

## **1. Design-based Research**

- > untangling design
- > definition + history
- > characteristics + critique

*Design-Based Research : A Decade of Progress in Education Research?*

*Terry Anderson & Julie Shattuck*

*Educational Researcher 2012 41:16*

## **2. In-class exercise**

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**de·sign [dih-zahyn]**

verb (used with object)

1. to prepare the preliminary sketch or the plans for (a work to be executed), especially to plan the form and structure of: *to design a new bridge.*
2. to plan and fashion artistically or skillfully.
3. to intend for a definite purpose: *a scholarship designed for foreign students.*
4. to form or conceive in the mind; contrive; plan: *The prisoner designed an intricate escape.*
5. to assign in thought or intention; purpose: *He designed to be a doctor.*

# *Design*

Architectural design

Book design

Brand design

Costume design

Exhibit design

Event design

Industrial design

Information design

Instructional design

Interaction design

Fashion design

Furniture design

Game design

Graphic design

Hardware design

Identity design

Interaction design

Interface Design

Interior design

Jewelry design

Landscape design

Lighting design

Magazine design

Mobile design

Newspaper design

Packaging design

Responsive design

Retail design

Scenic design

Software design

Sound design

Systems design

Textile design

Transport design

Typographic design

Urban design

User Experience Design

User Interface Design

Web design


# *Design*



Architectural design  
Book design  
Brand design  
Costume design  
Exhibit design  
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Industrial design  
Information design  
Instructional design  
Interaction design  
Fashion design  
Furniture design  
Game design



Graphic design  
Hardware design  
Identity design  
Interaction design  
Interface Design  
Interior design  
Jewelry design  
Landscape design  
Lighting design  
Magazine design  
Mobile design  
Newspaper design  
Packaging design



Responsive design  
Retail design  
Scenic design  
Software design  
Sound design  
Systems design  
Textile design  
Transport design  
Typographic design  
Urban design  
User Experience Design  
User Interface Design  
Web design


*about achieving an artifact*

***Design-based research  
is a practical research  
methodology in which an  
intervention is investigated.***

*holds 'real world' implications*

***Design-based research***  
***is a **practical** research***  
***methodology in which an***  
***intervention is investigated***


*process for conducting research*



***Design-based research***  
***is a practical **research*****  
*****methodology** in which an***  
***intervention is investigated***

***Design-based research  
is a practical research  
methodology in which an  
intervention is investigated***

*planned, targeted, goal-oriented  
response to a problem*





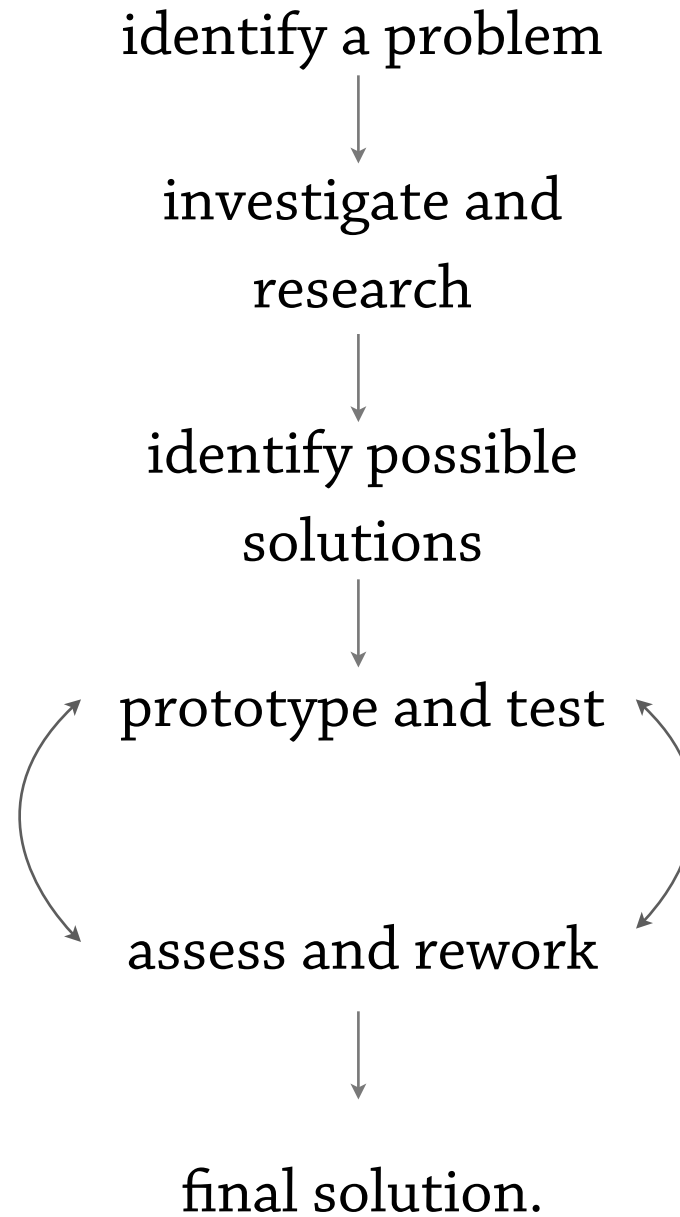
***Design-based research  
is a practical research  
methodology in which an  
intervention is investigated***

*studied through the lens  
of the design process*



***Design process ...***

***artifact***



***Design process ...***

***Design-based  
research***

identify a problem

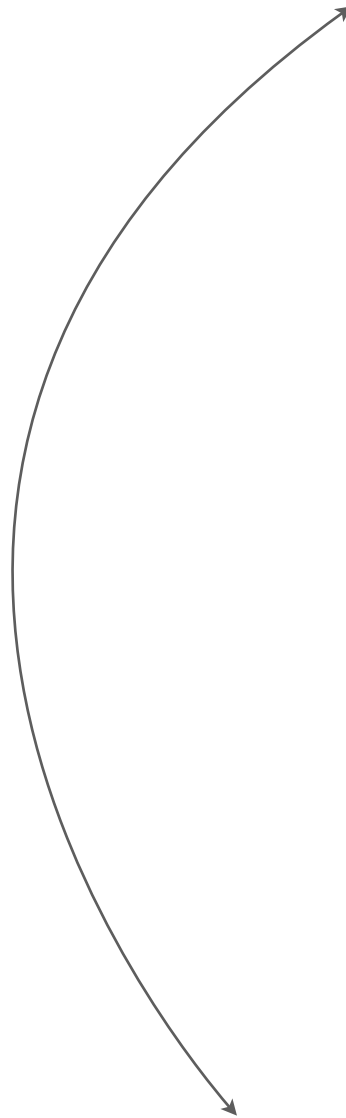
investigate and  
research

identify possible  
solutions

prototype and test

assess and rework

report on findings, contribute to  
learning theory and/or the development  
of future learning environments



***Design-based research*** is ...

- > a practical research methodology that employs design principles to guide, inform, and improve both practice and research.
- > seeks answers to how, when and why educational innovations work in practice.

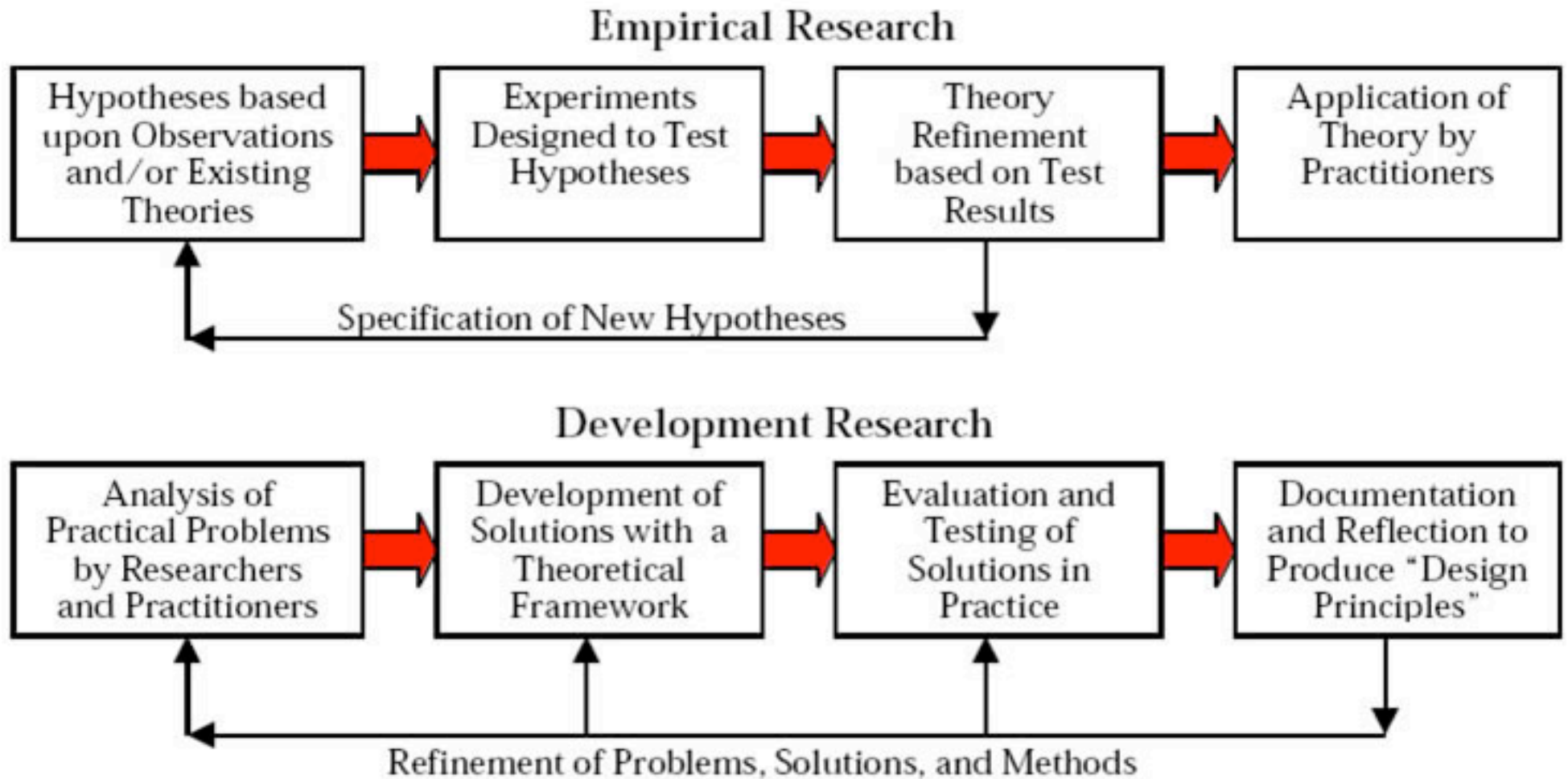
## ***Design-based research***'s history ...

Ann Brown, 1992

instead of conducting research outside of classroom,  
design research that can be tested and used  
simultaneously // sought the context of the real-world  
versus the laboratory

> bridge research and practice

## *Design-based research's* history ...



A ***design-based research*** study ...

- > is situated in a real educational context.
- > focuses on an intervention.
- > employs methods per needs of the study.
- > includes multiple iterations.
- > is a collaboration between researchers + practitioners.
- > demonstrates practical purpose and application.

A ***design-based research*** study ...

- > is situated in a real educational context.

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setting needs to have a sense of validity, that there exists a transference of knowledge

formal *classroom*

informal *museum*

non-formal *workshop*



## A ***design-based research*** study ...

- > focuses on an ***intervention***.

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Intervention creation is a result of assessment of local context, informed by relevant literature and theory, is designed to specifically overcome some problem or create improvement in a certain practice.

*novel assessment*

*new learning tool*

*change in classroom setting*

*introducing technology*

A ***design-based research*** study ...

- > employs methods per needs of the study.

.....  
There is no 'one size fits all' method for implementation.

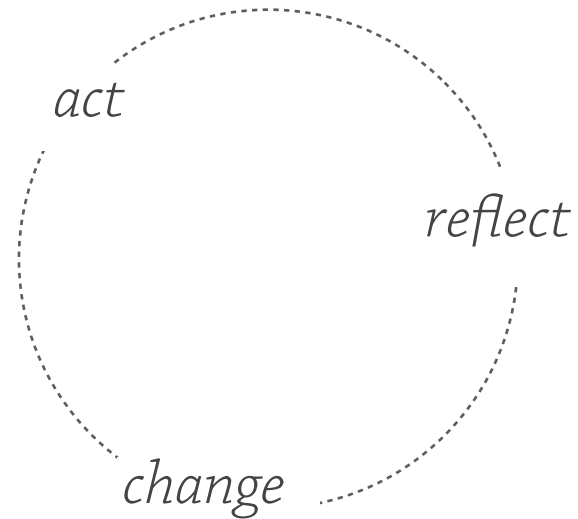
*quantitative and/or qualitative data*

A ***design-based research*** study ...

- > includes multiple iterations.

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“research through mistakes”  
continually evaluating the impact of the intervention



A ***design-based research*** study ...

- > is a collaboration between researchers + practitioners.

.....  
researchers bring the expertise and rigor of the research  
while teachers bring understanding of the complexities  
of context (*technology, politics*)

A ***design-based research*** study ...

- > demonstrates practical purpose and application.

.....  
outcome reflects the condition in which the research is operating and holds practical application.

good science leads to practical outcomes while also contributing to theoretical and basic understandings.

generates new ***design principles*** from which to guide future TEL developments

Example ***design principles*** outcome ...

Reduce visual complexity to help learners access information

Provide teachers with supports for real-time adoption

Scaffold the process of generating explanations

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*Design Principles Database:*

<http://www.edu-design-principles.org>

## ***Design-based research*** critiques ...

- x holds poor implementation and adoption record in affecting wide systemic change beyond design principles or individual teacher impact.
- x hard to determine when it is complete
- x intimate nature of researcher to conceptualization, design, development and implementation can lead to question of researcher bias

## Helpful links ...

<http://www.learning-theories.com/design-based-research-methods.html>

<http://dbr.coe.uga.edu/index.htm>

[http://edutechwiki.unige.ch/en/Design-based\\_research#Methodology](http://edutechwiki.unige.ch/en/Design-based_research#Methodology)