Constructivist Instruction: Success or Failure?
(Book Review)

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Textbook Details:
Constructivist Instruction: Success or Failure?
Edited by Sigmund Tobias and Thomas M. Duffy
Routledge Publishing (http://www.routledgeeducation.com/books/Constructivist-Instruction-isbn9780415994248)

Introduction

Constructivism may address a broad range of disciplines, from philosophy to education, from psychology to sociology. From a philosophical viewpoint, constructivism is an epistemology, a theory of knowledge representing an essential part of contemporary philosophical culture. What does knowledge mean? How does the process of knowledge take place? What is the relation between knowledge and reality? Constructivist is also a referential learning theory for some psychologists and pedagogists. How is our mind structured? How do we learn? Moreover, constructivist is an instructional paradigm, a set of teaching techniques. How to teach? What are the characteristics of an effective teaching? There is not yet a strong, unique instructional model based on the constructivist framework and the debate among researchers is still hotly open. Plus, some researchers call the effectiveness of the constructivist didactics into question and suggest that explicit instruction is superior.

Constructivist Instruction: Success or Failure? is a book which well represents the actual debate related to constructivism and education. The main purpose of this book is to discuss the present status of constructivism, applied to teaching and to development of instructional materials. The volume was stimulated by the 2007 annual convention of the American Educational Research Association, which was an occasion for constructivists and advocates of explicit instruction (“instructionists”) to debate about both theoretical and practical issues. Particular relevance for animating the debate was related to the Kirschner, Sweller and Clark’s paper Why Minimal Guidance During Instruction Does Not Work: An Analysis of the Failure of Constructivist, Discovery, Problem-Based, Experiential, and Inquiry-Based Teaching (2006).

The book is organized in chapters which present detailed views from both sides of the controversy. The first part of the volume is introductive. The second part is dedicated to chapters by constructivists, whilst the third part is devoted to chapters by instructionists. The fourth part is prepared by researchers concerned with content and application areas. The fifth tries to offer a summary of the main issues debated and to define a possible common research agenda.

Part I. Introduction

In the first chapter, The Success or Failure of Constructivist Instruction: An Introduction, Tobias and Duffy trace a brief outline of the theoretical debate related to the constructivism and provide some background information about the history of constructivism as a learning theory, with some reference to researchers who influenced the field.

The authors suggest that, even if a solid base for the current interest to constructivism can be related to the work of Vygotsky (1978), Dewey (1929), Piaget (1952), and Bruner (1966), a strong input for the growth of constructivist theory and its application to instruction can be tied to some recent researches. In particular, Brown, Collins, and Duguid (1989) argued that knowledge is situated and is a product of the interaction with its context and its culture. Resnink (1987) examined situated learning which takes place outside the school. Lave and Wenger (1991) extended
the study of situated learning to communities of practices.

At the end of this chapter, the authors present a detailed overview of the entire volume.

Part II. The Evidence for Constructivism

In the second chapter, Reconciling a Human Cognitive Architecture, Jonassen provides a general overview of the constructivist positions. The author agree with Kirschner et al.’s (2006) about the collaborative articulation and construction of cognitive architecture, but he takes issue with theory definition of learning as a change in long-term memory. Jonassen claims that a cognitive architecture must account for the context, the learner, and the social and cognitive process of cognition in order to explain or predict cognitive activities.

In the third chapter, Constructivism in an Age of Non-Constructivist Assessments, Schwartz, Lindgren, and Lewis suggest that constructivist teaching may be superior for situations in which current learning is a preparation for future learning, rather than for sequential problem solving. If the objective of instruction is for immediate problem solving the authors suggest that constructivist instruction mat ne less ideal.

In the fourth chapter, Taking Guided Learning Theory to School: Reconciling the Cognitive, Motivational, and Social Contexts of Instruction, Herman and Gomez explore the implications of guided learning theory for schooling. The authors claim that critics of constructivist instruction ignore such critical components of the instructional process as motivation, the social context of the classroom, and other aspects of the dynamics of instruction. They then discuss their work on supporting students’ reading in science and describe tools developed to guide student’s reading in that domain.

In the fifth chapter, Beyond More Versus Less: A Reframing of the Debate on Instructional Guidance, Wise and O’Neill argue that experimental “high versus low guidance” studies cannot provide a valid basis for making assumptions about the fundamental merits of constructivist teaching. The quantity of guidance is just one dimension along which guidance can be usefully characterized. Two additional concerns that have to be considered are context and timing of guidance especially in ill-defined problems domains.

In the sixth chapter, Constructivism: When It's the Wrong Idea and When It's the Only Idea, Spiro and DeSchryver claim that constructivist instruction may be more or less effective depending on the domain in which it is adopted to support teaching and learning. It may lead to superior results in ill-structured domains such as medical diagnoses, whilst it may be less effective in well-structured domains such as mathematics, for example. In such as domains, explicit instructional approaches may be more effective.

Part III. Challenges to the Constructivist View

In the seventh chapter, What Human Cognitive Architecture Tells Us About Constructivism, Sweller argues that some constructivists approaches, namely discovery, problem-based, or inquiry learning, seem to imply that evolutionary secondary knowledge, such as intentional school learning, can occur as easily as evolutionary primary knowledge, such as learning to speak or listen. The author argues that reading, writing, and other evolutionary secondary subjects taught in school have evolved relatively recently, and therefore have to be taught explicitly.

In the eighth chapter, Epistemology or Pedagogy, That Is the Question, Kirschner affirm that children differ from adult experts in many way and that children do not have many of the cognitive abilities of adult experts, such as their context knowledge, their conditionalized knowledge, or their ability to retrieve knowledge rapidly.

In the ninth chapter, How Much and What Type of Guidance is Optimal for Learning?, Clark focuses on guidance and instructional support provided to learners and suggests that guidance should provide accurate and complete demonstrations of how and when a task should be performed. Further, when transfer to a new situation is required, guidance must provide the practice and declarative knowledge permitting learners to function in that situation. The author maintains that guidance should involve application of procedures with immediate corrective feedback.
In the tenth chapter, *Constructivism as a Theory of Learning Versus Constructivism as a Prescription for Instruction*, Mayer suggests that there is a difference between behavioral activity and cognitive activity. While the first one does little to advantage learning, the second one is vital for learning. The author suggests that in discovery learning, constructivists tend to confuse the two, leading to considerable confusion since the behavioral activity seen in discovery learning does little to promote learning.

In the eleventh chapter, *The Empirical Support for Direct Instruction*, Rosenshine reviews classical findings developed by process-product studies of students’ learning from classroom instruction. That research is composed of both experimental and correlational work, and has largely been ignored with the advent of constructivist approaches. The author suggests that those findings are still valid and should be taken into consideration.

### Part IV. An Examination of Specific Learning and Motivational Issues

In the twelfth chapter, *Learning and Constructivism*, Kintsch remarks that there is confusion between the commonly accepted notion that all knowledge is constructed by the individual, and the constructivist approaches to instruction, such as discovery, problem-based, and other instructional approaches.

In the thirteenth chapter, *From Behaviorism to Constructivism: A Philosophical Journey from Drill and Practice to Situated Learning*, Fletcher overviews the philosophical and psychological roots of both constructivist and, to a small, explicit instruction. This chapter suggests the importance of “drill and practice” and the use of simulated environments for situated learning.

In the fourteenth chapter, *What's Worth Knowing about Mathematics?*, Gresalfi and Lester deal with instructional issues from the perspective of mathematics education. The authors suggest that a constructivist approach should see learning as a change in social activity that integrates what is known with how one came to know it, and emphasizes understanding of math and when to apply that understanding.

In the fifteenth chapter, “To every thing there is a season, and a time to every purpose under the heavens” *What about Direct Instruction?*, Klahr describes his research on the control of variables strategy trying to clarify how direct instruction differ from discovery learning, when direct instruction should be used and what aspects of disciplinary practice should be included in early science education.

In the sixteenth chapter, *Beyond the Fringe: Building and Evaluating Scientific Knowledge Systems*, Duschal and Duncan oppose instructionists’ position regarding science education. The authors emphasize that science education is not only knowing “what” is known, but also knowing “how” and “why” is known.

### Part V. Summing Up

In the seventeenth chapter, *An Eclectic Appraisal of the Success or Failure of Constructivist Instruction*, Tobias analyzes the issues in the book from an eclectic viewpoint and claims that, whenever possible, it is important to support the theoretical debate with research results.

In the eighteenth chapter, *Building Lines of Communication and a Research Agenda*, Duffy focus on the failure in communication between the constructivist researchers and the direct-instruction researchers. The first ones seem to ignore that information processing plays an important role in the learning process, whilst the second ones seem to ignore that extensive guidance may be provided in constructivist environments.

### Final comments

This volume effectively presents some crucial aspects related to the actual theoretical debate in the research of learning theory. The initial question – “*Constructivism and the Designing of Instruction: Success or Failure?*” – seems to find not an unique answer. A variety of positions are expressed in this volume by different researchers. The
debate arose from the chapters of this volume helps to spotlight many of the issues and clarify the underlying rationale for the different perspectives.

An interesting feature of the book is the dialogue built into it between the different positions. In fact, each chapter ends with discussions in which two authors with opposing viewpoints make questions about the chapter, followed by the author(s)’ clarifications to those questions; for some chapters there are several cycles of questions and answers. Such as interactive dialogue among researchers with different background and perspectives allows to have some points further discussed and clarified by the author(s).

References


