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Methodological
note

Literature search protocol for the African Education Research Database

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Author:

Dr Rafael Mitchell and Professor Pauline Rose (REAL Centre, University of Cambridge, UK).

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Summary

This methodological note provides an overview of the 'Mapping education research in sub-Saharan Africa' project. It presents the protocols for the literature search, data extraction, and development of the African Education Research Database.

1. Overview

Education is a fundamental human right that has the potential to reduce poverty and conflict, improve health, empower women, and drive economic growth. The Sustainable Development Goals (SDGs) commit all countries to ensuring inclusive and equitable quality education for all. Yet, at present, great swathes of the population in sub-Saharan Africa (SSA) either do not have adequate access to education, or receive education which fails to equip them with the knowledge and skills they need, including functional literacy and numeracy (Mugo et al. 2015; Tassew & Aregawi 2016).

Evidence from the REAL Centre's work in the region (Rose & Alcott 2015; Ilie & Rose 2017) points to inequitable learning outcomes for different groups with a number of implications:

- Gaps in learning between the rich and poor are already evident by the age at which children are expected to have started school, and widen over the primary school cycle.
- Poverty and low learning in the early grades influences access to higher levels of education, creating an intergenerational cycle of disadvantage that needs to be broken.
- Access and learning outcomes vary widely within and between countries, indicating that evidence of good practice is not being identified or shared, and the effective use of evidence to inform policy is not the norm.

These disparities are likely to hinder progress towards achieving the SDGs.

While many actors are working to improve this situation and there is an increasing evidence base to inform policy and practice (Cloete et al. 2015), African research outputs are dispersed across a wide array of journals, working papers and other publications (Bonini et al. 2015). Universities in SSA are often characterised as teaching rather than research institutions, where education researchers 'work in relative isolation rather than as part of an integrated network of scholars' (Wolhuter 2011, 610). However, there is evidence that a significant amount of important research from SSA is 'overlooked and undervalued' (Maclure 2006).

No systematic assessment of research undertaken within SSA to identify problems and solutions is available. This project addresses this gap by providing a mapping of research of relevance to achieving the SDGs undertaken by SSA-based researchers in African institutions.

The 'Mapping education research in sub-Saharan Africa' project seeks to:

- Map education research undertaken by SSA-based researchers, organisations and networks to produce the African Education Research Database (AERD), an open access, interactive database.
- Review, evaluate and synthesise the literature to identify common themes, key findings to inform policy and practice, and research gaps.
- Identify potential priorities and partnerships for future research.

This methodological note outlines the approach to mapping research for the AERD, an open access, updatable bibliographical database of education research in SSA, searchable by country, thematic foci and research methods.

2. Identifying research for inclusion in the database

Relevance criteria

The project aims to identify: (a) **social science research** with (b) **implications for recent and current education policy and practice** that has been (c) conducted by **SSA-based researchers and organisations**.

In relation to (b), *recent and current* is defined as research conducted in the past decade. *Implications for policy and practice* is understood within the context of the African Union's Continental Education Strategy for Africa (CESA) and Agenda 2063, and the global priorities and targets expressed in Sustainable Development Goal 4 'ensuring inclusive and quality education for all', with a focus on the targets agreed by world leaders in September 2015. In relation to (c), the search is restricted to studies involving at least one SSA-based researcher (Table 1).

Table 1: Inclusion and exclusion criteria for determining relevant research

Inclusion criteria	Exclusion criteria
Social science research	Not social science research
Evidence-based	Theoretical/not evidence-based
Implications for education policy and practice of relevance to African and global frameworks	No implications for education policy or practice of relevance to African and global frameworks
Date range 2007-present	Before 2007
Conducted by at least one SSA-based researcher	Not conducted by SSA-based researcher/organisation
Identified through literature search strategy	

Literature search strategy

There are four main strands to the literature search strategy, as shown in Figure 1.

Figure 1: Four strands of the literature search strategy



Academic databases

Based on our evaluation of academic databases, **Scopus** has been selected as the primary database due to its extensive coverage of peer-reviewed articles, conference papers, books and chapters, and its capacity to limit search outputs to studies conducted by researchers affiliated to institutions in specific countries (e.g. Angola, Benin). Secondary databases include **Web of Science**, and the field-specific databases Education Resources Information Center (**ERIC**), British Education Index (**BEI**), and AfricaBib: Education in Africa.

Step 1. Using Scopus, the search uses high-level field terms ('education', 'school') in English, French and Portuguese. The search is limited by date range, subject area (social science), and author affiliation for 48 countries in SSA¹:

Angola, Benin, Botswana, Burkina Faso, Burundi, Cameroon, Cape Verde, Central African Republic, Chad, Comoros, Democratic Republic of the Congo, Djibouti, Equatorial Guinea, Eritrea, Ethiopia, Gabon, The Gambia, Ghana, Guinea, Guinea-Bissau, Ivory Coast, Kenya, Lesotho, Liberia, Madagascar, Malawi, Mali, Mauritania, Mauritius, Mozambique, Namibia, Niger, Nigeria, Republic of the Congo, Rwanda, Sao Tome and Principe, Senegal, Seychelles, Sierra Leone, Somalia, South Sudan, Sudan, Swaziland, Tanzania, Togo, Uganda, Zambia, Zimbabwe.

Titles and abstracts are checked to identify studies with implications for education policy and practice. Details of studies are entered into an Excel spreadsheet and exported to Zotero, an open source reference manager.

Step 2. The search process is repeated using Web of Science.

Step 3. Field-specific databases ERIC, BEI and AfricaBib: Education in Africa are checked according to the search procedures outlined in Step 1. Since these databases do not allow search results to be filtered by authors' country of residence (e.g. Botswana, Burkina Faso), authors' names are checked manually for relevance.

Step 4. Although the above databases contain studies in languages other than English, greater coverage can be achieved through specialist databases such as *Archive ouverte en Sciences de l'Homme et de la Société* (French) and *Repositórios Científicos de Acesso Aberto de Portugal* (Portuguese). Field-level terms are used alongside country name, and authors' names are checked manually for relevance.

Unpublished 'grey' literature databases

Recognising that SSA-based researchers often face barriers to publishing in peer-reviewed journals (Thomas 2017), the database also includes unpublished 'grey' literature, including PhD theses, reports, policy briefs and working papers. Grey literature databases have been selected based on their capacity to limit searches by geographical area. These include:

- Bielefeld Academic Search Engine (BASE), one of the largest search engines for academic web resources. Search:
 - continent = Africa
 - keywords
- OpenDOAR, a directory of academic repositories.
 - Identify repositories in SSA, search using keywords
- African Studies Library (University of Cambridge), search:
 - education AND [country name]

Expert and network consultation

Experts and networks involved in education in SSA are consulted via survey to identify additional studies for inclusion in the database. Relevant networks include, for example:

- Association for the Development of Education in Africa (ADEA)
- Association of African Universities (AAU)
- African Research Universities Alliances (ARUA)
- Forum for African Women Educationalists (FAWE)
- Educational Research Network for West and Central Africa (ERNWACA)
- *Atelier de recherche sur l'éducation au Burkina Faso* (AREB)

The consultation aims to ensure coverage of all geographical areas and themes. The consultation is extended through blogs (e.g. Mitchell & Rose 2017a, 2017b, 2017c) for forums such as NORRAG (Network for International Policies and Cooperation in Education and Training) and ADEA (Association for the Development of Education in Africa) which present initial findings and request feedback and further information on studies.

Pearl-growing techniques

The bibliographies and author profiles of studies that meet inclusion criteria are searched to identify additional studies for inclusion in the database.

3. Developing the African Education Research Database

The strategies outlined in Section 2 are used to identify studies for inclusion in the African Education Research Database (AERD). For each study, details are collected according to the procedures below.

Data extraction and appraisal framework

The following details are extracted for entry into an Excel spreadsheet. This allows research outputs to be filtered according to various criteria, including country of focus, thematic area, research methods, and relevance to SDG4:

- Citation (*Harvard style*), year, URL, abstract
- Type of research output (*e.g. chapter, peer-reviewed article*)
- Research method (*e.g. quantitative, qualitative, mixed-methods*)
- Author, affiliation, email
- Country of focus
- Language
- Funder (*where available*)
- number of citations (*using Google Scholar*)
- Keywords

Each study is appraised using a points system, with ratings in two areas based on (a proxy for) quality and relevance to global and African frameworks (Table 2).

Table 2: Research appraisal criteria

	3 points	2 points	1 point	0 points
Proxy for quality	Article in leading international/African peer-reviewed journal (≥ 0.5 impact factor ²)	Article in national journal (≥ 0.2 impact factor) or other type of research output from reputable international publisher	Article in low status journal (≈ 0.1 impact factor) or other type of research output without relevant peer review	Predatory publisher ³
Evidence with relevance to SDG4, Agenda 2063 and CESA	Provides evidence that strongly relates to the global and/or African frameworks	Provides evidence that weakly relates to the global and/or African frameworks	Provides evidence that potentially relates to the global and/or African frameworks, but unclear	Does not relate to the global or African frameworks

A curated, searchable version of the AERD is freely available on the Education Sub-Saharan Africa (ESSA) website: <http://www.essa-africa.org/>.

Conclusion

In consolidating the African research evidence base for policy and practice and making it accessible via an online database, it is hoped that the AERD will prove useful to multiple audiences (including researchers, policy actors and practitioners in Africa and elsewhere) while promoting greater recognition and use of African research.

Endnotes

1. This follows the World Bank classification of sub-Saharan Africa (<https://data.worldbank.org/region/sub-saharan-africa>) with the addition of Djibouti and the exclusion of South Africa. Although South Africa was initially included in the search, preliminary analysis revealed that it has a markedly different research landscape to others in the region, with 3.5 times more education research outputs than Nigeria, the second most prolific country (Mitchell & Rose 2017a). In these circumstances, South Africa has been excluded from academic and grey literature database searches.
2. Ratings based on metrics in Scimago (<http://www.scimagojr.com/aboutus.php>) and CAPES (Coordenação de Aperfeiçoamento de Pessoal de Nível Superior, <https://sucupira.capes.gov.br/sucupira/public/consultas/coleta/veiculoPublicacaoQualis/listaConsultaGeralPeriodicos.jsf>).
3. A list of predatory journals and publishers is maintained by Jeffrey Beall (<https://beallist.weebly.com/>).

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Research for Equitable Access and Learning

REAL Centre

Faculty of Education
University of Cambridge
184 Hills Road, Cambridge
CB2 8PQ, UK

 @REAL_Centre

REAL Centre Director: Professor Pauline Rose

Email: pmr43@cam.ac.uk
Telephone: +44 (0) 1223 767511

REAL Centre Administrator

Email: REALCentre@educ.cam.ac.uk
Telephone: +44 (0) 1223 767693

www.educ.cam.ac.uk/centres/real

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