Researcher ↔ Practitioner Collaboration in Educational Design Research:
Values, Expectations, Roles & Outcomes

Guest Lecture at Gent University
March 28, 2013, Gent, Belgium

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Open University & Twente University
Some background

• Former pre-school teacher

• Currently: researcher, teacher, developer & consultant
  • Curriculum development
  • Teacher professional development
  • Technology integration
  • Educational design research

• In service of educational practice
Respondent experiences: Familiar?...

Are you the homeowner? May I ask you to participate in our short survey...
How do we feel?

2012 SCHOOL COSTS SURVEY: THANK YOU!

986 parents completed our survey about the cost of school in 2012.

Stay informed: sign up to Barnardos Campaigns

Like

Dislike
Why respondents participate?

- Personal interest in data/insight
- Personal interest in process/treatment
- Sense of duty
- Sense of moral purpose
- Extrinsic motivation (cash, prize, gift, etc.)
What determines these perspectives?

- Personality, e.g.
  - “Ask Tim, he’s usually quite happy to think along”
  - “Mary? No way, she is always too busy”

- Process, e.g.
  - What we actually have to do (answer questions, take pills, etc.)
  - The way we are approached
  - Ratio of time available : time required

- Convictions, beliefs, attitudes, especially:
  - Role – situational identity
  - Values – worth, aesthetics
  - Expectations – based on info, prejudice, experience, etc
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Today’s talk

• What are researcher-respondent experiences like during Educational Design Research processes, regarding
  • Roles?
  • Values?
  • Expectations?

• What outcomes do these interactions yield?

• Variation across Educational Design Research interactions

• Considerations for those shaping (educational design) research activities
What is educational design research?

“...a genre of research in which the iterative development of solutions to practical and complex educational problems also provides the context for empirical investigation, which yields theoretical understanding that can inform the work of others.”

- McKenney & Reeves, 2012
Also known as...

- Design-based research
- Development research
- Design experiments
- Formative research
- Educational design research
Motives

- **Scientific motives**
  “By engaging in design on both a technical and a social level, we were able to arrive at valuable insights in how to foster computer-supported collaborative learning.”
  
  - *Hoadley, 2004*

- **Practical motives**
  “In design-based research, practitioners and researchers work together to produce meaningful change in contexts of practice (e.g., classrooms, after-school programs, teacher on-line communities).”
  
  - *DBRC, 2003*
Goals of EDR

Solutions to real and complex problems

• Programs
• Processes
• Products
• Policies

Theoretical understanding

• Describe
• Explain
• Predict
• Prescribe
Generic model for design research in education

(McKenney & Reeves, 2012)
Researcher ↔ practitioner interaction
Sometimes within and always across processes

(McKenney & Reeves, 2012)
Need for research ↔ practice interaction

- Studies in context => ecological validity => usable findings
  - (Brown, 1992; Lagemann, 2002)
- Practitioner voices => relevant focus => usable outcomes
  - (McKenney & Reeves, 2012)
- Co-creation of knowledge => stimulates uptake and use
  - (Vanderlinde & van Braak, 2010)
- Relevant & usable knowledge => can (better) ground the design and implementation of educational innovations
  - (van den Akker, 1999)
Analysis & Exploration: Key processes

**Exploration**
- Site visits
- Professional meetings
- Networking

**Analysis**
- Initial orientation
- Literature review
- Field-based investigation
Analysis & Exploration: Stakeholder discussion
Analysis & Exploration: Roles

Practitioners
- Own the problem(s)
- Share (emic) insights into key issues & causes
- Share sources of inspiration and/or concern (often from first or second hand experience)

Researchers
- Study the problem
- Question why things are
- Share sources of inspiration and/or concern (often from theory and research literature)
Analysis & Exploration: Core values

• Activities in this phase are particularly insightful when researchers and practitioners value:
  • Realism – grounded in here and now
  • Critique – rational exploration of problem, seeking to understand (and not avoid) pertinent issues, even sensitive ones
  • Open mindedness – wiling to explore or try on different lenses

• Activities in this phase usually initiate a longer-term partnership, and are therefore served by:
  • Open, 2-way communication
  • Mutual respect
  • Acknowledgment of mutual interests, if not curiosity about other roles or even desire to try them on
Analysis & Exploration: Expectations

• A critical phase in EDR
  • Inventorying expectations from both perspectives
  • Often negotiating what is desirable and feasible
  • Understanding (un)shared priorities, pressures and concerns

• Set the stage for design, shared understandings of
  • Problem definition (descriptive and explanatory)
  • Long range goal
  • Key considerations (e.g. boundary conditions)
  • Initial ideas about design
Design & Construction: Key processes

Design:
- Mapping solutions
  - Requirements and propositions
  - Skeleton design
  - Detailed specifications

Design:
- Exploring solutions
  - Generating ideas
  - Considering ideas
  - Checking ideas

Construction
- Creating initial prototypes
- Revising prototypes
# Design & Construction: Roles

<table>
<thead>
<tr>
<th></th>
<th>Practitioners</th>
<th>Researchers</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Organizers</strong></td>
<td>Usually limited</td>
<td>Most often orchestrators</td>
</tr>
<tr>
<td><strong>Consultants</strong></td>
<td>Often</td>
<td>Sometimes</td>
</tr>
<tr>
<td><strong>Designers</strong></td>
<td>Sometimes</td>
<td>Often</td>
</tr>
<tr>
<td><strong>Developers</strong></td>
<td>Rarely</td>
<td>Sometimes</td>
</tr>
</tbody>
</table>
Design & Construction: Core values

• Activities in this phase are particularly productive and innovative when researchers and practitioners value:
  • Both analytical and creative mindsets
  • (both are needed across EDR, but particularly in this phase)

• Activities in this phase are particularly served by:
  • Teamwork
  • Communication
  • Creativity
  • Orchestration
Design & Construction: Expectations

• Often a surprising and energizing phase in EDR:
  • Participation in creative processes can engender ownership
  • Teams negotiate their identities and habits
  • Participants see group ideas coming to life

• Set the stage for evaluation of
  • Products and prototypes describing ideas
  • Products and prototypes embodying ideas
Evaluation & Reflection: Key Processes

**Evaluation**
- Establish the focus
- Frame guiding questions
- Select basic strategies
- Determine specific methods
- Draft and revise a planning document
- Create or seek instruments
- Collect the data
- Analyze the data
- Report the study

**Reflection**
- Organic
- Structured
Evaluation & Reflection: Live pilots
Evaluation & Reflection: Roles

Practitioners
- Expert
- User/client
- Stakeholder

Researchers
- Data collectors
- Process facilitators
- In EDR, sometimes practitioners are both respondents and researchers, as they may also facilitate processes and/or collect data

Other common groups
- Users: Children
- Experts: Subject matter
- Stakeholders: Parents
Evaluation & Reflection: Core values

• Results from this phase are particularly robust if there is:
  • Tight alignment between goals and methods
  • Transparent and well-justified frameworks for data analysis
  • Openness to unforeseen

• Activities in this phase are well-served if value is placed on:
  • Reasoning, empathy, especially for
    • Top down and bottom up analyses (deduction and induction)
  • Association, especially for
    • Systematic reflection and outside connections
Evaluation & Reflection: Expectations

• Typically a humbling, and insightful phase in EDR:
  • What flies vs what flops
  • Social, and emotional reactions to designs

• Begin to produce
  • Theoretical understanding
    • Answering research questions
    • Generating new research questions
  • Recommendations for applied use
    • (Re-) Design
    • Implementation strategies
Implementation & Spread

- Implementation
  - Adoption
  - Enactment
  - Sustained maintenance

- Spread
  - Dissemination
  - Diffusion

- Roles:
  - Implementers
  - Facilitators
  - Program champions

- Values
  - Make a difference/solve a problem
  - Innovate, design
  - Learning of students, educators, others

- Expectations
  - Change takes time (process, not event)
  - Strategies must evolve with actor needs
Implementation & Spread: Plans enacted
Outcomes: Maturing intervention

(McKenney & Reeves, 2012)
Outcomes: Maturing intervention

- **Program**
  - Professional development program for mathematics teachers (Swan, 2007)

- **Product**
  - Multi-User Virtual Environment (MUVE) curriculum River City (Clarke & Dede, 2009)

- **Process**
  - Learning-for-use process model (Edelson, 2001)

- **Policy**
  - Organizational restructuring as pre-requisite to change (Raval, 2010)
Outcomes: Theoretical understanding

(McKenney & Reeves, 2012)
Outcomes: Theoretical understanding

DOI 10.1007/s11423-006-9010-9

DEVELOPMENT ARTICLE

Grounded design of web-enhanced case-based activity

Hyeonjin Kim · Michael J. Hannafin

Published online: 17 October 2006
© Association for Educational Communications and Technology 2006
Outcomes: Ideally also…

(McKenney & Reeves, in press)
...in the eyes of the...
EDR interactions can vary widely

EDR can accommodate various...

• Ontologies (What is reality?)
  • Objective
  • Subjective

• Epistemologies (What is knowledge?)
  • Empirical observation
  • Community-created insights

• Methodologies (How is research conducted?)
  • Qualitative methods
  • Quantitative methods
Ontological variation

• Differing views of reality yield differing areas of focus

• One true reality?
  • Seeks consensus (e.g. inter-rater reliability)

• Multiple realities? High value on subjective impressions
  • Seeks multiple interpretations (e.g. and tries to describe them well)
Epistemological variation

• Different views on knowledge have implications for how it is sought

• Researcher, participant and topic are independent?
  • Dualism, objectivism (e.g. reduce biases)

• Researcher, participant and topic are dependent?
  • Deeper insight through intense interaction (e.g. undercover agent)
Methodological variation

• Different kinds of research questions can be answered with different kinds of instruments/data

• In EDR, we often ask things like:
  • Are effects present?
    • Often, but not always involves quantitative data
  • How and why are effects (not) present?
    • Often, but not always, involves qualitative data
### Researcher ↔ practitioner interactions

Excerpts from Wagner (1997)

<table>
<thead>
<tr>
<th>Research Process</th>
<th>Data extraction agreement</th>
<th>Clinical partnership</th>
<th>Co-learning agreement</th>
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<tbody>
<tr>
<td>Direct, systematic, inquiry designed, conducted and reported by researcher</td>
<td>Systematic inquiry cooperatively designed and reported by researcher and practitioner</td>
<td>Reflexive, systematic inquiry stimulated in part by ongoing collegial communication</td>
<td></td>
</tr>
<tr>
<td>Researcher as researcher; practitioner as practitioner</td>
<td>Researcher as researcher and collaborator; practitioner as practitioner and collaborator</td>
<td>Researcher as researcher-practitioner; practitioner as practitioner-researcher</td>
<td></td>
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Needed: EDR interaction stories

- Several attempts to portray EDR interactions based on literature reviews
  - Anderson & Shattuck (2012)
  - Ormel et al, (2012)

- Empirical studies needed (McKenney & Reeves, 2013)
  - Share your own inspiring, creative examples
  - Reflect on how/why things synergize (or not)
Ideas to take home?

- Productive and meaningful interactions in EDR are mutually beneficial.
- Seek synergies, but also attend directly to conflicting concerns of different stakeholder groups.
- Requires understanding and acceptance of varying personalities, processes and convictions (especially roles, values and expectations).

Helped by knowing and articulating:

- **Stance of self/organization**
  - “To thine own self be true, and …thou canst not then be false to any man”
- (Educational Design) **Research process**
  - Tight adherence to key principles, loose accommodation to practicalities.
- **Clear goals**
  - Maturing intervention & theoretical understanding.
Thank you!
For discussion beyond today...

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