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Educational Research in Estonia 2007-2011

Evaluation Report 2/2013



Eesti Teadusagentuur
Estonian Research Council



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EDUCATIONAL RESEARCH IN ESTONIA 2007-2011

Evaluation Panel:

Professor David James (chair)
Professor emeritus Erik De Corte
Dr Judith Harford
Professor Pavel Zgaga

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Preface

The Estonian Ministry of Education and Research commissioned in 2012 an international evaluation of educational research in Estonia. The evaluation was carried out in cooperation with the Estonian Research Council, Estonian Academy of Sciences, Estonian Higher Education Quality Agency, PRAXIS Center for Policy Studies and Estonian Union of Parents.

The goal set for the international evaluation by the Steering Committee was to assess the research quality, the significance of Educational research to Estonian society and training of young researchers. The institutional assessments involved four public universities: Estonian Academy of Music and Theatre, Tallinn University, Tallinn University of Technology and University of Tartu.

Assessments and recommendations both at the level of the research system as well as at the institutional level should be taken as scientific advice on how to further improve and strengthen the research lines and research environments for the future.

The international expert panel for evaluating the educational research was chaired by Professor David James from the Cardiff University. On behalf of the Steering Committee I would like to thank all panel members for their willingness to take on the task, and their professional and solid work throughout the evaluation process.

Jüri Allik, Chairman of the Steering Committee

Tartu, February 2013

Introduction

Background and objectives

Evaluations of disciplines and research fields are an important research and science policy tool in order to provide information to the research community and research funding organisations. The results of these evaluations serve as an input for preparing the research policy decisions and measures pertaining to the educational research, for the further development of the field and for the preparation of development plans.

The Estonian Ministry of Education and Research decided to commission an international evaluation of the Educational Research in Estonia (Appendix 1), including basic and applied research. The evaluation was performed by an international expert panel including Professor David James (chairman, Cardiff University), Professor Erik De Corte (University of Leuven), Professor Pavel Zgaga (University of Ljubljana) and Dr Judith Harford (University College Dublin). The panel convened from November 18–23, 2012 and this assessment is based on site visits and interviews with management, research staff and PhD students from institutions being evaluated and on self-assessment reports and background material provided by each institution. In addition to the pre-collected assessment material, the evaluation panel received additional information during unit hearings.

The evaluation covered Educational Research in Tallinn University, University of Tartu, Tallinn University of Technology, Estonian Academy of Music and Theatre. In last two institutions, only a minor part of its activities are devoted to Educational Research. The panel considered research quality, research environment including infrastructure and funding, training of young researchers and research impact in the evaluation process. The expectation of the evaluation outcome is to provide assessments and recommendations to the institution level and to the research system of Estonian educational research.

Estonian R&D system

Estonia is one of the leading countries in the European Union in terms of annual growth of R&D expenditures (in average 25% per year in 2000-2011). In total, Estonian R&D employs 4,500 people (FTE); R&D funding is about € 385 million (in 2011) which equals to 2.4% of GDP. The main financing body for research is Ministry of Education and Research. Its funding goes primarily to scientific research at universities and research institutes. Private sector's proportion of R&D funding in Estonia was ~63% in 2011.

A general remark

Estonian R&D system has been changed in 2012 as new institution - Estonian Research Council (ERC) - was established.

ERC was established on the 1st of March 2012 on the basis of Estonian Science Foundation and Estonian Scientific Competence Council and with combination with a unit of Archimedes Foundation, Research Cooperation Centre, with main goal to create one single research financing institution.

As this evaluation covers period till 2011 the previous system has been described here and used as frame in evaluation process.

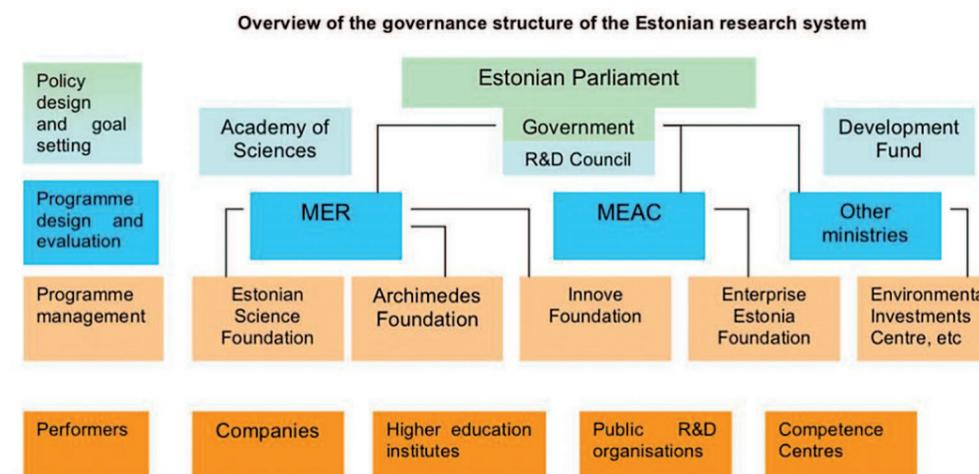


Figure 1. Overview of the governance structure of the Estonian research system (2011).¹

The *Organisation of Research and Development Act* sets the structure and functioning of the Estonian R&D system as follows:

Policy and decision makers are the Parliament (*Riigikogu*) and Government of the Republic. The Government establishes national R&D plans, submits them to Parliament, approves national R&D programmes, ensures cooperation between ministries and enacts legislation. The Research and Development Council provides consultation to the Government on the matters of R&D. The Estonian Development Fund organises foresight activities in Estonia, required for assuring sustainable economic development. Estonian Academy of Sciences provides independent and highly professional scientific expertise and science-policy advice.

Programme design and evaluation. Policy preparation and managing organisations are the ministries. The key ministries are the Ministry of Education and Research (MER) advised by the Research Policy Committee, and the Ministry of Economic Affairs and Communication (MEAC) advised by the Innovation Policy Committee. These two ministries are responsible for nearly all research funding streams and horizontal policies. Other ministries play a minor, but still important, role by providing support to sectorial research and governmental research organisations. For example, the Ministry of Agriculture has three thematic R&D programs with appropriations also to plant and soil science.

Programme management. Main financing and supporting organisations of research are the MER (advised by the Estonian Scientific Competence Council), Estonian Science Foundation and Archimedes Foundation. The development and innovation activities are supported mainly by MEAC through Enterprise Estonia.

R&D performing organisations are universities and other public and private R&D institutions. There are 18 R&D institutions in Estonia that passed the regular research evaluation in 2010. Six of them are public universities, largest of which is the University of Tartu which accounts for more than 50% of Estonian research papers and citations and educates ~60% of new PhD-s. The largest state research organizations are Estonian Biocentre, Tartu Observatory, Estonian Literary Museum and the Institute of Estonian Language. There are also some public independent R&D institutions that perform high level research, i.e. the National Institute of Chemical Physics and Biophysics. Today nearly all basic research is conducted in the public sector; the private sector focuses mainly on product development and innovation.

¹ Estonian R&D system has been changed in 2012 as new institution - Estonian Research Council - was established on the 1st of March 2012 on the basis of Estonian Science Foundation and Estonian Scientific Competence Council and with combination with a unit of Archimedes Foundation, Research Cooperation Centre. As this evaluation covers period till 2011 the previous system has been described here and used as frame in evaluation process.

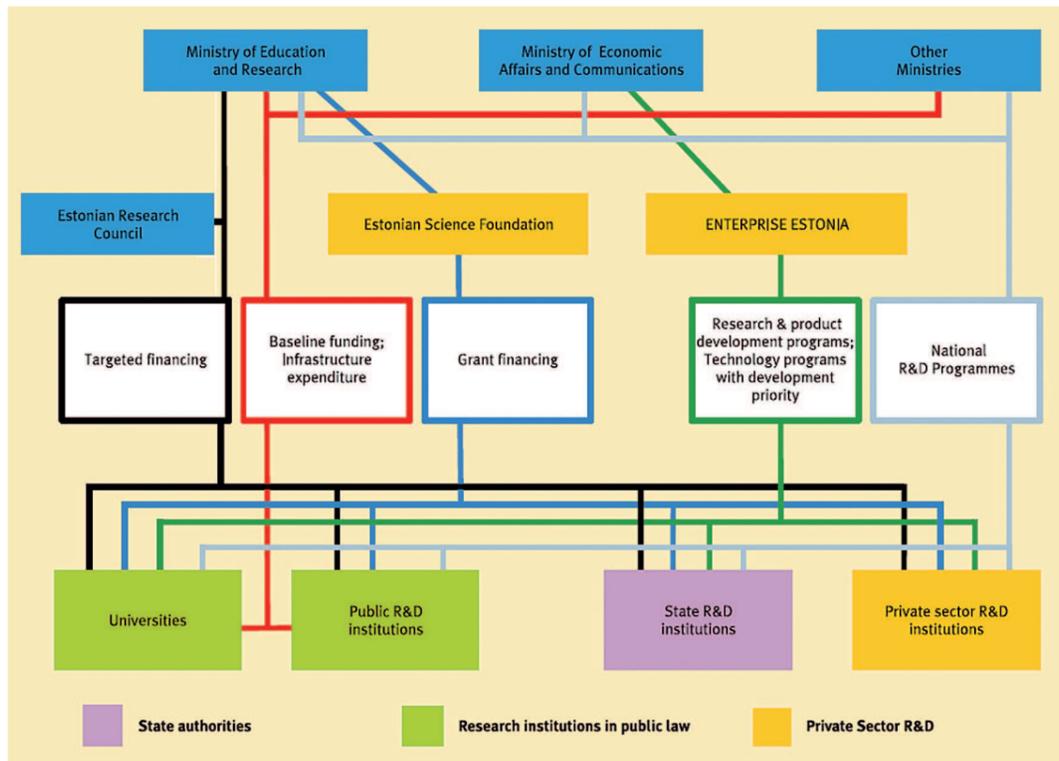


Figure 2. Estonian R&D funding system (2011).²

The biggest regular public funding stream for R&D institutions is **targeted financing** (€ 23 million in 2011) financed by MER. The Estonian Science Foundation allocates about € 8.3 million in 2011 in relatively small grants to curiosity driven research. Various national R&D programmes provide support for research in specific research areas.

² Estonian R&D system has been changed in 2012 as new institution - Estonian Research Council - was established on the 1st of March 2012 on the basis of Estonian Science Foundation and Estonian Scientific Competence Council and with combination with a unit of Archimedes Foundation, Research Cooperation Centre. As this evaluation covers period till 2011 the previous system has been described here and used as frame in evaluation process.

Educational system in Estonia

The organisation and principles of the education system are prescribed in the Education Act of the Republic of Estonia. The levels of education are preschool education, general education, which is divided into 9-year basic education and secondary education (which is divided into general secondary education and vocational secondary education) and higher education.

Table 1. Number of educational institutions and students in Estonia in academic year 2011/2012.

Level of education	Number of educational institutions	Number of children/students
Pre-school education	643	66 000
General education	556	136 000
Vocational education	42	27 000
Higher education	30	67 600

School attendance is compulsory for children who become seven by 1st October of the current year. Before this age, children usually acquire preschool education in kindergarten. Compulsory school attendance lasts until the child has acquired a basic education or has turned 17.

In the 2009/10 academic year, there were 8 500 teachers in pre-school childcare institutions and only 0.3% of them were male. Total of 14 700 teachers worked in general education schools (including adult upper secondary schools), and 14.3% of them were male teachers. Vocational educational institutions employ 2 200 teachers, of whom 35% are men. Approximately 2 600 teachers worked in hobby schools.

In recent years, Estonia has invested 13-14% of total public expenditure on education. In 2009, the amount was 831 million euro, which comprised of 13% of total public expenditure. More than half of the public expenditure on education is comprised of general education expenditure (53%), vocational education expenditure comprises 12% and higher education expenditure has reached 21%. Rest of public expenditure (14%) cannot be divided between different levels of education and are categorized as other costs.

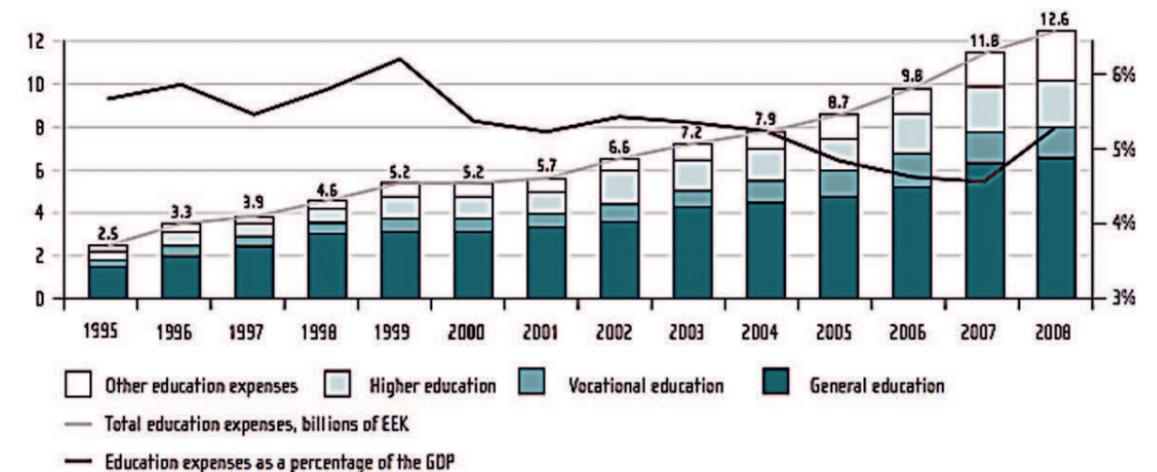


Figure 3. Public expenditure on education by level of education (in millions of euro) and the percentage of GDP (%), the change per year.

Unit Assessments

Estonian Academy of Music and Theatre (EAMT)

The Nature and Scientific Quality of Research

Within the EAMT, the nature of research (in general) is slightly different from other institutions observed in this review: on one hand, it relates predominantly to humanities and arts and supports the main fields of education (music, drama); on the other hand, the very semantics of the research in this field (i.e., humanities and arts) differs from other fields (sciences, social sciences, etc.). In this setting, educational research is conducted predominantly to support teaching and learning, and is in this sense vital to the mission of the institution. Such research is often highly focused on narrow and specialized concerns, which in turn limits the role and profile that the research might have at national and international levels, where educational research often has a broader and more interdisciplinary context.

Data provided by the institution on published work in categories 1.1 and 1.2 show a level of educational research publication that appears normal for a conservatoire or music academy but weak in relation to Universities in Estonia and internationally. The Evaluation Panel's view is that to change this would require more strategic and immediate attention. The senior management team is aware of this situation, and the presence of a new visiting professor can be expected to make a substantial contribution in this respect in the coming years. There is also an intention to nurture a more interdisciplinary approach through the involvement of external expertise in domains like psychology, educational sciences and research methodologies, and this also promises to enhance the quality and volume of both research and publication. Practically all research activity was within the music education context rather than in the field of drama.

Research Strategy, Culture, Environment and Organization

Following the departure of a professorial member of staff around a year ago, the institution's educational research strategy is in a period of reformulation, under the leadership of a recently-appointed part-time visiting professor. There is continuity with an earlier focus on music identity, though with a different theoretical approach and a more empirical emphasis. A research focus group now meets regularly to share ideas and formulate plans. The Evaluation Panel considers this as a promising development for the future of research in the institution. EAMT scholarship also includes work on the history of music education, and practical music didactics. Currently there is no research underway in the field of teacher education, but the issue is under discussion in collaboration with the Department of Teacher Education of the University of Helsinki: This should yield further research capacity and output.

The Panel did not find evidence of a well-developed research strategy, though the intention to build one was clearly present. At around 25, the proportion of staff holding a PhD had more than doubled in the last 10 years. It remains relatively low compared to universities, but the Panel recognised that the pattern of professional backgrounds and accomplishments of staff in institutions of this kind are not the same as they are in a university department. The number of staff directly involved in educational research of one sort or another is proportionately low, at around 9 people.

Funding for educational research is a relatively small proportion of the institution's activities. The period 2007-11 included project funding amounting to around 500k Euros, of which some 71k Euros was focused on Educational Science. The annual budget of EAMT is around 4.5million Euros.

EAMT is housed in high quality buildings and there are plans to further extend and develop these. Whilst it appeared in most respects excellent, the library facilities included relatively few texts on educational research methods and methodology. There was however good access to such texts in other libraries nearby and through electronic means.

In terms of international collaboration the EAMT participates actively in music education networks such as the International Society for Music Education and the European Association for Music in Schools. Although the Academy is also actively looking for opportunities to participate in international research projects, there is currently no international cooperation in the domain of educational research. On the other hand the institution is very actively involved in music education conferences.

Around 10% of the registered students at EAMT are international students, though these are all following artistic programmes (such as performance and composition). There are currently no international students in music education programmes. The Evaluation Panel heard that language was the main issue, given the nature of the academic demands in such programmes, and that it would be uneconomical to run parts of the programme as parallel Estonian and English pathways. The Panel does however encourage further exploration of this issue and of the potential for educational research collaborations. The currently high level of exchange activity in the framework of the ERASMUS programme was noted.

Doctoral Education and Training

A doctoral programme in Music Pedagogy existed at the EAMT from 2005 until 2011 when it was closed due to insufficient academic resources. Within this period there were 7 PhDs accepted and registered (i.e., on average one per year) though none of these were completed and defended at EAMT. Six of the students moved registration to Tallinn University with their supervisor, whilst the seventh is planning to resume studies at EAMT following a period of maternity leave.

The EAMT can provide an excellent "arts laboratory" for educational research. However, the view of the Evaluation Panel is that a doctoral programme in any field of Educational Sciences should be underpinned by a critical mass of relevant research activity. For this reason, any re-establishment of a doctoral programme in this field at EAMT should be developed jointly with another national or international institution with established breadth and depth to its educational research.

The Research –Teaching Relationship

The Evaluation Panel gained a clear impression of the underpinning of teaching and learning by experienced performers and other forms of professional practice. However, evidence of a continuous research underpinning for teaching or the development of programmes was much less apparent. It appears that a very small number of the teaching staff have research obligations. This needs to be re-examined with a view to establishing a more strategic connection between research and teaching. This could be done *via* the introduction of a workload model or further strategies to incentivise research for individuals or groups. Consideration could also be given to inviting more scholars with a track record in research to contribute to programmes.

Interaction between Research and Society

The institution has a close connection with a wide field of practice through its role in the education of music teachers, and a clear articulation of the role of music in relation to social cohesion. There are strong links with, amongst others, the Estonian Choral Society and many staff are engaged in community-facing activities, with some student work (e.g. Masters students research) supporting this connection and investigating issues that are rooted in educational practice. However, across staff and doctoral research the Panel did not see evidence of strong contemporary educational research that was driven by needs or challenges in the field of music or drama education or which could have a direct impact on policy and practice. Developing this in respect of music was a firm part of the work of a recently-appointed visiting professor who was coordinating the development of a new strategy, and was well articulated as an ambition in the self-assessment report.

Recommendations

The Panel recommends that the EAMT:

- Develops more rapidly a clear strategy for educational research. This may entail the identification of key research themes and/or research clusters, and/or clearer internal leadership for research and the establishment of a research committee;
- Aims to build up a substantial critical mass in educational research by attempting to expand the numbers of research active staff and through acquiring more funding;
- Develops its national and international cooperation with other institutions carrying out educational research in a broader spectrum;
- Further strengthens its research in the field of music pedagogy to underpin its core institutional identity and mission;
- Considers development of a research strategy in the field of drama pedagogy;
- Explores options for a close collaborative arrangement with another institution in respect of doctoral studies in music pedagogy and related fields;
- Considers appointing further senior scholars in a permanent capacity who can lead the research strategy of the EAMT at this critical juncture.

Tallinn University

The Nature and Scientific Quality of Research

Educational research at Tallinn University includes a broad spectrum of areas and topics ranging from the development of individuals, curriculum studies and special didactics, digital and lifelong learning, to teacher education and teachers' professional development, the history of education, and health and sports. These areas differ in how developed they are, and not all are operating at a level where they contribute to contemporary international debate. However, there is plenty of evidence that the University has made good progress during the evaluation review period and that it continues to prioritize and support the research in these areas and topics. Based on the data supplied in self-assessment reports and during the site visit, the Panel thought especially notable the high quality, originality and international significance of the publications emanating from the Centre for Educational Technology which is based in the Institute of Informatics and the high potential significance of the longitudinal developmental study based in the Institute of Psychology.

Research Strategy, Culture, Environment and Organization

There is evidence of a strong research culture at the university, both in terms of research funding and publications and within this a significant rise in high impact publications over recent years. The performance based system in place as well as the attraction of a number of high profile international academics should both contribute to this pattern on a sustained basis. The university has done well to play host to a number of international conferences.

Tallinn University is a young institution with a clear aim to strengthen and improve its research performance. Education is one of the six broad domains under which the University conceives and organises its teaching and research activities, and indeed a Pedagogical University was the largest of the component institutions in its relatively recent formation. Educational research takes place within up to 12 'Institutes', but in practice most of it is located in around half of these. Projects often cross between Institutes and there is evidence that the Institutes' collaboration has brought some positive results. There is also major research collaboration with the University of Tartu.

The range of areas and topics of educational research, mentioned in the previous section, is quite wide and it reflects recent institutional inheritance. Whilst this breadth is impressive, the Evaluation Panel recommends a focus on greater *depth* in the next few years. This process might seek to increase the proportion of educational research that is located in international debates, and which incorporates critical theories and research methods.

During the reviewed period, the institution was implementing its Research and Development Strategy 2007-2011 and within the recently adopted new strategy for the period from 2012 to 2016 it has defined three strategic research fields and pointed to some other areas in which it intends to achieve further significant advance ("break-throughs") in the following years. The strategy appeared to the Evaluation Panel to be both ambitious and feasible.

The primary strategic objectives of the past years were: forming larger research groups with participants from multiple Institutes, increasing the effectiveness of doctoral programmes, and increasing the number of publications in international journals. For the next period (2012-2016) the priorities are: increasing the share of R&D; increasing and diversifying knowledge transfer; increasing the R&D financial resources. The strategy also specifies the three strategic research fields mentioned above, namely: personal and academic development of individuals (strongly inclined towards basic research), digital learning ecosystems, and changes in education and lifelong learning (both more inclined towards applied research).

Based on the self-assessment report and the meeting during the site visit, the Evaluation Panel has the impression that, notwithstanding the first strategic objective mentioned above, educational research at Tallinn University still appears rather fragmented. Indeed, besides the Institute of Education a large number of other Institutes are involved to some degree in educational research, but without much interconnection. It is important to note that the

University is already aware of this situation. Indeed, one of the major challenges put forward in the self-assessment report is the creation of an organizational structure to reduce fragmentation. In this respect the Evaluation Panel considers the recent creation of the Centre for Educational Innovation, supported by EU funds, to be a positive development: the Centre may also facilitate bidding for research funding, involving more international scholars in collaborative work, and achieving a further increase in high-profile publications.

As far as internationalization is concerned, Tallinn University has already acquired a fairly good record. For instance, the Panel was informed that it is a participant in EU framework programmes (FP 6 and FP 7). However, whilst there are notable exceptions (e.g. collaboration with Brazil, and some visiting researchers from USA and France), the majority of the international collaboration and networks is at the regional (Baltic and Nordic) level, in fields including teacher education, mathematics education, early childhood education, curriculum studies, and educational technology. The Panel noted a strong impetus for international links in the research culture (for example, doctoral students are strongly encouraged to spend one semester in a university abroad and to apply for grants to do so; the number of international co-supervisors is increasing; the strategic research area of digital learning ecosystems attract international postdocs).

For 2011, educational research is valued at 1.77 million Euros: The total R&D is 5.5million and the total institutional budget is 26.2 million. Educational research appeared to be well supported by library and information services and to be located in good quality facilities, some of which were undergoing further refurbishment.

Doctoral Education and Training

The Evaluation Panel saw evidence of integration and coherence between educational research strengths and doctoral studies. Altogether, there are 14 doctoral programmes in 5 areas at the University. Doctoral studies in the reviewed area are organized within the School of Doctoral Studies of Educational Sciences (as a sub-unit to the Institute of Educational Sciences) while the studies in “core subjects” are organized by academic departments. The doctoral programme which is central to the field considered in this report is Educational Sciences; however, doctoral theses with a direct relevance for this field have been performed also within other programmes such as the Information Society Technologies programme within the Mathematics and Natural Sciences area. However, there is evidence of cooperation between and across areas and programmes. During a conversation with doctoral students coming from four different Institutes the Panel found that the doctoral School offers students a good opportunity to make useful contacts across fields and areas and to broaden their research horizons.

During the observed period, on average there have been about 5 defences per year (24 altogether). Whilst this is an acceptable level of completion, the Panel’s view is that the University should aim at higher figures in future. One reason for this is the age profile of staff in the University: At the current rate Doctoral completions will make an insufficient contribution to University staff renewal. In general, theses have an explicit relevance within the educational sciences field. Interviews with staff and stakeholders also showed that there are needs for new graduates to be employed both in the higher education sector (and this looks preferable from the candidates’ point of view) as well as from the public sector (e.g. the Ministry of Education & Research and/or related public agencies). No indication was found that new PhDs find employment outside these two sectors.

Most doctoral students study on a full-time basis. In a conversation with them they stated that 4 years of study are “hard but manageable”. Almost all students have to work in paid employment alongside their doctoral studies. The Panel’s view is that the combination of doctoral study and paid employment could work well where students were working in an educational setting (e.g. at the university, or in schools) and there was often a productive affinity between the two worlds. This appeared to be the case with many of the students met by the Panel.

The Panel had no opportunity to meet students who were taking significantly more than four years to complete, but the clear impression from students and staff is that such cases are mainly attributable to factors like parenting or a major change in personal circumstances.

At its site visits, the Panel was also informed about the “Doctoral pre-school”: before submitting their applications, candidates have an opportunity to visit the University and to talk to their potential supervisors about their research plans and topics. This is identified as a case of good practice. In interviews with the Panel, students confirmed that they receive the expected support from supervisors – both in general and in the process of drafting their research papers.

It is particularly important that in addition to the “local” University Doctoral School a wider and internationally oriented Doctoral School has been created in cooperation with the University of Tartu and the Helsinki University (Finland) which operates in summer courses. This provides an important means by which the institution can enhance the research environment which is crucial for advanced doctoral training.

All the students whom the Panel met already had some international experience, though most visits undertaken were quite short, and this point led the Panel to one of its recommendations (see below).

Between 2007 and 2011, three Tallinn University staff defended their theses abroad and this can also be assessed as a case of good practice (not least for its contribution to consolidating research links and to broadening research culture).

The Research-Teaching Relationship

The University Act requires that all Professors and Associate Professors (Docents) carry out research. The Evaluation Panel found that staff themselves recognise and welcome this. The Panel also saw evidence that teaching was research-led. The Panel welcomed the initiative within the Institute of Educational Sciences to undertake research on the development of academic identities and applauded the way in which this particular initiative is used as a mechanism for supporting academics in their professional formation. The Panel felt that there was likely to be scope for other research-based initiatives to have a positive influence on the wider university.

Interaction between Research and Society

The Panel saw evidence of close relationships with the Ministry of Education & Research, with schools, teacher trade unions and groups of educational professionals. Research includes a project on ICT with small children and another on professionalism of teachers across countries, and there was evidence that an international project on school engagement had, amongst other things, led to some highly practical knowledge about reading in Estonia and Finland. Staff are hosting and organising the next conference of the European Early Childhood Education Research Association which will take place in August 2013. Work with the Ministry included collaboration on PISA analysis and with OECD on TALIS. Further research grew from these engagements, including some on perceptions of the natural sciences amongst Gymnasium School students.

Work on digital learning has included the research-based development of specific virtual learning environments for different purposes and phases of education, some of which are very widely used. The head of the Centre for Educational Technology chairs a working group for the development of the ICT subject area in the frames of national curriculum, and other academic staff had contributed to similar processes.

Educational research and high quality publications in the field of teacher professionalism had had significant impact on the Estonian induction programme for new teachers and on the framework for teacher competences, as well as upon programmes within the University. In the field of Lifelong Learning researchers had contributed to national Human Development reports as well as being involved in formal and informal discussions/Forums. There were also other examples of significant impact of educational or education-related research. In sum, the Panel’s view is that educational research at Tallinn University has a good level of impact, owing both to its quality and to a series of established relationships with a range of agencies, which appear to be attuned to what it can offer.

Recommendations

The Panel recommends that Tallinn University:

- Accelerates the creation of larger interdisciplinary research teams through the mechanism of the new Centre for Educational Innovation;
- Attempts to further increase the number of international publications in high-quality journals, for example through developing a more explicit policy and internal support mechanisms;
- Broadens the base of international collaborative research;
- Seeks to further secure its international profile through such mechanisms as increasing the representation of staff across the membership of editorial boards of international journals;
- Gives careful consideration to the establishment of a head of Research and/or a Research Committee to promote focus and coherence in educational research;
- Seeks out means whereby doctoral students can have more substantial visits abroad to universities which are particularly respected for their educational research (e.g. within the EU programmes like Marie Curie etc.)

Tallinn University of Technology

The Nature and Scientific Quality of Research

The self-assessment report stated that educational sciences, including engineering education, were a priority area for this University. In the list of key fields of the university in research and development given on Page 9 of the same report, educational research is not mentioned. The University does list social sciences as a key field, and educational research is internally considered to fall within this. The University also sees educational research as a dimension of all its other key fields of research and development. On the basis of the self-assessment report and the visit to the institution it has become clear to the Evaluation Panel that educational research in this institution is: (a) applied in nature; (b) aimed at contributing to curriculum development; (c) aimed at contributing to the improvement of teaching and teacher education. The Panel appreciated that these features were in keeping with international developments in engineering education under the auspices of IGIP, the International Society for Engineering Education, and see them as commendable. However, work with these features is perhaps more accurately described as “internal R&D to support core activities” than as “educational research” as that term is widely understood in an international context. Against that benchmark, the activity presented to the Panel as educational research appeared fragmented, largely unconnected to theory, and lacking in a coherent focus and strategy.

The Self-Assessment Report listed a number of research areas or themes, namely pedagogy and didactics, special didactics, technical teacher education, adult education and permanent education, and computer-assisted education. Whilst all these themes do appear at some point in the publications, none of them constitutes a coherent heading for a body of work, either in groups of publications or in the make-up of research funding. The total number of published papers was impressive, though few contained strong links to educational research literature and even fewer engaged in a critical way with concepts of teaching, learning, curriculum, assessment, pedagogy and so forth. This led the Panel to conclude that overall the publication record in *educational* research was weak. At the same time, the research outputs in the fields of technical sciences appeared very strong, and several of these had clear *relevance* for educational practices.

Research Strategy, Culture, Environment and Organization

Since 2001, educational research at Tallinn University of Technology has been coordinated by the Estonian Centre for Engineering Pedagogy (ECEP). This Centre continues the work of the previous Centre for Educational Research founded in 1977. University leaders informed the Panel of a long-standing participation in international collaboration in the field of engineering education with international organizations such as the IGIP.

Further to this, a number of other types of educational research were clear contenders for development. These include research with mainstream schools and within teacher education (neither of which were currently addressed in recent publications from the 1.1-1.3 categories, although teacher education is identified in the Self-Assessment Report as ‘a new developing area’). There are clear research possibilities regarding the education of ‘technical teachers’. The University has a collaborative programme with the Technical Universities in Bratislava in Slovakia and Prague in the Czech Republic. Furthermore, it has international contacts with similar institutions in the Baltic region, the Nordic countries (especially Finland and Sweden), and in Silicon Valley, California. However, the Panel did not see evidence of substantial, long-term exchange of students and staff in the field of educational research.

The Self-Assessment Report estimates that in financial terms, educational research constitutes less than 1% of the institution’s research.

Doctoral Education and Training

In a strict sense, there is no doctoral study programme in *educational sciences* at this institution; doctoral studies and research training in this field are provided through the Centre for Engineering Pedagogy. Throughout the reviewed period, the number of doctoral students has been relatively large, but the prevailing trend of their dissertations has been within the so-called STEM fields and not educational sciences. The Self-Assessment Report states that up to now, only one doctoral thesis has been defended in the field of engineering education and the Panel noted that two others, which may be similarly classified, are now close to completion. There are also some ten candidates in progress. The Panel's assessment is that this profile is less than would be required for a critical mass. In this institution, doctoral studies related to the field of educational sciences appear positioned as a sub-area of the STEM field: while this is the case, such studies as they are currently positioned are unlikely to gain a distinct identity. Having said this, the Panel has no doubts concerning the importance and relevance of doctoral graduates' contributions to the improvement of teaching and learning at the University and in Estonian schools.

TUT is the leading national institution in the field of engineering research, and the Panel had no doubt that it provides an excellent research environment in engineering, strengthened by international links such as those with Slovakia and the Czech Republic. However, the Panel was not convinced that there was currently a sufficient basis in research for a doctoral programme identified as educational sciences as that field is recognised internationally. The Panel appreciated that the University has a more specific aim that sees engineering pedagogy science as a field in its own right, distinct from educational sciences, to be developed with the support of IGIP and IEEE with the aim of improving the quality of education in STEM subjects.

Engineering education is an interdisciplinary field that combines engineering research on one side and educational research on the other. The Panel's impression was that the former has dominated during the observed period and that important dimensions of educational research – especially the more theoretical and critical elements - remain underdeveloped. A number of projects have been running with a direct or indirect relevance for education (i.e., development of subject specific didactics; development of teaching and learning aids/media, development of technological aids and solutions, etc.) but not necessarily with a direct relevance to the most pronounced issues discussed within the contemporary educational research field (e.g., theories of teaching and learning, the curriculum, assessment, equity and inclusion, education for people with additional needs, vulnerable social groups, etc.).

These broader dimensions have a growing importance in contemporary doctoral programmes and research training in the field of educational research, and a strong doctoral programme needs a clear relationship to them.

The Research-Teaching Relationship

There is a clear link between the research undertaken and the teaching at the university, though the Panel found this to be less evident with regard to educational research. Whilst it was reported in the site visit that there is a mentoring programme for staff, this did not appear to be research-based. The Panel felt there was scope for developing international links that had a more explicit focus on educational research, and that this may lead to new opportunities for joint funding and collaborative publication as well as potential contributions to teaching.

Interaction between research and society

The institution has a strong mission to create synergy between and across disciplines, and a main justification for educational research is the view that all university activity should be underpinned by research. Educational concerns were sometimes combined with other substantive concerns in doctoral studies. There was some strong evidence of partnership working (for example with 22 Gymnasium Schools and a 'Junior University Technology School') and involvement in courses for teachers and textbook production. The Panel understands that several professors at the University have a contract with the Estonian Ministry of Education and Research for curriculum development of

STEM subjects and technology specialisms for Gymnasia. The institution has multiple links with relevant stakeholders in industry, including companies, professions and regulatory bodies.

There were well-evidenced examples of internal evaluation (e.g. on teaching methodology, learning packages, support to reduce student drop-out or to support students with disabilities) and some good evidence of the impact of this research to improve and refine materials and processes. However, for all its strengths, much of this work would be difficult to define as educational research/educational science in the wider context.

Recommendations

The Evaluation Panel recommends that Tallinn University of Technology:

- Develops a more focused articulation of what is distinctive about its educational research, considering in particular whether the core of this should be engineering pedagogy, and specifying the role of educational theory;
- Gives careful consideration to developing and deepening its relationships with other institutions, within and beyond Estonia, that carry out internationally recognised educational research, as a means to inform future TUT developments;
- Gives further serious consideration to how doctoral studies are organised (e.g. an "independent" doctoral programme). The institution may seek to increase the number of professors/researchers with expertise in engineering pedagogy / educational sciences as well as PhD students;
- Seeks to bring about further improvement in its record of international publications in the field of educational research;
- Seeks to increase the representation of staff on editorial boards of key international journals in the field of educational research.

University of Tartu

The Nature and Scientific Quality of Research

There is evidence of a strong research culture at the University of Tartu, supported from amongst other mechanisms by a targeted internal funding system. There is also evidence of strong national and international collaboration with other universities, and a recent decline in the amount of national funding has been compensated for by the securing of additional international funding.

The Panel was impressed by the increase in recent years of publications in high-impact journals and by the strength of the interdisciplinary research reflected in publications. At the same time it was the Panel's collective opinion that the weight of educational sciences in interdisciplinary work could be increased to become more visible as core educational research, and a greater proportion of the highest quality publications could be more clearly recognisable as having a core educational research focus.

It was clear to the Panel that the Faculties of Social Sciences and Education and of Science and Technology were engaged in educational research as this is widely recognised and understood. In the case of the Faculty of Exercise and Sport Sciences, much of the research has educational relevance, but was more difficult to describe as educational research *per se*, and the Panel felt that its excellence would appear to lie mainly in related fields. This is not to deny its high potential significance for training, coaching and educational activity. The Panel's view is that more could be done to exploit the clear synergies between research in this Faculty and that in the two other Faculties visited, and a more strategic approach to this issue is recommended. The introduction of a new Estonian education journal in the university is a welcome initiative, as is the decision to publish extended abstracts in English.

Overall the Panel gained a positive impression of the quality of educational research in the three Faculties, as reflected for instance in the increasing numbers of publications and doctoral students. Educational research in the Faculty of Exercise and Sport Sciences is currently low in volume and marginal in terms of the main thrust of research in that Faculty. With appropriate structures and support it could be significantly enhanced.

Research Strategy, Culture, Environment and Organization

Educational research in the University of Tartu takes place in three organisational locations: the Institute of Education (in collaboration with the Faculty of Social Sciences and Education); the Faculty of Exercise and Sport Sciences; the Centre for Science Education. An important strategic decision was taken in 2009 with the establishment of the "Pedagogicum", the aim of which is to stimulate, support and coordinate collaboration between the different research teams and institutes involved in educational research. This collaboration has already led to the acquisition of joint R&D resources, in some cases together with Tallinn University.

A further important initiative in 2011 was the adoption of a "Strategic Plan for Teacher Education" for the period 2012-2015. Major aims of the plan include promoting national and international cooperation in teacher education research, and increasing the quality of doctoral theses.

The University of Tartu has over recent years developed substantial international activities, and these are an important part of its position in world recognition. It has for instance been increasingly successful in participating in EU Framework Programme projects (FP 6 and FP 7), has acquired European Social Fund money for educational research, and was involved in the evaluation of COMENIUS projects.

The Panel heard that the University attracts international postdocs, and it saw evidence that PhD students are encouraged to go abroad for a semester and to participate in international conferences. The University is also seeking to increase the number of international co-supervisors of doctoral students. However, the University is aware that in

this respect there is still room for improvement, for instance with regard to inviting international visitors for longer periods of time who can play a more structured role in the development of educational research capacity.

Doctoral Education and Training

The University of Tartu is the leading and the only comprehensive Estonian university and is distinguished internationally. More than half of the country's research publications are authored by its academics and more than half of the country's doctoral theses are completed here. A merger of the former Faculty of Education and the Faculty of Social Sciences in 2010 has enhanced the research collaboration with the Institutes of Psychology, Sociology and Political Sciences and avoids some of the potential for fragmentation in this field. The Institute of Education currently covers a range of disciplines from Psycho-pedagogy and Special Education via Technology Education and Computer-assisted Learning to Teacher and Adult Education, Comparative and Social Pedagogy, Educational Management and Curriculum Development.

This broad range offers a solid research environment to doctoral students. The Panel understood that efforts for integration and cooperation across the university remain a priority and this may importantly contribute to strengthening educational sciences as an interdisciplinary field. The Panel recommends strengthening the ties between the Institute of Education, the Centre for Science Education and the Faculty of Exercise and Sport Sciences. In the latter, educational research in the strict sense seems to be rather marginal at a moment: so far, it has been limited to didactics of physical education with a few doctoral students.

The University has a good international reputation and is engaged in a number of international research projects, including some in the field of educational sciences. However, in comparison with other research areas, more could be done in this field. The Panel felt that the number of foreign doctoral students was small for an internationally recognised university (however, the Panel had an opportunity to meet post-docs from abroad). Further integration and positioning of educational research within the University would be likely to further stimulate international demand for doctoral studies in the field of education at Tartu.

Across the university, 35 doctoral programmes are offered by 9 of its faculties³. There is only one doctoral programme in which a "detailed field of study" is defined as "Education Science": the doctoral programme Educational Science at the Faculty of Social Sciences and Education⁴. Doctoral courses comprise specialty courses (36 ECTS; e.g. Conducting Research in Development and Learning; Methodology of Educational Research; Models and Concepts of Educational Psychology and Their Applications), university-wide elective courses (12 ECTS; e.g. research seminars in General pedagogy, Educational Management etc.; Presentation on Scientific Conference, etc.), university teaching practice (6 ECTS) and optional courses (6 ECTS; e.g. Academic Writing, Education and Society; e-Learning Technologies; Methods of Text Interpretation, etc.; many of these courses are relevant for students in educational sciences and are provided by other faculties thus enhancing cross-disciplinary contexts).

A major consequence of the collaboration in the framework of the above-mentioned "Pedagogicum" is the merging of two doctoral programmes in a united curriculum, the establishment of a joint committee for the defences of PhD theses, and the creation of a joint Doctoral School with the universities of Tallinn and Helsinki. The Panel was surprised to find that the doctoral programme of the Faculty of Exercise and Sport Sciences had not been involved in this renewed curriculum, though also appreciated the strong and distinctive identity of the Sports Sciences as a location for Doctoral studies.

The Panel's view is that given the profile of the University of Tartu and the nature and volume of its research, the outcomes of doctoral training could (and should) be more visible and pronounced than they currently are. The number of students whose study is wholly or mainly educational research (all three Faculties) has risen from 39 in

³ See <http://www.ut.ee/en/studies/doctoral-studies/programs>

⁴ See https://www.is.ut.ee/pls/ois/ltere.tulemast?leht=OK.OK.VA&id_oppekava=445&systeemi_seaded=3,2,12,1&viida%20kaudu=1&session=0

2007 to 55 in 2012. There has also been an improving rate of completions in recent years for educational Doctorates in the Faculty of Social Science and Education (from 2 in 2007 to 5 in 2011; data for 2012 not yet completed). However, overall rates of completion for Doctorates that are wholly or mainly educational are low by international standards (all three Faculties together registered 3 Doctorates in 2007 and 8 in 2011).⁵ Information made available to the Panel shows that given the current age profile of staff, there would need to be a significant increase in the rate of Doctoral completions if these are to make a major contribution to staff renewal.

It is also worth noting that having met a group of current doctoral students, the Panel heard plenty to suggest students' generally high satisfaction with key aspects of the research environment and with the quality of the support they get from supervisors. This confirmed the Panel's positive view of the general quality and effectiveness of doctoral training.

The Research-Teaching Relationship

There is evidence of a strong link between research and teaching at the university. Whilst there is a tiered system whereby those academics who are more research active teach less, the Evaluation Panel was pleased to hear that all staff, including those who work predominantly in research, are involved in teaching. It is recommended that whilst the university works to increase its research output, both in terms of high impact journal articles and research funding, that the relationship between teaching and research remains central to the overall strategy of the university.

The Panel recognises that for historical reasons, a minority of staff, particularly in the Faculty of Social Sciences and Education, are not currently engaged in research. The Panel would encourage the exploration of ways in which the professional expertise of these staff can inform research and/or be integrated with research activity.

Interaction between research and society

As well as the range of international educational research projects, there are many projects funded from sources within Estonia and which are focused on Estonian issues and problems and which engage with stakeholders within the national setting. Staff have been active in the development of the national curriculum, generating other curriculum materials, producing textbooks, designing and developing educational software and virtual learning environments, and enabling teacher networks as well as providing in-service courses. There is some collaboration with industry, and there are ambitions to do more to research what various relevant stakeholder groups would prioritise as research that may contribute to the further development of Estonian society and citizenship. The contribution to evidence, debates and developments in Estonia appeared to the Panel to be at an appropriate level.

In addition to responding to calls for bids, there were also examples of research activity that responded to a more 'grass-roots' concerns amongst, for example, groups of practitioners and groups of parents. During its meeting with staff in the Institute of Education, the Panel was pleased to hear that there was consideration of new forms of support for established educational professionals from schools and elsewhere who might wish to do a Doctorate. This impulse to widen participation was reflected at the level of University policy, and the Panel recommends that it is pursued as soon as possible.

⁵ Data provided by UT.

Recommendations

The Panel recommends that the University of Tartu:

- Develops a new and more strategic approach to developing and exploiting the clear synergies between educational research in the Faculty of Sport and Exercise Sciences and that taking place in the two other Faculties visited;
- Finds means to improve the rate of successful completions in doctoral studies in educational research;
- Further improves the publication record of educational research in high quality international journals;
- Develops the provision of research-based Doctorates that would be attractive and available to established education professionals such as teachers.

Overview, Further General Points and Recommendations

Overview: Educational Research in Estonia

The Evaluation Panel's overview is that Estonian higher education institutions contain some high quality educational research that is of internationally-recognised excellent quality, and that there is both the capacity and the will to do yet more of it. However, with some exceptions, the general picture is that educational research is either fragmented or widely dispersed between and within institutions, and in some cases it is not well defined in terms of scope and purpose. Whilst this has some advantages, it also militates against critical mass and focus, and therefore against maximising development, visibility and impact.

Educational research aimed at directly supporting in-house programmes and teaching was widespread. Less widespread but still frequently occurring was that aimed at helping with Estonian educational developments in such fields as curriculum, policy, pedagogy and so on: there were examples of this in all the institutions visited. However, educational research that was aimed at changing the way that broader educational problems are conceptualised, understood or tackled was harder for the Panel to locate. This is not necessarily to suggest its absence, but rather to point to its relative lack of visibility. An exception here would be the Centre for Educational Technology at Tallinn University, which appeared to the Panel to represent volume, coherence, criticality and challenge, informed by educational and related theoretical resources.

Across the institutions visited, the Panel's general impression was that publications were numerous and of good quality. However, publications located in educational journals with the highest international recognition were fewer in number than expected. Institutions generally had strategies to attempt to develop in this area, but it may not be possible for all of them to succeed in these ambitions.

The Panel would like to add the following general points, some of which include recommendations, to those already made in the foregoing paragraphs under each institution.

Doctoral Studies in Estonia

The Panel's impression is that in general, Doctoral students have a positive experience in Estonia, and that there are many initiatives that help them make the most of their supervisors, peers and, to some extent, international contacts. One difficulty is that overall the numbers of defences/completions appears low, as reflected in the Panel's recommendations for some institutions.

A related and crucial point is that the rate of Doctoral completions may be too low even for the purposes of staff renewal. Tallinn University and the University of Tartu are, in effect, the main suppliers of young academic staff in the educational sciences in Estonia. The Panel heard that over the five-year period covered by this report, there has been a decline in the number of people younger than 30, and an increase in the number of people older than 60, in these institutions. This situation may be regarded as a potential 'time bomb'. The Panel **recommends** that the Ministry of Education and Research works with institutions to set in place a strategy for guarding against this effect, possibly by incentivising greater take-up of Doctoral studies through new forms of studentship subsidy, or by opening up a career pathway and easing the transition for a few people with requisite skills and ambitions who are currently working in other parts of the education sector.

Doctoral programmes last for 4 years and require a volume of 240 ECTS, including the completion of a dissertation and its defence. University information (websites) suggests that the dissertation may consist of (1) a bound cycle of publications, (2) a published monograph or, as an exception, (3) an outstanding textbook for high school or university students. However, the first option seems to be the rule; in interviews, the Panel did not meet anyone working towards options (2) or (3).

All doctoral students sign a doctoral study agreement together with the Dean of the respective faculty and his or her supervisor(s). Students often experience co-supervision. After completion of a study year, a doctoral student must submit a progress report to the relevant commission at his/her university. After the defence, universities often facilitate the publication of the work; the Panel **recommends** that this practice should be maintained and extended. Full time doctoral students (all of those whom the Panel met were full time students) who are citizens of the Republic of Estonia or who reside in Estonia and who are studying at state-funded study places, are entitled to an allowance of some 385 EUR per month. In addition, universities may offer a few places paid from their central budgets. The Panel found these basic rules well implemented and believes that such a system is very helpful for a successful doctoral programme and for the development of a research agenda.

At the same time the Panel's impression was that more state funded places would be highly appreciated, and that the current student allowance was not sufficient as the circumstances of most students dictate that they did paid work in parallel to their studies. Sometimes this work had high synergy with the doctoral study undertaken, but sometimes it had little or no connection. There were undoubtedly cases where the need to do large amounts of paid work had the effect of lengthening the duration of study, particularly where the paid work was unrelated to the study undertaken, to detrimental effect.

The Panel also **recommends** that Institutions explore whether the European Council for Doctoral Education,⁶ a special interest group within the European Universities Association, can assist with some aspects of the further development of doctoral programmes.

The Meaning of Educational Research

The Panel found a range of meanings of 'educational research' in operation, and would wish to make the point that internationally speaking, some are better recognised than others. For example, the Panel saw evidence of research that was (a) highly focused on refining an in-house mode of delivery or a teaching methodology, (b) largely descriptive, and (c) with little connection to a wider theoretical, critical or empirical literature. Such research and publication may be of immense value to the institution, but will be of limited interest to a wider community of educational researchers unless it makes explicit connection with wider debates and concerns of an empirical or theoretical nature. In general, internationally-regarded educational research includes more than just relevance to particular educational settings.

Across all the research work seen or referred to, approaches calling on psychological concepts were readily apparent. However, there appeared to be very little connection with sociological concerns and the application of sociological, historical, philosophical or management reasoning to issues such as policy, educational leadership, educational innovation, organisation and interaction in the education field. This is a feature that could be strengthened.

The Panel **recommends** that institutions, the Ministry and the Estonian Research Council give attention to both the above points in the further development of Educational research in Estonia.

Responding to Stakeholder Interests

Whilst State-funded educational research follows specific calls from the Ministry that must be tightly specified in advance, the Evaluation Panel was pleased to hear that there had also been several examples of educational researchers working closely with stakeholder groups in separate arrangements.

Following its discussion with various of the bodies with a stake in education and a direct interest in educational research, it became clear that amongst such bodies there was a view that they could usefully have more input into making suggestions or requests for particular topics in educational research. The Panel is not in a position to know or judge how 'open' the existing arrangements are in this respect. However, if this point is legitimate, the Evalua-

⁶ See <http://www.eua.be/cde/Home.aspx>.

tion Panel would **recommend** that the Ministry and the Estonian Research Council gives consideration to diverting a small portion of its resources for educational research to an ‘open call’ scheme. This could place upon the ‘bidding’ academic a requirement that research questions are developed in conjunction with a stakeholder group or agency (such as parents, participants, other ‘users’ or professional groups, or industry). Such a scheme could also require some element of ‘matched funding’ or in-kind support from a relevant group, Municipality, industry or University internal funds, and could be periodically available and competitive. Such a scheme might be named ‘Educational Research for Estonian Democracy’.

The Panel noted that Masters students were sometimes given access to datasets located in the Ministry, and would **recommend** this as way of working and an important source of research training for doctoral students as well.

A Process of Quality Assurance

The Panel **recommends** that institutions develop a robust and systematic process for internal quality assurance for educational research. This could include periodic self-assessment in a brief format, and peer review between institutions. The Ministry may wish to specify a broad requirement which would achieve this.

Follow-up to the Process of Targeted Evaluation

The Panel **recommends** that the Ministry and Estonian Research Council ensure that the findings and recommendations of this report are re-visited after a specified period, to measure the degree to which practices and processes have changed in response.

The process of Targeted Evaluation

The Panel would also like to make the following points from its reflections on the *process* of Targeted Evaluation. The Panel suggests:

1. That targeted evaluations of this kind might helpfully include a more formalised process for Panels to read selected examples of research publication to assess their quality, rather than relying heavily on the existing categorical rankings. Internationally, many processes for assessing the quality of research include scoring a small sample of publications chosen by the institution, using criteria such as ‘originality’, ‘rigour’, ‘significance’ and ‘impact’. This is however a time-consuming activity and the costs would need careful consideration.
2. That Institutional Self-Assessment Reports may be even more informative if they included word-limited requirements to identify strengths, weaknesses, opportunities and threats (abbreviated as a ‘SWOT analysis’).
3. That the process of targeted evaluation could require Panels to suggest timescales and review points to help structure the processes of change which follow upon the process.

Appendices

Appendix 1. Directive of the Minister of Education and research No 386 (23.07.2012): Approval of theme, participants, personnel and detailed organization of the 2012 evaluation of educational research.

Ministry of Education and Research

Directive of the Minister (non-official translation)

Tartu

23 July 2012 No. 386

Approval of theme, participants, personnel and detailed organisation of the 2012 targeted evaluation of educational research

On the basis of Subsection 20²(3) of the Organisation of Research and Development Act:

1. To organise the 2012 targeted evaluation in the educational sciences, sub-field of the culture and society field (hereinafter evaluation).
2. I assign educational sciences and related fields as the theme of the evaluation:
 - Pedagogy and didactics;
 - Special didactics;
 - Teacher education;
 - Physical training, motorial learning, sport;
 - Adult education, permanent education;
 - Computer-assisted education;
 - Comparative and historical pedagogy;
 - Psychopedagogy;
 - Experimental pedagogy;
 - Social pedagogy;
 - Orthopedagogy.
3. I assign the following institutions as participants in the evaluation:
 - Tallinn University;
 - University of Tartu;
 - Tallinn University of Technology;
 - Estonian University of Music and Theatre.
4. I appoint the following members of the international panel responsible for carrying out the evaluation (evaluation panel):
 - David James – professor, Cardiff University, panel chairman;
 - Pavel Zgaga – professor, University of Ljubljana;
 - Judith Harford – Dr, University College Dublin;
 - Eric de Corte – professor, University of Leuven;
5. I approve the detailed procedure for executing the evaluation (appended).
6. This directive may be challenged within 30 days of publication, by filling a complaint with Tartu Administrative Court in accordance with the Code of Administrative Court Procedure.

/Signature/

Jaak Aaviksoo

Minister

To be issued to: participants in the evaluation, Research Department of the Ministry of Education and Research, Estonian Research Council, persons specified in the Minister of Education and Research directive No. 244 of 11 May 2012, “Formation of committee for preparing the 2012 targeted evaluation of educational research”.

Detailed procedures for executing the evaluation

1. The evaluation is carried out to provide information to the research community, research and development institutions, research funding organisations, research policy planners and society at large regarding educational research and the level, productiveness and influence of research fields related to educational research. The results of the evaluation serve as an input for preparing research policy decisions and measures pertaining to educational research and related fields, further development of the field, preparation of development plans and introduction of necessary changes.

2. The members of the evaluation panel carrying out the evaluation shall, before assuming their positions, sign a declaration of independence and confidentiality in the form approved by the authority organising the evaluation, and also undertake, after the end of the evaluation process, not to use or disclose to third parties any public or non-public information, such as data, documents and other information they learned or to which they were referred to in the course of the evaluation.

3. For carrying out the evaluation, the institutions participating in the evaluation shall submit, through the corresponding environment of the Estonian Research Information System, by 15 October 2012:

1) a self-evaluation report (including general information of the institution, overview of research and development activities, self-evaluation, overview of cooperation and activities aimed at the public) in the form published by the institution carrying out the evaluation;

2) data which serve as a basis for the evaluation (including personnel, research results, doctorate studies, infrastructure, research projects and financing).

4. The evaluation panel has the right:

1) to receive additional information necessary for the evaluation from participants in the evaluation, from the authority organising the evaluation, and the committee preparing the evaluation, formed on the basis of the Minister of Education and Research directive No. 244 of 11 May 2012, "Formation of committee for preparing 2012 targeted evaluation of educational research" (hereinafter Steering Group);

2) to visit, for the purpose of obtaining additional information necessary for evaluation, the institutions participating in the evaluation, providing at least 10 working days advance notice.

5. The evaluation panel shall analyse, based on the information specified in clause 3 and 4 of this directive, the quality of research studies, the research environment and the influence of the research and development activities related to the educational research in society and their timeliness and organisational structure of the institutions participating in the evaluation.

6. The evaluation panel may, as a working format, use meetings or, by decision of the evaluation panel other formats, and to involve if necessary experts who possess the information necessary for carrying out the evaluation.

7. The evaluation panel shall, as a result of the analysis specified in clause 5 of this directive, compile a report in which the panel shall:

- 1) to evaluate the quality of the educational research in Estonia compared to the international level, including:
 - identification of the strengths and weaknesses of the research and development activities in the field in institutions being evaluated and in Estonia generally;
 - assessment of the effectiveness of the performed research, including the share of scientific output compared to input;
 - assessment of the collaboration with key academic partners at home and abroad;
- 2) to give an assessment of the organisation of research in the institutions being evaluated, including:
 - assessment of the general organisation of research in the institutions and links between research and national/institutional strategies and development plans;
 - assessment of the condition of the infrastructure to guarantee sustainable development of educational research;
- 3) to give an assessment of the quality and relevance of doctoral studies in the area of educational research, including:
 - assessment of the quality and quantity of the doctoral studies compared to the international level;
 - assessment of links between doctoral studies and research.
- 4) to give an assessment of the significance of educational research on Estonian society, including:
 - assessment as to the quality and relevance of research and development activities;
 - assessment of the collaboration with key stakeholders in Estonian society.
- 5) to give recommendations and make proposals with regard to further development and financing of research and development activities in the field of educational research and for carrying out necessary changes in Estonia, including suggestions and recommendations:
 - for the further development of research policy in Estonia;
 - for the further development of educational research in institutions being evaluated;
 - to ensure the future supply of qualified academic and educational professionals in Estonia;
 - to apply the results of educational research in general national management of educational settings.

8. The evaluation panel shall submit the evaluation report and other materials compiled during the activity of the evaluation panel to the authority organising the evaluation by 1 February 2013.

9. The authority organising the evaluation shall forward the report to the Steering Group for an opinion. The Steering Group shall submit the opinion on the evaluation report to the authority organising the evaluation within 10 working days.

10. The authority organising the evaluation shall forward the evaluation report along with the opinion of the Steering Group to the Ministry of Education and Research within 5 working days. The Ministry of Education and Research shall notify the institutions that participated in the evaluation of the results of the evaluation.

/Signature/

Rein Kaarli

Advisor to the research department
in the capacity of department head

Appendix 2. Terms of Reference for the Evaluation Panel.

This document sets out the standard Terms of Reference applicable to the Panel.

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1 Background and purpose

Discipline and research field evaluations in Estonia are one of the new key elements in the long-term development of research and science policy in Estonia.

Estonian Ministry of Education and Research sees evaluations of scientific disciplines and individual fields of research as an important development tool for research and science policy. Their main purpose is to provide feedback to decision makers, to scientific community and to funding agencies. Furthermore, they provide an opportunity for learning and development for all those involved. Evaluations inspire discussion and debate and help responsible ministries, researchers and funding organisations to identify potential problems and areas of development.

In April 2012, the Commission of Research Policy decided that the quality and status of Estonian educational research done at the universities will be evaluated with respect to the international level. The present evaluation combines an external assessment by an international evaluation panel with an internal self-assessment exercise. The purpose of the evaluation is to support the future development of this research field. The main objectives of the external evaluation are: to examine the quality of the educational research of the R&D institutions during 2007–2011 and to provide recommendations on how to develop the research and researcher training of the field in future.

2 Definition of the field to be evaluated

The field to be evaluated consists of educational research and researcher training. In correspondence to the Estonian Research Information System Classification Scheme, the more specific research fields to be evaluated are:

Logopedics;

Educational research, including:

- Pedagogy and didactics;
- Special didactics;
- Teacher education;
- Physical training, motorial learning, sport;
- Adult education, permanent education;
- Computer-assisted education;
- Comparative and historical pedagogy;
- Psychopedagogy;
- Experimental pedagogy;
- Social pedagogy;
- Orthopedagogy.

3 Definition of the institutions to be evaluated

The field to be evaluated consists of educational research and researcher training carried out by the following Estonian universities:

- Estonian Academy of Music and Theatre;
- Tallinn University;
- Tallinn University of Technology;
- University of Tartu.

The evaluation should focus mainly on the research field, not on an institution, although this structure forms the basic tools for the evaluation.

4 Organisation

The evaluation is commissioned by the Estonian Ministry of Education and Research. The evaluation is carried out in cooperation with the Estonian Academy of Sciences, Estonian Higher Education Quality Agency, PRAXIS Center for Policy Studies, Estonian Union of Parents and Estonian Research Council. The Minister appointed a Steering Committee to lead and support the execution of the evaluation.

The members of the Steering Committee are:

Jüri Allik, Chairman, University of Tartu, professor, Estonian Academy of Sciences;

Epp Rebane, Ministry of Education and Research, adviser;

Ain Tõnisson, Ministry of Education and Research, Deputy Head of General Education Department;

Vilja Saluveer, Ministry of Education and Research, expert of Higher Education Department;

Heli Mattisen, Estonian Higher Education Quality Agency, Director;

Valdek Rohtma, Estonian Union of Parents, Member of the board;

Laura Kirss, PRAXIS Center for Policy Studies, Education Policy programme director.

A list of the invited Panel members, a list of the evaluation documents to be submitted and the Terms of Reference have been reviewed and approved by the Steering Committee or by the Minister of Education and Research.

5 International Evaluation Panel

The external evaluation will be carried out by an international panel of independent high-level experts.

The Minister of Education and Research has approved the following renowned scientists as members of the evaluation panel:

- **Prof David James**, Chairman, Cardiff University;
- **Prof Pavel Zgaga**, University of Ljubljana;
- **Dr Judith Harford**, University College Dublin;
- **Prof Eric De Corte**, University of Leuven.

6 Objectives of the evaluation

The purpose of this exercise is to evaluate Estonian educational research and researcher training in the fields and institutions defined above in sections 2 and 3. The evaluation period is 2007–2011, on which the future recommendations to be provided will be based.

The objectives of the evaluation are:

- To evaluate the quality of educational research in Estonia as compared to the international level:
 - To identify the strengths and weaknesses of the research in institutions being evaluated and generally in Estonia;
 - To evaluate the efficacy of the research, i.e. how much output is produced in relation to the resources invested (including finances, personnel, research infrastructure);
 - To evaluate collaboration with key academic partners at home and abroad.
- To evaluate the organization of research and researcher training in institutions being evaluated:
 - To evaluate the organization of research and researcher training in institutions being evaluated;
 - To evaluate the condition of infrastructure to guarantee sustainable development of educational research and researcher training in institutions being evaluated.
- To evaluate the quality and relevance of PhD studies, including
 - Evaluation of quantity and quality of doctoral studies;
 - Evaluation of links between research and doctoral studies.
- To estimate the significance of educational research to Estonian society:
 - To evaluate the relevance and quality of educational research and developmental activities for Estonia;
 - To evaluate collaboration with key stakeholders in Estonian society.
- To make suggestions and recommendations for the further development of educational research and research policy:
 - To make suggestions and recommendations for the further development of research policy in Estonia;
 - To make suggestions and recommendations for the further development of educational research in institutions being evaluated;
 - To make suggestions and recommendations to ensure the future supply of qualified academic and educational professionals in Estonia;
 - To make suggestions and recommendations to apply the results of educational research in management of education.

7 Evaluation criteria

The basic unit to be evaluated by the Panel is an university.

The universities are mostly interdisciplinary research environments. Each university will be evaluated as such, but the focus is on the research field as a whole.

The Panel is asked to give:

- A written statement of the quality of the research, achieved results and academic contribution;
- A written statement of the quality and efficiency of the research environment and organization,
- A written statement of the quality and efficiency of the doctoral training,
- Written feedback about the interaction between research and society, and the impact of it,
- Recommendations for the future of the research field.

The Panel's main role is to evaluate the quality of research and researcher training. The main emphasis is on evaluating the academic and applied research. The Panel should ensure that the evaluation takes into account all relevant materials available.

7.1 Academic quality of the research

The Panel's main role is to evaluate the quality of research. The quality statement is based on the evaluation documents submitted by the institutions. Panel members will have the opportunity to complete this information during their site visits. All research, whether basic or applied, should be given equal weight. The quality statement must reflect the work of all the research staff listed in a unit.

Important issues to be considered include (if relevant):

- What is the international quality and status of the unit's research?
- What are the competence and cooperation relationships of the unit?
- What is the significance of the research (projects) to the professional promotion of the researcher's or professional's career?
- How innovative and challenging is the unit's research?
- What is the impact and status of the research within each research field described in article 2?
- What is the role of education and research interaction in research and researcher training?
- What is the significance of research including educational productions or products?

7.2 Research environment and organisation

The evaluation deals with research environments, prevailing research practices and collaborative networks.

Important issues to be considered include:

- What kind of research environment facilitates the research in terms of funding, infrastructure and mobility (strengths, weaknesses, needs for improvement)?
- What is characteristic of the activity, management and administration in the field?
- Are the national and international networks sufficient (universities, research centres, enterprises)?
- How does the research interrelate with the strategies of the organisation?
- What is the role of interdisciplinarity within the research fields?

7.3 PhD education

The Panel is asked to evaluate quality and relevance of doctoral studies based on all evaluation documents as well as interviews.

Important issues to be considered include:

- Is the quantity of doctoral studies enough for sustainable development of Educational Research?
- What is the quality of the doctoral studies and its organization – do the study process, supervision and learning outcomes of PhD studies comply with international standards?
- How do you evaluate the level of internationalization and interdisciplinarity of doctoral studies?
- Are there proper and adequate links between research (i.e. carried on/conducted by supervisors) and doctoral studies (theses)?
- How are societal needs taken into account in organization and learning outcomes of doctoral studies?

7.4 Interaction between research and society

The Panel is asked to write feedback about the interaction between research and society. The feedback is to be based on all evaluation documents as well as interviews. The Panel should especially consider other activities such as expert tasks, productions and exhibitions, communication of research results to the public and the educational community, technology transfer and cooperation with other sectors of society.

The questions to be asked are “How actively and efficiently does the institution communicate its points and findings to various stakeholders and the rest of society and in what way does the research of the institution contribute to society?” The Panel should consider this issue from the point of view of, for example, use of novel technical solutions and innovations, the impact the research has on practices. The Panel is asked to discuss the interaction between the research of the institution and society from relevant aspects.

Important issues (if relevant):

- How fruitful is cooperation between the institution and the various actors of society, and what kinds of results have been achieved?
- Is the research of the field relevantly focused with respect to the future scenarios of national as well as international developments?
- What is the academic and non-academic (business, R&D, administration,) need for research doctorates in the field, and how well is it met with the current intensity of doctoral training?
- In case of innovations, how are the results of research transferred to industrial producers and partners who are able to develop new products for the market and society?
- Is sufficient and systematic effort made to find suitable collaborators for the commercialising and visibility of productions and innovations?

7.5 Panel recommendations for the future

The Panel is asked to provide recommendations for the future development of the research field. The Panel will need to consider that the recommendations should be focused on the research field and on the single unit.

Key issues to be addressed are:

- What strengths and weaknesses does the field have in institutions and in Estonia; for example, is there missing expertise in certain sub-fields or overrepresentation compared to the total research volume?
- What opportunities and challenges does the field have?
- How should the field improve its performance in carrying out its research?
- What kinds of means could be recommended to improve and strengthen the research performance at various levels?

The Panel should provide recommendations on:

- Research representing single- and interdisciplinarity;
- Research including educational productions and products;
- Development of research: staff, environment and infrastructure;
- Strengthening the effectiveness and impact of the research on society;
- Development and securing of training and research enthusiasm;
- Suggestions on how to guarantee enough research-active staff in future;
- Other issues.

8 Tasks, responsibilities and working arrangements of the Panel

In conducting the expert evaluation, Panel members will base their examination on desk research at home on the basis of the background information to be provided. Ultimately, this will supplement their view during the site visits in Estonia.

Panel members will set responsibilities within the panel and together with the Estonian Research Council. All evaluation documents are provided by the Estonian Research Council.

8.1 Desk research

Desk research will be carried out before the site visits. The material includes facts about the research staff and funding:

- list of publications
- collection of the best publications of the Unit
- members by their inquiries
- list of doctoral theses
- lists of visits and collaborations
- lists of the most important non-academic work of the research-active staff
- self-assessment exercise of the institution.

8.2 Site visits and interviews

The site visits will consist of the following sessions:

- A session for presentations organised and selected by the institution and agreed with Estonian Research Council
- Interview of a subset of researchers during the site visit, including:
 - Heads of Unites (research)
 - Professors, senior research staff, postdoctoral researchers, visiting foreign scholars
 - PhD students, junior researchers

The specific timetable and instructions will be provided by the Estonian Research Council in due time.

8.3 Confidentiality

Panel members undertake not to make any use of and not to divulge to third parties any public or non-public facts, such as information, knowledge, documents or other matters communicated to them or brought to their attention during the performance of the evaluation. Confidentiality must also be maintained after the evaluation process has been completed.

8.4 Conflicts of interest

Panel members are required to declare any personal conflicts of interest. They must disqualify themselves if they can in any way benefit from a positive or negative statement concerning the research institution and research field under evaluation. They must also disqualify themselves in the following circumstances:

- They have close collaboration with the research institutions to be evaluated (e.g. have co-authored a scientific article, research plan or funding application during the past five years, or are planning to co-author one/some of these in the near future in research field being evaluated).
- They have acted as a superior, subordinate or instructor of the research institution during the past five years.

- A member of the institution in research field being evaluated is a close person to them. A close person is:
 - their spouse (also *de facto*), child, grandchild, sibling, parent, grandparent or a person otherwise especially close to them (e.g. fiancé/e or a close friend), as well as their spouses (also *de facto*),
 - a sibling of their parent or his/her spouse (also *de facto*), a child of their sibling, their previous spouse (also *de facto*),
 - a child, grandchild, sibling, parent or grandparent of their spouse as well as their spouses (also *de facto*), a child of a sibling of their spouse,
 - or a half-relative comparable to the above mentioned.

Panel members are also disqualified if their impartiality may otherwise be endangered, or if they feel that they have a conflict of interest and are therefore disqualified to evaluate the research unit.

Therefore, if they feel that they are unable to evaluate a research unit, they must notify the Estonian Research Council as well as the other Panel members of it as soon as possible. The clarification of all conflict of interest matters must preferably be done during the first panel meeting.

8.5 Public availability of the evaluation material

The evaluation and the ratings are confidential and for official use only. Once the evaluation has been completed, panellists are required to destroy all evaluation documents and any copies made of them, or return them to the Estonian Research Council. The evaluation report is confidential and only for official use until publication.

The evaluation report including the main recommendations is based on the evaluation criteria defined by the Ministry of Education and Research. The evaluation report will be written and edited by the Panel members (main responsibility of the Panel Chair) with the assistance of the Estonian Research Council. Prior to final editing and publishing, the Units being assessed are given the opportunity to review the report to correct any factual errors. The Ministry of Education and Research will publish the final evaluation report in both printed and electronic form.

8.6 Declaration

Accepting the task as a member of an evaluation Panel, the member of an evaluation Panel guarantees not to disclose the information he or she receives as Panel member and not to use it for anybody's benefit or disadvantage as it is stipulated in the paragraph "Confidentiality". Further, he or she affirms that if he or she has a conflict of interest he or she will immediately inform the Estonian Research Council as well as the other Panel members of it.

9 Timetable of the evaluation process

Time / Deadline	Activity	Institution responsible
03.09.2012	Making available self-assessment forms and other evaluation materials for institutions to be evaluated	Estonian Research Council
15.10.2012	Sending self-assessment forms by institutions being evaluated to Estonian Research Council	Institutions being evaluated
19.10.2012	Sending self-assessment forms and other relevant evaluation materials to members of evaluation panel	Estonian Research Council
10.11.2012	Additional questions to institutions from panel members	Evaluation panel, Estonian Research Council
19-23.11.2012	Site visits by evaluation panel	Estonian Research Council, Institutions being evaluated
17.12.2012	Sending evaluation report to steering committee and institutions being evaluated for factual corrections	Evaluation panel
11.01.2013	Returning factual corrections to evaluation report to evaluation panel	Steering committee and institutions being evaluated
01.02.2013	Sending final evaluation report to steering committee	Evaluation panel
22.02.2013	Sending final evaluation report to Minister of Education and Research with proposals for monitoring and implementation of the results of evaluation, presentation of the report	Steering committee, Estonian Research Council

10 Coordination of evaluation

The evaluation process is operationally coordinated by Estonian Research Council. The duties of the Estonian Research Council are to compile the evaluation documents collected from the research field as well as to assist the Panel during the site visits and the report editing. The administrative support and assistance for the Evaluation Steering Group and Evaluation Panel as well as the practical details of the seminars and site visits are organised by the Estonian Research Council.

11 Funding

The evaluation is funded by the Estonian Ministry of Education and Research. The Ministry will pay an expert fee to the Panel members.

All travel expenses related to the Panel's visits and accommodation in Estonia will be covered or reimbursed by the Ministry.

Appendix 3. Panel members

Professor David James, chairman of the panel.

David James is Professor in the School of Social Sciences, Cardiff University, and Director of the ESRC Doctoral Training Centre for Wales, UK. He gained his PhD in 1996 from the University of the West of England with a thesis on Mature Studentship in Higher Education. From 2004 to 2011 he was Professor in the Faculty of Education at the University of the West of England, Bristol, UK. Since 2006 he has been Visiting Professor in University of Latvia.

Professor James has carried out research on education, sociology of education, social research methods and methodology, educational policy, student experience, curriculum innovation, work related learning and on teaching, learning assessment and learner identity in further and higher education.

He is member of British Educational Research Association, a Fellow of the Higher Education Academy, and a Fellow of the Royal Society of Arts, Manufactures and Commerce. He is an author of more than 50 scientific papers, many of which are published in refereed international journals, and 12 books or book chapters. He has supervised to completion 16 PhD students and examined many more.

Professor James is Co-chair of the Executive Editors of the British Journal of Sociology of Education, a member of editorial board of Journal of Education and Work, a member of the Council of the British Educational Research Association, and a member of the Education panel for the UK Research Excellence Framework.

Professor Emeritus Erik De Corte

Erik De Corte is Emeritus Professor (of Educational Psychology) in the Faculty of Psychology and Educational Sciences at the University of Leuven, Belgium where he chaired from August 1994 till July 1998 the Department of Educational Sciences. In 1998-1999 he was Visiting Scholar at the School of Education of Stanford University.

His major research interest is to contribute to the development of theories of learning from instruction and the design of powerful learning environments, focusing thereby on learning, teaching, and assessment of thinking and problem solving, esp. in mathematics.

He was the first President (1985-1989) of the European Association for Research on Learning and Instruction (EARLI), and the founding editor of the EARLI journal *Learning and Instruction* (1990-1993). From 1987 till 2002 he was associate editor of the *International Journal of Educational Research*. In 1997 he received the "EARLI Oeuvre Award for Outstanding Contributions to the Science of Learning and Instruction", and in 2002 the "Award for Outstanding Career Contribution to Educational Psychology" of the Division on Educational, Instructional and School Psychology of the International Association of Applied Psychology. He is a Fellow of the Academia Europaea, of the Royal Norwegian Society of Sciences and Letters, of the National Academy of Education of the U.S.A, of the Russian Academy of Educational and Social Sciences, and of the International Academy of Education (President 1998-2006). Respectively in 2000 and 2003 he has been conferred the doctorate honoris causa of the Rand Afrikaans University, Johannesburg, and the University of the Free State, Bloemfontein, South Africa. During the academic year 2005-2006 he stayed as a Fellow at the Center for Advanced Study in the Behavioural Sciences at Stanford.

Professor Pavel Zgaga

Pavel Zgaga is Professor of Philosophy of Education and Education Policy; and director of Centre for Educational Policy Studies in University of Ljubljana since 2001. He obtained his PhD in 1988. From 1999 to 2000 he was a Slovenian Minister of Education and Sport; from 2001 to 2004 he acted as a Dean of Faculty of Education and a member of the Senate of the University.

He has held several research grants and directed national and international projects on education policy. These projects have been mainly concerned with development of higher education in the contemporary European context as well as with teacher education as a specific area of higher education. In these areas, he has been also co-operating with relevant agencies of the European Commission and with several international organisations, e.g. Council of Europe, UNESCO, OECD, World Bank, etc.

He is a member of the editorial boards for the *Journal of Educational Policy*, *Theory and Research in Education*, *Mediterranean Journal of Educational Studies*, *Education Enquiry*, *Voprosy obrazovaniya (Educational issues; Moscow)* etc. He has served as a peer reviewer with a number of scientific journals and monographs. Since 2006 he has authored 2 and (co)edited 5 monographs; he published 35 scientific articles in monographs and journals.

In 2006, he received the Slovenian national prize for research in education. In 2007, he received honorary doctorate from University of Umeå, Sweden. In 2011, he initiated the Slovenian Society for Educational Research (SLODRE) and has taken the task of its first president.

Dr Judith Harford

Dr Judith Harford is Co-Director of the Professional Diploma in Education at the School of Education, University College Dublin, Ireland. Her area of research is education, with a particular emphasis on teacher education research and history of education. Her work in these areas has led to an extensive publication record and a number of research grants, from organisations including The World Bank, The Irish Research Council for the Humanities and Social Sciences and The European Educational Research Association. She is an author of about 15 books or book chapters and about 20 scientific papers published in refereed international journals since 2006.

Dr Harford is Co-Ordinator of the Teacher Education Policy in Europe Network and Link Convenor of the Teacher Education Research Network of the European Educational Research Association (EERA). She also serves on several committees of the State Department of Education and Skills and the Teaching Council of Ireland. She is a peer reviewer for a number of international journals and is on the editorial board of the *New Hibernia Review*. She is Consulting Editor to the *Australian Journal of Teacher Education* and series editor for Peter Lang: Oxford ('Re-Thinking Education' Series). She was recently a Visiting Research Associate at the Faculty of Policy and Society, Institute of Education, University of London. External examining work includes the University of Western Australia, the Australian Catholic University, the University of East London, UK, the University of Limerick, Ireland and the University of Dundee, Scotland.

Appendix 4. Self-assessment Form

Evaluation of Educational research in Estonia (2007–2011)

Submission Form

GENERAL REMARKS

All data in this self-assessment form should represent educational research (excluding in question G3) and should cover only R&D activities and R&D personnel (doctoral students are not included).

GENERAL INFORMATION

Institution (entity):

Address:

Phone:

Internet home page:

Head of the Institution:

Phone:

Email:

Contact person for the Evaluation:

Phone:

Email:

G.1. Percentage that educational research represents in the research carried out in the institution

(Calculations should base on proportions of research financing (do not include infrastructural investments into buildings). The fields of educational research are defined in question G.2. In your institution there may be many other fields of science represented, but we ask you to give the percentage that educational research stands for).

Percentage that educational research represents in the research carried out in the institution	... %

In the following questions, you are asked to concentrate only in this portion of research.

G.2. Institution's research profile within educational research (give estimate of the percentage)

(Calculations should base on proportions of research financing (do not include infrastructural investments into buildings). The percentages should add up to 100.)

Research field	(%)
Logopedics (logopeedia).	
Pedagogy and didactics (Pedagoogika ja didaktika).	
Special didactics (Erivajadustega inimeste õpetamine, eripedagoogika).	
Teacher education (Õpetajakoolitus).	
Physical training, motorial learning, sport (Kehaline kasvatus ja mootorika).	
Adult education, permanent education (Täiskasvanuharidus, elukestev õpe).	
Computer-assisted education (Arvuti õpiprogrammide kasutamise meetoodika ja pedagoogika).	
Comparative and historical pedagogy (Võrdlev ja ajalooline pedagoogika).	
Psychopedagogy (Psühhopedagoogika).	
Experimental pedagogy (Eksperimentaalpedagoogika).	
Social pedagogy (Sotsiaalpedagoogika).	
Orthopedagogy (Ortopedagoogika: erivajadustega lastele suunatud pedagoogika).	
Total	100%

G.3. Other relevant fields connected to institution's research profile

(The interaction between educational research and other fields are studied. Three levels are given:

1 - normal collaboration with joint publications;

2 - common scientific projects i.e. consortia;

3 - integration through scientists working in the group.

Mark with x the columns 1, 2 or 3. More than one column can be marked in the same row).

Research field	1	2	3
Psychology			
Social Sciences			
Other (field 1)			
Other (field 2)			

Comments. Max 1 page.

(Any comments about general information what could be useful for evaluators for better understanding of institution.)

1. THE INSTITUTION'S SELF-ASSESSMENT

(Self-assessment is an important part of the evaluation. Please answer carefully.)

1.1. Describe the development of/changes in the institution's scientific expertise, funding, facilities, organization during 2007-2011

(max 5 pages)

1.2. The institution's research strategy

(Relation to the institution's appropriate strategies, priority areas in research, development measures; max 3 pages.

Describe the institution's research strategy for the next few years, the key research objectives and means to achieve these objectives.

- What is the role of basic and applied research?
- Is there need for new knowledge, facilities, is the present level of funding sufficient for attaining the objectives laid down?

1.3. The societal impact of the institution's activities

(max 2 pages. Describe here how the institution's research activities and cooperation with other actors in society have promoted the activities of other societal actors, e.g. public sector, industry or SMEs, professional unions, technology competence centers etc.).

1.4. Assess the academic and societal need for doctoral training within the institution's research fields and the institution's role in doctoral training (if relevant)

(max 1 page)

Comments. Max 1 page.

(Any comments about self-assessment what could be useful for evaluators for better understanding of institution.)

2. NATIONAL AND INTERNATIONAL COLLABORATION

2.1. Most important national collaboration (max 10)

(List the most important national collaboration partners of the institution (max 10). Collaborator refers to a person or a research team with whom the cooperation has generated one of the outcomes indicated in item ETIS data "Outcomes of R&D activities". Types of collaboration include e.g. joint projects, organizing common scientific events (conference), and researcher mobility.)

Organization	Type of collaboration	Year

2.2. Most important visits abroad by institution's staff (max 10) (minimum duration of visit: three weeks)

(List the most important visits of each year by country in the alphabetical order. In item "Purpose of the visit" indicate clearly the objective of the visit.)

Name	Target organization	Country	Purpose of the visit	Duration (weeks)	Year

2.3. Visits of the foreign researchers to the institution (max 10) (minimum duration of visit: three weeks)

(List the visits of each year in the alphabetical order. In item "Purpose of the visit" indicate clearly the objective of the visit. Data should agree with ETIS data in section visiting researchers.)

Name	Home organization	Country	Purpose of the visit	Duration (weeks)	Year

2.4. Short but particularly important visits of the foreign researchers (max 5)

(List the short but important visits of each year in the alphabetical order (max 5). In item "Purpose of the visit" indicate clearly the objective of the visit.)

Name	Home organization	Country	Purpose of the visit	Year

2.5. Most important foreign academic collaborators (max 10)

(List the most important foreign academic collaboration partners of the institution (max 10). Collaborator refers to a person or a research team with whom the cooperation has generated one of the outcomes indicated in item ETIS data "Outcomes of R&D activities". Academic collaborators include universities and public research institutes. Types of collaboration include e.g. joint projects, organizing common scientific event (conference), and researcher mobility. In outcome section describe e.g. key joint publications, researcher training, adoption and use of new technologies or new approaches etc.)

Name and organization	Type of collaboration	Country	Year	Outcome

2.6. Most important non-academic collaboration and societal impact (max 10)

(List here the most important domestic and foreign non-academic collaboration, e.g. industry contacts, collaboration with different professional unions (e.g. parent's unions, different associations (e.g. teachers associations), research-based in-service training etc.)

Name and organization	Type of collaboration	Country	Year

Comments. Max 1 page.

(Any comments about collaboration what could be useful for evaluators for better understanding of institution.)

3. OTHER SCIENTIFIC AND SOCIETAL ACTIVITIES

3.1. Invited presentations in international scientific conferences (max 10)

(Most important invited international plenary talks, and other invited talks (max 10).)

Name	Topic of presentation	Name and time of the conference

3.2. Invited presentations and organized domestic conferences (max 10)

(Most important organized domestic conferences and invited domestic plenary talks (max 10).)

Organized conferences

Name and time of the conference	Main topic of the conference	Main target audience

Invited domestic plenary talks

Name	Topic of presentation	Name and time of the conference

3.3. Memberships in editorial boards of international scientific journals (max 10)

(Give only the most important memberships (max 10).)

Name	Journal	Period

3.4. Memberships in editorial boards of domestic scientific journals (max 5)

(Give only the most important memberships (max 5).)

Name	Journal	Period

3.5. Memberships in committees and in (advisory) boards of companies or other similar tasks of no primarily academic nature (max 10)

(Give only the most important memberships (max 10).)

Name	Company/organization	Tasks	Period

Comments. Max 1 page.

(Any comments about other activities what could be useful for evaluators for better understanding of institution.)

Appendix 5. Data provided by the Estonian Research Information System ETIS

- R&D activities:
 - List and description (incl. project number, title, description, project leader, senior personnel, duration, financing) of R&D projects;
 - Summarized data tables.
- R&D infrastructure:
 - Number and total area of labs and other research related rooms and facilities;
 - List of most important equipment, apparatuses and instruments (up to 30 and advisably with minimum cost 10 000 euros).
- Personnel:
 - Names, positions and CV-s;
 - Summarized data tables by positions held;
 - Age structure table;
 - Defence of doctoral dissertations;
 - Implementation of doctoral studies;
 - Awards and recognitions.
- Outcomes of R&D activities:
 - List and description of publications by classification;
 - List and description of other R&D based activities;
 - List of most important publications (up to 30) with full text;
 - Number and description of patents, patent applications and plant variety right certificates.

All data are from period 2007-2011.

All sections have options for making comments.

8 Soola Str
Tartu 51013, Estonia
Tel +372 730 0324
www.etag.ee
etag@etag.ee



Eesti Teadusagentuur
Estonian Research Council

