

Review

Educational Design Research

Title:	Educational Design Research
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The aim of this publication is to address an obvious and continuous need for better comprehension of educational design research, and how it would contribute to increasing the relevance of research for educational policy and practice. Throughout the text, the challenges confronted by the researchers in this area are emphasised and discussed. This book is the compilation of revised, updated, and elaborated versions of presentations given at an educational design research seminar organized by the Netherlands Organization for Scientific Research under its Program Council for Educational Research (NWO/PROO).

The book is structured to provide an overview of educational design research and the challenges faced by researchers in educational design. It consists of four main parts. The first part presents a mixture of substantive information for those who are interested in learning about the essence of design research. The second part of the book provides illustrative examples of design research, and in the third, authors share their views on quality assurance. Finally, policy implications are offered and discussed, with particular attention paid to understanding and evaluating educational design research work.

Part 1 is called: *what and why*. It consists of two chapters. The editors open the first chapter with the overview information of this book, and the motivation behind of its publication. There is a brief introduction to educational design research, and its terminology, and characteristics are highlighted. In chapter 2, Decker Walker makes his arguments as to why design research has now received more attention and become more accepted by researchers and policy makers. He expresses his disappointment with the impact of conventional approaches in educational research where there has been no significant *intellectual breakthroughs* when compared to other areas such as medicine, engineering, and sciences. He added that there no measurable improvement in teaching practices or students learning have been seen on a large scale. To show the seriousness of the situation, the author states

that after more than half a century of research activities having been undertaken, it has not yet improved education. Further it is stated that in some parts of the world the situation has become worse with the quality of education declining. The author was also concerned that most research designs were developed with little consideration to the reality of target user needs which he labelled as *'done by the seat of the pants'*. Due to this, a guideline that could lead to productive design research, which emphasises the need to create a balance between caution and risk-taking in researching was suggested.

Part 2 is titled: *Examples from the field*. In this part, authors elaborate their involvement in the application of design research from the past few years. It consists of three chapters which discuss educational design research case studies from three perspectives including *learning design perspective (Chapter 3)*, *technology perspective (Chapter 4)*, and *curriculum perspective (Chapter 5)*. In Chapter 3, Koeno Gravemeijer and Paul Cobb elaborate on an approach to design research that has been used and refined in a series of design research projects on which they have worked together for more than 10 years. They mainly discussed three phases that were involved in conducting design experiments to explicitly define *'what design research is for'*. An experiment on statistics was used to ground the discussion of the three phases which are *preparing for the experiment, the design experiment, and the retrospective analysis*. Related theories and examples with relevance to each phase were also given and discussed. While, Thomas Reeves in Chapter 4 selects *educational technology* as a subject to illustrate the design research issue from the perspective of technology. He proposed that progress in improving teaching and learning through technology may be accomplished using design research as an alternative model of inquiry. A viable strategy for socially responsible research in educational technology through the application of *predictive research and design research* was suggested for a possible satisfactory outcome to be obtained. At the end of the

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chapter he called for the educational technology research community to adopt design research methods more widely. In Chapter 5, Susan McKenney, Nienke Nieveen and Jan van den Akker attempt to bring together the discussions of design research in the context of curriculum domain. From this perspective, they characterise design research and build towards a conceptual model of the process. The chapter concludes by addressing the challenges in undertaking the research, and guidelines for mitigating those challenges are presented.

Part 3 is named: *Quality*. Quality assurance was the main issue discussed in this section. In Chapter 6, D.C. Phillips highlights the prejudice or unfair judgement towards design research proposals that exist from individuals or organisations who had different favoured approaches. The author gave suggestions to the research funding body on the criteria they should look for in assessing design proposals. In the following chapter, Daniel Edelson addresses the approach taken to assessing design research proposals from an engineer's perspective. He outlined sequential steps to conduct educational design research, and followed by describing criteria for assessing the proposals. In Chapter 8, Anthony Kelly emphasises the criteria of design research by providing an overview its characteristics, uses, goals, methods, and measures.

The book ends with two chapter in Part 4 which has the title *Moving Ahead*. In chapter 9, the author, Hugh Burkhardt addressed the need to move design research to become a research-based method, and the need for reliable models of process of educational change. These two he believes do not yet exist. By outlining progress that has been made, it does give reasonable hope that a successful research-based developmental approach is possible. Firstly, he makes the comparison between the craft-based approach and the research-based approach as the foundation in outlining the key elements for the improvement. An overview is given of the styles and key products from other approaches was undertaken such as humanities, science, engineering and art, to recognise any approach which could be applied in educational design research, so as to make it become useful to practice, and more influential on policy. The chapter concludes with a summary of strategic changes that seem to be needed to improve educational research practice. In the closing chapter, the authors, Nienke Nieveen, Susan McKenney, and Jan van den Akker conclude by exploring the role that design research plays in the broader scientific cycle, including implications for assessing the quality of design research proposals, activities, and reports.

Personally, I believe this book makes an important contribution by providing information to educational researchers, especially those who are just beginning to become involved or are initiating education research. It is a good starting point for the new researcher to realise the challenges that might occur while undertaken such efforts through sharing the experiences of people who have devoted most of their lives to this area. This is clearly shown by the extensive accounts of real research which are presented, mostly based on the authors' own research experiences. Throughout its chapters, annotated references that help readers to find their way through the existing literature were listed. Having said this, I will use and recommend this book for reference by researchers and research students who intend to carry out or are presently involved with educational design research.