

Research Report for GeSCI Meta-Review of ICT in Education Phase Two -Partial document-

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In response to:

Terms of Reference for GeSCI Request for Proposal

Meta-review of ICT in Education Research

(TOR dated 17 February 2009)

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The complete version of this document as well as Phase One are available from:

<http://www.gesci.org/publications.html>

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Abstract

This second phase of a comprehensive meta-review of educational ICT research and practice addresses global developments reflected in the research and development literature appearing since 2006. Completed in April 2009, the Phase One (P1) report comprised a synopsis of research related to GeSci's five thematic inquiry priorities. Preliminary findings identified in the initial P1 report were presented by Dr. Patti Swarts, Manager of the GeSci Africa Regional Programme, in the GeSci-facilitated North-South Research Partnerships in ICT Education workshop conducted in the Irish Aid Centre, Dublin, on 21 April 2009. This Phase Two (P2) narrative builds upon the P1 report and responds to several refined GeSci declarations of purpose and mission.

Background from Phase One of Meta-review

Phase One (P1) of this meta-review was prepared by John LeBaron and Elizabeth McDonough (2009) of Western Carolina University, a campus of the University of North Carolina (USA). Dr. LeBaron serves as the Jay M. Robinson Distinguished Professor of Educational Technologies, and Ms. McDonough is Education Reference Librarian. The P1 report was produced as a resource for GeSci's North-South Research Partnerships for ICTs in Education workshop conducted in Dublin on 21 April 2009. The major purposes of the P1 Report were to:

1. provide a multi-disciplinary, multi-methodological lens for understanding the global complexity and exponential growth of ICT;
2. reveal trends in contemporary ICT scholarship; and
3. discern relevant research themes.

Readers may find it helpful also to examine a related PowerPoint presentation, which offers discussion points in bullet form, presented at the workshop by Patti Swarts (2009), Manager of the GeSci Africa Regional Programme.

The P1 research was limited to studies conducted between 2006 and 2008 and included articles from traditional peer-reviewed literature and "grey literature," such as policy reports, conference papers, and popular media releases. Although the search scope focused on five thematic streams outlined in GeSci's Terms of Reference (TOR), the comprehensive nature of these combined themes dictated a search methodology that was both broad and deep.

The following five themes were specified in GeSci's original TOR:

1. Educational ICT leadership and management
2. ICT infrastructure, connectivity, and accessibility
3. Integration of ICTs into teaching and learning
4. Teacher education and ICT
5. Educational Content and ICT

Research Methodology for Phase Two (P2) of GeSci Meta-Review of ICT in Education

The literature review for the P1 report revealed that published scholarship in ICT is prolific. While the researchers reviewed approximately 250 studies related to the identified themes, many times that number were published during the time period of 2006-2008. To better understand how this emergent field is being defined by the academic community at-large, a tighter journal quality screen was adopted for P2 of the meta-review. Studies for review were gathered from a limited number of the most highly-rated educational journals. To ensure that the most prominent contributors to the education literature were represented, the scope of the study was not limited to ICT journals but includes a broader sector of the education literature.

The *Publishing in Academic Journals in Education* (PAJE) database project (Holbrook et al., 2009), developed by the Centre for the Study of Research Training and Impact (SORTI) at the University of Newcastle, Australia, was selected as an appropriate journal quality measure for the purposes of this project because of the following criteria: first, it was developed specifically for the field of education and ranks journals within education sub-disciplines; second, it is current as of December 2008, and so provides a useful snapshot of quality journals in a rapidly-changing publishing environment; and third, it is international in scope, seeking to counterbalance other journal quality measures that have been criticized as being excessively USA-centric (Bourke, 2009; Fairbairn, 2009).

Education journals included in PAJE (Holbrook et al., 2009) are ranked with a quality indicator called a "Qscore." Such journals fall within 27 sub-disciplines ranging from "Administration, etc." to "Vocational, etc." education. Based on our P1 report and core GeSci mission declarations, and following our Web meeting with GeSci's Mary Hooker and Jyrki Pulkkinen on 21 May 2009, the researchers decided to focus on four major themes:

1. Leadership and management promoting effective ICT deployment
2. ICT and educational transformation
3. ICT and learning relevance to 21st Century phenomena
4. Equity of access to the resources of technology

During the process of narrative development stemming from the database scan, it was determined that items 2 and 3 overlapped, and separating them appeared counterproductive. Therefore, the middle two items were combined into a single item labeled "Transformational migration to a new century." Accordingly, we selected the following sub-disciplines deemed particularly germane to the

established themes. From each of these sub-disciplines, we selected the top five journal titles, except for the core sub-discipline “Educational Technology/Computing/ICT” where we selected the top ten of 57 titles (see Table 1, below):

1. Administration/Leadership/Educational Management policy (5 journals)
2. Comparative/Cross-Cultural/Indigenous/Ethnic Education (5)
3. Comprehensive (5)
4. Technology/Computing/ICT (10)
5. Pedagogy & Curriculum/Theory & Practice (5)
6. Special Education Including Gifted (5)
7. Teacher Education (5)

Using this approach, we intended to examine a considerably smaller number of research studies in greater depth than we did during P1. However, there were two unexpected outcomes of our review: first, more studies were published in this limited set of journals than we anticipated (N=253); and second, most of those studies were published in ICT journals, with disappointingly few results appearing in non-ICT educational disciplines (See Table 1, below). The latter outcome raises the very real possibility that, when educational literature is broadly considered, ICT researchers may be spending much energy communicating among themselves. This phenomenon supports a general conclusion that ICT research remains very much an emerging field that has failed to enter the conversational mainstream of educational policy and practice.

<u>Table 1</u>		
<i>Journals Included in P2</i>		
Journal/Category	Q-Score	ICT Articles
Admin/Leadership/Educational Management/Policy		
J. of Education Policy	18.64	0
Educational Administration Quarterly	15.82	0
Educational Management, Administration & Leadership	15.39	2
J. of Educational Administration	15.21	4
School Effectiveness & School Improvement	14.18	2
Comparative/Cross-cultural/Indigenous/Ethnic		
Comparative Education	18.65	3
Globalization, Societies & Education	16.48	1
Comparative Education Review	15.99	2
Compare: A J. of Comparative Education	15.05	2
International Review of Education	13.89	2

Table 1		
<i>Journals Included in P2</i>		
Journal/Category	Q-Score	ICT Articles
Comprehensive		
American Educational Research J.	29.33	1
British Educational Research J.	29.30	4
Review of Educational Research	29.21	4
Harvard Educational Review	25.90	0
Australian Educational Researcher	24.34	0
Educational Technology/Computing/ICT		
British J. of Educational Technology	20.84	26
Computers & Education	20.22	75
Australasian J. of Educational Technology	18.65	17
A L T -J: Research in Learning Technology	17.37	0*
J. of Computer Assisted Learning	16.21	5
Australian Educational Computing	14.36	33**
Educational Technology & Society	14.01	13
J. of Technology & Teacher Education	13.63	9
Technology, Pedagogy & Education	13.21	28
Educational Technology, Research & Development	12.76	4
Pedagogy and Curriculum		
J. of Curriculum Studies	19.16	9
Curriculum Inquiry	17.45	0
Curriculum & Teaching	14.24	0
Curriculum Perspectives	11.53	1
Teaching & Learning: J. of natural inquiry	11.07	2
Special Education		
Exceptional Children	23.81	0
J. of Learning Disabilities	18.84	5
Language, Speech & Hearing Services in Schools	18.56	1
International J. of Inclusive Education	18.23	3
American J. of Mental Retardation	18.05	0
Teacher Education		
Teaching & Teacher Education	17.39	6

<u>Table 1</u>		
<i>Journals Included in P2</i>		
Journal/Category	Q-Score	ICT Articles
Teachers College Record	15.97	11
Asia-Pacific J. of Teacher Education	14.92	8
Australian J. of Teacher Education	14.05	3
Asia-Pacific J. of Teacher Education & Development	12.95	***
* Higher education focus		
** Not reviewed due to technical difficulties		
*** No access to indexing and abstracting – no journal website		

For P1, we had undertaken a comprehensive literature review, broadly sweeping literature from a defined time frame (2006-2008) according to themes and topics derived from the contracted terms of reference. In order to achieve this, we used a tightly-structured, controlled vocabulary search of Educational Resources Information Center (ERIC), the world’s largest index of educational research. Since P2 targeted a select list of journals, we were able to focus individually on each journal. Whenever possible, the individual journal was searched by keyword. When that was not possible, the tables of contents for the time period under study were reviewed. Notwithstanding our intent to narrow and deepen our narrative, we nonetheless generated a prodigious number of possible entries and have thus used our professional judgment in selecting studies for the main P2 narrative. The P2 Report section labeled “Full bibliographic results of the P2 search,” however, lists the citations of all the studies revealed from the search process.

For the following reasons, we determined not to attempt culling conference papers or other document types that were not published in the identified journals:

1. Research quality screens for non-journal documents seem rather subjective.
2. The best work of the best thinkers typically turns up in high-quality refereed journals, even though the time-lag between authorship and publication is occasionally excessive.
3. Reference to a broader sweep of multi-faceted literature sources may be found in the P1 Report and in other research databases.

In the reference lists, Web-linked URLs may be labeled “Available from” or “Retrieved from.” “Available” links are not accessible on the open Web, but may be secured on-demand, typically for a document or subscription fee. “Retrieved” links are available on the open Web at no cost to the user.

This P2 review offers a clear picture of the nature of the ICT dialog occurring in, or absent from, the educational literature. Complementing the themes of interest in this study, the review uncovers significant gaps in ICT research, revealing a discussion taking place in narrower scholarly and professional circles than we had previously thought.

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