustomed to straight liner text presentation may consider the appearance of this book sloppy and unstructured. In fact, this reader found the initial effort in understanding the complex mapping figures to be well worth the time and energy expended. The prose, while comprehensive and unbroken, save for the numerous figures and tables, is easy to understand on a practical level.

The book's strengths are major ones; its weaknesses minor. Among the strengths are the following:

- A precise definition and use of key terms such as macro and micro levels of analysis

and planning, strategies and tactics. This is essential in such an interdisciplinary area as educational technology and communications.

- A synthesis of the instructional design area which combines the strengths of many major theories.

- Numerous examples of the strategies and tactics are described. The guidelines presented are viable. They work.

As for the weaknesses, I found two issues irksome.

- A not insignificant amount of the content is reiterated from *Designing Instructional Systems*. While this may be in part unavoidable, it is disappointing for those who have read and used the earlier book.

- Romiszowski's use of pronouns would have one believe that the female gender is not included in the general profession of educational technology and communications. The author also clings to stereotypical gender classifications in providing examples, as in referring to a salesclerk as "she" and insurance salesperson as "he". Aside from reference to specific examples, all references are to a masculine entity. The content of the text is of the future — the language, however, is outdated.

In summary, go out and buy this book. Recommend it to your students. As a synthesis and evaluation of the methodology of instructional production it will be referred to again and again.

REFERENCE

Romiszowski, A. J. (1981). *Designing instructional systems*. London: Kogan Page.

Styles of Learning and Teaching, by Noel Entwistle. New York: John Wiley and Sons, 1981. 293 pages.

Reviewed by Rob Dainow

Noel Entwistle has done an effective job of building a model of student learning that is grounded in both educational and psychological research. He weaves a convergence of evidence from differing areas to substantiate the main elements of his model while recognizing the limitations of our knowledge in these complex cognitive and social areas. The goal is not to prove the truth or validity of the model; rather, it is to "build up a coherent framework within which to understand the learning process" (p. ix) with the objective to help readers "consider critically their own ways of learning and thinking" (p. xi). In this he succeeds admirably - in fact, a more appropriate title might be "Styles of Learning and Thinking: An Integrating Framework".

Part I sets the stage; Part II builds up the model based on a small group of related studies of (college) student learning; Part III draws support for the model from the (educational) psychology literature; and Part IV provides an overview of suggested applications of the model in various teaching situations.

In setting the stage, chapter 1 serves as an advance organizer by outlining the main themes of the book (intellectual and cognitive development, the importance of individual differences in personality and styles of learning, and the importance of activity in learning) and the use of different forms of evidence from different areas to uncover a convergence of ideas. The discussion of scientific versus, humanistic evidence is well presented and is