



DESIGNED BASED RESEARCH - A CONCEPTUAL FRAMEWORK IN RESEARCH METHODOLOGY



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ABSTRACT

Design Based research is a wakeup call to narrow the bridge between the theory and practice in educational research. In the recent year, design based research has emerged for engaging in theoretical research in realistic research. In this approaching researcher working in partnership with educational seek to refine theory of learning by designing, studying and refining rich, theory based innovation in realistic classroom environment. This paper addresses certain important issues related to design based research to understand the basic concept and encourages adopting design based research (DBR).

KEYWORDS : *Designed Based Research, Conceptual framework, Research Methodology.*



INTRODUCTION :

Educational researcher, policy makers and practitioners agree that educational research is often divorced from the problems and issues of everyday practise a spite that creates a need for a new research approaches that speak directly to problem and practise that lead to the development 'usable knowledge'. DBR can compose a coherent methodology that bridge theoretical research and educational practice.

Definition, Hannafin and wang define 'a systematic but flexible methodology aimed to improve educational practises through iterative analysis, design, development and implementation based on collaboration among researchers and practitioners in real world settings, and leading to contextually – sensitive design principles and theories.

MEANING OF DESIGN BASED RESEARCH

DBR is based on grounded theory leads to innovative learning and come out of environmental need. DBR does not accept tailor –made design. It takes place in naturalistic real life like situation. It is longitude research. It includes analysed, evaluate, pilot study, feedback, and redesign an implication. In each phase changes occur so it takes long time to develop the research.

AREA OF DESIGN BASED RESEARCH

There are four areas where DBR methods prove to be more promising.

- Exploring possibilities for creating novel learning and teaching environments.
- Developing theories of learning and instructions that are contextually based
- Advancing and consolidating design knowledge.
- Increasing our capacity for educational innovation.

Characteristics of design based research-

- Pragmatic: Solution to real world problem.
- Grounded: Grounded in theory.
- Interactive: Collaboration among researchers and practitioners.
- Integrative: Integration of research methods and approaches.
- Contextualizing: Context in design process and research setting.

General Characteristics of design based research-

- Addressing complex problem in real authentic context in collaboration with practitioners.
- Conducting rigorous and reflective inquiry to test and refine innovative learning environment.
- Research and development through continuous cycles of design, analysis and redesign.
- Research must account for how designs function in authentic settings.

OBJECTIVES-

- The need to derive research findings from formative evaluation.
- The need to go beyond narrow measures of learning.
- The need to address theoretical questions about the nature of learning in context

Collaboration In Design Based Research-

Collaboration is the most important factor in design based research which is missing in traditional research. Here the teacher who teaches the subject and the researcher who is doing the research on the subject come together to get the benefit out of the research.

DESIGN BASED RESEARCH METHOD-

Design experimentation reflects a range of practices and methodology that are drawn from a variety of disciplines. Within DBR methodology, interventions are conceptualized and then implemented in natural settings in order to test the ecological validity of dominant theory and to generate new theories and framework for conceptualizing learning, instruction design processes, and educational reform.

THE BASE OF DESIGN METHOD

- i. The need to address theoretical questions about the nature of learning in context.
- ii. The need for approaches to study of learning phenomena in the real world situation rather than the laboratory.
- iii. The need to go beyond measures of learning.
- iv. The need to derive research findings from formative evaluation.

Guidelines for design based research

a. Implementing a design

Identify the critical elements of the design and how each element are addressed in implementation.

b. Modifying a design

If elements of the design are not working then modify the design, working then modify the design. Modification on each stage describes the reason for making the modification.

c. Multiple ways of analyzing the design

Cognitive, resourceful, interpersonal, group or classroom, school or institution.

d. Measuring dependent variables

Three types of dependent variables are important. Climate variables (engagement, co-operation, risk taking), Learning variables (content knowledge, meta-cognition, learning strategies) System variables (sustainability, spread, cost).

To get a clear idea how design based research is different than Experimental research, Action research and Formative research a comparative chart has been given –

DBR	Formative Evaluation	Action Research	Expt. Research
Real world situations	Iterative refinement of design and theory leads to adoption of formative evaluation.	Practitioners initiate the research and researchers facilitate the research process	Controlled situation
Characterize complex situation through iterative revisions	Goal of formative evaluation is to improve the practice of design		Fixed Procedure
Social interaction	Theory generation is not a goal of formative evaluation		
Development of design profile in practice "Research paradigm" rather than an "Evaluation method"			

Difference between Traditional research and Design based research:

Traditional Research	Design based Research
1. Existing theories are usually tested through artificial treatments in controlled context.	1. Mutual development of Design and Theory.
2. Single/multiple mixed method	2. Integrative: Multiple mixed method.
3. Intervention is designed once – no flexibility	3. – Interactive - Iterative - Flexibility
4. Deal with single variable, control all other factors and isolate subjects and situations from the real world.	4. Real world context – Conducted in collaboration i.e., researchers and practitioners.

Considerations for implementing DBR:

- Begin with a meaningful problem
- Collaborate with practitioners
- Integrate robust theory about learning and teaching
- Conduct literature review, need analysis, etc. To generate research questions.
- Design and Educational Intervention
- Develop, Implement and Revise the design
- Evaluation of the impact of the intervention
- Iterate the process
- Report DBR

Criticism

Design based research is often viewed as “non scientific “ by circles in the ‘fixed and isolated variables are measured’. The experimental design always go through changes and modifications are made during the middle of ‘experimental intervention’. It takes long time to develop the research. The participation of the teacher may not be in favour of the researcher. The lack of collaboration in between the practitioner and the researcher may lead to weak results.

CONCLUSION

Design based research goes beyond perfecting a particular product. Design based research can provide a lens for understanding how theoretical claims about teaching and learning can be transformed into effective learning in educational settings.

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