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Kaleidoscope: Scientific Quality Committee - final report

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Scientific committee final report

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Summary

This is the final report from the Kaleidoscope Scientific Quality Committee, based on online questionnaires to members, and the work of two Task Groups consisting of subsets of members. The aim of the Report is to provide a basis for the Symposium to debate the quality criteria relevant to research in Technology Enhanced Learning, as they are used to judge research, publications, and dissemination mechanisms in the field.

1.1 Terms of reference

To shape a body of reference at a scientific level for the European TEL research communities.

To make recommendations (i) to support a policy for the enhancement of research in Europe in this field, (ii) to survey the development of the field, and (iii) to build scientific collaboration on top of the shared TeLearn Open Archive.

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1 Introduction

In 2006 – 2008 Kaleidoscope initiated work on the development of scientific quality criteria for the European research within the area of Technology Enhanced Learning (TEL). This was motivated by a number of reasons. First and foremost is the area of technology enhanced learning an emerging and relative young field of research. It is both multidisciplinary and interdisciplinary. It bridges computer science, psychology, social science, media science and educational sciences, to mention just a few of its component disciplines. And it crosses various approaches: analytical, theoretical and design-based. A challenge is therefore to establish the scientific quality criteria that are sensitive to and respectful of these different traditions.

To help in carrying out this work, we invited international experts to join us in a virtual ‘Scientific Quality Committee’, to take part in online discussions and comment on drafts.

We hope that the results of the discussions outlined here may inspire a continuing European debate on research quality that will strengthen the European research on TEL in the international context. Furthermore the discussions on quality can be used in national discussions. In most countries it seems that TEL research does not have its own support programme, and is only occasionally supported within general or strategic programmes.

On the other hand the TEL area is well equipped with international and national journals and conferences covering a huge variety of topics, approaches, dimensions on TEL research. For newcomers it is difficult to judge where to publish, and what conferences to join. The Scientific Quality Committee found that it was interesting to start a discussion of criteria to judge the quality of this area – but also to discuss new publication channels as the TeLearn Open Archive.

1.1 Terms of reference

The work was structured around the following terms of reference, set out by the Kaleidoscope Executive:

- To shape a body of reference at a scientific level for the European TEL research communities.
- To make recommendations (i) to support a policy for the enhancement of research in Europe in this field, (ii) to survey the development of the field, and (iii) to build scientific collaboration on top of the shared TeLearn Open Archive.

1.2 Workplan

Based on the terms of reference the work was divided into the following tasks:

- Establish the Scientific Quality Committee
- Provide a description of the current means for publication and communication of TEL research from a European perspective
- Propose scientific criteria for the evaluation of the quality of European research
- List relevant bodies at European, National and non governmental levels
- Propose options for the criteria and processes for the TeLearn open archive, including peer review, Kal quality stamps, and Web 2.0 mechanisms

1.3 Members

The Scientific Quality Committee is composed of members from the Core Group within the Kaleidoscope governance structure, members of the broader community of Kaleidoscope, and representatives from the international expert community:

Core group

- Angelique Dimitrakopoulou, University of the Aegean
- Ulrich Hoppe, University of Duisburg
- Judith Schoonenboom, University of Amsterdam
- Pierre Tchounikine, University of Lemans
- Claudio Dondi, Scierter, Italy
- Nicolas Balacheff, CNRS, Grenoble
- Sten Ludvigsen, Oslo University

Outside core group

- Freidrich Hesse, University of Tübingen
- Rosamund Sutherland, University of Bristol
- Marta Turcsanyi-Szabo, Eotvos Lorand University
- Roger Säljö, University of Göteborg
- Stella Vosniadou, University of the Aegean
- Pedro Pinto, Cnotinfor, Portugal
- Richard Noss, University of London

International non-Kaleidoscope

- Gerry Stahl, Drexel University
- Naomi Miyake, Chukyo University
- Gordon McCalla, University of Saskatchewan
- Michelle Selinger, Cisco, UK
- Katherine Maillet, Institut National des Télécommunications, France

The Committee has been chaired and co-chaired by Lone Dirckinck-Holmfeld, e-Learning Lab (eLL), Aalborg University, Denmark, and Diana Laurillard, London Knowledge Lab (LKL), Institute of Education, UK. The website and hyperdocument environment was set up by a small technical team: Yishay Mor and Tim Neumann at LKL, and James Bligh at Dublin. Brian Møller Svendsen, eLL has assisted the work on the technical report.

The Committee was selected during the fall 2006. The work of the Committee has been conducted through a range of modalities. Sub-groups have met at different Kaleidoscope activities, but most have taken place through virtual means, both synchronous and asynchronous. The first discussion took place through a shared discussion board and was organized as a commentary on a hypertext document, while the second discussion took place as an e-mail questionnaire. The work carried out online was then analysed and summarized by the chair and co-chair. The work has been discussed in several events: at Kaleidoscope core group meetings in Granada and Paris, and at the Kaleidoscope Symposia in Santiago and Berlin, in 2007.

1.4 Structure of the report

The report is organized in the following sections:

- Funding for TEL Research
- Criteria for Judging Research Quality
- Key Journals within TEL
- Current Review Criteria
- Criteria for Peer Review
- Key Conferences
- TeLearn open archive

2 Funding for TEL Research

Contributions from the Committee did not cover all the countries represented. In all the countries from which there are contributions, TEL is funded, irregularly, through various long-term funding sources:

- General strategic and educational research (Denmark, Norway, France, Canada)
- Technology councils (Denmark, Norway, Greece)
- Science funding (US, Canada)
- Joint research councils educ + tech (UK, France)
- Ad hoc funds from Ministries, Regions, Provinces, Universities, cultural organisations

In addition, in some countries there has been regular TEL-related funding:

- JISC, Eduserve for higher and further, Becta for Schools (UK)
- Competence Centre for ICT in Education (Norway)
- SURF and Dutch Digital University for HE, Kennisnet ICT for Schools (Netherlands)

Annex 1 has further detail taken directly from the contributions to the website.

What we notice from these contributions is that relatively few countries have research funding targeted on TEL on a regular basis. It is not possible from this data to link research output in the field to the incidence of funding as this is not a formal study. However, from the point of view of establishing who is developing the criteria for research quality in TEL, this list gives us some key sources.

3 Criteria for judging the quality of research proposals

Criteria for judging the quality of research can be discerned from the research funding call documents published in each country. Most of the research criteria collected from funding bodies by members of the Committee were those common to all research. These are listed in full in Annex 2, supplemented with the Committee members' own additions, and with reference to Professor Richard Noss's analysis of the TLRP/TEL proposals in the recent funding round (<http://www.tlrp.org/tel2/report.html>).

However, the generic criteria for quality research are familiar to the research community. For the purpose of this report, it is more interesting to analyse the general research funding criteria to discern the TEL-specific criteria. These are highlighted in bold in Annex 2. They are the criteria

that are important for the quality and effectiveness of TEL research and are therefore an essential baseline for the progression of the research field. Where the criteria have been developed for a TEL-specific call, they also include criteria that may not be appropriate for other research fields, and would therefore not usually feature in other research calls. On this basis, the main criteria that have been identified as being distinctively TEL-related are as follows:

Delivery

Ability to demonstrate effective service delivery (Eduserve)

Impact

The extent to which the project outcomes will be of overall value to the JISC community;
Likelihood that project will have a real impact on e-Learning in the UK (HEA)

Partnership and dissemination

The degree to which the proposal demonstrates an openness and willingness to work in partnership with related projects and JISC in forward planning, dissemination and evaluation; Supported by personnel at post-doctoral level and/or senior staff with computing, library or educational technology support departments

Pedagogical and technical expertise

Evidence of the project team's understanding of the pedagogical issues involved (JISC)

User engagement and partnership

Does the proposal include strong collaborative partnerships and appropriate user engagement with relevant policy-makers, practitioners and potential adopting organisations throughout all stages of the research? Is there evidence that relevant partners have been engaged, as appropriate, in the development of the proposal, acting as co-designers throughout all stages of the project?

Interdisciplinarity

Has interdisciplinary collaboration and integration between the social and technological sciences been successfully established within the research design? Does the proposal make a good use of the opportunities to achieve added value through interdisciplinary collaboration in ways which make a significant contribution to the development of interdisciplinary research in the field (e.g. showing evidence that the different literatures necessitate individual researchers stepping outside of their range of expertise; an acknowledgement that interdisciplinarity is an evolving and uncomfortable state during the lifetime of the project; that it is not merely multi-disciplinary, i.e. passing, testing, or evaluating ideas between disciplines, but involves added value to all the participating disciplines)?

Robust project management

Does the proposal have a clear, well-designed and robust project management structure capable of supporting the proposed partnerships, interdisciplinary integration, successful collaboration, and delivering on the specified work programme (e.g. strong scheduling, clarity on the dependency on software design, with fully defined risk management)?

Development of interdisciplinary research capacity

Is there a commitment to helping to build research capacity in interdisciplinary research in the field of technology enhanced learning?

Sustainability and product adoption

Is there a coherent strategy for addressing sustainability and for maximizing the chances of product adoption, where appropriate?

Methodological renewal using technology

Does the research contribute to methodological renewal in terms of the design that is used, the relationship research and innovation and practice, and the use of new technology as research tool? (ESRC/EPSC)

Innovative problem formulation

Does the research feature scientific aspects in the sense that it formulates a scientific problem in a new manner and thereby brings resolution of the problem nearer? (Netherlands); Does the research prepare for how design evolves, both in terms of activity structures and technological innovation; does it allow the interplay of different disciplines, co-designing learning 'systems', as a way of producing genuine innovation in TEL?

Members of the Committee have also suggested the following additions:

- What are the specificities that link computational and educational objectives and methods - i.e. how do computational and educational approaches articulate to create, potentially, synergies that are greater than the sum of the parts? – aspects of ‘interdisciplinarity’
- What is the focus on new kinds of knowledge that arise specifically from the 'employment' of technology; i.e. new knowledge rather than old knowledge in new ways – aspects of ‘design research’.

There is considerable richness to the above criteria. They take us beyond the generic research criteria and suggest the aspects of research in TEL that present new challenges and which will need to be considered for projects in the field. They will not necessarily remain peculiar to TEL, but whereas in some research funding calls they would not need to be represented, they probably constitute a minimum requirement for TEL projects. To distil them further, we may conclude that high quality TEL research should meet the following criteria:

- Interdisciplinarity that adds value to both the social and technological sciences
- Project management
- Development of interdisciplinary research capacity
- Sustainability and product adoption
- User engagement in design and implementation
- Methodological renewal using technology
- Design research as the iteration between the social, cognitive and technological sciences
- Technical expertise
- Pedagogical expertise
- Impact, delivery
- Partnerships

Many of these may remain inappropriate for other kinds of research, but they are very important for the quality and effectiveness of TEL research, and constitute a useful baseline for research criteria in this field.

There could be further criteria for high quality TEL research that have not surfaced through this analysis, but are nonetheless important for the future of the field. One example that is not found in the current criteria in research calls, but which comes from Committee members, is the distinctive character of ‘design research’. This refers to R&D that uses ‘scientific research’ of the kind that tells us about human behaviour and cognition, and uses that to design ‘tools’, iteratively testing, refining and improving them until they work as well as possible in terms of the human activity they are designed to assist. TEL research often sets out to design such tools in order to improve learning. In that sense it is like ‘design research’. When it sets out to discover, for example, how people use technology in the context of learning, this is ‘scientific research’, or perhaps ‘social science research’. It has an essentially iterative character in terms of research methodology, and in terms of the interplay between the disciplines involved, each impacting on and influencing the other.

The list of criteria above captures a range of critical aspects of research approaches to the study of TEL, but perhaps there are others?

This leads us to two questions for the further development of this work:

- Could this analysis be used to develop widely agreed recommendations on enhancing the quality of research in the field?
- Are there ideas, approaches, or criteria that are missing, but would be important for the future of TEL research?

4 Key Journals within TEL

Based on the input from members of SQC we have created the following list of international and national key journals within TEL. A further description of the journals can be found in Annex 3.

The tables of international and national journals raise a number of questions for further work:

- Have we included all relevant key journals within TEL? Are there others, for example, from the Spanish speaking /or other language communities?
- Given the numbers of journals, topics and approaches, which journals to prioritize (from a European/Kaleidoscope perspective)?
- The impact factor, what kind of impact does it measure? Rather few journals report the impact factor. Should we concentrate on journals measuring the impact factor?
- The increased demand to publish in international journals challenge the national journals. Should we worry?

4.1 International Journals

Learning and Instruction	
Link:	http://www.earli.org/publications/learning_and_instruction
Association:	EARLI
Impact factor or acceptance rate:	2005: 1.548 Journal Citation Reports® 2005, published by Thomson Scientific
Media & Publisher:	

Educational Research Review	
Link:	http://www.elsevier.com/wps/find/journaldescription.cws_home/706817/description
Association:	EARLI
Impact factor or acceptance rate:	
Media & Publisher:	

International Journal of Computer Supported Collaborative Learning (ijCSCL)	
Link:	http://www.ijcscl.org
Association:	ISLS
Impact factor or acceptance rate:	
Media & Publisher:	Springer (print & online) + a pre-proof, open-access version

Journal of the Learning Sciences	
Link:	http://www.cc.gatech.edu/lst/jls/
Association:	ISLS
Impact factor or acceptance rate:	
Media & Publisher:	

International Journal of Learning Technology (IJLT)	
Link:	http://www.inderscience.com/browse/index.php?journalID=87
Association:	ISLS
Impact factor or acceptance rate:	
Media & Publisher:	

Journal of Computer Assisted Learning (JCAL)	
Link:	http://www.blackwellpublishing.com/journal.asp?ref=0266-4909&site=1
Association:	
Impact factor or acceptance rate:	ISI Journal Citation Reports® Ranking: 2005: 37/98 (Education & Educational Research) Impact Factor: 0.556
Media & Publisher:	Blackwell

Computers in Human Behavior	
Link:	http://www.elsevier.com/wps/find/journaldescription.cws_home/759/description
Association:	
Impact factor or acceptance rate:	2005: 1.116 Journal Citation Reports® 2005, published by Thomson Scientific
Media & Publisher:	

Artificial Intelligence in Education (IAIED)	
Link:	http://aied.inf.ed.ac.uk
Association:	AIED
Impact factor or acceptance rate:	
Media & Publisher:	

Computers & Education	
Link:	http://www.elsevier.com/wps/find/journaldescription.cws_home/347/description
Association:	
Impact factor or acceptance rate:	
Media & Publisher:	
Journal of Science Education and Technology	
Link:	http://www.springerlink.com/content/102587
Association:	
Impact factor or acceptance rate:	
Media & Publisher:	Springer
International Journal on E-Learning (IJEL)	
Link:	http://www.ace.org/pubs/ijel/
Association:	AACE
Impact factor or acceptance rate:	The acceptance rate for all AACE journals is 10-19%
Media & Publisher:	
International Journal of Learning Technology (IJLT)	
Link:	http://www.inderscience.com/browse/index.php?journalID=87
Association:	
Impact factor or acceptance rate:	
Media & Publisher:	Inderscience Journals / Open Archives Initiative, Online & print
Journal of Technology and Teacher Education (JTATE)	
Link:	http://www.ace.org/pubs/jtate/
Association:	SITE
Impact factor or acceptance rate:	
Media & Publisher:	
The International Journal of Education and Development using Information and Communication Technology (IJEDICT)	
Link:	http://ijedict.dec.uwi.edu
Association:	
Impact factor or acceptance rate:	
Media & Publisher:	e-journal
Research and Practice in Technology Enhanced Learning (RPTTEL)	
Link:	http://www.worldscinet.com/rptel/rptel.shtml
Association:	APSCE
Impact factor or acceptance rate:	
Media & Publisher:	World Scientific Publishing Company (WSPC)
e-Journal of Instructional Science and Technology (e-JIST)	
Link:	http://www.usq.edu.au/e-jist/
Association:	
Impact factor or acceptance rate:	
Media & Publisher:	(Electronic journal)

Cooperative Work (CSCW)	
Link:	http://www.springerlink.com/content/100250/
Association:	
Impact factor or acceptance rate:	
Media & Publisher:	Springer (print & online)

The Scandinavian Journal of Information Systems (SJIS)	
Link:	http://www.e-sjis.org
Association:	IRIS (Scandinavian Chapter of AIS)
Impact factor or acceptance rate:	
Media & Publisher:	Online archive

4.2 National Journals (UK)

Association for Learning Technologies Journal (ALT-J)	
Link:	http://www.alt.ac.uk/alt_j.html
Association:	
Impact factor or acceptance rate:	
Media & Publisher:	Taylor & Francis Group

British Journal of Educational Technology (BJET)	
Link:	http://www.blackwellpublishing.com/journal.asp?ref=0007-1013
Association:	BECTA
Impact factor or acceptance rate:	ISI Journal Citation Reports® Ranking: 2005: 33/98 (Education & Educational Research) Impact Factor: 0.593
Media & Publisher:	

Journal of Interactive Media in Education (JIME)	
Link:	http://jime.open.ac.uk
Association:	
Impact factor or acceptance rate:	
Media & Publisher:	Online (free access)

4.3 National Journals (Germany)

Zeitschrift für Medienpsychologi	
Link:	http://psycontent.metapress.com
Association:	
Impact factor or acceptance rate:	
Media & Publisher:	

5 Key Conferences

As the following list indicates there are many international and national conferences within the area of TEL and related research. Participants have listed more than 13 international conferences as well as national conferences.

Based on the information we have it seems that not all European countries have regular conferences on TEL, and as with the journals the key international conferences are dominated by the English speaking community.

5.1 International conferences

- CSCL - *The Computer Supported Collaborative Learning conference*
- Online Educa
- EdMedia - *World Conference on Educational Multimedia, Hypermedia & Telecommunications*
- ASCILITE - *The Australasian Society for Computers in Learning in Tertiary Education*
- AIED - *Artificial Intelligence in Education*
- ITS - *Intelligent Transportation Systems*
- Learning Sciences
- ICALT - *International Conference on Advanced Learning Technologies*
- EARLI - *European Association for Research on Learning and Instruction*
- IEEE
- Ec-TeL - *European Conference on Technology Enhanced Learning*
- Tec - *Technology Enhanced Classroom Conference*
- Networked Learning

5.2 National conferences

UK

- Association of Learning Technologies Conference (annual)
- CAL 07 - *Computer Assisted Learning* (Biennial)

Germany

- LearnTec Karlsruhe
- Education Quality Forum (NRW)
- Online Educa Berlin

Greece

- The biannual conference ICTs in Education (e.g. <http://www.rhodes.aegean.gr/LTEE/etpe-2002/>), organised by the HICTE, (Hellenic Association of Information and Communication Technologies in Education). <http://www.etpe.gr>
- The biannual conference of “Teachers and ICTs in Education”, of Association of “Teachers and ICTs in Education” called “e-Network –ICTs” (<http://www.e-diktyo.eu>)

Netherlands

- Four main conferences:
- For fundamental research, the annual Onderwijs Research Dagen (ORD), aimed at educational research in general, with TEL being one strand.
- For applied research on TEL in higher education, the annual SURF onderwijsdagen and the Innovatum of the Dutch Digital University. Although the SURF conference is mainly Dutch, some of the presentations at this conference are in English, and there are always a number of international participants.

- For applied research on TEL in primary, secondary and further education, the EDU-Exchange.
- It is interesting to note that the number of people who participate in both the ORD and one of the applied conferences is relatively small.

Nordic countries

- Nordic Conference for media and communication research – biannual conference. A Nordic Network for ICT, Media & Learning (NNIML) is related.
- The IRIS (Information Systems Research in Scandinavia) Association conferences. TEL is only occasionally a prioritized issue.

6 Criteria for judging the quality of research papers

Peer review of research papers is considered the most important quality mechanisms for journals and conferences. Bibliometrics within the TEL area is viewed sceptically due to some of the characteristics of bibliometrics: citation indexes do not include citations in books; Thomson's measures impact after 2 years – however results within social science and humanities are not taken up so quickly; not necessarily the best, but the biggest English journals are on Thomson's list; and some of the more important journals are not on the list.

For most of the SQC participants, the CSCL conferences are viewed as the most important and best conferences for hearing what is happening in the research community and seeing people who are active. The CSCL conferences always provide a number of categories for presentations, such as long papers, short papers, posters, demos, workshops, tutorials, symposia, invited keynotes, doctoral consortia, etc. That way, they can balance the criteria for high scientific standards for long papers and maximal inclusion. Furthermore the ijCSCL is viewed as the most important conference.

7 TeLearn Open Archive

An open archive for TEL research at www.telearn.org has been created by the Kaleidoscope Network. The TeLearn Open Archive is an important integrating activity of TEL research in Europe and beyond.

7.1 Background

The Kaleidoscope Network shares the view of the Scientific Council of the ERC (European Research Council) on:

- the need for open archives and the dissemination of high-quality scientific research
- the fundamental importance of peer-reviewed journals in ensuring the certification and dissemination of high-quality scientific research and in guiding appropriate allocation of research funds
- policies towards access to scientific research must guarantee the ability of the system to continue to deliver high-quality certification services
- policies to mandate the public availability of research results in open access repositories – ideally within 6 months, and in any case no later than 12 months after publication

The ERC Scientific Council will issue specific guidelines for the mandatory deposit in open access repositories of research results – that is, publications, data and primary materials – obtained thanks to ERC grants, as soon as pertinent repositories become operational.

The ERC Scientific Council encourages research founders across Europe to join forces in establishing common open-access rules and in building European open access repositories that will help make these rules operational.

In the light of this European perspective on open research, the Kaleidoscope Scientific Quality Committee was made responsible for recommending the quality criteria for the TeLearn Open Archive.

7.2 TeLearn

The open archive at www.telearn.org conforms to the OAI-PMH standards. As such, it is a repository which collects all pre-print, articles, dissertations, research and technical reports in the field of Technology Enhanced Learning (TEL) without any filter other than verifying that the material falls within the scope of the TEL field of research. Priority is given to documents (pdf files), but bibliographical descriptions with a link to a resource hosted in another repository or mere bibliographical descriptions are also accepted.

TeLearn is multidisciplinary and multilingual, and multimodal. There are currently three repositories which are active: documents (classical OA), video (keynotes, seminars, PhD defence, etc.) and software. The TeLearn roadmap includes the creation of a repository for the sharing of research data. The software and the data repository should shortly benefit from the outcomes of the two Kaleidoscope initiatives: a centralized research data repository (Erica Melis, USAAR), and IRO - Kaleidoscope Resource Sharing (Ulrich Hoppe, University of Duisberg).

The TeLearn resource can be searched by several criteria (e.g. authors name, language, research unit, keywords, etc.). It offers the possibility to create series associated to a RSS feed format. The creation of a series is based on a stamping mechanism under the control of one individual representing a research unit, a community or an editorial board. Some services are included like a suggestion about resources likely to be of interest for a user when he or she has selected an resource.

TeLearn is registered as an OAI provider of content by the OAI.org organization.

The sustainability of TeLearn, for the classical document part, is ensured by it mirroring in an institutional open archive (the CCSD), which is maintained by the CNRS and supported by the major research institutions in France.

7.3 The Scientific Quality Committee work in relation to TeLearn Open Archive

One of the tasks of the scientific Quality Committee has been to discuss a mechanism to review the resources and select journals, conferences and other initiatives for their scientific quality and to establish a Kaleidoscope quality stamp on top of the TeLearn Open Archive.

The work is based on a questionnaire, which has been e-mailed to the members of the Kaleidoscope Scientific Quality Committee. The aim of the questionnaire was to take forward the second major task of the Committee: to propose options for the quality criteria and processes for the TeLearn open archive.

The questionnaire consisted of the following three major parts:

1. Criteria for the inclusion of publications and papers in the TeLearn repository
2. Quality assurance mechanisms for the archive
3. Maintaining of the TeLearn Open Archive

7.4 Criteria for the inclusion of publications and papers in the TeLearn repository

Peer reviewed journals and conference proceedings

Most of the members of the Scientific Committee (YES (3) NO (9)) support the idea that not only peer reviewed journals and conference proceedings should be invited to submit papers in the TeLearn Open Archive.

The general view is that the idea of Open Archives exactly is to make more ideas available, scientific reports, “grey literature” or drafts articles under review. As one of the member express: “In my view, the added value of TELearn and other digital repositories is that they include materials that otherwise would be hard to find”.

The open archive should include metadata about the status of the work and whether or not the resources have been peer reviewed. Moreover, one member suggested that a KalStamp could be a solution to claim for a resource quality towards the community. In this case, a specific review process must be implemented. This procedure might be engaged after having verified that it was worth the effort and that normal publication was effectively not possible. Other members don't agree to build up special review procedures and a KalStamp in relation to the archive. That would imply to establish a new society.

Impact factors

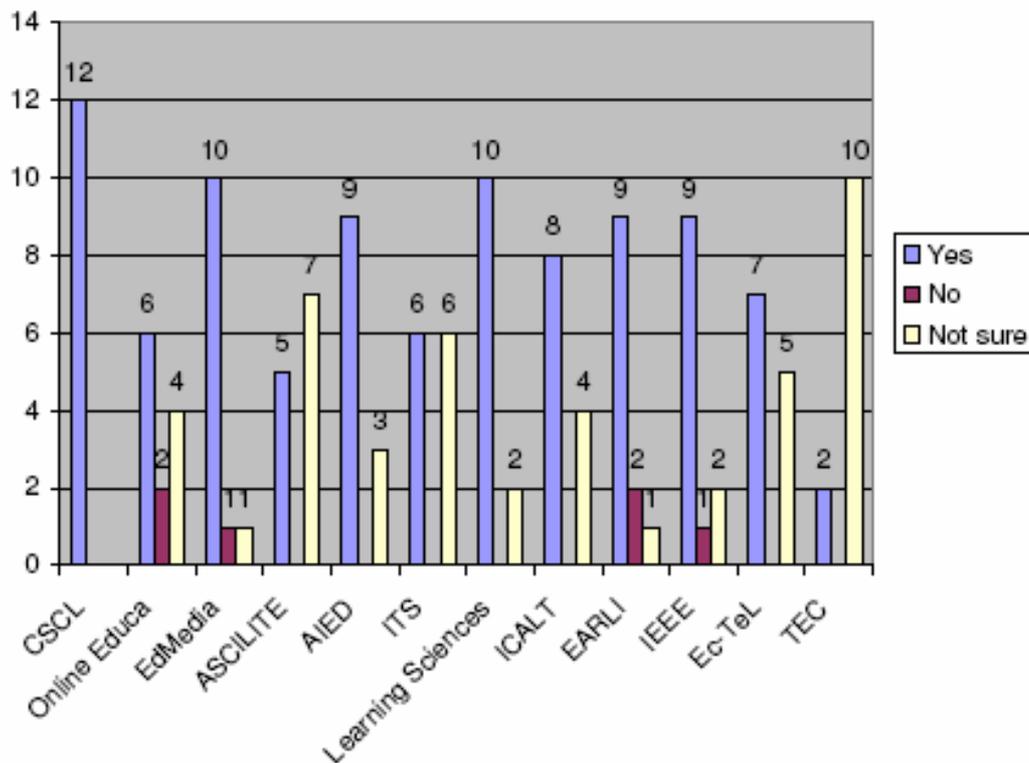
Most of the members of the Scientific Committee (YES (2) NO (9)) support the idea that not only journal publications with high impact factors should be accorded highest priority.

Many members of the committee are sceptical about the quality of impact factors within the area of TEL-research. “High impact factors only come to old, established, conservative journals in well-defined fields, but TEL-research is a new, quickly changing and interdisciplinary field”. On the other hand most committee members support, that the impact factor – when available – could be included in the meta-data. One committee member suggests that a KalStamp if it works well may have an impact on the ranking of journals. The KalStamp should express relevance and importance to the TEL-area.

Conference proceedings

At the moment some conferences have made their conference proceedings available in the TeLearn Archive. It has been suggested that as many conference proceedings as possible should be made available. Below is a graph which shows the support for different conferences. CSCL has the support from everybody. Some other conferences were suggested: AERA, IEEE, The Asia-Pacific ICCE conference series and “EIAH”. Moreover, TEL-conferences from national communities should be invited. Further more it was underlined that only the TEL-track for example of the EARLI conferences should be included.

The Scientific Quality Committee identified the following conference proceedings to be added to the archive. Do you agree?



Books, edited books, and book chapters

All committee members support to include materials from all publishers who will make the material available at least one year of publication (YES (11) NO (0)), however a few add, that we should have the KAL stamp with additional criteria related to the relevance to TEL and to quality. Others argue that even we can't get the full chapter, abstracts should be included. The CSCL series at Springer should be included.

Government documents

In general does the committee support that government papers, e.g. position papers, white papers, official reports are made available (YES (8) NO (1))
Again it's highlighted that it is important to add criteria for the relevance and type of document.

Research reports from funded EU and national research programmes

All committee members support that research outputs (reports, products) are made available – also from other continents (YES (11) NO (0)), unless they cover too wide areas or topics. Also research reports from research commissioned by the government should be available.

PhD theses made available by University libraries

In general, there is support for making Ph.D thesis available (YES (11) NO (0)), however some argues that only the highly valued Ph.d thesis should be included. They can either be made available direct or through other repositories, e.g. university libraries. To link to university libraries requisite other mechanisms.

Databases of research results

Questionnaire results are (YES (7) NO (2)). The problem is that because of language issues it might be difficult to determine value. Moreover, we shall be aware that it is a completely different methodology, technology and architecture than the doc repository.

Open source tools, software, learning objects and learning designs

Questionnaire results are (YES (11) NO (1)), however there are a number of concerns. That a specific Review Committee is needed to ensure relevance and quality, but also that it is a completely different methodology, technology and architecture than the doc repository". The KalStamp could consider video papers, video of talks, seminar, keynotes.

7.5 Quality assurance mechanisms for the archive

Peer review

Most of the committee members find that given the level of peer review already available in the academic TEL community TeLearn should not set up its own peer review process, but sets its criteria for inclusion in terms of the peer review processes of other organisations and publication mechanisms (YES (9) NO (1)). In general there is a wish to have shortcuts (without additional peer reviewing) for as many standard sources (e.g., conferences, journals) as possible. Publications without prior peer reviewing may need additional quality control, though. Another idea is to create a kind of meta-journal on top of the open archive as a way to put forward some articles or resources with a special KAL-stamp. At least, relevance to TEL should be one criterion. For example, all papers from proceedings of Online Educa and ICALT can be included, but not all papers from EARLI are relevant to TEL." One member goes against additional quality control or a stamp because the seniors are already now very busy making reviews.

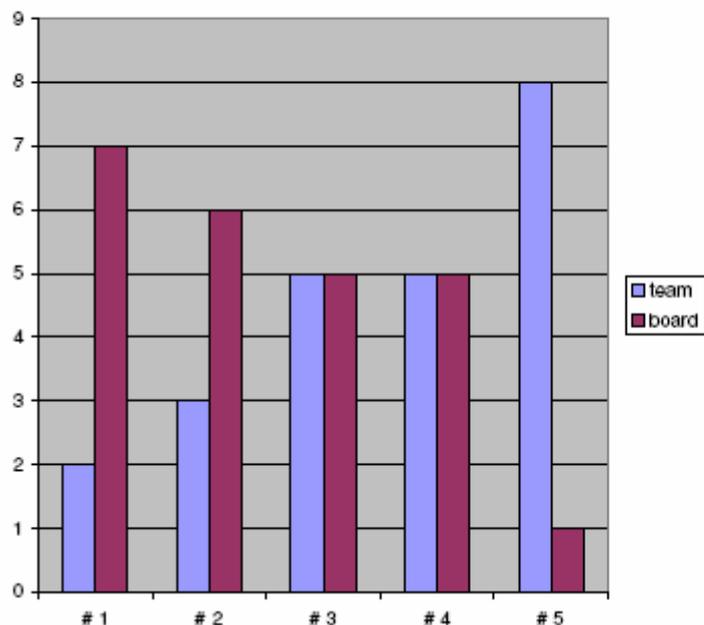
7.6 Maintaining the TeLearn Open Archive

Another group of questions concern the maintaining of the TeLearn Open Archive. The questions focus on the work of the Scientific Quality Committee and the TeLearn team.

International editorial board

Most committee members recommend that the Scientific Quality Committee sets up an international editorial board to advise the TeLearn team (YES (10) NO (0)). It is stressed that it should be a very 'light committee', which only sets up the rules for inclusion and answers questions that come from the Team. The Team should have the opportunity to suggest additional conferences, journals etcetera to the Committee, based upon the papers that they receive for publication. To check if articles are in the TEL scope and thus accepted on the archive, can be managed by the TeLearn team. The international scope of the committee is highlighted.

Who should be responsible for deciding the following, the Editorial Board or the TeLearn Team, with reports to the Board?



- #1: which journals, conferences and societies should be integrated with the open archive
- #2: the main conferences, journals and societies that should be invited to make their publications available in TeLearn
- #3: which university libraries should be affiliated to the TeLearn archive, for a mutually beneficial collaboration on the availability of their documents
- #4: the categories, metadata and search mechanisms to be undertaken
- #5: how to optimize Google searches to link to TeLearn

The table shows that the board should be responsible for preparing the quality criteria and guide the work while the team should carry out and maintain the work of the archive. Feedback should be solicited from the team, and it is important to keep a dynamics between the board and the team.

8 Concluding points

From the discussion of research quality criteria, we can see that it is important for the TEL field to debate and develop the research criteria that are particularly important for the successful development of this distinctive field. It is subject to the full range of general research criteria, but across the international research calls we have been able to identify several important criteria that are not common to all, and are very important for the success of TEL projects. In particular, a clear understanding of 'design research' and what counts as good methodology and high quality outcomes, is yet to be fully debated and agreed.

It has been clear from the survey of research calls, both national and international, that there is a paucity of funding for this field, despite the significant funding for ICT infrastructure at all levels of education, in most EU countries. What funding there is, tends to be from short-term initiatives, lasting a few years, then ending, with the loss of accumulated expertise, and a continual disruption in the building of research capacity in young researchers. The field cannot develop properly with the cycle of stop-go funding that has dogged it since the early 1970s.

There is a great support for the TeLearn Archive. It is seen as a mean to make more visible the TEL-research, and also to give scholars, politicians, practitioners and managers direct access to the research going on. Further more can the TeLearn Archive be seen as a research political manifestation stressing knowledge as a free resource. It is recommended to set up an international board of well estimated scholars within the field of TEL to guide the quality issues and also the relevance and impact factors. This board shall work in close cooperation with the Team, which should take care of the day-to-day maintenance and quality insurance. It is recommended to use metadata to provide detailed information about the resources in the open archive, their status, peer reviews etc. Moreover, it is recommended that the Team work with publishers, conferences and societies to develop more easy ways of making resources available.

There is no clear support for a definitely KAL-stamps. Members are a little reluctant to build up a new peer-review mechanism, however if the archive should get a high status in the scientific world and become *the* channel for making publications and resources public available, then a quality stamp may be the way to proceed. At national levels for example in Norway, United Kingdom, Denmark there are ongoing discussions on which publication channels should count (and how much) when giving out basis funding for research. It would strengthen the TeLearn Open Archive if a potential KAL quality stamps correspond to or relate to these national and institutional criteria under development.

9 References

Wright, Susan (2007): The British System of Research Assessment and Quality in the Social Sciences. Power point presentation at the Research Conference: Research Quality and Research Control, Research Council for Society and Business, Denmark 2007

10 Annex 1

10.1 Bodies that fund TEL research by country

The following text is an edited version of contributions from members to the website.

Denmark

- The research council
- The strategic research council
- Advanced technology council
- Moreover we have several funding opportunities in agencies and ministries, as well as regionally.

UK

- A joint initiative between the Engineering and Physical Science Research Council and the Economic and Social Research Council, administered through the Teaching and Learning Research Programme.
- JISC: for mainly HE and Further Education
- Becta: for mainly Schools, FE and Adult and Community Learning
- HEA: for mainly institution-based research in HE
- Eduserve: for research in mainly HE and FE

US

- The best funding source is the National Science Foundation

Norway

- The Norwegian Research Council. TEL as area of research is both under social science and education and under other programs more related to applied ICT research.
- ITU – The Norwegian competence centre for ICT in Education.
- The Ministry of Research and education have a few calls for R&D related to ICT in education.

France

In France there are two major lines of funding

- labs get a general global direct funding
- the ANR (research national agency) funds projects

The main source of funding for TEL projects (as well as most of the others in the country) is the Agence National de la Recherche (ANR). It operates through competitive calls on specific content, TEL is not a topic considered every year.

Other sources of funding are the multidisciplinary programmes of the CNRS (National Centre for Scientific Research), which proceeds through competitive calls on specific topics. The Regions may have a specific call on TEL.

TEL projects can also be submitted to "white calls" (programme blanc) which has no specific topic, or to more general calls in education of technology.

It sometimes happens that the Universities fund research on TEL, essentially as seed grants.

Germany

In general TEL-research in Germany is funded by DFG, BMBF and the Laender (e.g. Lower-Saxony runs the ELAN-project

Hellenic Republic /Greece

- General Secretariat for Research and Technology, Ministry of Development
- Pedagogical Institute in conjunction to Ministry of National Education

However:

- There is no funding of TEL projects in a regular manner.
- When there are programs that fund TEL projects, in most of the cases, there is an underlying resource from the European Community directly to the Hellenic Republic for such a purpose.

Canada

Two national funding councils, one for the sciences and engineering disciplines: (NSERC) and one for the social sciences and humanities (SSHRC). TEL funding can come from either NSERC or SSHRC, although sometimes good research falls in the gap between them. In addition there are joint funding programs among the three funding agencies called networks of centres of excellence which fund large, distributed networks of researchers (there is one such network, called LORNET, in the TEL area). Various provinces (most notably Quebec and Ontario) have their own provincial funding. My province, Saskatchewan, has a specialized fund for technology-enhanced learning, which gives out small annual grants for development of on-line material, not really for much in the way of research.

The Netherlands

- Fundamental research: Netherlands organization for scientific research
- Applied research aimed at developing, implementing and evaluating ICT in education:
- In Dutch higher education: SURF foundation, and from 2001- 2006: the Dutch Digital University
- In Dutch primary and secondary education and in further education: Kennisnet ICT op school

Applied research is commissioned by the Dutch Ministry of Education. There are lots of opportunities for performing applied TEL research on an incidental basis with various types of commissioners, ranging from schools, universities and cultural organizations to municipalities and national organizations.

11 Annex 2

11.1 Funding bodies published criteria for judging research quality

The following text is taken from members' inputs to the website. Highlighted text is that selected for its specific value for TEL research.

Criteria for Eduserve, UK

Criteria which projects should meet are:

- **Supported by personnel at post-doctoral level and/or senior staff with computing, library or educational technology support departments.**
- Undertaken by an individual or a team with project leader
- Ability to demonstrate clear contribution to research and/or **effective service delivery within a particular field**
- Will not usually extend over a period of less than six months or more than two years.
- Will commence by summer 2007
- Should be based at a UK academic institution. If you are unable to bid directly because of this, you might like to use this Google Group to advertise any skills and expertise that you might bring to someone else's proposal
- Total funding requested will normally be in the range £30,000 - £150,000
- **Software development projects will usually be open source and deliver fully tested and documented code**
- Dissemination of outcomes should be integrated into project plans
- Should include mechanisms for securing long term impact or sustainability of project outcomes

Criteria for HE Academy, UK

- Stage 1: Expressions of interest will be considered by the assessment panel with reference to the following criteria:
 - Relevance: addresses theme; demonstrates a need in relation to current work ; addresses the existing literature in the field; has a clear potential to build capacity
 - Excellence: overall quality of the proposed work, likelihood that project will succeed in meeting its aims (including a sound methodology) and **likelihood that project will have a real impact on e- Learning in the UK**
 - Dissemination and impact: potential benefits for developing future research, policy or practice in learning, teaching and the student experience, and how these will be realised
- Stage 2: Full proposals at the second stage will be judged against the criteria listed above plus the following additional criteria:
 - Rationale: Clear motivation in relation to the wider HE context and existing research and literature
 - Methodology: Clear statement and justification of the proposed project methodology
 - Transparency: clear, full and deliverable project plan, including proposed outcomes
 - Value for money: appropriately justified budget in relation to projected outcomes
 - Track record and CVs of the applicants

Criteria for JISC call: Learner Experience of e-Learning

- Quality of the proposal and work plan - the extent to which the proposal addresses the issues and demands outlined in the circular – including how the proposed methodology will address the key research questions – and shows innovation as appropriate; the quality of the proposal will be assessed on the basis of the deliverables identified and the evidence provided of how these will be achieved including an assessment of the risks (35%)
- **Impact – the extent to which the project outcomes will be of overall value to the JISC community (30%)**
- **Partnership and dissemination – the degree to which the proposal demonstrates an openness and willingness to work in partnership with related projects and JISC in forward planning, dissemination and evaluation (10%)**
- Previous experience of the project team – **evidence of the project team’s understanding of the pedagogical issues involved**, and of its ability to manage and deliver a successful project, for example through work done to date in the area or in related fields (15%)
- Value for money – the value of the expected project outcomes vis-à-vis the level of funding requested, taking into account the level of innovation, chance of success and relevance to the target communities (10%)

Criteria for TEL call by ESRC/EPSRC

- Contribution and fit to the TEL Call. Does the proposal display an appropriate fit to the overall aims of the TEL Call? Is there creative engagement with the challenges to research defined in the TEL Call?
- **User engagement and partnership. Does the proposal include strong collaborative partnerships and appropriate user engagement with relevant policy-makers, practitioners and potential adopting organisations throughout all stages of the research? Is there evidence that relevant partners have been engaged, as appropriate, in the development of the proposal?**
- **Interdisciplinarity. Has interdisciplinary collaboration and integration between the social and technological sciences been successfully established within the research design? Does the proposal make a good use of the opportunities to achieve added value through interdisciplinary collaboration in ways which make a significant contribution to the development of interdisciplinary research in the field?**
- Contribution to knowledge. Is the proposal grounded in a thorough review of the relevant research literature in all the contributing disciplines? Does the proposal have a coherent theoretical and analytical framework? Is it likely to make a significant contribution to the development of the current interdisciplinary research knowledge base?
- Research Teams and Project Management. Does the proposal indicate that the project team or consortium has the skills, expertise and time necessary to bring the research to a successful conclusion? **Does the proposal have a clear, well-designed and robust project management structure capable of supporting the proposed partnerships, interdisciplinary integration, successful collaboration, and delivering on the specified work programme?**
- Research Design and Methods. Does the proposal clearly and fully describe a research design and schedule appropriate for the achievement of the stated research objectives? Is the project time- scale appropriate to the research design? Are there rigorous methods for assessing learning outcomes (broadly conceived)? Are there realistic proposals for data collection and data analysis?

- Has careful consideration been given to ethical issues? For example, is there a clear link between the theoretical foundations being referenced, the pedagogic design, the nature of the data collection, and the research findings expected?
- Contribution and fit to TLRP. Does the proposal display awareness of the overall aims and objectives of the TLRP? Where appropriate, does it attempt to build on existing work from the Programme? Is there a thoughtful commitment to active participation in the Programme as a whole?
- Contribution to Research Capacity Building. **Is there a commitment to helping to build research capacity in interdisciplinary research in the field of technology enhanced learning?**
- Communication, Knowledge Transfer and Impact Plans. Is there a well-developed project communication and impact plan, which would make a significant contribution to knowledge transfer? Is there a clear statement of the anticipated outputs appropriately targeted at a range of potential academic and non-academic audiences? **Is there a coherent strategy for addressing sustainability and for maximizing the chances of product adoption, where appropriate?**
- Value for money. Does the research represent value for money relative to the likely outcomes? Are the resources requested necessary and adequate for the effective conduct of the research as outlined, including proposals for communication and impact?

Criteria Germany

Criteria for judging research quality is published and in force for every single call by each institution; but common crucial aspects are always: scientific quality and relevant use in science and society

Criteria Research Hellenic Republic

There are no published criteria for research funding, and specially for ICTs in Education. During the last two years there have been no calls for ICTs in Education related fields. The main problem in Greece, is that the Greek Governement(s), devote a very low budget to research (both applied and fundamental/basic).

Criteria - Canada

The Canadian criteria for basic research grants from NSERC and SSHRC (called "discovery grants") are 4-fold: quality of researcher, quality of research proposal, need for funds, and production of highly qualified personnel. For more targetted funding, there are more targetted criteria.

Criteria for Netherlands Organisation for Scientific Research

Problem definition

- Have the problems addressed in the research been clearly described and demarcated?
- Is the indication of and alignment with existing knowledge and theories, including domain-specific aspects, adequate?
- Has the problem definition been logically worked out in a model, suppositions, and so forth?
- If applicable, has it been described what type of design research it concerns, and why this type of research is appropriate?

Setup and methods

- Are the proposed methods and techniques appropriate and suitable for answering the research questions?
- Is the selected methodological-technical setup consistent and is it sufficiently motivated?
- Are the methods sufficiently aligned with the questions posed?
- Are the sources and data mentioned accessible and available, and are they suitable for answering the questions posed in the problem definition?
- Has the working plan been properly thought through, logically set up, phased, and does it include interim measurement points?

Feasibility of the research

- Does it include a well thought through working and publication plan?
- Does the proposal include sufficient reasoning why an assistant research fellow or a post doc is asked for?

Estimation regarding staff and material resources

- Is the estimation of the requested staff and material resources reasonable?
- If applicable, are the proposed trips, surveys, and so forth necessary for the research?
- Is the estimation of the total duration of the research reasonable?
- Is the estimation of the various components of the research (literature studies, data collection, analysis, reporting, and so forth) reasonable?

Quality of the applicant and the research group

- Is the staffing of the research group and the institutional environment adequate for performing the research?

Scientific importance

- To what extent and in which manner is the research important from a theoretical, methodological or descriptive perspective?
- Will the research resolve a scientific problem, or **does the research feature scientific aspects in the sense that it formulates a scientific problem in a new manner and thereby brings resolution of the problem nearer?**
- Have the components in question been clearly worked out?

Originality

- Do the choice of problem definition and the approach thereof, and/or the theoretical approach, and/or the methodology deserve to be qualified as original and renewing?
- Are the existing insights from the personal or other disciplines applied in an original manner, or are existing methods applied differently?
- Does the research contribute to methodological renewal in terms of the design that is used, the relationship research and innovation and practice, and the use of new technology as research tool?

Expected scientific output

- Does the research offer interesting scientific perspectives?
- What is the scope and quality of the expected output?
- Has the output been included in a clear plan?

International orientation (optional)

- Does the setup to the proposal demonstrate international orientation, for example through the choice of subject, a comparative approach, embedding or alignment with the theme of a foreign programme, the exchange of researchers or knowledge, or international cooperation?

Programme-related significance

- What is the relevance of the proposed research for the issues set as problems in the programme?
- Does the research relate to multiple themes in the programme and does the integration contribute to greater insight?
- Is there a link between fundamental and applied research?

Practical significance

- Will the results of the proposed research serve a practical interest? If so, which?
- What is the relevance of the research for the questions and issues faced by education professionals in practice (intrinsic practice-focus)
- The interaction between science and practice/policy in all phases of (the setup and implementation of the research) to generate knowledge that can be used in practice.

Dissemination

- Does the proposal address the possibilities and character of the use of the research results and, in this context, the manner in which the research results will be disseminated, and does it address the question in which format and when the research results of the research project can be expected (dissemination plan)?

Criteria for the ANR (France)

The published criteria are not specific to TEL but quite generic for Human Sciences

- 1) Relevance of the project with respect to the call
- 2) Scientific relevance of the project (topic, objectives and aims, approach, expectations...)
 - justification and value (interest) of the topic
 - originality, innovative character with respect to the state of the art
 - theoretical framework
 - clarity of the objectives and of the expected results
 - contribution to the structuring of the scientific community
 - awareness and quality of the state of the art
 - publication and dissemination plan
- 3) Methodology (strategy, approaches, choices for the field experiments, choice of the resources...)
 - clarity and relevance
 - reference to the current state of the art of the methodology (methods, tools, models, theories, ...)
 - relevance of the choice of the field and of the resources
 - modality of the multidisciplinary collaboration (if relevant)
- 4) Scientific competence of the proposers
 - competence of the project leader
 - adequacy of his/her scientific record to the content of the project
 - quality of his/her scientific productions

- capacity to lead a project
 - competence of the teams
 - scientific adequacy to the project content
 - quality of the scientific production
 - quality of the international partnership (if relevant)
 - scientific and technical complementarity of the partners
 - contribution to the structuration of a scientific community to be promoted
- 5) Feasibility (workplan, scheduling, modality of collaboration ...), quality of the construction and the management of the project
- modality of the organisation of the work packages
 - quality of the workplan
 - realism of the the scheduling
- 6) Human resources and financial means
- adequacy of the means to the objectives
 - realism of the requested budget with respect to the objectives (effort, investments, equipments...)
 - quality of the evaluation of the cost by the proposer
 - quality of the composition of the human resources (rate of non-permanent/permanent people, rate of PhDs compared to the overall resources)
 - realism of the allocation among the partners
 - under- or over- estimation of the workload of any partner
- 7) Valorisation (including publication, training, social impact, ethical, economical or environmental impact)

12 Annex 3

12.1 International journals

Learning and Instruction (http://www.earli.org/publications/learning_and_instruction)

The Journal of the European Association for Research on Learning and Instruction (EARLI) is an international, multi-disciplinary journal that provides a platform for the publication of the most advanced high-quality research in the areas of learning, development, instruction and teaching.

The journal welcomes several types of contributions: reports of original empirical investigations, and replications or extensions of important previous work; critical, integrative theoretical and methodological contributions. A preference, however, will be given to empirically-based studies.

The papers may represent a variety of theoretical perspectives and different methodological approaches (quantitative as well as qualitative). They may relate to any age level - from infants to adults - and to a diversity of settings, such as classroom learning in school, learning environments for special educational needs, vocational and industrial training of various kinds, and informal educational settings.

The focus will be on European work in the field. However, contributions from non-European experts as well as non-members of the European Association for Research on Learning and Instruction are encouraged.

The major criteria in the review and the selection process are the importance of the contribution to the area of learning and instruction, as well as its technical quality. The aim of Learning and Instruction is to provide a high quality, peer refereed journal publishing the most advanced research on learning and instruction.

Impact factor of this journal

2005: 1.548

Journal Citation Reports® 2005, published by Thomson Scientific

Educational Research Review

(http://www.elsevier.com/wps/find/journaldescription.cws_home/706817/description)

Educational Research Review is a new international Journal, an official journal of EARLI, aimed at researchers and various agencies interested to review studies in education and instruction at any level. The journal will accept meta-analytic reviews, narrative reviews and best-evidence syntheses.

Diverse types of reviews can be accepted:

- Research reviews: Reviews aimed at comparing research on similar or related topics.
- Theoretical reviews: Reviews able to critically describe the evolution of theories and the way they are understood in different contexts.

- Methodological reviews: Reviews devoted to methods and methodologies used in education.
- Thematic reviews: Reviews based on description of particular areas of the literature, or particular educational approaches or learning models.
- Theoretical contributions - state-of-the-art papers relating issues, comparisons, and analyses to the application of methods and models to the educational process.
- Research critiques - reviews on selected educational topics reflecting implications for the field of education.
- Forum Papers - shorter articles presenting new ideas, or responses to published material stimulating debate, but well founded in the existing literature.
- Instructional techniques - reports on instructional techniques when the use of adequate controls demonstrates the validity of the findings.

International Journal of CSCL (<http://www.ijCSCL.org>) (The most important journal now?)

The International Journal of Computer-Supported Collaborative Learning (ijCSCL) is a new professional journal founded by the International Society of the Learning Sciences (ISLS, <http://isls.org>)

ijCSCL is a high-quality, peer-reviewed academic journal reflecting the interests of the international CSCL community. The first volume appeared in print and online in 2006.

The primary aim of the journal is to promote a deeper understanding of the nature, theory and practice of the uses of computer-supported collaborative learning. A main focus is on how people learn in the context of collaborative activity and how to design the technological settings for collaboration.

The International Journal of Computer-Supported Collaborative Learning is published by Springer, which is recognized worldwide as a leader in scientific and professional publications. The publisher's website for this journal is located at <http://www.springeronline.com/journal/11412>

Journal of the Learning Sciences (<http://www.cc.gatech.edu/lst/jls/>)

An official publication of the International Society of the Learning Sciences
Historically, the Journal of the Learning Sciences has published many important papers, although primarily from North America (hopefully this is gradually changing).

International Journal of Learning Technology (IJLT)

(<http://www.inderscience.com/browse/index.php?journalID=87>)

IJLT is an international, refereed, scholarly journal providing an interdisciplinary forum for the presentation and discussion of important ideas, concepts, and exemplars that can deeply influence the role of learning technologies in learning and instruction. This unique and dynamic journal focuses on the epistemological thrust of learning vis-à-vis instruction and the technologies and tools that support the process. IJLT publishes papers related to theoretical foundations, design and implementation, and effectiveness and impact issues related to learning technologies.

Journal of Computer Assisted Learning (JCAL)

(<http://www.blackwellpublishing.com/journal.asp?ref=0266-4909&site=1>)

The Journal of Computer Assisted Learning is an international peer-reviewed journal which covers the whole range of uses of information and communication technology to support learning and knowledge exchange. It aims to provide a medium for communication between researchers and the practitioners and to foster collaborative research. It is a rich source of material for research students in areas such as collaborative learning, knowledge engineering, open, distance and networked learning, developmental psychology and evaluation. The research themes are treated in a way which will maximize their influence on developments and practice in education, vocational training and professional development.

ISI Journal Citation Reports® Ranking: 2005: 37/98 (Education & Educational Research)
Impact Factor: 0.55

Computers in Human Behavior

(http://www.elsevier.com/wps/find/journaldescription.cws_home/759/description)

Computers in Human Behavior is a scholarly journal dedicated to examining the use of computers from a psychological perspective. Original theoretical works, research reports, literature reviews, software reviews, book reviews and announcements are published. The journal addresses both the use of computers in psychology, psychiatry and related disciplines as well as the psychological impact of computer use on individuals, groups and society. The former category includes articles exploring the use of computers for professional practice, training, research and theory development. The latter category includes articles dealing with the psychological effects of computers on phenomena such as human development, learning, cognition, personality, and social interactions. The journal addresses human interactions with computers, not computers per se. The computer is discussed only as a medium through which human behaviors are shaped and expressed. The primary message of most articles involves information about human behavior. Therefore, professionals with an interest in the psychological aspects of computer use, but with limited knowledge of computers, will find this journal of interest.

Impact factor of this journal

2005: 1.116

Journal Citation Reports® 2005, published by Thomson Scientific

Artificial Intelligence in Education (IJAIED) (<http://aied.inf.ed.ac.uk>)

The International Journal of Artificial Intelligence in Education (IJAIED) is the official journal of the International AIED Society. IJAIED publishes papers and other items concerned with the application of artificial intelligence techniques and concepts to the design of systems to support learning. IJAIED is an archival journal, with a conventional printed version.

IJAIED 'publishes' three kinds of item:

- Peer-reviewed journal papers (with all papers being reviewed by at least three members of the editorial board and specialist reviewers list). Accepted papers are made available on the IJAIED WWW pages as soon as possible and are, in due course, printed in the print version of the journal, published quarterly. The list of published and forthcoming papers is available from the IJAIED Papers link.
- Other referenceable items (such as workshop proceedings, conference reports, invited powerpoint presentations, etc.). These are made available on the IJAIED WWW pages as soon as possible but are not printed in the print version of the journal.

- News items (that is, any item of temporary interest to Society members). These are e-mailed to members and/or linked to from the 'Recent Items' list.

Computers & Education (Elsevier)

(http://www.elsevier.com/wps/find/journaldescription.cws_home/347/description)

Impact factor of this journal

2005: 0.968

Journal Citation Reports® 2005, published by Thomson Scientific

Journal of Science Education and Technology (<http://www.springerlink.com/content/102587/>)

Journal of Science Education and Technology is an interdisciplinary forum for the publication of original peer-reviewed, contributed and invited articles to improve and enhance science education at all levels worldwide. Topics covered can be categorized as disciplinary (biology, chemistry, physics, mathematics, computer science and engineering and the learning processes related to their acquisition and assessment of results), technological (computer, video, audio and print), and Organizational (legislation, administration, implementation and teacher enhancement). Insofar as technology is playing an increasing role both in the understanding and the development of science disciplines and in the delivery of information, the journal includes it as a component of science education. The journal provides a stimulating and informative variety of papers geared toward theory and practice in the hope that common information shared among a broad coalition of individuals and groups involved in science education will facilitate future efforts. In addition to works in the fields mentioned above and case studies of exemplary implementations, the journal publishes reviews of books, videotapes, software and relevant products to help reach our common goal: excellence in science education.

International Journal of Learning Technology (IJLT)

(<http://www.inderscience.com/browse/index.php?journalID=87>)

IJLT is an international, refereed, scholarly journal providing an interdisciplinary forum for the presentation and discussion of important ideas, concepts, and exemplars that can deeply influence the role of learning technologies in learning and instruction. This unique and dynamic journal focuses on the epistemological thrust of learning vis-à-vis instruction and the technologies and tools that support the process. IJLT publishes papers related to theoretical foundations, design and implementation, and effectiveness and impact issues related to learning technologies.

International Journal on E-Learning (IJEL) (Corporate, Government, Healthcare, & Higher Education) (<http://www.aace.org/pubs/ijel/default.htm>)

Advances in technology and the growth of e-learning to provide educators and trainers with unique opportunities to enhance learning and teaching in corporate, government, healthcare, and higher education. IJEL serves as a forum to facilitate the international exchange of information on the current research, development, and practice of e-learning in these sectors.

Led by an Editorial Review Board of leaders in the field of e-Learning, the Journal is designed for the following audiences: researchers, developers, and practitioners in corporate, government, healthcare, and higher education. IJEL is a peer-reviewed journal.

Acceptance rate: The acceptance rate for all AACE journals is 10-19%.

Indexing: All AACE journals are listed in most international citation indexes.

Journal of Technology and Teacher Education (JTATE) (<http://www.aace.org/pubs/jtate/>)

JTATE serves as a forum for the exchange of knowledge about the use of information technology in teacher education. Journal content covers preservice and inservice teacher education, graduate programs in areas such as curriculum and instruction, educational administration, staff development instructional technology, and educational computing. JTATE is the official journal of the Society for Information Technology and Teacher Education (SITE).

The International Journal of Education and Development using Information and Communication Technology (IJEDICT) (<http://ijedict.dec.uwi.edu>)

The International Journal of Education and Development using Information and Communication Technology (IJEDICT) is an e-journal that provides free and open access to all of its content.

IJEDICT aims to strengthen links between research and practice in ICT in education and development in hitherto less developed parts of the world, e.g., developing countries (especially small states), and rural and remote regions of developed countries.

The emphasis is on providing a space for researchers, practitioners and theoreticians to jointly explore ideas using an eclectic mix of research methods and disciplines. It brings together research, action research and case studies in order to assist in the transfer of best practice, the development of policy and the creation of theory. Thus, IJEDICT is of interest to a wide-ranging audience of researchers, policy-makers, practitioners, government officers and other professionals involved in education or development in communities throughout the world.

Research and Practice in Technology Enhanced Learning (RPTEL) in Asia

(<http://www.worldscinet.com/rptel/rptel.shtml>)

The journal Research and Practice in Technology Enhanced Learning commenced publication in 2006. RPTEL is the official journal of the Asia-Pacific Society for Computers in Education (<http://www.apsce.net>). RPTEL is a multidisciplinary refereed journal devoted to disseminating rigorous research on all aspects of the use of technology to enhance learning. The journal seeks to be a catalyst for multidisciplinary dialogue amongst researchers and practitioners worldwide in the fields of learning and cognition, education, and technology, with a view towards improving practice and achieving real-world impact in technology enhanced learning.

The e-Journal of Instructional Science and Technology (e-JIST)

e-JIST is an international peer-reviewed electronic journal. (<http://www.usq.edu.au/e-jist/>)

The Journal is a multi-faceted publication with content likely to be of interest to policy makers, managers, investors, professional staff, technical staff, and academics within education and training.

The editions of e-JIST will adopt an evolutionary style.

In the meantime, the Journal continues to welcome new contributions based on original work of practitioners and researchers with specific focus or implications for the design of instructional materials.

The Scandinavian Journal of Information Systems (SJIS) (<http://www.e-sjis.org>)

The Scandinavian Journal of Information Systems is the journal of the IRIS Association. The roots of the journal can be found in the tradition of annual IRIS conference. The first issue was published in 1989. The IRIS (Information Systems Research in Scandinavia) Association is a non-profit organization aiming to promote research and research education in the use, development and management of information systems in Scandinavia, and making that research known in the international research community and among practitioners. The IRIS Association is the Scandinavian chapter of the Association of Information Systems.

International Instructional Science (<http://www.springerlink.com/content/102905/>)

12.2 National Journals

UK

Association for Learning Technologies Journal (ALT-J) (http://www.alt.ac.uk/alt_j.html)

ALT produces an international, tri-annual, peer-reviewed journal devoted to research and good practice in the use of learning technologies within tertiary education. Members receive ALT-J as part of their subscription, although the format and type of access to the journal may vary according to membership type.

ALT-J is published by the Taylor & Francis Group. From its inception until January 2004 (Issue 11.3) it was published by the The University of Wales Press.

British Journal of Educational Technology (BJET)

(<http://www.blackwellpublishing.com/journal.asp?ref=0007-1013>)

The British Journal of Educational Technology provides readers with the widest possible coverage of developments in educational technology world-wide. BJET is a primary source for academics and professionals in the expanding fields of education, training and information technology. Articles cover the whole range of education and training, concentrating on the theory, applications and development of educational technology and communications. The Colloquium section publishes shorter contributions, summarising work in progress, raising queries, and questioning received wisdom. Published on behalf of the British Educational Communications and Technology Agency (BECTA)

ISI Journal Citation Reports® Ranking: 2005: 33/98 (Education & Educational Research)

Impact Factor: 0.593

Journal of Interactive Media in Education (online only: <http://jime.open.ac.uk>)

JIME offers free access to all articles in HTML and PDF format. You can also comment on each article in its Review Discussion Forum. JIME was launched in September, 1996. Its aims are:

To foster a multidisciplinary and intellectually rigorous debate on the theoretical and practical aspects of interactive media in education. To clarify the cognitive, social and cultural issues raised by the use of interactive media in education. To radically improve teaching and learning through better interactive media. To publish leading international research on the theories,

practices and experiences in the field. To link scholars and commercial practitioners Through its innovative use of interactive Net-based media, to be an action research project which explores the changing face of journals, and more broadly, scholarly practice in the age of digital publishing and communication.

12.3 Key Journals Germany

Zeitschrift für Medienpsychologi

(<http://www.psycontent.com/abstracts/hh/abstracts.php?code=zmp>)

Die "Zeitschrift für Medienpsychologie" ist ein internationales Forum für psychologische Grundlagen- und Anwendungsforschung in allen Bereichen der Individual- und Massenkommunikation und versteht sich als Bindeglied zwischen Wissenschaft und Praxis. Die Zeitschrift bietet Beiträge zu aktuellen methodischen Problemen und Erprobungen, Berichte über Kongresse, Tagungen und Workshops, Forschungsberichte, Interviews mit Wissenschaftlern und Praktikern zu aktuellen anwendungsbezogenen Fragen der Medienpsychologie, Rezensionen zu neueren medienpsychologischen Arbeiten und Aktuelles aus der Fachgruppe. Die "Zeitschrift für Medienpsychologie" ist gelistet in: PsycINFO, PsycLit, PsyJOURNALS, PSYINDEX, IBZ, IBR, e-psyche. Die "Zeitschrift für Medienpsychologie" (ISSN 1617-6383) erscheint seit 1989. Ab Jahrgang 2001 (N.F. 1) bis 2007 erschien die Zeitschrift vierteljährlich im Hogrefe Verlag und wird ab 2008 englischsprachig unter dem Titel "Journal of Media Psychology" fortgeführt.

13 Annex 4

This questionnaire was posted on the SQC website for a period of two weeks, in the form of a hypertext document, where members could add answers cumulatively, with one question per page.

13.1 Questionnaire 1

1 What are the bodies that fund TEL research in your country?

[http://sqc.noe-kaleidoscope.org/meeting1-questionnaire/What are the bodies that fund TEL research in your country](http://sqc.noe-kaleidoscope.org/meeting1-questionnaire/What_are_the_bodies_that_fund_TEL_research_in_your_country)

1.1 What are their published criteria for judging research quality?

[http://sqc.noe-kaleidoscope.org/meeting1-questionnaire/What are their published criteria for judging research quality](http://sqc.noe-kaleidoscope.org/meeting1-questionnaire/What_are_their_published_criteria_for_judging_research_quality)

1.2 Are there criteria you would like to add specifically relating to TEL?

[http://sqc.noe-kaleidoscope.org/meeting1-questionnaire/Are there criteria you would like to add specifically relating to TEL](http://sqc.noe-kaleidoscope.org/meeting1-questionnaire/Are_there_criteria_you_would_like_to_add_specifically_relating_to_TEL)

2 Key journals

[http://sqc.noe-kaleidoscope.org/meeting1-questionnaire/Key journals](http://sqc.noe-kaleidoscope.org/meeting1-questionnaire/Key_journals)

2.1 Current criteria?

[http://sqc.noe-kaleidoscope.org/meeting1-questionnaire/Current criteria](http://sqc.noe-kaleidoscope.org/meeting1-questionnaire/Current_criteria)

2.2 Are there criteria you would like to add specifically relating to TEL?

[http://sqc.noe-kaleidoscope.org/meeting1-questionnaire/Are there criteria you would like to add specifically relating to TEL2](http://sqc.noe-kaleidoscope.org/meeting1-questionnaire/Are_there_criteria_you_would_like_to_add_specifically_relating_to_TEL2)

3 Key conferences

[http://sqc.noe-kaleidoscope.org/meeting1-questionnaire/Key conferences](http://sqc.noe-kaleidoscope.org/meeting1-questionnaire/Key_conferences)

3.1 Current criteria of quality

[http://sqc.noe-kaleidoscope.org/meeting1-questionnaire/Current criteria of quality](http://sqc.noe-kaleidoscope.org/meeting1-questionnaire/Current_criteria_of_quality)

3.2 Are there criteria you would like to add specifically relating to TEL?

[http://sqc.noe-kaleidoscope.org/meeting1-questionnaire/Are there criteria you would like to add specifically relating to TEL3](http://sqc.noe-kaleidoscope.org/meeting1-questionnaire/Are_there_criteria_you_would_like_to_add_specifically_relating_to_TEL3)

4 Important audiences

[http://sqc.noe-kaleidoscope.org/meeting1-questionnaire/Important audiences](http://sqc.noe-kaleidoscope.org/meeting1-questionnaire/Important_audiences)

5 Any further comments you would like to make on this issue?

[http://sqc.noe-kaleidoscope.org/meeting1-questionnaire/Any further comments you would like to make on this issue](http://sqc.noe-kaleidoscope.org/meeting1-questionnaire/Any_further_comments_you_would_like_to_make_on_this_issue)

13.2 Questionnaire 2

Dear xxxx

The aim of this collective questionnaire is to take forward the second major task of our Committee: to propose options for the criteria and processes for the TeLearn open archive.

TeLearn is the first international open archive dedicated to research in the field of technology enhanced learning. It accepts research papers and videos, in any language. For more information, visit TeLearn at <http://telearn.noe-kaleidoscope.org/>.

By setting up the questionnaire within email, we hope to make it as simple as possible for you to send back your comments and ideas. Your comments will contain further ideas and suggestions that will be put to the Committee again in a short follow-up questionnaire.

Please let us know if anything is not clear.

We would like your responses **by 15 October** if possible - this should only take a few minutes of your time.

The Background, at European level, to this stage of our work is detailed after the Questionnaire.

Questionnaire

First hit Reply - so that you can edit the Questionnaire and return it to us.

For each question please delete either Yes or No, and add a comment if you wish to explain your answer. Your comments will form the ideas to be tested in the next and final version of the Questionnaire, and will also be used anonymously in the text of the report summarising our recommendations.

1. Criteria for the inclusion of publications and papers in the TeLearn repository

Only peer reviewed journals and conference proceedings should be invited to submit papers **Yes / No**

Comment:

Journal publications with high impact factors should be accorded highest priority **Yes / No**

Comment:

The current conference proceedings available in TeLearn are listed at the end of this email. The Scientific Quality Committee identified the following conference proceedings to be added to the archive. Do you agree?

- CSCL Yes / No

Comment:

- Online Educa Yes / No

Comment:

- EdMedia Yes / No

Comment:

- ASCILITE Yes / No

Comment:

- AIED Yes / No

Comment:

- ITS Yes / No

Comment:

- Learning Sciences Yes / No

Comment:

- ICALT Yes / No

Comment:

- EARLI Yes / No

Comment:

- IEEE Yes / No

Comment:

- Ec-TeL Yes / No

Comment:

- Tec Yes / No

Comment:

Books, edited books, and book chapters should be included from all publishers who agree to make the material available in open archives within at least one year of publication **Yes / No**

Comment:

Government documents should be included only if they are published by government offices, e.g. position papers for Government conferences, white papers, official reports, policy documents, discussion papers **Yes / No**

Comment:

Research reports from funded EU and national research programmes **Yes / No**

Comment:

PhD theses made available by University libraries **Yes / No**

Comment:

Databases of research results made available from national research data archives **Yes / No**

Comment:

Open source tools, software, learning objects and learning designs, developed within research programmes where evaluation data is also available **Yes**

Comment:

Please suggest any other types of document and criteria not already covered:

2. Quality assurance mechanisms for the archive

Given the level of peer review already available in research and publications in the academic field, we recommend that TeLearn does not set up its own peer review process, but sets its criteria for inclusion in terms of the peer review processes of other organisations and publication mechanisms, as listed above **Yes / No**

Comment:

3. Maintaining the TeLearn Open Archive

The Kaleidoscope Scientific Quality Committee should set up an international editorial board to advise the TeLearn team **Yes / No** **Comment:**

The Editorial Board would decide:

- which journals, conferences and societies should be integrated with the open archive **Yes / No**

Comment:

- the main conferences, journals and societies that should be invited to make their publications available in TeLearn **Yes / No**

Comment:

- which university libraries should be affiliated to the TeLearn archive, for a mutually beneficial collaboration on the availability of their documents **Yes / No**

Comment:

- the categories, metadata and search mechanisms to be undertaken **Yes / No**

Comment:

- how to optimize Google searches to link to TeLearn **Yes / No**

Comment:

The Editorial Board would conduct their business in a mainly virtual environment, meeting only occasionally to establish and update the fundamental principles of the archive **Yes / No**

Comment:

Please add any further comments you have on the criteria and documents for inclusion in TeLearn:

Thank you very much for your help.

14 Background

The Kaleidoscope Network shares the view of the Scientific Council of the ERC (European Research Council) on

- the need for open archives and the dissemination of high-quality scientific research
- the fundamental importance of peer-reviewed journals in ensuring the certification and dissemination of high-quality scientific research and in guiding appropriate allocation of research funds
- policies towards access to scientific research must guarantee the ability of the system to continue to deliver high-quality certification services
- policies to mandate the public availability of research results in open access repositories – ideally within 6 months, and in any case no later than 12 months after publication

The ERC Scientific Council will issue specific guidelines for the mandatory deposit in open access repositories of research results – that is, publications, data and primary materials – obtained thanks to ERC grants, as soon as pertinent repositories become operational.

The ERC Scientific Council encourages research funders across Europe to join forces in establishing common open-access rules and in building European open access repositories that will help make these rules operational.

In the light of this European perspective on open research, the Kaleidoscope Scientific Quality Committee is responsible for recommending the quality criteria for the TeLearn Open Archive.

15 Conference proceedings currently available in TeLearn

AIED proceedings. : International Conference on Artificial Intelligence in Education - 8th (1997), 9th (AIED 1999), 11th (AIED 2003), 12th (AIED 2005)

CERME proceedings : Proceedings of the Congress of the European Society for Research in Mathematics Education - CERME 2 (2001), CERME 3 (2003), CERME 4 (2005), CERME 5 (2007)

Conférence EIAH : Conférence "Environnements Informatiques pour l'Apprentissage Humain" - EIAH 2003, EIAH 2005, EIAH 2007

ELeGI conference : International ELeGI - European Learning Grid Infrastructure - Conference on Advanced Technology for Enhanced Learning - 1st (2005)

International LeGE-WG Workshop : International Learning Grid of Excellence Working Group - 1st (2002), 2nd (2003), 3rd (2003), 4th (2004)

Joint meeting of the EARLI SIGs : Joint meeting of the EARLI SIGs "Instructional Design" and "Learning and Instruction with Computers" - 1st (2004)

Networked Learning conference : International Conference on Networked Learning - 3rd (NL-2002), 4th (NL-2004), 5th (NL-2006)