

IMPACTS OF OER: WHAT DIFFERENCE DOES IT MAKE AND HOW?

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Impacts of OER: What difference does it make and how?

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Introduction

As interest in the adoption of OER grows...

- There is increasing interest in ascertaining what difference these learning resources make to learning and teaching.
- Is it the OER in itself that make the difference?
or it is
- The careful integration of OER in learning and teaching that makes the difference?

Context

ROER4D Project:

- Impact of integrating OER in Teacher Education

Institutional Context:

- The Open University of Sri Lanka (OUSL)
- Has a major role in raising awareness among educators about OER and encouraging use and creation of OER within the education system.
- Faculty of Education at OUSL offers the Postgraduate Diploma in Education which is an in-service professional development program for school teachers throughout the country.
- Involves the adoption and integration of OER by student teachers in the program.

Research Questions

- Key research question:
 - How and in which ways integration of OER is having an impact on teaching and learning in Sri Lankan schools?
- Sub research questions:

More specifically we are investigating the impacts along the following lines:

 - Changes in the quality of teaching-learning materials teachers use
 - Changes in pedagogical perspectives of teachers
 - Changes in the pedagogical practices among teachers

Research Hypotheses

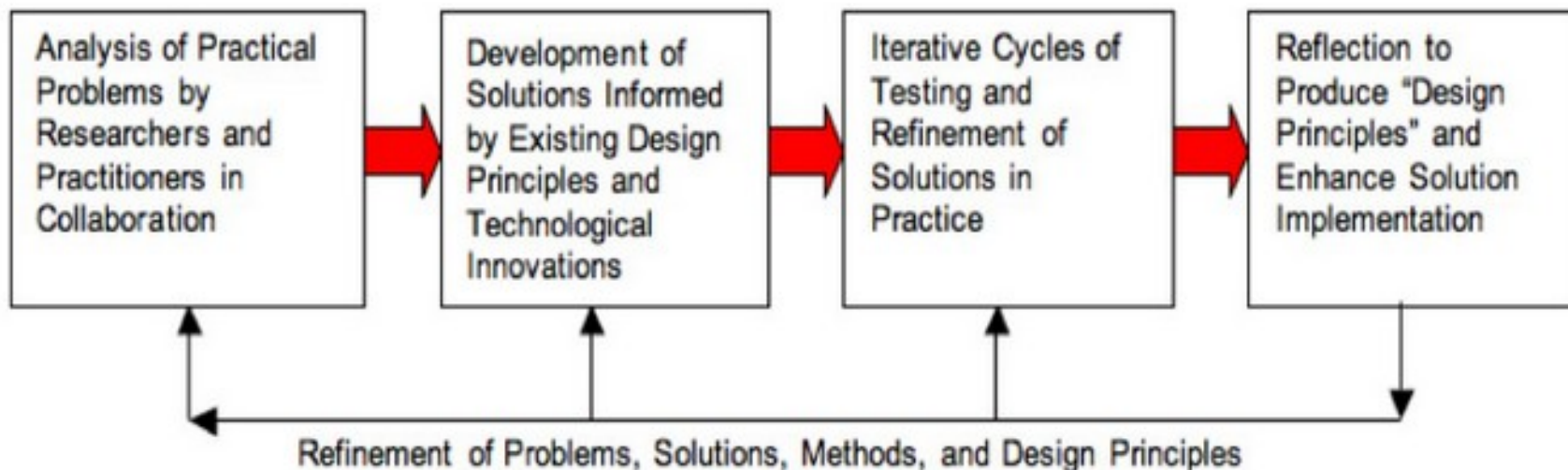
- Integration of OER will improve the quality of teaching-learning materials student teachers use.
- Integration of OER will change the pedagogical perspectives of student teachers.
- Integration of OER will change the pedagogical practices of student teachers.

Research Design

- A Design-Based Research (DBR) approach is used
- Design-based research (DBR) is a systematic and flexible methodology aimed at improving educational practices through iterative *analysis, design, development, and implementation*.
 - Involves design and implementation of a professional development intervention program in several stages for teachers on the integration of OER in teaching-learning process.

Research approach

Four phases of design-based research (Reeves, 2006, p. 59)



My research website - <http://www.elearnopen.info/research.html>

Parker, J. (2011). *A design-based research approach for creating effective online higher education courses*

Procedure

- Design and develop a PD program on OER integration in T&L.
- Raising awareness of OER and the opportunities afforded by it
- Build capacity in identifying, searching, selecting and integrating OER in their teaching practices.
- Follow up with finding solutions to authentic problems in teaching and learning with the teachers' active participation in this process.
- Evaluate the impact of integrating OER in their teaching-learning process.

Participants

Student teachers in the PGDE program

- Nine Regional Centers of OUSL
- 230 participants
- Ethnicities and medium (Sinhala/Tamil/English)

Data collection methods

- Multiple data gathering strategies
 - OEP Impact evaluation (survey of practices, perspectives, beliefs)
 - Study of artefacts including learning designs and instructional resources using checklists
 - Semi-structured interviews (focus groups/Individual)
 - Observation of teaching practices through classroom observations
 - Concept mapping and self reflection reports
 - Case studies

Hypothesis

1. Integration of OER will improve the quality of teaching-learning materials student teachers use.

Specific objectives

To establish whether (or not, to what extent) the integration of OER (in terms of 4Rs - Reuse, Revision, Remixing or Redistribution) can improve the quality of teaching-learning materials used by teachers in secondary schools.

Evidence/Indicators

Teaching-learning materials designed/developed by teachers, in their context. (Pre/Mid/Post Intervention)

- Degree (to what extent) OER are integrated in teaching-learning materials (No-usage to Creation)

- Ways in which OER are integrated in teaching-learning materials (4Rs)

- With what purposes OER are integrated by teachers in teaching-learning materials

Data Collection Methods / Instruments

Goal: To collect evidence of types of engagement with OER by teachers – Pre/Mid/Post-Intervention

• **Questionnaire Survey** on teaching-learning materials teachers use. (N= 30x9 = 270) Questionnaires @ Pre/Mid Post Intervention

• **Observation/Analysis of teaching materials** teachers use - Lesson Plans Observation Checklist @ Pre/Mid/Post Intervention

• **In-depth Interviews** with selected sub-sample (3x9=27) Interview (*Interview Schedule*) @ Mid/Post-intervention

2. Integration of OER will change the pedagogical perspectives of student teachers

To establish whether (or not, to what extent) the integration of OER (in terms of 4Rs - Reuse, Revision, Remixing or Redistribution) can change pedagogical perspectives of teachers, towards a participatory and sharing culture of teaching and learning

Concept Maps to be created by student teachers during the study period

Reflective Journals to be maintained by student teachers during the study period

-Degrees of 'openness' in the usage and integration of OER by teachers

-Innovative 'open educational practices' (OEP) adopted by teachers

Goal: Determine teachers' conceptions of OER, and relationship between their values and beliefs about teaching and learning, and their disposition towards OER.

• **Content Analysis of Concept Maps** created by teachers, at different stages of the intervention (Pre/Mid/Post Intervention)
• *(Concept Maps)*

• **Content Analysis of Self-Reflections** made by teachers, at different stages of the intervention (Pre/Mid/Post Intervention)
• *(Reflective Journals)*

• **OEP Impact Evaluation Questionnaire** (Pre/Mid/Post Intervention)

3. Integration of OER in teaching will change pedagogical practices among student teachers,

To establish whether (or not, to what extent) the integration of OER (in terms of 4Rs - Reuse, Revision, Remixing or Redistribution) will change pedagogical practices among teachers in secondary schools.

Teaching-learning methods and approaches adopted by teachers in their context. (Pre/Post Intervention)

-Degree (to what extent) OER are integrated in their teaching practice

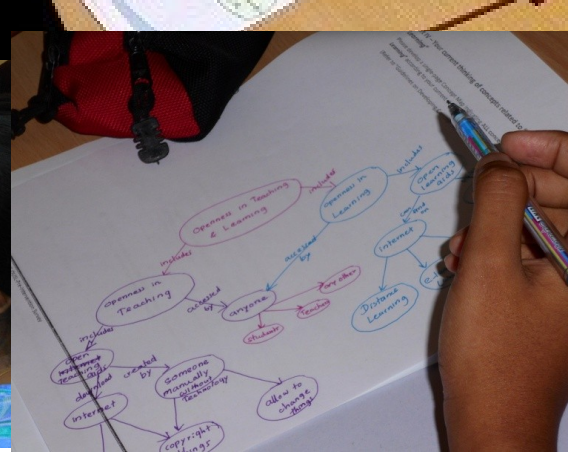
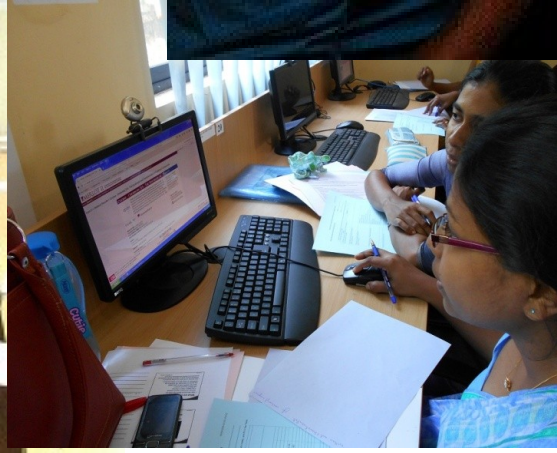
-Ways in which OER are integrated in teaching-learning methods

- With what purposes OER are integrated by teachers in teaching-learning methods

Goal: Capture OER usage embedded in teachers' pedagogical practices

- **Questionnaire Survey on pedagogical practices** of teachers (N= 230)
Questionnaires @ Pre/Mid/Post-Intervention
- **Observation/Analysis of lesson notes** of selected sub-sample (N= 3x9 = 27) - Lesson Plans Observation Checklist @ Pre/Mid/Post-Intervention
- **Observation of teaching practice** of selected sub-sample (N= 3x9 = 27) - Teaching Practice Observation Checklist @ Pre/Mid/Post-Intervention
- **In-depth Interviews** with selected sub-sample (N= 3x9 = 27) - *Interview Schedule* @ Pre/Mid/Post-Intervention

Data Collection



OEP Impact Evaluation Index (OEP Impact Index)

Instructions. This survey seeks to capture your **CURRENT beliefs and practices** around **open educational practices**. Please indicate your response to each one of the items by checking the best response for you. Please note that in submitting the survey you indicate your consent to the reporting of this data for research purposes. This data will be reported only in aggregate form.

Please indicate your **CURRENT beliefs** about the following statements.

Your CURRENT Pedagogical Beliefs	+2 Strongly Agree	+1 Agree	0 Neutral	-1 Disagree	-2 Strongly Disagree
1. Education is a human right.					
2. Technology can enhance learning and teaching.					
3. Teaching is mostly about teaching the subject matter content.					
4. Educational resources developed with public funds should be available freely.					
5. OER has the potential to change pedagogical practices (i.e., approaches to teaching and learning).					
6. Teaching is mostly about designing the learning experiences of students.					
7. OER has the potential to substantially alter our design of students' learning experiences.					
8. Teaching with technology substantially increases our teaching workloads.					
9. Being able to <i>reuse</i> educational resources helps me to improve my teaching.					
10. Being able to <i>revise</i> educational resources helps me to customize my teaching.					
11. Being able to <i>remix</i> educational resources allows me to be creative in my teaching.					
12. Being able to <i>redistribute</i> educational resources helps promote a culture of sharing.					
13. Searching for appropriate OER for my teaching is a waste of my time.					
14. The accuracy and reliability of OER cannot be assured.					
15. An open licensing framework is crucial to being able to share instructional resources.					

Please indicate your **CURRENT practices** in relation to the following statements.

Your CURRENT Pedagogical Practices	5 Always	4 Often	3 Sometimes	2 Rarely	1 Never	What do you think this item is referring to? What does this item mean to you?
1. I integrate technology in my teaching.						
2. The main focus of my teaching is the subject matter content.						

Data Analysis

- Content Analysis – Surveys, Concept maps, Narratives, Reflections, Interview transcripts and other artifacts
- Examine in detail to capture the meanings by close engagement with the text through a process of coding, categorizing and interpretation.
- The emergent themes and patterns of meanings identified will be used to ascertain the changes that had occurred, mainly in terms of their impacts upon pedagogical perspectives and pedagogical practices of participants, in order to establish causation.
- Case studies will also be used to discuss and present the in-depth understandings gained of particular phenomena in real-world settings.

Interpretative Phenomenological Analysis (IPA)

- IPA is used as a methodological construct for the analysis of data.
- It includes coding, categorisation and interpretation of the contents of concept maps, narratives, surveys, reflections, interview transcripts and other artefacts.
- The strategy is being used to explore in greater detail...
 - how individuals are perceiving the particular situations they are facing and making sense of their personal and social world,
 - helping to discover the meaning of the experience of each individual through their and researchers' interpretations, and through examining their 'lived experiences'.

Establishing Causation

- Ascertaining impact is a matter of establishing causation or a relationship between and among variables.
- Despite the common belief that a non-quantitative approach is incapable of establishing causal impact...
- There have been many attempts to suggest that the qualitative approach offers a viable approach for ascertaining causation.

Establishing Causation

- Causation can be demonstrated through qualitative research...
 - when there is evidence of ‘physical causality’, which rests on the idea of a direct physical connection in the real world..
 - as opposed to ‘factual causality’ which rests on the idea of actual causation.
- Such a ‘realist, process-oriented approach’ relies on an understanding of the processes by which a situation occurs...
 - rather than a comparison of situations involving the presence or absence of the presumed cause.

Establishing Causation

- We argue that in-depth studies such as these which adopt a DBR approach and which is *process-oriented* and situated in the real world context, are well suited for investigating causality.
- For instance, integration of OER in teaching and learning by teacher participants in this study is occurring in different ways at different levels in terms of 4Rs.

Conclusion

- The use of a variety of qualitative and quantitative strategies
 - To ensure methodological triangulation
 - Include the use of IPA for in-depth analysis of data
 - And interpretation to determine how and in which ways the integration of OER is having an impact covers all the bases in establishing causality and answering the question
 - **...What difference does it make and how?**

Acknowledgements

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