



# Initial Prototype EERQI: Research Quality Indicators

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# EERQI WP4

- Goal:

To establish a preliminary list of new quality indicators (for educational research).

- Principles:

- 1) Expanding the assessment with traditional quality indicators by adding potential new quality indicators that were not systematically used before,

- 2) Preparing for empirically validation of electronic assessments (complementary to bibliometric measures and review processes).

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## Five workgroups:

- Semantic analysis of texts and citations,
- Usage of statistics and metrics,
- Metadata,
- Criteria of quality in educational research,
- Quality maintenance in publishing.

# Proposed list of indicators

## Six categories of indicators:

- 1) Contextual information,
- 2) Review information,
- 3) Content-based criteria (peer based),
- 4) Content-based criteria (machine based),
- 5) Citation information,
- 6) Use information.

# Proposed list of indicators

## 1) Contextual information:

- Type of document (journal article, book, chapter, proceedings, report etc.),
- Nature of content (research based or not),
- Publication year (recency),
- Publisher (local / international),
- Biographical information (authors, affiliations),
- Subject matter information,
- Presence of abstract and keywords,
- Language.

# Proposed list of indicators

## 1) Relevance of contextual information:

- Bibliographical search and ERIH (means),
- Content should be research based and subject matter should relate to educational research (starting point),
- Contextual information in itself does not provide quality assessment (e.g. type of document),
- Combination of contextual information (e.g. publisher and language may tell us something about impact and dissemination).

# Proposed list of indicators

## 2) Review information:

- Peer reviewed or not?
- Review procedure (e.g. double blind, number of reviewers),
- Review standardization (e.g. criteria),
- Review outcomes (e.g. rejection rates may differ for journal articles vs. book chapters).

# Proposed list of indicators

## 2) Relevance of review information:

- ISI (means),
- (Double) blind reviews by multiple reviewers may reduce subjectivity and add to reliability,
- Problem: Criteria are are often not explicitly defined,
- Problem: Review outcomes are often not available (unless publication).

# Proposed list of indicators

## 3/4) Content-based criteria (peer/machine based):

- Rigor,
- Originality,
- Significance,
- Integrity,
- Style.

# Proposed list of indicators

## 3/4a) Content-based criteria:

### Rigor

- Appropriate methodology,
- Coherent argumentation,
- Internal consistency of argumentation, method, evidence, and conclusions,
- Counter-arguments are considered,
- Reflexivity on limitations.

# Proposed list of indicators

## 3/4b) Content-based criteria:

### Originality

- Unique contribution to the field in relation to awareness of previous work (content, methodology, and findings),
- Is the contribution original, creative, or innovative in a significant (non-trivial) way?

# Proposed list of indicators

## 3/4c) Content-based criteria:

### Significance

- Theoretical or practical embeddedness of the study,
- Goals and conclusions should disclose the significance of the study,
- Independent reasons for appraisal of its significance (e.g. opening up a new field),
- Impact on educational theory and research, practice and policy.

# Proposed list of indicators

## 3/4d) Content-based criteria:

### Integrity

- Study represents the genuine work of the authors (in contrast with e.g. plagiarism),
- Problems and limitations are acknowledged and reported,
- Ethical codes of research conduct are applied (including confidentiality and informed consent),
- Acknowledgement of contribution by others,
- ‘Ghandi’ test: contribution to the less privileged.

# Proposed list of indicators

## 3/4e) Content-based criteria:

### Style

- Communication tuned to the audience,
- Well structured and organized text,
- Comprehensively written (clarity of the text, however, also depends on complexity of subject matter),
- Elegancy and wit in writing (pleasure to read).

# Proposed list of indicators

## 3/4) Content-based criteria:

- Assessing quality means weighing publications against criteria,
- Problem: Validity of present criteria set => peer review action plan (David & Ingrid),
- Problem: How to match content-based criteria with automated semantic analysis is still unclear,
- ICT might provide a supportive tool for rationalizing the review process.

# Proposed list of indicators

## 5) Citation information:

- Frequency of citations in articles, books, and chapters (authors, year, source),
- Citation by others vs. self-citations and group citations.

# Proposed list of indicators

## 5) Citation information:

- ISI statistics (e.g. impact factors),
- Probabilistic indicator of quality,
- Problem: Citation manipulation (how to recognize and sort out group citations?).

# Proposed list of indicators

## 6) Use information:

- Frequency of hits and downloads,
- Source location of user might indicate the breadth of dissemination amongst an audience,
- Integration in groups, involvement in queries.

# Proposed list of indicators

## 6) Use information:

- Statistics (publishers or external providers),
- Probabilistic indicator of quality,
- Problem: Manipulation (Fancy titles or self-downloads may yield invalid user data),
- Problem: User privacy should be ensured.

# Conclusions

- Not a definite, exhaustive list of quality indicators,
- Some problems need to be dealt with: criteria validation through peer reviews, automated assessment of criteria, and manipulation issues,
- Likely, not all information categories are accessible through automated analysis (e.g., content-based criteria). Hence, electronic assessment cannot replace the review process,
- It is not clear how to weigh different categories of information.