

State-of-the-Art Report

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The focus of this project, European Educational Research Quality Indicators (EERQI), is a collaborative, evidence-based effort to develop new sets of indicators and methodologies that can be used to determine the research quality of scientific publications and, in turn, of research results and their means of dissemination. The project concentrates on research publications in the field of education. This field can serve as a prototype for the whole area of social sciences and the humanities. The results of the project will affect not only the impacts of research efforts and scientific publications, but also the policies of research funding bodies and assessment boards, national higher education and research councils. At the European level, the policies and programmes on scientific advancement and research orientation are addressed. The overall goals of the project are to reinforce and enhance the visibility and competitiveness of European science and research via new approaches of assessing quality of research publications that are produced in the European research space.

Background:

Traditional methods of assessing research quality of scientific publications depend heavily on ranking methods according to citation frequency and journal impact factors. This tradition was developed in the US; the methodologies were first applied on publications (natural) sciences. Thus, the instruments are based on methodologies that neither reflect the research and publication traditions in the social sciences and humanities, nor do they show adequate coverage of European scientific publications. This is not least the case because European multilingualism is not covered in the respective methodologies. The vast majority of publications that are captured by the traditional instruments (such as ISI Thomson, Web of Science) are English media. The instruments do not take other than journal into account – no book publications, no publications in other media than print. Hence, if European science or institutions are exposed to these evaluation methods, not only individual researchers or institutions are ignored, but also complete subject domains and even language areas are disadvantaged. Specific features of European research publications are not – or only sparsely – included in the traditional instruments.

Chart 1 illustrates the findings with respect to the languages that are covered in SSCI-ranked educational research journals:



Language of the Journals

Language	Number of Journals	Shares (%)
English	178	88
German	6	2,6
Spanish	4	2
Turkish	4	2
Multilingual	3	1,5
Croatian	1	0,5
Italian	1	0,5
Japanese	1	0,5
Portugese	1	0,5
Russian	1	0,5
Slovenian	1	0,5
Total	171	



It is evident, for example, that (nearly) the whole Romanic speaking research area, namely French, is missing.

The initiators of the EERQI project, as well as numerous researchers and evaluation bodies within the European Union, recognise the need to remedy the inadequacies of this situation, especially for the area of social sciences and humanities. The EERQI project contributes to filling the gap. Its results shall not only be applicable to education research but also to other fields of the social sciences and humanities. A test with the field of political sciences is being carried out in the framework of EERQI.

Who are we?

The EERQI project brought together researchers in the target field of educational research as an exemplary field for such an endeavour. The whole EERQI team is truly interdisciplinary: it is composed of educational researchers, as well as specialists in the areas of computer science and informatics, biblio- and scientometrics, linguistics, educational information centres. Five important European publishing houses are members of the EERQI consortium; several other significant publishing houses contribute to and take part in the project.

Mission

The mission of the EERQI project is to improve the current situation by developing more comprehensive tools and methodologies for the purpose of quality assessment of research output. The project takes into account not only journal articles, but also book chapters and electronic publications. The innovative methodologies are tested

for publications in four European languages, namely English, French, German and Swedish.

EERQI-products

The result of EERQI will be an evidence-based prototype *framework* that relies on a *mixed methodology* of detecting quality in publications. The most innovative challenge for the project is the intelligent combination of both, quantitative and computer assisted qualitative methodologies for determining quality.

The testing of the new set of approaches takes place on a domain-centred EERQI content base which consists of relevant documents contributed by the participating publishers, as well as open access and other Internet-based resources harvested by the EERQI search and query engine. The search and query engine is able to detect research publications in the four EERQI languages. A prototype is online already (see the EERQI-website www.eerqi.eu) and will be further refined within the project. Innovative query modules are integrated into the search engine and trained through reiterative auto-learning processes. Hence, the search engine re-programmes itself to recognise documents relevant to the respective query parameters.

The preliminary results were continuously presented to the scientific community for verification – not only to the educational research community alone, but also to other experts in the field, and to representatives of research funding, promotion and evaluation bodies at the national and European level. Attention will be paid to the ex-post evaluation of the project, as well as to the ex-ante assessment of the contribution that the new framework can make to the public policy development and decision making and to more effective and efficient public sector interventions. **The final EERQI conference will take place in Brussels (15th to 16th March 2011).**

EERQI-Tools and methodologies:

- A federated, aggregated content base drawing on available and accessible publisher contributions and databases in the field of educational research, augmenting these by harvesting the Internet for educational research documents.
- A multilingual search and query engine for the identification of relevant educational research documents in electronic repositories with the possibility of harvesting according to a corpus of subject terms (in English, German, French and Swedish).
- A methodology for computer assisted semantic analysis of full texts that aims at assisting the reader.
- A set of newly developed and tested bibliometric indicators that produces correlations between different sets of information (such as author information, institution, content, references, environment of published item, etc.) and other newly defined research quality indicators.

- A set of tested qualitative indicators for the purpose of peer review (EERQI Peer Review Questionnaire).
- A test result that indicates possible correlations between bibliometric indicators and assessment results that derive from peer review processes.
- A methodology for citation analysis that is tested with educational research publications.
- A set of use cases indicating intelligent combinations of the EERQI methodologies that can be used to improve research quality evaluation in the field of educational research.
- A demonstration of transferability of EERQI methodologies to the field of Political Sciences.
- A demonstration of transferability of the EERQI methodologies to books.
- A sustainability plan that consists of the content base, search and query engine and the prototype framework, presenting an organisational model and possible business models.

Chart 2 illustrates the EERQI prototype framework in a nutshell:

