

The Research on Open Educational Resources for Development (ROER4D) project was a four-year (2013–2017), large-scale networked project which set out to contribute a Global South research perspective on how open educational resources can help to improve access, enhance quality and reduce the cost of education in the Global South. The project engaged a total of 103 researchers in 18 sub-projects across 21 countries from South America, Sub-Saharan Africa and Asia, coordinated by Network Hub teams at the University of Cape Town and Wawasan Open University.

This output forms part of an open research toolkit sharing the conceptual and other tools utilised to conduct the meta-synthesis of the sub-project research findings published in the edited volume, *Adoption and Impact of OER in the Global South*.

Meta-synthesis methodology

Rationale

The Research on Open Educational Resources for Development (ROER4D) project had a central objective of producing and communicating open education research from the Global South. In order to do so, it was necessary to conduct a meta-synthesis of the findings from its 18 sub-projects in order to distill the key insights, similarities and differences that emerged from the various study sites.

Sub-project findings are profiled in the edited volume, *Adoption and Impact of OER in the Global South*, which was co-published by African Minds, the International Development Research Centre (IDRC) and ROER4D. The book is comprised of 13 chapters on sub-project findings as well as introduction, meta-synthesis and conclusion chapters. The meta-synthesis is presented in Chapter 2, “Factors influencing Open Educational Practices and OER in the Global South: Meta-synthesis of the ROER4D project”.

A review of current literature revealed that meta-synthesis of constituent chapters or multiple text components does not appear to be common in open education research. Such books or collections often include descriptive overviews of the chapters and findings contained therein, but this is not the same as a meta-synthesis. The project was therefore forced to innovate and articulate an approach which was appropriate for analysing multiple research outputs, each of which had an individualised conceptual framework and sub-project-specific methodology.

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The process of formulating an appropriate methodology for the ROER4D meta-synthesis was initiated by Principal Investigator (PI) Cheryl Hodgkinson-Williams in 2016 with the support of the UCT Network Hub team. Drawing on existing literature on meta-synthesis studies, she elected to utilise Scruggs, Mastropieri and McDuffie's (2007) qualitative approach, as it promotes an approach which respects the integrity and diversity of the original reports. This was deemed preferable to quantitative methodologies, which often rely on standardisation of data into lists of variables and do not take sufficient account of or provide the necessary affordances for accommodating multiple studies with divergent methodological approaches.

Methodology

In order to provide insights into the relationship between engagement with OER and open educational practices (OEP), and change or “stasis” (Archer, 2003) with respect to equitable access to relevant, high-quality, affordable and sustainable education, findings from 15 of the 17 ROER4D empirical studies were interrogated using a meta-synthesis approach. Scruggs et al. (2007, p.395) explain that:

Unlike quantitative synthesis (meta-analysis) of group experimental research reports, qualitative metasynthesis is not concerned with summarizing or reducing findings to a common, standardized metric, such as a mean effect size. Rather, the purpose is to integrate themes and insights gained from individual qualitative research into a higher order synthesis that promotes broad understandings of the entire body of research, while still respecting the integrity of the individual reports.

This is a useful methodology to adopt when, as is the case with the ROER4D studies, researchers used a variety of methodologies, included a range of participants and conducted their research over different time periods (Arinto, Hodgkinson-Williams, King, Cartmill & Willmers, 2017). The meta-synthesis does therefore not set out to compare the findings of each of the independent studies, but rather endeavours to engage more broadly with the key issues that may help to better understand which structural and cultural circumstances influence institutional and/or individual (agential) adoption of OER. It also seeks to understand whether and how the adoption of OER can improve access to educational materials, the quality of educational resources, educators' pedagogical perspectives and practices and student performance, as well as the overall affordability and sustainability of open education in the Global South.

The meta-synthesis was comprised of the following stages:



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1. Reading through draft and final versions of sub-project research reports (including, in some cases, primary microdata) and noting similarities and/or differences in terms of key themes in their findings.

Sub-project research reports formed the basis of the sub-project chapters in the ROER4D edited volume, which were viewed as the primary data source for the meta-synthesis. Given the fact that the synthesis process needed to take place concurrently with the finalisation and publication of the sub-project chapters, research reports (along with primary microdata, in some instances) were examined in order to gain a sense of emergent themes and findings. This review process also helped to identify the different vocabularies which various sub-projects were using when articulating themes and findings, which enabled a mapping of equivalent terms and phrases that could be applied in the analytical framework. Variability in the naming and understanding of key concepts constituted a significant challenge in terms of overall cohesion in the ROER4D meta-synthesis, particularly in cases where research was undertaken and first written up in a language other than English.

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2. Engaging with the researchers to clarify concepts, data and/or findings to aid the comparison of key themes.

The ROER4D UCT Network Hub undertook a developmental editing process (Norton, 2009) in working with sub-project researchers to evolve their final research reports into the constituent chapters of the edited volume. This editing process was focused on distilling key aspects of the various research processes into shortened scholarly works which retained the authors' individual voices while obtaining some level of coherence across the greater collection of ROER4D chapters. The process, which was primarily facilitated through Skype calls and in-person meetings with authors (depending on physical location), entailed iterative development of content and interrogation of key concepts, microdata and the articulation of findings in order to ensure (a) that assertions could be supported by underlying data, and (b) that key concepts were adequately explicated so that they could be analysed and compared in the meta-synthesis.

The work undertaken in the various clarification processes was captured in the “ROER4D Research Concepts” document, which was made openly available to the ROER4D researcher community as a guide for conceptual articulation and ultimately served as a key resource to the project PI in developing the **conceptual and analytical frameworks**. Sub-project researchers engaged with and commented on this document throughout the research process, contributing to the overall refinement and shared understanding of key concepts applied in the research and meta-synthesis processes.



Archer's (2003) social realism theoretical framework was incorporated as a means of understanding the structural, cultural and agential factors that influence the adoption of OER and OEP.

3. Using a literature-informed set of themes to create the meta-level conceptual framework for the claims about OER and OEP in relation to the open education cycle (Hodgkinson-Williams, Arinto, Cartmill & King, 2017); and for the structural, cultural and agential influences on the potential impact on access, quality and affordability.

A set of foundational themes was identified in the preliminary conceptual framework developed in the project scoping process, and adapted over time to capture developments in the OER field and the refinements made in sub-project research processes in the course of the ROER4D research capacity building process. Archer's (2003) social realism theoretical framework was incorporated as a means of understanding the structural, cultural and agential factors that influence the adoption of OER and OEP. This process, supplemented by initial findings reported in the sub-project research reports, informed the first iteration of Hodgkinson-Williams' 10Cs open education cycle, which was presented at the OERAsia 2nd Regional Symposium held at Wawasan Open University in Penang, Malaysia, in June 2014 (Hodgkinson-Williams, 2014), which later formed the central pillar of the conceptual framework.

4. Ingesting pre-peer reviewed edited volume chapters into the qualitative software analysis tool NVivo to assist in the analysis of the literature-informed and emergent themes.

Given the coinciding meta-synthesis coding and chapter publication timeframes, pre-peer reviewed edited volume chapters were selected as the most advanced text versions that could be utilised in the coding process. These draft chapters had undergone extensive editorial development in collaboration with the authors; there was, therefore, a degree of conceptual and terminology cohesion that facilitated the coding process. The fact that the chapters had already been through multiple rounds of review by the PI also meant that it was unlikely that the anticipated peer review comments and subsequent refinements would impact upon methodological and conceptual formulation or the core aspects of the various sub-projects' findings.

NVivo¹ was selected as the analytical tool due to its strengths in processing qualitative data, and its ability to generate a range of reports and visualisations that could support an efficient coding process.

5. Using the meta-level conceptual framework to code the themes in the findings of each of the studies and then adjusting the framework to include unanticipated themes emerging from the findings.

Coding activity was undertaken collaboratively by two members of the UCT Network Hub, the Project Manager and Project Curator, who

¹ <http://www.qsrinternational.com/nvivo/nvivo-products>

reported on their process and findings to the PI for confirmation of their coding choices and, where necessary, clarification of ambiguous extracts that were difficult to code. This reporting process surfaced data points not sufficiently covered by the early iterations of the conceptual framework, prompting adjustments to the framework to better represent the complexity and depth of the data. These adjustments took the form of the addition of new categories and sub-codes into the conceptual and analytical frameworks for examining the challenges facing Global South education; the OER and related OEP that address those challenges (and the discernable impact that OER have had on addressing needs); and the structural, cultural and agential factors that affect OER and OEP.

Figure 1 shows an extract from the coding framework which describes the “OER and related OEP” category.

6. OER and related OEP	0	0
1. OER Conceptualisation	3	6
2. OER Creation	10	35
1. Developing individually	4	7
2. Developing collaboratively with colleagues	4	19
3. Co-creation with students	2	3
4. Crowd sourcing with members of the public	0	0
3. OER Curation (retain)	2	3
4. OER Circulation (redistribute)	1	1
1. Sharing	10	44
2. Distribution	4	6
5. OER Location (finding)	7	22
6. OER Use	12	53
1. OER Copying (reuse as-is)	6	14
2. OER Adaptation	6	12
1. OER Customisation (revise)	9	19
2. OER Combination (remix)	3	6

Figure 1: Coding sample demonstrating utilisation of the meta-level conceptual framework to code the themes in sub-project findings

6. Identifying the most frequently occurring themes to provide a more comprehensive and classified interpretation of the findings across the empirical studies.

Meta-synthesis processes attempt to present findings in aggregate in order to allow for comparisons to be made across multiple projects or study sites. In order to create a logical structure for the presentation of the ROER4D findings, the structural, cultural and agential factors that appeared most frequently in the coding process were utilised to provide a structure for presentation of the meta-synthesis. These themes, such as variable awareness of OER, were explored in depth to develop more nuanced explanations of the types of behaviour and influencing factors that were observed.

Presenting findings exclusively in order of frequency proved to be less valuable when elaborating on the findings related to the open education cycle. Instead, a logical progression from the conceptualisation of OER, to the creation phase, to the adaptation cycle was chosen to structure

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the findings that pertained to OER and related OEP. At each point, the structural, cultural and agential factors that most influenced those specific points in the cycle were identified and explored in the narrative.

7. Distilling insights according to the conceptual and analytical frameworks.

Not all themes identified in the conceptual framework before coding were well-represented in the findings. This necessitated a re-examination of the framework. As a result, the “optimal” open education cycle (Hodgkinson-Williams et al., 2017) (which incorporated feedback, critique and circulation activities) was refined into a version that more accurately reflected the more modest OER activities evidenced in the sub-projects’ research sites, in which copying “as is” predominated over original creation and adaptation.

Once the meta-synthesis findings had been interrogated and the conceptual framework adjusted to represent the actual OER practices surfaced in ROER4D sub-project research processes, the meta-synthesis analysed these in the context of the challenges facing Global South education, the possible role OER could play in addressing or ameliorating these challenges, and the impact that could be ascertained from the adoption of OER in the ROER4D study sites. The structural, cultural and agential factors that influenced OER adoption again provided the framework for this discussion and allowed for the identification of specific factors (such as the presence or absence of institutional support) that appeared to have the greatest effect on the impact of OER in the Global South.

Insights and lessons learned

The UCT Network Hub made an attempt to deliberate and standardise concepts in its research capacity building processes, but sub-project researchers remained largely invested in their own operational definitions and conceptual frameworks. Language diversity also played a role in the efforts to attain conceptual alignment when it came to developing definitions for specific sub-concepts that could be universalised across study sites. (The term “repurposing”, for instance, does not appear to have an easily translatable equivalent in Portuguese.) This diversity made conceptual meta-synthesis challenging, as there was some difficulty in developing a set of comparable concepts across all sub-projects. Meta-synthesis at a broad thematic level was, however, still possible.

In this kind of meta-synthesis, there is always a limitation in terms of construct validity, posing a challenge for the research community in terms of establishing whether members are actually speaking about the same concept. This is particularly the case in an emergent area of study such as open education research where vocabularies and specific



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terms for concepts are still being negotiated and established. This poses a potential validity threat, in that there are challenges in establishing a set of exact comparable concepts across the studies examined.

ROER4D was specifically scoped with a developmental strand intended to support the development of research skills amongst sub-project researchers. As such, this researcher cohort had variable levels of previous research experience. They were also situated in a diverse range of research cultures and geographical contexts. This led to researchers ascribing varying levels of importance to framing their work in the context of prior literature and aligning their conceptual frameworks with those of the broader OER literature, which primarily originate in the Global North. This factor necessitated careful negotiation during the developmental editing process in order to align conceptual expressions to a standard that could be productively synthesised, while respecting the diversity of perspectives and authorial voices. While sometimes challenging to negotiate, this diversity was productive in that, through retaining their agency, sub-project researchers sometimes uncovered findings that were not anticipated in the initial conceptual mapping conducted by the UCT Network Hub, which ultimately enriched the meta-synthesis.

The ROER4D experience points to an implicit tension for projects with meta-synthesis ambitions in terms of balancing the need for rigorously defined concepts understood and applied consistently across study sites with researcher autonomy and methodological agility. This is particularly pertinent for projects with partners or sub-projects employing qualitative and mixed-method data collection processes. It is also a factor in South–North research collaboration if there is a desire to avoid the dominance or normativity of Global North research approaches. Thorough attention should be paid to the overlap between the theoretical and conceptual frameworks intended for a meta-synthesis and those of the constituent research partners.

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The published open dataset arising from the meta-synthesis can be accessed at <https://www.datafirst.uct.ac.za/dataportal/index.php/catalog/696>.

A full list of ROER4D outputs can be accessed at <https://goo.gl/BMeCTH>.



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