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REAL
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Methodological note

Literature search protocol for the Evidence hub: Education partnerships between the state and non-state sector

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Education Partnerships Group

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1. Education partnerships between the state and non-state sector: Evidence hub

Summary

This methodological note provides an overview of a joint project to catalogue the research evidence on collaborations between the state and non-state sector in education in low income, lower-middle and upper-middle income countries. This document outlines the search protocol for the literature search, data extraction, and the development of the database.

Overview

Collaborations between the state (public) and non-state sector in education are widespread across developed and developing countries and economies. Such collaborations—such as contract schools, vouchers, and government subsidies—present a potential option for governments looking to improve the quality, access, or efficiency of national and sub-national systems of education through alternative mechanisms to public finance and delivery. However, it is important for reforms of this kind to be guided by evidence—such as evidence on the impact of such cross-sector collaborations on access and learning—particularly in regards to potential effects on disadvantaged groups and equity issues, such as poverty, gender, disability, or where a child lives.

While collaborations between the state and non-state sector in education are common practice, the 2017 publication—*Public-Private Partnerships in Education in Developing Countries*: *a rigorous review of the evidence*—commissioned by Education Partnerships Group, highlighted an urgent need for further robust research on the topic. As noted in the Review, 'for all the controversy and cacophony around public-private partnerships in education, we actually have very few high-quality studies that quantify their impacts' (Aslam, Rawal, and Saeed 2017, p.iii).

To coordinate the research evidence already available, and to provide an evidence hub for the ongoing coordination of research on this important issue, Education Partnerships Group (EPG) and the Research for Equitable Access and Learning (REAL) Centre at the University of Cambridge are curating an online platform cataloguing the research evidence on collaborations between non-state sectors in education in low income, lower-middle and upper-middle income countries and economies.

The platform will include:

- a searchable database of research studies published in academic journals between 2010 and 2018
- user-friendly summaries describing the contents of each study

The aim of this online platform is to collate and present relevant research studies in a clear and accessible manner. It will be developed for policymakers, researchers and stakeholders interested in the evidence on collaborations between state and non-state sector partners in pre-primary education, primary education, and secondary education (including school-level vocational education and training) in low income, lower-middle income, and upper-middle income countries and economies.

The platform is not intended to advocate collaborations between the state and non-state sector in education. Rather, it aims to provide an impartial and objective hub of available research evidence, in order to contribute to the knowledge base and practice of such collaborations in a range of system contexts.

The literature search protocol

This document proposes a search protocol for identifying relevant, quality studies for inclusion in the online searchable database. The aim of the search protocol is to:

1. ensure that the website includes all the relevant studies satisfying the inclusion criteria as defined by the search protocol; and
2. facilitate the ongoing maintenance of the database as more studies become available in the future.

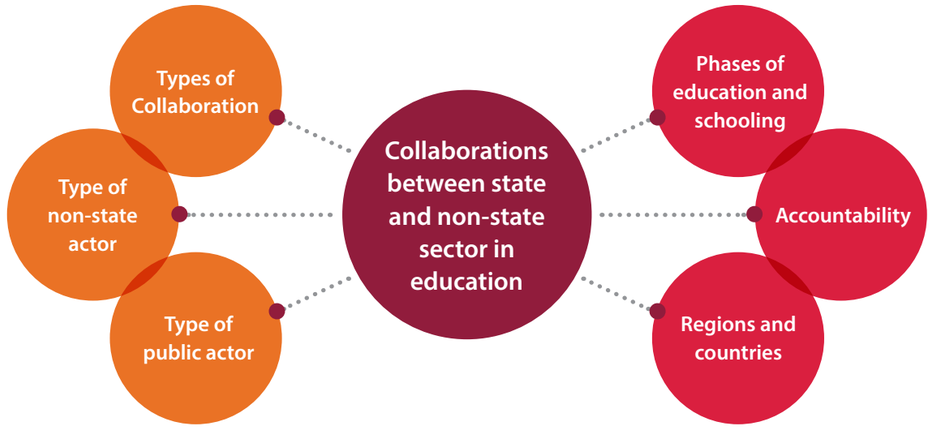
2. Search protocol

2.1 Developing the search protocol

The central question for this literature search is: what is the evidence on collaborations between the state and non-state sector in education in low income, lower-middle and upper-middle income countries?

To organise this search, a conceptual framework was developed to map the key dimensions of the research question (Figure 1). These dimensions were developed in reference to the research field and key ideas associated with the purpose of the database.

Figure 1: Conceptual framework for the search protocol: dimensions of the research field



These dimensions provide the structure for the development of a list of keywords and phrases associated with collaborations between state and non-state actors in education in low income, lower-middle income and upper-middle income countries and economies.

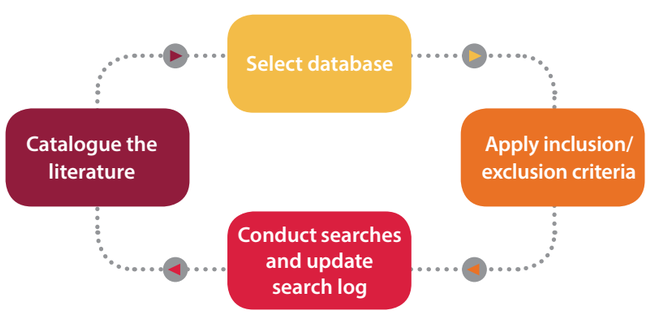
Using the rigorous literature review commissioned by EPG in 2017 as a starting point, we developed an initial list of keywords associated with the conceptual framework. This initial list was refined through a validation search, which identified synonyms and alternative keywords/ phrases found in the literature and existing reviews on the subject. The final keywords and phrases list used for the search is included in Table 2 in Appendix 4.1.1.

2.2 Four steps to the search strategy

There is no single, universal approach to conducting a literature search. What matters is that the protocol is intrinsically coherent and consistent, and is tailored to the purpose of the objective at hand.

The search protocol for this project is a simple, iterative process (Figure 2). Each step is described here:

Figure 2: Search protocol cycle



Step One: Select database

Search protocols depend on access to reputable, academic databases that house the available research evidence. Two scholarly databases have been selected for the purposes of this literature search protocol:

- Scopus
- Web of Science

These databases have been selected because they offer:

- English-language publications[i]
- Wide coverage of reputable, international journals that publish peer-reviewed articles in social science and education research
- Geographic search capacities (i.e. the capacity for users to restrict searches to particular countries)

Technical note: 'grey' literature is excluded from this search

For the purpose of the initial database development, this search strategy excludes 'grey' literature, such as working papers, policy briefs, and publications by agencies or organisations such as the World Bank, UNESCO and the OECD. Grey literature may be added at a later date, subject to a separate search strategy.

The exclusion of grey literature and reports accounts for why references included in Aslam et al.'s *Public-Private Partnerships in Education in Developing Countries* do not appear in this database.

Step Two: Apply inclusion and exclusion criteria

The search uses the following inclusion criteria to specify the search.

Inclusion criteria	Specification
Publication date range	2010 to 2018, inclusive
Language of publication	English-language only
Discipline/ subject area	Social science and/or education research
Document type	Peer-reviewed journal articles (excluding grey literature)
Region and country/ economy	Low-income, lower-middle and upper-middle income countries and economies, as defined by the World Bank country classification by income level for 2018-2019 (4.1 below)
Research intervention/ scope	Public-private partnerships in pre-primary, primary and/or secondary education, and school-level vocational education and training

Exclusion criteria

If any article does not satisfy the inclusion criteria above, or if it meets any of the following exclusion criteria, it will be omitted from the catalogue. A research article will be excluded if it:

- ✘ Is published in a predatory journal,[ii]
- ✘ Pertains to an education sector other than pre-primary education, primary education, secondary education, or school-level vocational education and training;
- ✘ Pertains to subjects or sectors other than education: i.e. transport, housing etc…
- ✘ Pertains to high income countries/ economies;
- ✘ Is published in a language other than English
- ✘ Reports an intervention that is not the result of a public-private partnership, i.e. just focuses on private education

Step Three: Conduct searches

The conceptual framework and associated keywords and phrases introduced in Figure 1 and Appendix 4.1.1 below guide this search strategy. Combinations and permutations of these keywords and phrases are used to conduct increasingly specific searches of selected databases. To document the search process, and to ensure that no viable search strings are omitted from the search process, each search iteration is recorded in a search log, including the database used for the search (i.e. Web of Science or Scopus), iteration number, query string, and yield (i.e. number of articles). The search log for this protocol is in Appendix 4.1.2 below.

All articles yielded by a search string are screened manually against the inclusion and exclusion criteria, to ensure fidelity to the search protocol, before being included in the final database.

Citation searches

After the initial web-based searches were conducted using the databases and search terms identified above, the bibliographies of relevant studies were searched to identify additional relevant publications. This process is known as citation searching, 'snowballing' or 'pearl-growing' techniques, and is common in academic search strategies.

The Web of Science and Scopus academic databases enable users to search cited references automatically. Additional citation searching may be conducted manually. Publications identified by the citation search are subjected to the relevance filters above, and included or excluded from the final catalogue on these grounds.

Technical note on research databases and Boolean operators

Like most database queries, this search protocol applies Boolean operators (AND, OR and NOT) to improve the relevance of the search. Additional Boolean operators are included, as below.

- **Parentheses ()** apply to conduct searches of more than two keywords and to combine AND and OR searchers within a search, i.e. "public private partnership" AND ("contract school" OR "subsid*" OR "voucher*")
- **Quotation marks ""** apply to retain specific terms and phrases, i.e. "accountability framework"
- **Truncation punctuation *** applies to accommodate pluralisation word variations: i.e. "partner*" yields partner, partners, partnership.
- **Wildcard notation ?** applies to accommodate variations in spelling (i.e. British and American English), i.e. subsidi?ation = subsidisation and subsidization; colo?r = color and colour

Academic databases have unique search instructions, which detail for instance the search syntax (Boolean operators, i.e. truncation as *, ?, ! or #), search fields (i.e. whether the database searches titles and/ or abstracts), and search options (i.e. whether users can search by institution/ region) that govern the database directory.

Each search within this protocol is tailored therefore to the particular database search context. Where possible, searches apply to all abstracts, titles and keywords.

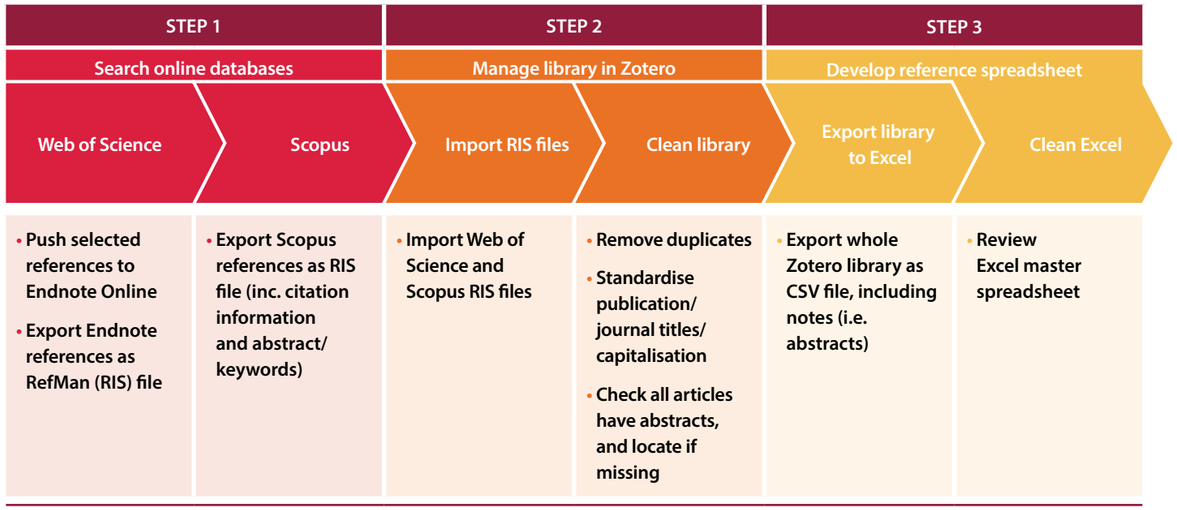
Step Four: Catalogue the literature

Articles identified through the search strategy, and which meet the inclusion and exclusion criteria, will be catalogued through two main repositories:

- a reference management program; and
- an excel spreadsheet

The process for identifying and managing references for the database is illustrated in Figure 3 overleaf.

Figure 3: Cataloguing the literature: key steps



This is an iterative process. New articles will be identified through citation searches and other means.

Reference management program

Zotero has been selected as the reference management program both because of its capacity to import RIS files from both the main databases (i.e. Scopus and Web of Science) and from other reference management software (i.e. EndNote online); and because of its capacity to export libraries as CSV files for the development of the Excel spreadsheet.

Excel spreadsheet

For each source, the following bibliometric/ citation data are extracted from Zotero and imported into an Excel spreadsheet. These data enable users to filter the database according to categories included in section 3.

- **Bibliometric/ citation data** include: author(s), study title, journal, place of publication, publisher, date of publication, URL, DOI, and number of pages
- **Meta-data** include: include: abstract; keywords; database where article was sourced; region/ country; research method; type of collaboration; whether the source is open source; and additional meta-data of use for the development of the database.

Quality appraisal

Publication in a reputable, peer-reviewed journal is commonly accepted as an indication of quality. The peer-review process used by the scholarly journals included in academic databases typically includes thorough review by subject experts. This peer-review process is deemed adequately robust for the purpose of this database. Unlike a systematic review or statistical meta-analysis, therefore, this search protocol does not include a secondary appraisal method for assessing the quality of articles identified through the search strategy. We will, however, filter out any publications in identified predatory journals.[iii]

3. Developing the database

The purpose of developing this online platform is to collate and present relevant research studies in clear and accessible manner, in the hope of engaging policymakers, researchers and stakeholders interested in the evidence on collaborations between the state and non-state sector in education in low-, lower-middle, and upper-middle income countries and economies.

The database will therefore be designed with usability and ease of navigation in mind. To facilitate the user experience, the final database will include two fields:

- Search tabs (with a pre-assigned set of options)
- Search filters

3.1 Search tabs

Users of the new online database will be able to navigate the literature using a 'drop-down' menu of tabs and options. These tabs and options will align with the conceptual framework for the search protocol to maximise the 'hits' generated by each search.

Table 1: Drop-down search tabs and options

'Drop-down' search tab	Search options
Type of collaboration	• All • Vouchers • Subsidy • Contract school • Other
Accountability	• All • Governance and policy • School management • Other
Phases of education	• All • Pre-primary education • Primary education • Secondary education • Vocational education and training (school-level)
Region	• All • East Asia and Pacific • South Asia • Europe and Central Asia • Latin America and the Caribbean • Middle East and North Africa • Sub-Saharan Africa
Country	Please see World Bank country classifications list below (4.1)

3.2 Search tabs

Users will also have the option of applying search filters to increase the specificity of and direct their search. A search filter is a set category or classification to help navigate the catalogue, and can be thought of as a way of excluding irrelevant or 'out of scope' articles based on the user's preference. Proposed filters for the database include:

'Drop-down' search tab	Search options
Income level[iv]	• Low income • Lower-middle income • Upper-middle income
Study method	• Qualitative • Quantitative • Mixed methods • Review
Open access	• Yes or no

4. Appendix

4.1 Keywords and search strings for online database searches

4.1.1 Keywords and phrases

The six dimensions of the conceptual framework provide the organising structure for this search strategy. Keywords included in the search were generated through:

- Thesaurus searches of ERIC Institute of Education Sciences and British Education Index (BEI)
- EPG Rigorous Review (2017) keywords list
- Synonyms identified through the validation search of the search protocol
- Specific country examples of public-private partnerships in education, drawing on The World Bank's *The Role and Impact of Public-Private Partnerships in Education* (2009)

Table 2: Conceptual framework dimensions and associated keywords/ phrases

Conceptual framework dimension	Purpose of dimension	Keywords/ phrases
Phases of education and schooling	The purpose of this dimension is to ensure the search generates studies within selected phases of education.	basic education; early childhood education; education system; education*; pre-primary; primary education; primary school; school system; school*; secondary education; secondary school; vocational education and training (secondary)
Types of collaboration	This dimension ensures the search captures the three main categories of collaboration between state and private actors in education: vouchers, subsidies and contract schools. It also contributes to the exclusion of studies focusing on private or public provision only.	academic industrial collaboration*; adopt a school (Pakistan); assisted places scheme; business and education; business education partnership; capitation grant for private; charitable foundation; civil-society partnership; collaboration between non-government service providers and governments; collaboration with government; community-funded school; collaborative service* provision; community public partner*; community school; concession school; construction contract; contract* for education*; contract* out; contract* school; contracts for education services; cooperative program*; corporate sponsored schools ; corporate-public partnership; cost-sharing; cross-sector; development partnership; education contracting; Education For All Adaptable Program Grant (Haiti); education* contract*; education* cooperation; educational service contracting (Philippines); Escuela Nueva Foundation (Colombia); Fe y Alegría (South America); Foundation Assisted Schools Program (Pakistan); foundation-assisted schools; fund assistance to private education; government aid to privately managed; government contract for private; government spen* on private; government subsid* independent;

Conceptual framework dimension	Purpose of dimension	Keywords/ phrases
Types of collaboration *(cont.)*	(This dimension ensures the search captures the three main categories of collaboration between public and private actors in education: vouchers, subsidies and contract schools. It also contributes to the exclusion of studies focusing on private or public provision only.)	government-subsid* private; government subsid* faith; government subsid* for faith; government subsid* for independent; (cont. overleafl) government subsid* for private; government-NGO collaboration; government-NGO partner*; government-NGO relations*; independent school subsid*; independent school vouchers; institutional cooperation*; institutional partner*; joint* financ*; Madrasa; managed school; non-government education provider; non-government* organi?ation; NGO-government; NGO provi*; NGO-public; NGO-state; Pakistan Education Foundation; partners* for management in education; partnership* in education*; philanthropic school; philanthropic support for private; Pitagoras (Brazil); Plan de Ampliacion de la Cobertura de la Educacion; Secundaria (Columbia); PPP*; private contribution to public; private finance initiative; private finance with government guarantee; private management; private management of public; private operat* public school; private public engagement; private public partners*; private public sector; Private School Implementation Partners (Pakistan); private school subsid*; private school voucher*; private sector participation in government; private system subsid*; privately operated public; public contract private; public contribution to private; public fund* for private; public fund* for independent school; public fund* for non-government; public fund* for religious; public private consortia; public-private engagement; public private partners*; public spend* on private; public subsid* for independent; public subsid*; public subsid* for faith; public subsid* for independent; public subsid* for private; public-private sector; public* fund* private; religious association; school adoption; school business relationship*; school voucher*; shared governance; Sindh Education Foundation; state and non-state; state subsid* for faith; state subsid* for independent; state subsid* for private; state-NGO collaboration; state-NGO partner*; state-NGO relation*; sub-contract; subsid*; relations between government and NGOs; sector-wide aid; service provision; third-sector partner*; Universal Secondary Education Program (Uganda); voucher*; voucher-funded
Types of non-state actor	The purpose of this dimension is to ensure we capture a range of non-state actors engaged in partnerships and collaboration with public actors in education.	academ*; charit*; civil society organi?ation; community; concession; contractor; donor; faith-based; for profit; foundation; independent; madrassah; NGO; non-government organi?ation; not-for-profit; non-profit; non-state service provider*; non-state provider; non-state provis*; philanthropic; private; private finance initiative*; private sector; religious organi?ation; voluntary
Types of public actor	This dimension ensures the search focuses on a range of public actors engaged in collaborations or partnerships with the non-state sector.	assisted school*; government ; government school*; public finance; public school*; public sector; public service*; state sector; state-maintained school; state-owned schools
Accountability	This dimension ensures the search captures a range of accountability issues related to collaborations and partnerships between state and non-state actors in education	accountability; accountability framework; compliance; contractual framework; education regulation; education* governance; education* policy; efficiencies; evaluation; financial accountability; governance; impact; impact evaluation; implementation; implementation guidelines; learning outcome*; monitoring; obligation*; performance management; policy; policy implementation; PPP framework; provision of education; quality assurance; regulatory framework; risk management; school effectiveness; school improvement; school management; school performance; social accountability; standardised assessment

Conceptual framework dimension	Purpose of dimension	Keywords/ phrases
Countries	This dimension ensures the search covers low income, lower-middle income, and upper-middle income countries, as categorised by the World Bank classifications by income for 2018 to 2019.	**Low income countries and economies** Afghanistan; Benin; Burkina Faso; Burundi; Central African Republic; Chad; Comoros; Congo, Dem. Rep; Eritrea; Ethiopia; Gambia, The; Guinea; Guinea-Bissau; Haiti; Korea, Dem. People's Rep.; Liberia; Madagascar; Malawi; Mali; Mozambique; Nepal; Niger; Rwanda; Senegal; Sierra Leone; Somalia; South Sudan; Syrian Arab Republic; Tajikistan; Tanzania; Togo; Uganda; Yemen, Rep.; Zimbabwe **Lower-middle income countries and economies** Angola; Bangladesh; Bhutan; Bolivia; Cabo Verde; Cambodia; Cameroon; Congo, Rep.; Côte d'Ivoire; Djibouti; Egypt, Arab Rep.; El Salvador; Georgia; Ghana; Honduras; India; Indonesia; Kenya; Kiribati; Kosovo; Kyrgyz Republic; Lao PDR; Lesotho; Mauritania; Micronesia, Fed. Sts.; Moldova; Mongolia; Morocco; Myanmar; Nicaragua; Nigeria; Pakistan; Papua New Guinea; Philippines; São Tomé and Principe; Solomon Islands; Sri Lanka; Sudan; Swaziland; Timor-Leste; Tunisia; Ukraine; Uzbekistan; Vanuatu; Vietnam; West Bank and Gaza; Zambia **Upper-middle income countries and economies** Albania; Algeria; American Samoa; Armenia; Azerbaijan; Belarus; Belize; Bosnia and Herzegovina; Botswana; Brazil; Bulgaria; China; Colombia; Costa Rica; Cuba; Dominica; Dominican Republic; Equatorial Guinea; Ecuador; Fiji; Gabon; Grenada; Guatemala; Guyana; Iran, Islamic Rep.; Iraq; Jamaica; Jordan; Kazakhstan; Lebanon; Libya; Macedonia, FYR; Malaysia; Maldives; Marshall Islands; Mauritius; Mexico; Montenegro; Namibia; Nauru; Paraguay; Peru; Romania; Russian Federation; Samoa; Serbia; South Africa; St. Lucia; St. Vincent and the Grenadines; Suriname; Thailand; Tonga; Turkey; Turkmenistan; Tuvalu; Venezuela

4.1.2 Search logs

The search strings and strategy for each database and search iteration are detailed in the search logs below, using the inclusion and exclusion criteria articulated in section 2.2 above.

Advanced search functions in Web of Science and Scopus were used to maximise the scope and specificity of the search.

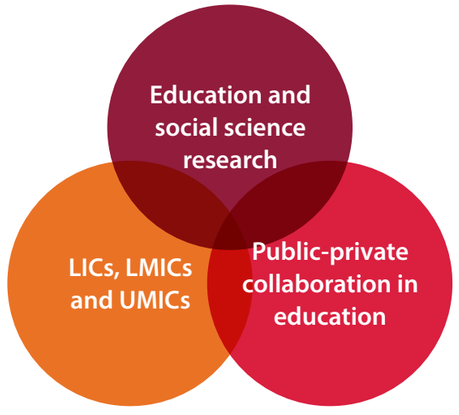
The search intentionally started wide, i.e. creating individual sets for social science and education research (Iteration 1). This first step is important given Scopus and Web of Science are multi-disciplinary databases.

Iterations 2 through 4 create sets of research literature for each income level, i.e. low-income, lower-middle income, and upper-middle income countries.

Iteration 5 then creates a literature set identifying types of collaboration.

The search strategy then involves cross-referencing these sets to isolate key studies. The advantage of this approach is that searches can be rerun, expanded and replicated with facility. The final yield of articles are then sifted manually to ensure articles meet search parametres.

Figure 4: Advanced search strategy



Web of Science (core collection)

Relevant Web of Science codes include:

- SU = subject, i.e. Education and Educational Research; Social Sciences
- CU = country, i.e. LIC, LMIC and UMICs
- TS = topic, i.e. keywords

Fixed search settings across include: timespan (2010-2018), document type (article) and language (English).

Table 3 Web of Science search log

Web of Science		
Iteration	**Search string**	**Yield**
1	SU=(Education & Educational Research; Social sciences) AND LANGUAGE:(English) AND DOCUMENT TYPES: (Article), timespan=2010-2018	**247,435**
2	CU=(Afghan* OR Benin* OR Burkina Faso* OR Burund* OR Central African Republic OR Chad* OR Comoros* OR Congo* OR Eritrea* OR Ethiopia* OR Gambia* OR Guinea* OR Guinea-Bissau* OR Haiti* OR North Korea* OR Liberia* OR Madagasca* OR Malawi* OR Mali* OR Mozambi* OR Nepal* OR Niger* OR Rwanda* OR Senegal* OR Sierra Leone* OR Somalia* OR South Sudan* OR Syria* OR Tajik* OR Tanzania* OR Togo* OR Uganda* OR Yemen* OR Zimbabwe*) Indexes=SCI-EXPANDED, SSCI, A&HCI, BKCI-S, BKCI-SSH, ESCI Timespan=2010-2019 (to identify literature on low income countries)	**104,546**
3	CU=(Angola* OR Bangladesh* OR Bhutan* OR Bolivia* OR Cabo Verde* OR Cambodia* OR Cameroon* OR Côte d'Ivoire* OR Djibouti* OR Egypt* OR El Salvador* OR Georgia* OR Ghan* OR Honduras* OR India* OR Indonesia* OR Ivory Coast OR Kenya OR Kiribati* OR Kosov* OR Kyrgyz* OR Lao* OR Lesotho OR Mauritania* OR Micronesia* OR Moldova* OR Mongolia* OR Moroc* OR Myanmar OR Nicaragua* OR Nigeria* OR Pakistan* OR Papua New Guinea* OR Philippin* OR Republic of the Congo* OR São Tomé and Principe OR Solomon Islands OR Sri Lanka* OR Sudan* OR Swazi* OR Timor-Leste OR Tunisia* OR Ukrain* OR Uzbek* OR Vanuatu* OR Vietnam* OR West Bank OR Gaza* OR Zambia*) Indexes=SCI-EXPANDED, SSCI, A&HCI, BKCI-S, BKCI-SSH, ESCI Timespan=2010-2019 (to identify literature on lower-middle income countries)	**1.08m**
4	CU=(Albania* OR Algeria* OR American Samoa* OR Armenia* OR Azerbaij* OR Belarus* OR Belize* OR Bosnia OR Herzegovina OR Botswana* OR Brazil* OR Bulgaria* OR Chin* OR Colombia* OR Costa Rica* OR Cuba* OR Dominica* OR Dominican Republic OR Equatorial Guinea* OR Ecuador* OR Fiji* OR Gabon* OR Grenada* OR Guatemala* OR Guyana* OR Iran* OR Iraq* OR Jamaica* OR Jordan* OR Kazakh* OR Leban* OR Libya* OR Macedonia* OR Malaysia* OR Maldiv* OR Marshall Islands OR Mauritius* OR Mexic* OR Montenegr* OR Namibia* OR Nauru OR Paraguay* OR Peru* OR Romania* OR Russia* OR Samoa* OR Serbia* OR South Africa* OR St. Lucia* OR St. Vincent and the Grenadines OR Suriname* OR Thai* OR Tonga* OR Turk* OR Turkmenist* OR Tuvalu* OR Venezuela*) (to identify literature on upper-middle income countries)	**4.4m**
5	(TS=("academic industrial collaboration*"; "adopt a school"; "assisted places scheme"; "business and education"; "business education partnership"; "capitation grant for private"; "charitable foundation"; "collaboration between non-government service providers and governments"; "collaboration with government"; "community-funded school"; "collaborative service* provision"; "community public partnership"; "community school"; "concession school"; "construction contract"; "contract* for education*"; "contract* out"; "contract* school"; "contract* for education* service*"; "cooperative program*"; "corporate sponsored school"; "corporate-public partnership"; cost-sharing; cross-sector; "development partnership"; "education contracting"; "Education For All Adaptable Program Grant"; "education* contract*"; "education* cooperation"; "educational service contracting"; "Escuela Nueva Foundation"; "Fe y Alegría"; "Foundation Assisted Schools Program"; "foundation-assisted schools"; "fund assistance to private"; "government aid to privately managed"; "government contract for private"; "government spen* on private"; "government subsidized independent"; "government-subsidized private"; "government subsidized faith"; "government subsid* for faith"; "government subsid* for independent"; "government subsid* for private"; "government-NGO collaboration"; "government-NGO partner*"; "government-NGO relations*"; "independent school subsid*"; "independent school vouchers"; "institutional cooperation*"; "institutional partner*"; "joint* financ*"; "managed school"; "non-government education provider"; "non-government* organi?ation"; "Pakistan Education Foundation"; "partners* for management in education"; "partnership* in education*"; "philanthropic school"; "philanthropic support for private"; Pitagoras; "Plan de Ampliacion de la Cobertura de la Educacion Secundaria"; PPP*; "private contribution to public"; "private finance initiative"; "private finance with government guarantee"; "private management"; "private management of public school"; "private operat* public school"; "private public partners*"; "Private School Implementation Partners";	**111,296**

Web of Science		
Iteration	**Search string**	**Yield**
5 *(cont.)*	"; "private school subsid*"; "private school voucher"; "private sector participation in government"; "private system subsid*"; "private-public sector"; "privately operated public"; "public contract private"; "public contribution to private"; "public fund* for private"; "public fund* for independent"; "public fund* for non-government"; "public fund* for religious"; "public private consortia"; "public private partners*"; "public spend* on private"; "public subsid* for independent"; "public subsid*"; "public subsid* for faith"; "public subsid* for independent"; "public subsid* for private"; "public-private sector"; "public* fund* private"; "religious association"; "school adoption"; "school business relationship*"; "school vouchers"; "shared governance"; "Sindh Education Foundation"; "state and non-state"; "state subsid* for faith"; "state subsid* for independent"; "state subsid* for private"; "state-NGO collaboration"; "state-NGO partner*"; "state-NGO relation*"; "sub-contract"; subsid*; "third-sector partner*"; "Universal Secondary Education Program"; voucher*; voucher-funded; "public-private engagement"; "private-public engagement"; "NGO provision"; Madrasa; "relations between government and NGO"; NGO-government; NGO-public; "sector-wide aid"; "civil-society partnership") AND DOCUMENT TYPES: (Article) *(to identify literature on type of collaborations between public and non-state actors in education)*	
	1 AND 2 AND 5	**176**
	1 AND 3 AND 5	**593**
	1 AND 4 AND 5	**2,261**

Scopus

Scopus advanced search features were used to maximise the impact of this search. The advanced search field codes, operators and exact and approximate features were used.

- TITLE-ABS-KEY() codes were used to search article titles, abstracts and keywords
- KEY() codes were used to search keywords associated with articles
- SUBJAREA() codes were used to limit the subject areas to social sciences (i.e. to exclude health science, life sciences and physical sciences)
- { } were used to find finds exact phrases and "" to "" find approximate phrases
- AFFILCOUNTRY() was used to limit the search to low income, lower-middle income and upper-middle income countries and economies from the Scopus list.[v]

Scopus		
Iteration	**Search**	**Yield**
1	SUBJAREA(soci) AND DOCTYPE(ar) AND (EXACTKEYWORD, "Education") AND (LANGAUGE, "English"), timespan, 2010-2018	**34,997**
2	AFFILCOUNTRY(Afghan* OR Benin* OR Burkina Faso* OR Burund* OR Central African Republic OR Chad* OR Comoros* OR Congo* OR Eritrea* OR Ethiopia* OR Gambia* OR Guinea* OR Guinea-Bissau* OR Haiti* OR North Korea* OR Liberia* OR Madagasca* OR Malawi* OR Mali* OR Mozambi* OR Nepal* OR Niger* OR Rwanda* OR Senegal* OR Sierra Leone* OR Somalia* OR South Sudan* OR Syria* OR Tajik* OR Tanzania* OR Togo* OR Uganda* OR Yemen* OR Zimbabwe*) AND (LIMIT-TO (PUB YEAR, 2010-2019) AND (LIMIT-TO (DOCTYPE, "ar")) AND (LIMIT-TO (LANGUAGE, "English") (to identify literature on low income countries)	**130,544**
3	AFFILCOUNTRY(Angola* OR Bangladesh* OR Bhutan* OR Bolivia* OR Cabo Verde* OR Cambodia* OR Cameroon* OR Côte d'Ivoire* OR Djibouti* OR Egypt* OR El Salvador* OR Georgia* OR Ghan* OR Honduras* OR India* OR Indonesia* OR Ivory Coast OR Kenya OR Kiribati* OR Kosov* OR Kyrgyz* OR Lao* OR Lesotho OR Mauritania* OR Micronesia* OR Moldova* OR Mongolia* OR Moroc* OR Myanmar OR Nicaragua* OR Nigeria* OR Pakistan* OR Papua New Guinea* OR Philippin* OR Republic of the Congo* OR São Tomé and Principe OR Solomon Islands OR Sri Lanka* OR Sudan* OR Swazi* OR Timor-Leste OR Tunisia* OR Ukrain* OR Uzbek* OR Vanuatu* OR Vietnam* OR West Bank OR Gaza* OR Zambia*) (to identify literature on lower-middle income countries)	**1,358,101**

Scopus *(cont.)*		
Iteration	**Search**	**Yield**
4	AFFILCOUNTRY(Albania* OR Algeria* OR American Samoa* OR Armenia* OR Azerbaij* OR Belarus* OR Belize* OR Bosnia OR Herzegovina OR Botswana* OR Brazil* OR Bulgaria* OR Chin* OR Colombia* OR Costa Rica* OR Cuba* OR Dominica* OR Dominican Republic OR Equatorial Guinea* OR Ecuador* OR Fiji* OR Gabon* OR Grenada* OR Guatemala* OR Guyana* OR Iran* OR Iraq* OR Jamaica* OR Jordan* OR Kazakh* OR Leban* OR Libya* OR Macedonia* OR Malaysia* OR Maldiv* OR Marshall Islands OR Mauritius* OR Mexic* OR Montenegr* OR Namibia* OR Nauru OR Paraguay* OR Peru* OR Romania* OR Russia* OR Samoa* OR Serbia* OR South Africa* OR St. Lucia* OR St. Vincent and the Grenadines OR Suriname* OR Thai* OR Tonga* OR Turk* OR Turkmenist* OR Tuvalu* OR Venezuela*) *(to identify literature on upper-middle income countries)*	**4,534,689**
5	TITLE-ABS-KEY(Types of collaboration) AND (LIMIT-TO (PUBYEAR, 2010-2019) AND (LIMIT-TO (DOCTYPE, "ar") AND LIMIT-TO (SUBJAREA, "SOCI") *(to identify literature on collaborations between public and non-state actors in education)*	**12,004**
6	2 AND 5 AND (LIMIT-TO (SUBJAREA, "SOCI")	**240**
7	3 AND 5 ((LIMIT-TO (SUBJAREA, "SOCI")	**872**
	4 AND 5 (LIMIT-TO (SUBJAREA, SOCI")	**2,063**

4.2 World Bank country classifications for 2018-2019 (by income)

The relevant World Bank country classifications by income for 2018 and 2019 are listed below. Regions with LIC and LMIC countries include:

- East Asia and Pacific
- South Asia
- Europe and Central Asia
- Latin America and the Caribbean
- Middle East and North Africa
- Sub-Saharan Africa

Please note: North America (Bermuda, the United States, and Canada) is excluded as a region, as it does not include any LIC, LMIC and UMICs countries/ economies.

Low-income countries/ economies

Afghanistan
Benin
Burkina Faso
Burundi
Central African Republic
Chad
Comoros
Congo, Dem. Rep
Eritrea
Ethiopia
Gambia, The
Guinea
Guinea-Bissau
Haiti
Korea, Dem. People's Rep.
Liberia
Madagascar
Malawi
Mali
Mozambique
Nepal
Niger
Rwanda
Senegal
Sierra Leone
Somalia
South Sudan
Syrian Arab Republic
Tajikistan
Tanzania
Togo
Uganda
Yemen, Rep.
Zimbabwe

Lower-middle countries/ economies

Angola
Bangladesh
Bhutan
Bolivia
Cabo Verde
Cambodia
Cameroon
Congo, Rep.
Côte d'Ivoire
Djibouti
Egypt, Arab Rep.
El Salvador
Georgia
Ghana
Honduras
India
Indonesia
Kenya
Kiribati
Kosovo
Kyrgyz Republic
Lao PDR
Lesotho
Mauritania
Micronesia, Fed. Sts.
Moldova
Mongolia
Morocco
Myanmar
Nicaragua
Nigeria
Pakistan
Papua New Guinea
Philippines
São Tomé and Principe
Solomon Islands
Sri Lanka
Sudan
Swaziland
Timor-Leste
Tunisia
Ukraine
Uzbekistan
Vanuatu
Vietnam
West Bank and Gaza
Zambia

Upper-middle incomes countries/ economies

Albania
Algeria
American Samoa
Armenia
Azerbaijan
Belarus
Belize
Bosnia and Herzegovina
Botswana
Brazil
Bulgaria
China
Colombia
Costa Rica
Cuba
Dominica
Fiji
Gabon
Grenada
Guatemala
Guyana
Iran, Islamic Rep.
Iraq
Jamaica
Jordan
Kazakhstan
Lebanon
Libya
Macedonia, FYR
Malaysia
Maldives
Marshall Islands
Namibia
Nauru
Paraguay
Peru
Romania
Russian Federation
Samoa
Serbia
South Africa
St. Lucia
St. Vincent and the Grenadines
Suriname
Thailand
Tonga
Turkey
Turkmenistan

5. References

Aslam, Monazza, Shenila Rawal, and Sahar Saeed. 2017. "Public-Private Partnerships in Education in Developing Countries: A Rigorous Review of the Evidence." Ark Education Partnerships Group. http://arkonline.org/sites/default/files/ArkEPG_PPP_report.pdf.

Barrera-Osorio, F., J. Guaqueta, and H. A. Patrinos. 2012. The Role and Impact of Public Private Partnerships in Education. Edited by S. L. Robertson, K. Mundy, A. Verger, and F. Menashy. <Go to ISI>://WOS:000310459500010.

Beall's List of Predatory Journals and Publishers." 2019. March 2019. https://beallslist.weebly.com/.

Cohen, L, Lawrence Manion, and Kieth Morrison. 2017. Research Methods in Education. 8th ed. Oxford, UK: Routledge.

Education Resources Information Center (ERIC) Thesaurus." 2019. 2019. https://eric.ed.gov/?advanced.

World Bank Country and Lending Groups (2019)." 2019. 2019. https://datahelpdesk.worldbank.org/knowledgebase/articles/906519-world-bank-country-and-lending-groups.

Endnotes

i At present, searches are limited to English language publication. In the future, publications in other languages might be included if resources allow.

ii Predatory or 'pay to publish' journals charge publication fees and lack the rigour and transparency—such as a reputable editorial board, quality assurance, and editorial services—of legitimate, non-exploitative, academic journals. The databases selected for this search strategy typically exclude predatory journals from their stores, however any articles identified through citation searches will be subjected to this exclusion criterion.

iii Jeffrey Beall maintains a list of predatory journals and publishers, ("Beall's List of Predatory Journals and Publishers" 2019)

vi See World Bank country classifications in Section 0.

v Please note: where AFFILCOUNTRY() appears in the search log, it denotes that all low-income, lower-middle income and upper-middle income countries were added to the search using an OR Boolean operator to ensure articles referred to at least one country from the World Bank classifications by income.

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