





# Educational R&D in Norway 2013

Resources and Results

Hebe Gunnes  
Kristoffer Rørstad

Working Paper 2015:18

Working Paper 18/2015

Published by Nordic Institute for Studies in Innovation, Research and Education (NIFU)  
Address P.O. Box 2815 Tøyen, N-0603 Oslo. Office address: Økernveien 9, N-0608 Oslo

Project No. 12820495

Customer Norwegian Ministry of Education and Research  
Address Postboks 8119 Dep, N-0032 Oslo

ISBN 978-82-327-0138-4  
ISSN 1894-8200 (online)

[www.nifu.no](http://www.nifu.no)

---

# Preface

This working paper gives a summary of the mapping of resources and results of educational R&D in Norway in 2013. The project was funded by the Research Council of Norway, whereas this working paper is funded by the Ministry of Education and Research. This is the third survey on educational R&D in Norway conducted by NIFU. Norway has implemented a pilot of a planned OECD survey on public educational R&D in the 2013 survey, and the results from this pilot are analysed in this working paper.

Hebe Gunnes was the project leader for the mapping of educational R&D in 2013. Kristoffer Rørstad conducted the bibliometric analyses, and was also responsible for the technical parts of the survey. Bjørn Magne Olsen contributed to the data collection, while Ole Wiig contributed in the quality control of the working paper. Thanks to Eli Sundby at the Ministry of Education and Research for assistance with the data collection, and for interesting and enjoyable project meetings both at the ministry and at the OECD in Paris.

Oslo, 15.09.2016

Susanne L. Sundnes  
Head of Research

Hebe Gunnes  
Project leader



# Contents

<b>Summary .....</b>	<b>7</b>
<b>1 Introduction .....</b>	<b>9</b>
1.1 Background.....	9
1.2 Definitions of educational R&D.....	11
1.3 Data, methodology and design.....	12
1.4 The Norwegian context .....	14
1.5 Structure of this working paper.....	16
<b>2 Resources for educational R&amp;D .....</b>	<b>17</b>
2.1 Thematic priorities in Norway .....	17
2.2 R&D expenditure on educational R&D.....	18
2.3 Classification of educational R&D.....	22
2.4 Researchers participating in educational R&D.....	29
2.5 International cooperation.....	33
<b>3 Results of educational R&amp;D .....</b>	<b>35</b>
3.1 Scientific publication in educational research .....	35
3.2 Other results of educational R&D .....	40
3.3 Funders' view of the results of educational R&D.....	42
<b>4 Barriers to educational R&amp;D .....</b>	<b>43</b>
4.1 Barriers seen by the performing units .....	43
4.2 Barriers to funding educational R&D.....	44
<b>References .....</b>	<b>46</b>
<b>Appendix .....</b>	<b>47</b>
<b>List of tables .....</b>	<b>78</b>
<b>List of figures.....</b>	<b>79</b>





# Summary

NIFU has mapped the resources for educational R&D in Norway in 2007, 2009, 2011 and 2013. Educational R&D is partly mapped through the “thematic priorities” module in the R&D questionnaire for Norway, partly by a special survey covering the units performing educational R&D. For 2013, the survey was complemented by a bibliometric analysis of the field in the period 2010–2013.

This working paper presents an overview of resources for educational R&D, including the distribution of these resources by discipline, sub-area, level of education and funding source. International collaboration on education research is also mapped, along with the number of educational researchers. The survey also contains questions concerning barriers to educational research and development.

## Resources for educational R&D

In 2013, 1.1 billion NOK (approx. €136m) was spent on educational R&D in Norway. This implies a significant growth in the expenditure on educational R&D, from 548 million NOK (approx. €66m-~~EUR~~) in 2007, when resources for educational R&D in Norway were mapped for the first time.

### Where is educational R&D in Norway performed?

A total of 195 units at higher education institutions and research institutes reported that they had educational R&D in 2013. This encompasses all the 8 Norwegian universities, which together conducted 48 per cent of the educational R&D in Norway. State university colleges accounted for 27 per cent, and the 20 state university colleges were included in the sample. Six specialised university institutions, six private colleges and two other higher education institutions accounted for 15 per cent of educational R&D, while 10 per cent was conducted in the institute sector.

### Who funds Norwegian educational R&D?

At least 85 per cent of the educational R&D was funded by government in 2013, while three per cent was funded by other national sources, business enterprises, the EU Commission, or from abroad. General university funds (GUF) accounted for 60 per cent of the funds, while the Research Council of Norway and other government sources, such as the Norwegian Directorate for Education and Training, accounted for 12 per cent. We lack information about the funding of 13 per cent of the educational R&D that was carried out in Norway in 2013.

### Distribution of educational R&D

Of the educational R&D performed in Norway in 2013, 28 per cent was experimental development, 42 per cent applied research, and 28 per cent basic research. Half the educational R&D was

performed at units within *pedagogics* and *teacher education*, and *education* and *didactics* were the two largest disciplines. *Learning and instruction* was the largest sub-area in the field in 2013 (33 per cent), followed by *teacher education* (15 per cent). One quarter of the R&D was related to tertiary education, 19 per cent to upper secondary education and 21 per cent to lower secondary education.

### **Substantial growth in the number of educational researchers**

Educational R&D in Norway in 2013 engaged 2,780 researchers. In 2009, there were 2,074 researchers in the field. The population of researchers within educational R&D is characterised by a high share of women, few full professors, high average age and a relatively low proportion of researchers with a doctorate. There has been a significant rise in competence, i.e. a higher share of the researchers held a doctorate, and there were more professors in 2009 than in 2013.

## **Results of educational R&D**

### **A steady growth in the publication points from 2005-2012, but a reduction in 2013**

Scientific publications in educational R&D had a steady growth between 2005 and 2013. The publication points more than doubled in the period, from about 460 in 2005 to just under 1,100 points in 2013. However, there was a slight decrease from 2012 to 2013. Of the total publication volume in the sectors, educational R&D amounted to about 7 per cent in 2013. The universities accounted for about half the publication points and university colleges for approximately a third. Private university colleges and research institutes accounted for three and five per cent respectively.

### **The majority is written in Norwegian and published in books**

More than half of the publications (58 per cent) were book chapters or articles in an anthology series. Journal articles amounted to 38 per cent, while only five per cent were written as monographs. Educational researchers differ somewhat from researchers in other fields in the higher education sector by publishing far more in book chapters/anthologies and monographs. The majority of the book chapters and monographs were written in Norwegian, and as much as 40 per cent of journal articles were written in Norwegian.

### **Little co-publication, both nationally and internationally**

Of the approximately 960 educational research publications in 2013, only 11 per cent involved co-authorship with other national institutions. The most common form of collaboration, was bilateral co-publishing, which was the case for 10 per cent of the publications, while collaboration between three institutions only occurred in one per cent of the publications.

An analysis of journal articles from Web of Science over the period 2008-2013, gives a proportion of 29 per cent of international co-publishing. The Norwegian educational R&D departments collaborated with foreign institutions in 42 different countries. Most of the collaborating foreign institutions were in English-speaking countries like the US, UK and Australia, in addition to our neighbouring countries Sweden, Denmark and Finland.

## **Barriers to educational R&D**

Four out of five respondents have stated that they experienced some kind of barrier when it comes to performing educational research in 2013. Inadequate access to funding, insufficient time, and the fact that other topics are more prestigious, are seen as the three most important barriers to educational research. Inadequate access to funding of the research was seen as most problematic at university colleges, where almost half the units reported this as a barrier.

Of the units performing experimental development within educational R&D, three in four experienced barriers. Among those who reported barriers, inadequate access to funding, insufficient time or legal, regulatory, and administrative barriers were seen as most important. Units at university colleges were more likely to experience legal, regulatory, and administrative barriers than units at universities.

# 1 Introduction

NIFU, the Nordic Institute in Studies of Innovation, Research and Education, has mapped out the resources for educational research and development (R&D) in Norway by collecting data on expenditure and researchers within educational R&D in 2007, 2009, 2011 and 2013.

The 2007 mapping was organised as a project commissioned by the Research Council of Norway. The aim of the project has been to help provide a more accurate picture of educational R&D in Norway, and provide a basis for a more targeted effort for a strengthening of the field, as well as better strategic research and policy advice in this area.

## 1.1 Background

The Norwegian Ministry of Education and Research has the overall sectoral responsibility for educational R&D, which implies that it will fund research in and about the Norwegian education sector. In 2008, the Ministry presented a strategy for educational R&D.<sup>1</sup> The strategy contained the main objectives for future educational R&D in Norway. Increasing the volume of Norwegian educational R&D and strengthening the knowledge base in the field from kindergarten to higher education, as well as improving the quality of Norwegian educational R&D, were among the aims of the strategy. Strengthening the recruitment of researchers to educational R&D was another goal.

The mappings of educational R&D, conducted by NIFU, have been part of the effort to monitor the implementation of the strategy, as several of the main objectives have been quantified and measured through the mapping. Some of the goals in the 2008 strategy have been met in the following years. The volume of publications related to educational research has increased substantially as did the expenditure for educational R&D and the number of researchers in the field (Gunnes and Rørstad 2015). There has also been a considerable competence growth among the researchers in the field, as both the share of researchers with a doctorate and the number of full professors has increased.

The 2008 strategy was followed by the 2014 strategy,<sup>2</sup> which states the following main objectives:

- Continuing to develop strong and multi-disciplinary research expertise and capacity to meet the knowledge needs in key areas
- Improving the quality and relevance of educational research
- Encouraging the dissemination of results from Norwegian and international educational research and contribute to the interaction between research, education, practice and innovation in the education sector

---

<sup>1</sup>“Kunnskap for kvalitet 2008-2013” (Knowledge for Quality)

<sup>2</sup> “Kvalitet og relevans 2014-2019” (Quality and relevance)

- Encouraging research-based professional practice and practice-based educational research
- Strengthening the recruitment of young talented researchers
- Ensuring recruitment to top positions and developing a stronger international orientation in research communities

The 2014 strategy mentions a number of specific measures, one of them being an effort from the Ministry to renew and encourage research about and for kindergarten. In areas where there is a particular need for new knowledge, for example the quality of the vocational education programmes and special education, as well as gender differences, the Ministry will initiate such research. The Ministry also aims to strengthen the psychometric research in Norway.

Between 2005 and 2015, the Research Council of Norway implemented several research programmes related to education, all funded by the Ministry of Education and Research. *Praksis FoU*, Practice-based R&D for pre-school, primary and secondary education and teacher training, lasted from 2005–2010, and was followed by *PRAKUT*, Practice-based Educational Research. A ten-year long programme *Utdanning2020* (Education2020) started in 2009, and aimed to produce relevant research for the educational sector – policy makers, public administrators, school and kindergarten owners, and teachers. In 2014, *PRAKUT* and *Utdanning2020* were merged into *FINNUT*, a programme for research and innovation in the educational sector. The Ministry of Education and Research and the Research Council invested quite a lot of money in educational R&D over the past decade. The mappings of educational R&D have contributed to obtaining information on the outputs of their investments.

### **1.1.1 Educational R&D in an international perspective**

Educational R&D is a priority in both the Nordic countries and internationally. In recent years, several studies and initiatives for research on education have been taken. In the Nordic countries, NordForsk<sup>3</sup> is behind the initiative “Education for Tomorrow”, while OECD has initiated mapping of resources to educational R&D in several of its member countries.

NordForsk, the Nordic Council of Ministers, and the national research councils in the Nordic countries have combined forces in developing the programme “Education for Tomorrow (2012–2016)”. The purpose of this programme is to create new knowledge about educational systems in the Nordic countries that make them better equipped to meet existing and future needs. The overall objective of “Education for Tomorrow” is to strengthen the Nordic position in educational research, and contribute to a knowledge-based policy in the region. The programme is financing drop-out studies, as well as several major interdisciplinary research projects and a Nordic Centre of Excellence in Education.

A report from 2010 (Borgen et al.) mapped research on education in the Nordic countries using a bibliometric approach. Main findings were that the Nordic countries seem to be strong in the following topics within educational R&D:

- Studies of new technologies in learning, including the use of ICT
- Studies in higher education
- Learning and curriculum studies
- Health education research

The Organisation for Economic Co-operation and Development (OECD) has proposed a study to map units and resources within educational R&D in its member countries. The survey is part of the “Innovation Strategy for Education and Training” project of the Centre for Educational Research and Innovation (CERI), and the Secretariat has designed an ad hoc survey on educational R&D. The survey follows the guidelines of the Frascati Manual. So far, several countries have been involved in

---

<sup>3</sup> NordForsk is an organisation under the Nordic Council of Ministers that facilitates and provides funding for Nordic research cooperation and research infrastructure, which funds educational R&D in all of the Nordic countries.

the process of designing the survey, and six countries have carried out a mapping of performing units within educational R&D.

### **1.1.2 Previous mappings of educational R&D in Norway**

In 2007, the Norwegian Ministry of Education and Research initiated a study in order to map the units at Norwegian higher education institutions and in the institute sector that performed educational R&D, where NIFU did an exploratory study using bibliometric methods to map the landscape (Borgen et al. 2007).

In 2008, an initiative was taken to link the mapping of resources for educational R&D to the national R&D survey in Norway in order to follow up on the governmental priorities in the field of education. The first mapping of educational R&D in Norway in 2007 was based on a combination of survey and the national R&D statistics, and provides an overview of the extent of educational research in the higher education sector and institute sector (Gunnes 2009). A second survey on educational R&D was conducted in 2009, where a questionnaire was sent to all units that reported having R&D activities within the field of education in 2009 (Gunnes & Vabø 2011). For 2011, however, no special survey on educational R&D was conducted, but a report based on the Norwegian R&D survey and registry data was produced by NIFU (Gunnes et al. 2013). The survey on educational R&D in Norway for 2013, which is rendered in brief in this working paper, was the fourth mapping. 195 units in the higher education sector and the institute sector reported that they had educational R&D, and 146 responded to the survey. A list of the units that reported educational R&D in 2013 is found in appendix I.

## **1.2 Definitions of educational R&D**

The definition of educational R&D is based on the OECD's definition of research and development (R&D), stated in the Frascati manual (2002): *Research and development (R&D) comprise creative and systematic work in order to increase the stock of knowledge – including knowledge of humankind, culture and society – and to devise new applications of available knowledge.* For more details, see appendix II. To be counted as educational R&D, the activities need to be covered by this definition.

### **1.2.1 Definition of educational R&D in the Norwegian surveys**

NIFU has conducted four studies of educational R&D in Norway. The Ministry of Education and Research has developed a special definition for the national mapping of educational R&D, which has been used in all four mappings:

*Educational R&D is an interdisciplinary research field related to studying the aspects of education; teaching, learning, leadership and management of all levels and in all education systems, including teaching materials and technical aids in the studies. Educational R&D can be targeted at different purposes, such as social conditions, labour, government administration/public management and the general scientific development, in addition to educational conditions.*

### **1.2.2 Definition of educational R&D by the OECD**

The OECD has developed an ad hoc questionnaire to map educational R&D in its member states, and in the introduction to the survey it points out that *“Innovation and improvement in education partly relies on the knowledge and insight generated through research and development (R&D) in the field of education. However, existing measures of public educational R&D have limited ability to support educational and research policy.”* According to the OECD, current indicators on countries' investment in educational R&D face problems of accuracy and comparability. The main purpose of its survey is to allow better comparisons of R&D spending within countries, as well as to provide a clearer picture of the relative weight of educational R&D in the total R&D in a country. Another goal of the study is a better understanding of how educational R&D is organised and funded.

The ad hoc survey proposed by the OECD has a somewhat broader definition of educational R&D than the Norwegian survey:

*Educational R&D consists of a broad range of activities, including but not limited to research and development on: educational policies; management, organisations and leadership; curriculum studies; learning; instructional methods; teaching, teacher profession and teacher education; assessment and evaluation; education statistics; and educational technology. To demark R&D from other related activities, we recommend using the principle that R&D enhances the stock of publicly-available knowledge on education and education policy.*

This definition implies that the collection and preparation of educational statistics should be included. More development tasks seem to be covered by the OECD definition than by the Norwegian definition. And, most importantly, the OECD definition might include all government institutions with in-house R&D.

## 1.3 Data, methodology and design

The study has been conducted as a combination of a special survey sent to selected institutions on departmental level and the questionnaire for the national R&D survey. We use the infrastructure of the national R&D survey to find contact information for the units.

The survey on educational R&D is conducted in the higher education institutions and the institute sector, as the health trusts and business enterprises have little research in this field.

### 1.3.1 Data sources

The national R&D statistics for Norway are the basis for the calculation of R&D expenditure for educational R&D. Data on expenditure for R&D are available at department level. The survey asks the respondents to estimate the share of their R&D activities related to the thematic priority *Education*. As the definition of the thematic priority Education equals that of educational R&D, we thus know the total R&D expenditure in the field, even if the selected units do not participate in the survey for educational R&D. More information on the methodology of the R&D survey in Norway is found in Appendix II.

NIFU's Register of Research Personnel is a database that covers researchers/academic staff, as well as supporting staff within tertiary education, who participate in R&D in the Norwegian higher education and institute sector institutions, including health trusts. The register contains information on position, age, gender, educational background and doctorate, as well as the institution where the person is employed (department, faculty, field of science etc.). The register does not cover special part time affiliations, with the exception of adjunct professors (Professor II). Only personnel with a job share of 40 per cent or more are included in the register. Personnel data is retrieved from the administration of the R&D-performing institutions per October 1st, and the registry goes back to the 1960s.

Bibliometric studies are traditionally based on the Web of Science database (WoS), operated by Thomson Reuters, but the national system for research documentation in Norway (CRISTin) enables analysis of all scientific publications, which means that monographs and book chapters will also be included in the analysis, in addition to articles published in journals indexed by Thomson Reuters. More than 160 Norwegian research institutions are presently using CRISTin. The analysis in this working paper covers publications in publication channels approved by the Norwegian results-based system for funding research, see further explanation in chapter 2.1.1. We will use both publication points and the number of authors in the analysis. To identify publications in educational research, journal articles in the category *Pedagogic and Education* were targeted. This category corresponds largely with the definition of educational R&D in this mapping. Book chapters and monographs were manually identified by searching for keywords in the publications' titles, such as *education, training, learning, school, children, kindergarten* and *knowledge*. By using this method, we identified central publications in the field, and thus the basis for this analysis.

### **1.3.2 The survey**

The mapping provides an overview of the scope of educational R&D in the higher education sector and at selected research institutes in Norway, including an overview of funding sources for educational R&D and a distribution by field of science. The 2013 questionnaire asks for information about the following topics:

- The proportion of educational R&D related to current R&D expenditure, and the number of full-time-equivalents (FTE) related to educational R&D
- Distribution of educational R&D by source of fund (percentage)
- Distribution of educational R&D by type of R&D (percentage)
- Distribution of educational R&D by discipline (percentage)
- Distribution of educational R&D by level of education (percentage)
- Distribution of educational R&D by area of research, linked to the level of education (percentage). Results from this question are not presented in this working paper
- Collaboration on educational research, both national and international. Only the international collaboration is presented in this working paper
- Assessment of the recruitment situation of educational R&D, including the number of applicants for new positions

The methodology of the survey of educational R&D is presented in detail in Appendix III. It is important to emphasise that it can be difficult to specify the exact size of the scope of R&D activity in a particular area. The interpretation of the questions, and thus the quality of the data, will depend on the respondent's assessment.

Included in the mappings in 2007, 2009 and 2013 was also identification of the R&D personnel who participated in educational R&D. The respondents received a list with names and positions of all academic staff at the unit, based on NIFU's Register of Research Personnel, and were asked to mark the employees who had participated in educational R&D with an X. All units that responded to the survey, with one exception, provided these lists.

This methodology, combined with the rather unique Register of Research Personnel, gives us an exceptional good overview of the population of researchers participating in educational R&D in Norway. Since the names of the researchers are available, this made the review of publications and research results significantly easier.

### **1.3.3 The OECD mapping of public educational R&D**

Institutional frameworks vary greatly across countries, and the first phase of the OECD project has been to conduct a mapping of units involved in educational R&D in each participating country. National experts have been asked to identify the units performing and funding educational R&D in their country. The target population of the survey is defined as "*specific units or departments within higher education, government and non-profit institutions in participating OECD countries which have performed or funded educational R&D activities during the fiscal year 2013*".

As the OECD's definition was somewhat broader than the Norwegian definition, an effort was made to identify governmental bodies or units with in-house R&D activities. Several ministries, as well as the Norwegian Directorate for Education and Training, were asked if they had in-house educational R&D activities. A few of them replied that they might have some activity, but eventually they were not able to calculate the amount, nor classify the activity related to the breakdowns in the questionnaire. We thus decided to leave the government bodies out of the survey of performing units.

The existing survey on educational R&D in Norway already covered many of the topics proposed by the OECD, and the definitions and classifications used were equal or similar. We adapted the Norwegian survey to suit the OECD questions, and included a special «OECD module» to cover topics

raised especially in the OECD questionnaire. The questionnaire, with comments on the differences between the Norwegian survey and that proposed by the OECD, is found in appendix IV.

Topics covered by the «OECD module»:

- Headcount and full time equivalent (FTE) in-house personnel devoted to total R&D activities and educational R&D activities in fiscal year 2013, by occupation (researcher/other staff)
- Headcount and full time equivalent (FTE) of external contract personnel devoted to educational R&D activities in fiscal year 2013. The choice “Not applicable” was included for this question, as the use of external contract personnel of this kind is uncommon in Norway
- Percentage of expenditure on total intramural educational R&D performed in fiscal year 2013 by sub-area of educational R&D
- Results of educational research and development in form of products/services, and whether these outputs lead to patents or commercial revenues
- Barriers to educational research and development

The questions in the «OECD module» regarding R&D personnel were eventually filled in by NIFU with totals extracted from the Register of Research Personnel and from the list of researchers marked as participating in educational R&D by the respondents. The results from the survey regarding this issue will therefore not be addressed in this working paper.

The OECD made a separate questionnaire for the funders of educational R&D. We sent the questionnaire to selected ministries and governmental bodies, both central and local authorities. After an internal discussion in the project group, we decided to drop all ministries except the Ministry of Education and Research. However, the Ministry for Education and Research provided totals for their funding of educational R&D in 2013, but did not fill in the questionnaire. Three funders responded to the questionnaire: the Research Council of Norway, the Norwegian Directorate for Education and Training, and NordForsk. The Norwegian Association of Local and Regional Authorities reported that it funded educational R&D in 2013, but did not fill in the questionnaire. The questionnaire for funders is found in appendix V.

The OECD ad hoc survey is concerned with the non-responding units. As the Norwegian mapping builds on the national R&D survey and the thematic priority *Education*, we know the total number of units performing educational R&D in Norway in 2013. We also know the amount of current expenditure spent in the field by the units that did not participate in the survey, and they are included in the totals. However, we have no information about level of education, sub-area etc. at the non-responding units. A brief non-response analysis is available in appendix VI.

## 1.4 The Norwegian context

For international readers, a description of the Norwegian context, such as the R&D system and the structure of the education system, might be useful to get a full understanding of the mapping of educational R&D in Norway.

### 1.4.1 The Norwegian R&D system

R&D activities in Norway are classified within three sectors of performance: the industrial sector; the institute sector; and the higher education sector. The higher education sector corresponds to OECD's definition. The Norwegian institute sector covers OECD's Government sector and Private Non-Profit sector (PNP), as well as non-profit research institutes serving enterprises. The PNP sector is rather small in Norway, and is therefore merged into the Government sector in international statistics presentations. OECD's Business enterprise sector includes the industrial sector and the business-oriented research institutes.

Table 1.1 shows how the Norwegian R&D system relates to the OECD's sector classification.



**Table 1.1 The R&D system in Norway.**

OECD, R&D performing sector	Units	Norwegian system, R&D performing sector
Higher education sector (HES)	Universities, specialised university institutions, universities of applied sciences and other higher education institutions	Higher education sector (Universitets- og høyskolesektoren)
	University hospitals	
Government sector (offentlig sektor)	Other health trusts	Institute sector
	Research institutes and other institutions with R&D, mainly funded or controlled by the government	
Business enterprise sector	Private research institutes serving enterprises.	
	All enterprises with 50 or more employees. A selection of companies with a minimum of 10 employees are also included	Industry sector

Source: NIFU

For more details about the Norwegian R&D system, see appendix VII.

### **1.4.2 The education system in Norway**

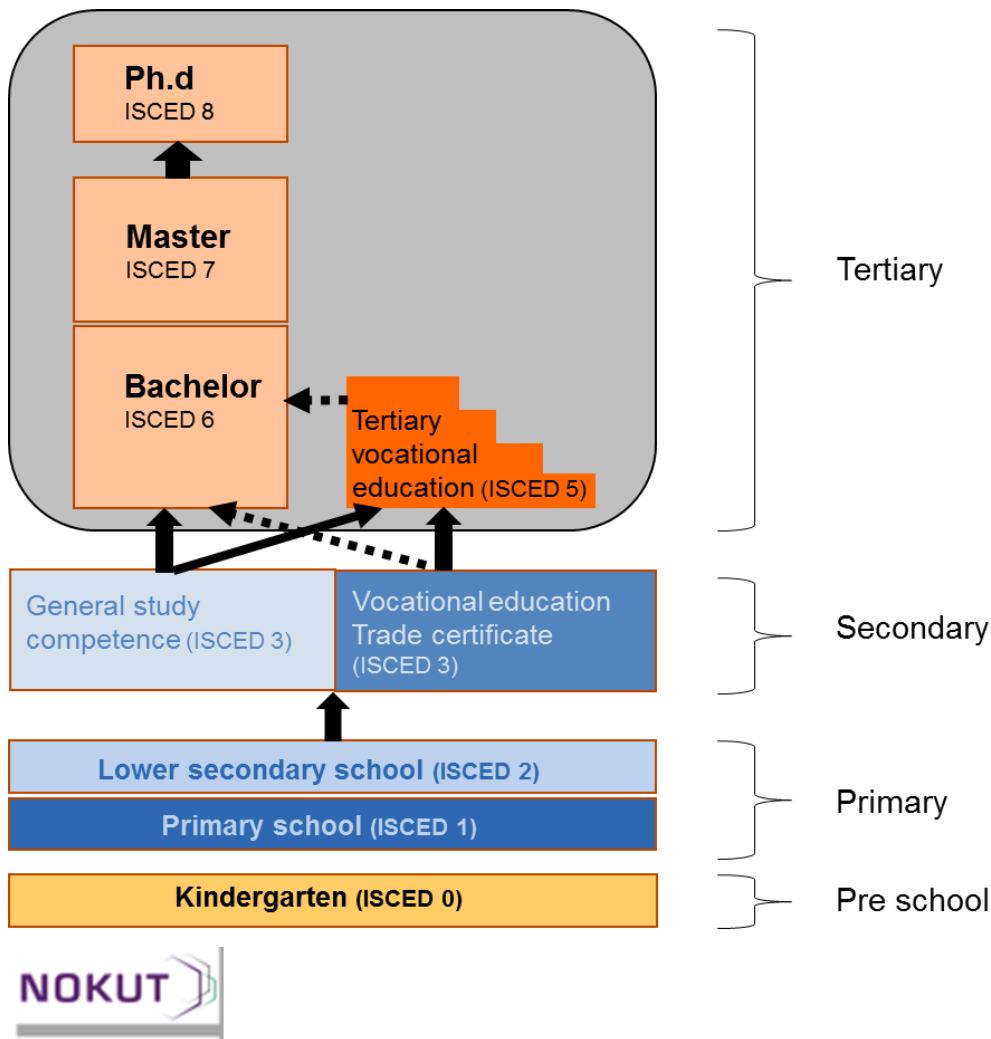
A short summary of the Norwegian educational system is necessary to understand the roles of the different actors and stakeholders and their contribution to educational R&D in Norway. This summary is based on information given by NOKUT (the Norwegian Agency for Quality Assurance in Education).

Children and young people in Norway have a right and an obligation to complete primary and lower secondary education, and adults are also entitled to primary and lower secondary education. Everyone who completes primary and lower secondary education is entitled to upper secondary education qualifying for further studies or a vocation. The Higher Education Entrance Qualification qualifies students for admission to university or university college programmes. Higher education is offered at bachelor, master's and PhD level (ISCED 6-8), and should be research-based. Tertiary vocational education is a short vocational alternative to higher education (NOKUT).<sup>4</sup>

Different governmental bodies are responsible for the organisation of education at different levels of the system – municipalities at kindergarten and basic school levels, county authorities at upper secondary level, and the Norwegian state for higher education. The responsibility for adult learning lays with the municipalities and counties, but also with the enterprises that need skilled workers, and on the higher education institutions when it comes to further higher education.

<sup>4</sup> See <http://www.nokut.no/en/Facts-and-statistics/The-Norwegian-Educational-System/>. See also [http://www.udir.no/Upload/Brosjyrer/5/Education\\_in\\_Norway.pdf?epslanguage=no](http://www.udir.no/Upload/Brosjyrer/5/Education_in_Norway.pdf?epslanguage=no)

See figure 1.1. for an overview of the Norwegian educational system. For more detailed information, see appendix VIII.



**Figure 1.1 The educational system in Norway**

*Source: NOKUT (the Norwegian Agency for Quality Assurance in Education)*

## 1.5 Structure of this working paper

Chapter 1 of this working paper has given background information about the mapping of educational R&D in Norway, as well as definitions, and a review of methods and design. The chapter has also provided information about the Norwegian context, both the R&D system and the educational system.

Chapter 2 presents the main results of the survey, i.e. resources for educational R&D in Norway, measured as current expenditure for educational R&D and number of researchers in the field. We examine the funding of educational R&D, and present the breakdowns by type of R&D, field of science/discipline and sub-area. We also examine the characteristics of educational researchers in terms of institutional affiliation, position, highest academic degree, share of personnel with a doctorate, gender balance and age. A session on international cooperation in educational R&D is also included in this chapter.

Chapter 3 contains an analysis of scientific publications in educational research, as well as the results from the questions in the «OECD module» related to results of educational R&D. In conclusion, chapter 4 deals with barriers to educational R&D, as the respondents reported them.

## 2 Resources for educational R&D

This chapter presents the mapping of educational R&D in Norway. We start with presenting the organisational landscape of the units participating in educational R&D, and then present the main findings from the survey.

The OECD wanted an overview of the aims of the funders of educational R&D. A survey was sent to some of the central funders of educational R&D in Norway, such as the Research Council, The Directorate of Education and Training, and NordForsk. We will present some of the responses to this survey in this chapter. In addition to providing an estimate for total funds allocated to educational R&D, the funders were asked to provide the same breakdowns as the performing units, i.e. type of R&D, level of education and sub-area.

### 2.1 Thematic priorities in Norway

The Norwegian R&D statistics questionnaire contains a module where respondents are asked to indicate the proportion of their R&D activity within selected government policy priorities.

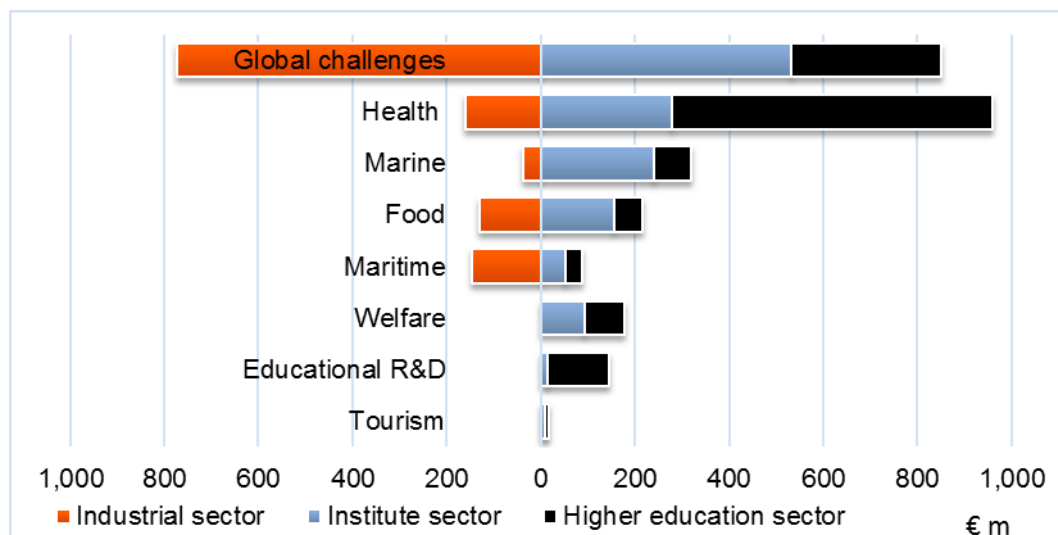


Figure 2.1 Thematic priorities in Norway: 2013

Source: NIFU/Statistics Norway

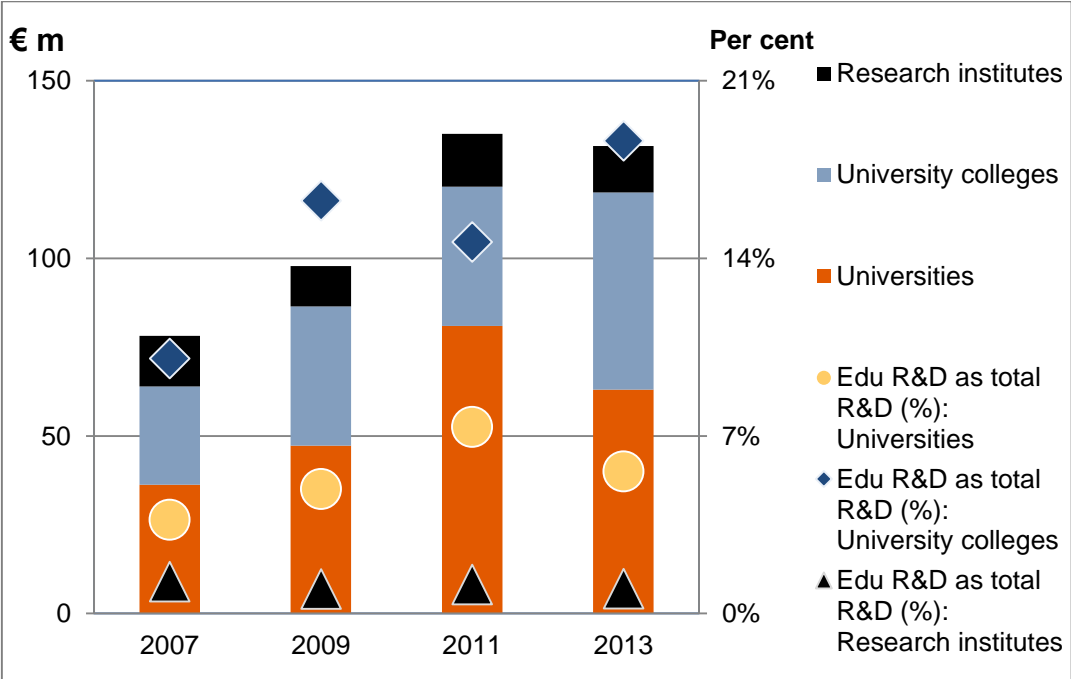
The module mapping thematic areas was implemented in the Norwegian R&D survey in the 1990s, and revised in 2005. There have also been some alterations in definitions and coverage for some of the areas over the years. The thematic areas that were covered in 2013 were *Global challenges* (i.e. *Energy and Environment, Food, Sea (Marine and Maritime), Health, Welfare, Education and Tourism*).

Educational R&D was one of eight thematic priorities that were monitored by the R&D survey in Norway; see figure 2.1. The largest thematic priority in 2013, measured in current R&D expenditure, was *Global challenges*, which includes studies of energy and environment, as well as development studies. The second largest priority was *Health*, which covers all R&D performed at the university hospitals and health trusts. *Education* was the second smallest of the thematic priorities in 2013, but the third largest in the higher education sector. It was, however, marginal in the institute sector, as the second smallest of the thematic priorities in this sector.

### 2.2 R&D expenditure on educational R&D

1,138 billion NOK (≈€146m) was spent on educational R&D in Norway in 2013. This educational R&D accounted for 4 per cent of current R&D expenditure in the higher education sector and institute sector in 2013

In 2007, 103 units with educational R&D responded to the survey. Two years later, the number of units had increased to 145. In 2011, no special survey on educational R&D was conducted, but 171 units reported that they had R&D within the thematic priority *Education* through the R&D statistics' questionnaire. In 2013, 195 units reported that they had R&D activities within *Education*, and 146 units participated in the survey.



**Figure 2.2 R&D expenditure on educational R&D in Norway by type of performing institution; 2007, 2009, 2011 and 2013 (million EUR<sup>1</sup>). Share of total R&D by type of institution (per cent). Fixed 2010-prices.**

<sup>1</sup>Re-calculated from NOK with the average exchange rate in DnB's currency converter for the specified year.

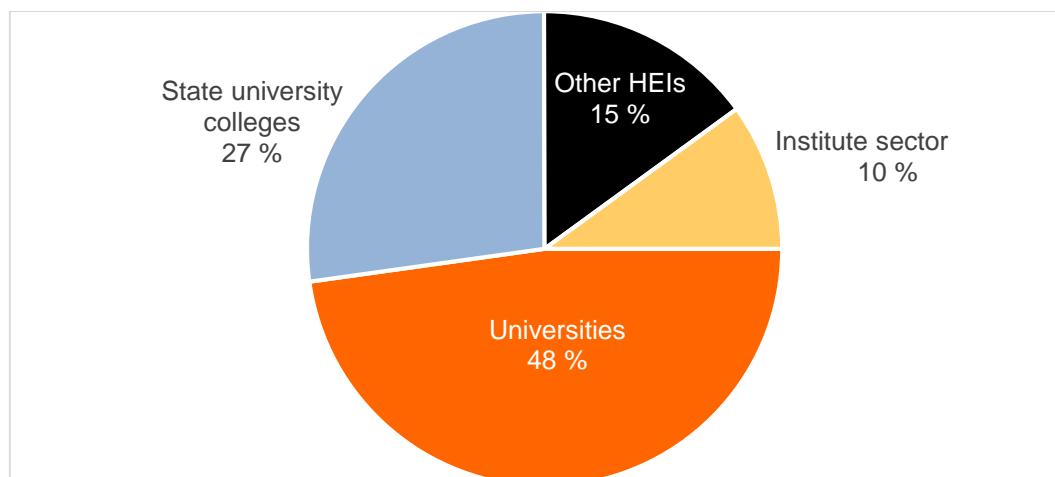
Source: NIFU/R&D statistics

Educational R&D amounted to 548 million NOK ( $\approx$  €68m) in 2007, 820 million NOK ( $\approx$ €94m) in 2009 and 1,096 billion NOK ( $\approx$ €141m). In fixed prices, this gives an annual real growth of 8.6 per cent from 2007 to 2013.

There was a considerable growth in the expenditure for educational R&D from 2007 to 2011, and then a decrease from 2011 to 2013;<sup>5</sup> see figure 2.2. The decrease has mainly occurred in the universities, but there was also a small decrease in the educational R&D at the research institutes. Educational R&D in university colleges decreased from 2009 to 2011, and then increased considerably from 2011 to 2013.<sup>6</sup> Educational R&D accounted for a higher share of the R&D expenditure at the university colleges in all years, than in the other types of institutions. This is mainly due to the regional teacher education at the university colleges.

### 2.2.1 Performing units

Universities accounted for close to half of the expenditure on educational R&D in Norway in 2013, while nearly 30 per cent was performed by units at university colleges, 15 per cent at other HEIs and 10 per cent at research institutes; see figure 2.3. Most of the performing units were public, and only 1 per cent of the educational R&D was performed at a research institute serving enterprises. Of the educational R&D performed in other HEIs, one third was conducted at a private higher education institution.



**Figure 2.3 Performers of educational R&D in Norway: 2013. Per cent.**

Source: NIFU

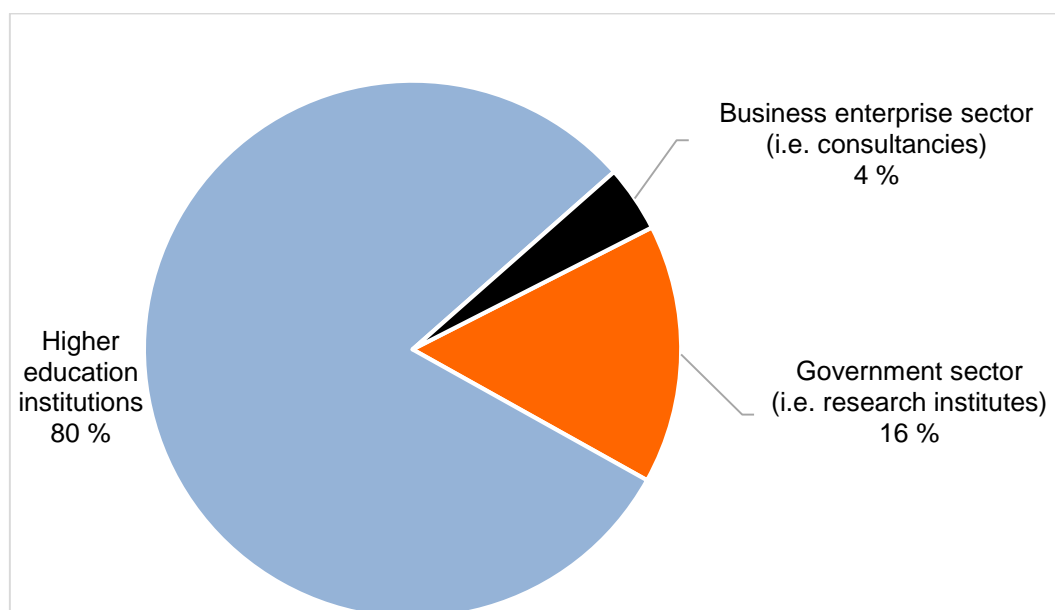
The University of Oslo was the largest institution in the field, followed by the Norwegian University of Science and Technology, and the University College of Oslo and Akershus. A list of the institutions and units performing educational R&D is found in appendix I.

Three of the major funding institutions filled in the questionnaire for funders: The Research Council of Norway (RCN), the Norwegian Directorate for Education and Training (Udir) and NordForsk. The funders were asked to allocate their funds by sector of receiver. Figure 2.4 shows that 80 per cent of the funds went to departments and centres in the higher education sector, while research institutes, mainly in the government sector, received 16 per cent. Four per cent of the funds were allocated to the business enterprise sector, mainly to consultancies. Consultancies are not covered by the Norwegian

<sup>5</sup> The data for 2011 relies on the national R&D survey for Norway, as there was no special survey on educational R&D this year. The data are thus slightly more unreliable than for the other three years.

<sup>6</sup> Note that these figures are affected by organisational changes in the higher education sector over the period of time. Examples: Bodø University College achieved university status in 2011, and is thus considered a university college in 2007 and 2009, but not in 2011 and 2013. The teacher education at Tromsø University College was included at the University of Tromsø in 2009, and this affected the ratio of the universities and university colleges as a total.

survey of educational R&D, and as seen in the responses from the funders, the efforts within educational R&D at consultancies seem to be rather marginal compared to the higher education and institutes sector units.



**Figure 2.4 Educational R&D in Norway from selected funders<sup>1</sup> by receiving sector: 2013. Per cent.**

<sup>1</sup>Includes the Research Council of Norway, the Norwegian Directorate for Education and Training (Udir) and NordForsk.

Source: NIFU

## 2.2.2 Funding of educational R&D

Public sources funded more than 84 per cent of the educational R&D in 2013. Public sources are thus more important in educational R&D than in other research fields, see table 2.1.

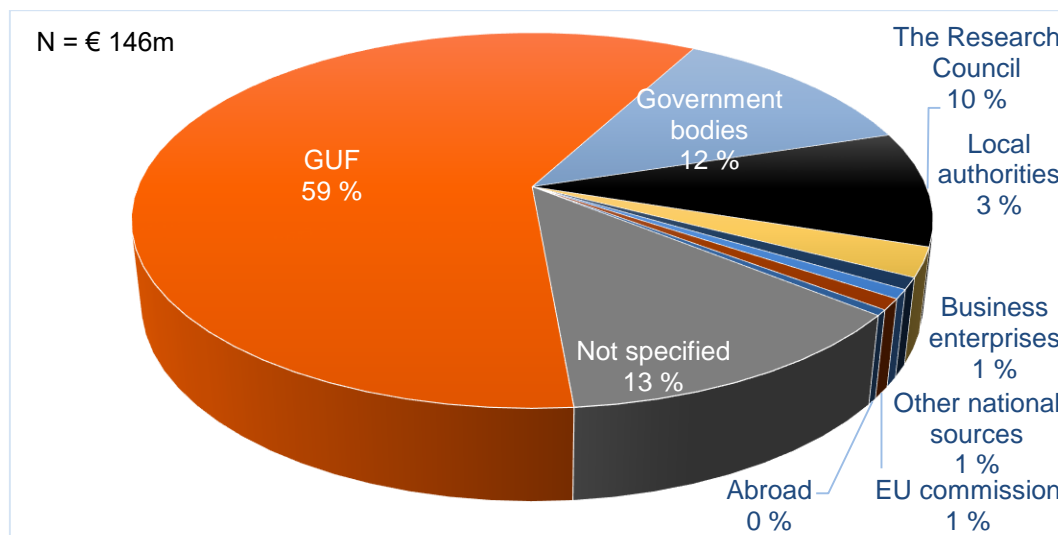
**Table 2.1 Key figures on educational R&D expenditure in Norway: 2013. Mill. NOK and per cent.**

Funding	Univer- sities	University colleges	Research institutes	Total (Mill. NOK)	Per cent
Current R&D expenditure	12,492	2,577	11,689	26,758	100
Funded by public sources	11,073	2,211	7,781	21,065	79
Funded by private sources	1,419	366	3,908	5,693	21
Current expenditure on educational R&D	544	480	114	1,138	100
Funded by public sources	465	413	78	956	84
Funded by private sources	9	9	18	37	3
Not specified	70	58	18	146	13
Share of educational R&D (%)	4	19	1	4	

Source: NIFU/R&D statistics

General university funds were the most important funding source for educational R&D and accounted for two thirds of the R&D expenditure; see figure 2.5. The high share of funding by GUF implies that the institutions themselves are initiating and performing a large part of the research.

The majority of the research funded by GUF is thus conducted during the academic staff's "R&D time". Time use surveys are conducted with regular intervals in the higher education sector in Norway. The latest survey was conducted in 2010 (Egeland and Bergene 2012), while previous time surveys for the university colleges were carried out in 2005 (Larsen and Kyvik), and for the universities and specialised university institutions in 2000 (Smeby 2001). The time use surveys show that the percentage of time spent on R&D has been relatively stable over the decades. A full professor/associate professor at a university spends approximately 40 per cent of their time on R&D related activities, while college readers and lecturers spend a somewhat lower part of their time on R&D activities, and more time on teaching (see also Gunnes and Wendt 2013).



**Figure 2.5 Educational R&D in Norway by source of fund: 2013. Per cent.**

Source: NIFU

Other government bodies, such as the Ministry of Education and Research and The Norwegian Directorate for Education and Training, accounted for 12 per cent of the funding, while the Research Council of Norway (RCN) contributed with 10 per cent.<sup>7</sup> Local authorities, among them The Norwegian Association of Local and Regional Authorities (KS) and municipalities/counties, funded 3 per cent of the educational R&D. Non-public sources, here business enterprises, other national sources and abroad/the EU Commission, accounted for a total of 3 per cent of the funding.

Information on funding is missing for 13 per cent of the expenditure. This is mainly related to the units that did not respond to the questionnaire. These units are either small, or educational R&D accounted for a minor proportion of their R&D activities in 2013, and we assume that the majority of educational R&D with these units are funded by GUF.

### **2.2.3 Reports from the funders**

Three of the major funding institutions filled in the questionnaire for funders. Altogether, they allocated 142.8 mill. NOK (≈€18m) to educational R&D in 2013. This amounts to 13 per cent of the current expenditure in the field in 2013. The funding units reported that 113 mill. NOK was funds from the RCN, whereas the sum given from the RCN itself was a little lower. This is to be expected, as there could be elements of educational R&D in projects related to programmes that are not targeted to educational R&D by the RCN. Besides, the institutions could have received funding in 2013, and transferred unused funds to the following year, due to delays, permissions etc.

<sup>7</sup> Several of the research institutes that performed educational R&D in 2013 received their basic funding from the RCN. These funds are registered as basic funding, not funds from the RCN, in the survey of the performing units.

The three funders provided information on the processes they use to distribute their funds for educational R&D. All three use *open competitive grants on predefined educational themes*. One out of three also uses *open competitive grants on any theme proposed by applicants*, and one out of three reported that they invited *certain researchers/units to undertake R&D on predefined educational themes*. None of the funders allocated their funds by inviting *certain researchers/units to undertake R&D on any theme they propose*.

## 2.3 Classification of educational R&D

The respondents were asked to classify their educational R&D activities by different breakdowns, including type of R&D, field of science, level of education and sub-area. For some of these classifications, the response rate was lower than others. Almost all respondents classified their educational activities by type of R&D, whereas more than 25 per cent did not provide the classification by sub-area.

### 2.3.1 Distribution by type of R&D

Research and development (R&D) comprise creative and systematic work in order to increase the stock of knowledge – including knowledge of humankind, culture and society – and to devise new application of available knowledge. In the OECD's manual, three types of R&D may be distinguished:

- Basic research is experimental or theoretical work undertaken primarily to acquire new knowledge of the underlying foundation of phenomena and observable facts, without any particular application or use in view
- Applied research is original investigation undertaken in order to acquire new knowledge. It is, however, directed primarily towards a specific practical aim or objective
- Experimental development is systematic work, drawing on existing knowledge gained from research and/or practical experience and producing additional knowledge, which is directed to producing new products or processes or to improving existing products or processes

(Frascati manual 2015)

Within the field of Education, pedagogical development is a widely used term. Some pedagogical development might be covered by the definition of experimental development, but not all. We will not address this discussion in this working paper, but we find it useful to make the reader aware that there is an ongoing discussion on this topic.

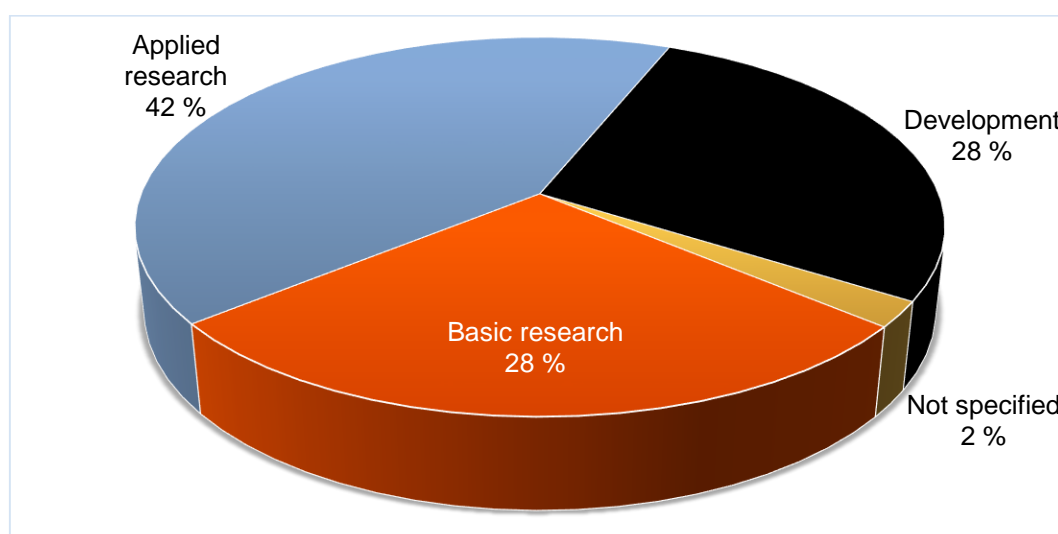


Figure 2.6 Educational R&D in Norway by type of research: 2013.

Source: NIFU

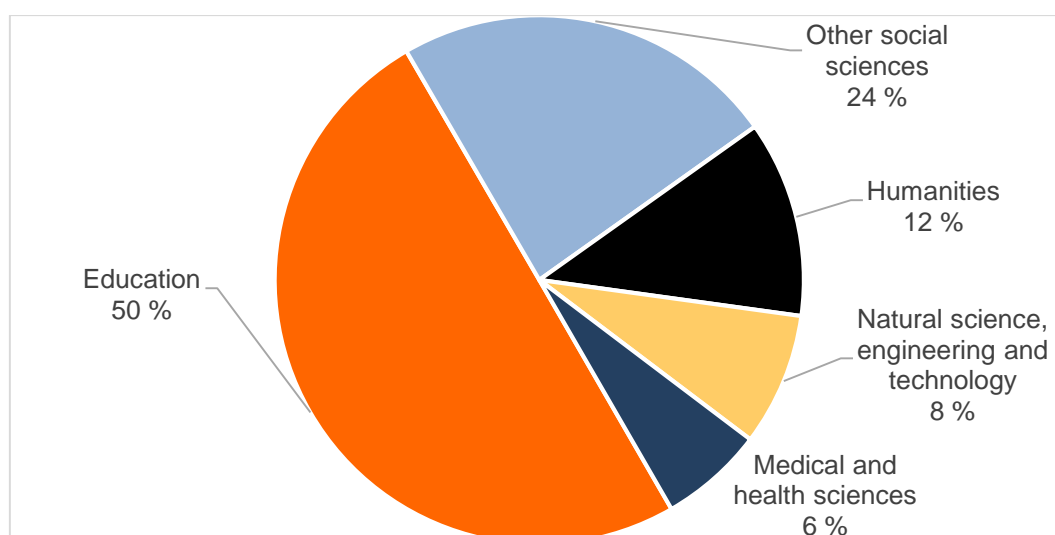


Of the expenditure for educational R&D in Norway in 2013, 70 per cent of the expenditure was on research, 42 per cent was applied research, and 28 was basic research. The amount spent on experimental development activities amounted to 28 per cent, and 2 per cent of the R&D effort in the field was not classified by the respondents; see figure 2.6

There was a slight difference in the distribution of type of R&D within the three types of institutions. At the universities, basic research accounted for 30 per cent, while applied research amounted to 40 per cent and experimental development to 30 per cent. The somewhat high share of experimental development at the universities might partially be due to a number of national centres dealing with education, and development in education organised by these centres. At the university colleges, applied research constituted half of the educational R&D, while basic research amounted to 35 per cent and experimental development to 15. In the institute sector, which has an overall large share of applied research, 75 per cent of the educational R&D was reported as applied research. Only eight per cent was basic research, while 17 per cent was experimental development.

### 2.3.2 Distribution by field of science

Half the educational R&D in Norway in 2013 was performed at units within *Education*; see figure 2.7. Examples of units within *Education* were the Department for Educational Research at the Faculty of Educational Sciences, University of Oslo and the Faculty of Education and International Studies at Oslo and Akershus University College of Applied Sciences.

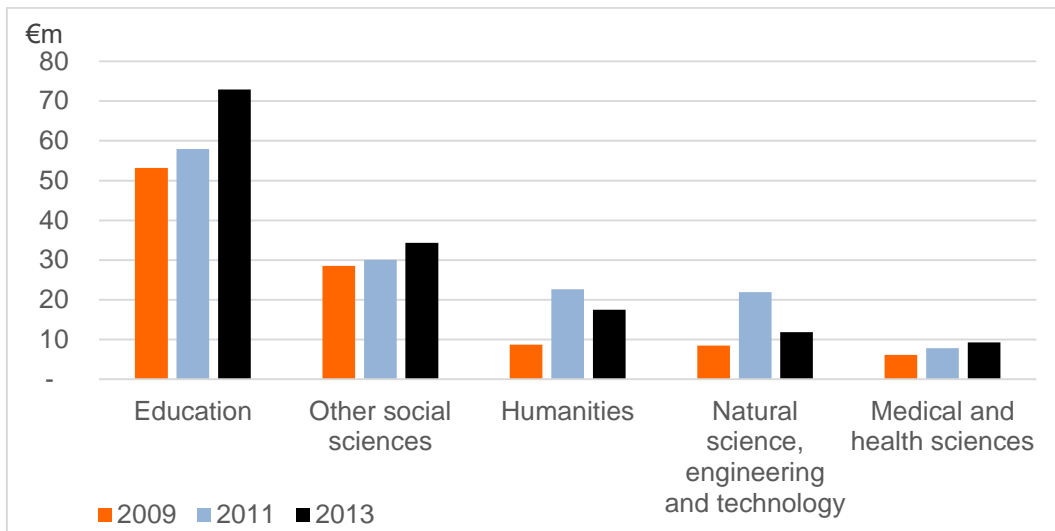


**Figure 2.7 Educational R&D in Norway by field of science:<sup>1</sup> 2013.**

<sup>1</sup>Field of science is related to the units' main field of science, as stated in the national R&D survey for Norway.

Source: NIFU/R&D statistics

Research units within social sciences, including *Education*, accounted for almost 3/4 of the educational R&D in Norway in 2013. Performing units within humanities encompass departments within linguistics, but also several units within arts and music, history and culture studies. Within natural sciences, there are several departments doing research within didactics, but also some units related to the education of engineers. The units within medical and health sciences are all within health sciences, mainly performing educational R&D related to health and psychology, including research related to the health worker education and profession.

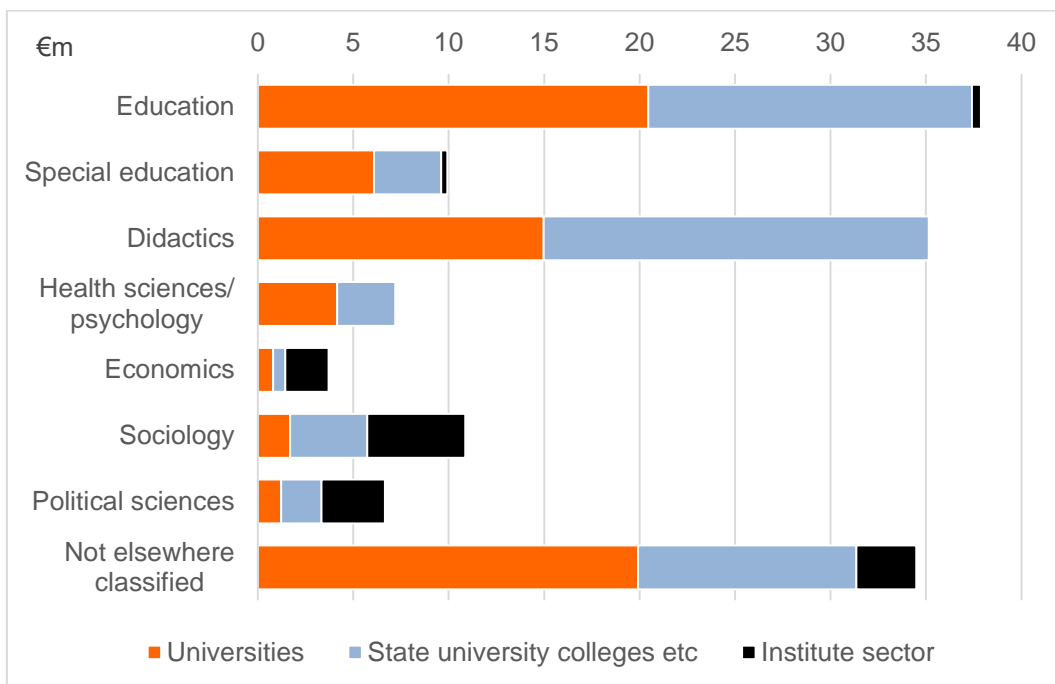


**Figure 2.8 Educational R&D in Norway by field of science:<sup>1</sup> 2009-2013. Fixed 2010 prices.**

<sup>1</sup>Field of science is related to the units' main field of science, as stated in the national R&D survey for Norway.

Source: NIFU/R&D statistics

Figure 2.8 shows units within humanities and natural science, engineering and technology reported a large increase in educational R&D from 2009 to 2011, and then a decline from 2011 to 2013. This is either due to a shift in the funding and focus of educational R&D from 2011 to 2013, or there are technical issues related to field of science (FoS). FoS is a dynamic classification in the Norwegian R&D system, as it is updated every two years in line with the national R&D survey.



**Figure 2.9 Educational R&D in Norway by discipline and type of institution: 2013.**

Source: NIFU

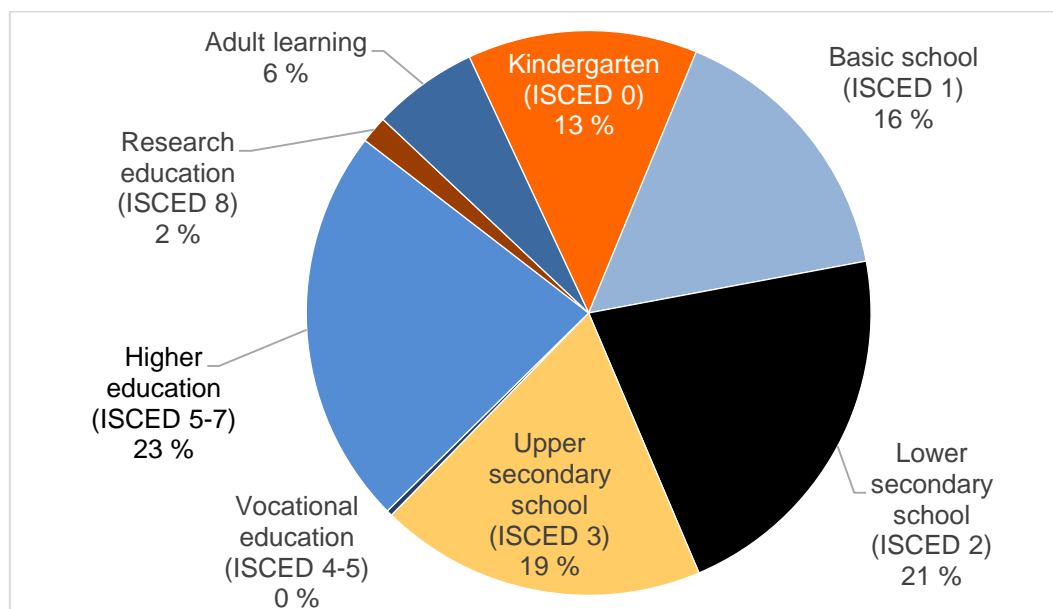
The respondents were asked to classify their educational R&D activities by selected disciplines, such as *education*, *didactics*, *sociology of education* and *education economy*. Figure 2.9 shows that *education* was the largest field in 2013, equally divided between the universities and the university

colleges. The second largest field was *didactics*, which is a major discipline in teacher education at the university colleges. The third largest field at the universities was *special education*, followed by *health sciences* and *psychology*. At the university colleges, the *sociology of education* was slightly bigger than *special education*. At the research units in the institute sector, the most prominent disciplines were *sociology of education*, *political sciences* and *economics*.

Not elsewhere classified encompasses both the R&D activity within education at the non-response units, as well as R&D activities that did not fit in with the predefined categories.

### 2.3.3 Distribution by level of education

Educational R&D has been reported by level of education in the Norwegian survey since 2007, but in somewhat different classifications from the OECD survey. The differences in the classification schemes are described in appendix V, as part of the presentation of the Norwegian survey. The levels selected by the Ministry of Education and Research in the Norwegian mapping relates to the organisation of research within the ministry. Kindergarten was earlier part of child care, and thus included in the Ministry of Children and Equality. When the responsibility was transferred to the Ministry of Education and research, several research initiatives were taken both by the ministry and by the Research Council of Norway. There has been a special focus on R&D related to the kindergarten level in two of the previous mappings of Norwegian educational R&D.



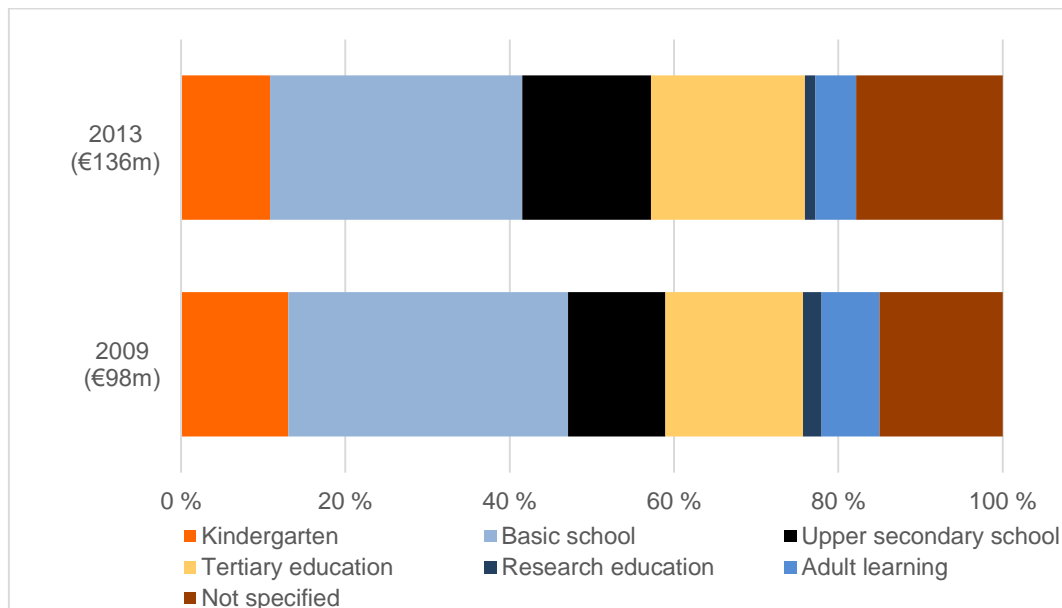
**Figure 2.10 Educational R&D in Norway by level of education: 2013.**

Source: NIFU

The highest share of educational R&D in Norway in 2013 was focused on higher education (23 per cent); see figure 2.10. *Lower secondary school* (21 per cent) and *upper Secondary school* (19 per cent) were also areas of considerable research. The smallest areas within educational R&D were *vocational education* (less than 1 per cent) and *research education* (2 per cent). This corresponds rather well to the number of pupils and children enrolled at the different levels of the Norwegian education system, see appendix VIII.

Educational R&D by level was mapped both in 2013 and 2009, and although there has been a considerable growth in the resources for educational R&D, there have only been minor changes in the distribution of R&D activities on different levels in the Norwegian education system; see figure 2.11. In 2009, the highest share of educational R&D was related to *basic school*, as it was also in 2013. *Upper secondary school* had expanded as a research area between 2009 and 2013, as had *higher*

education. R&D on the kindergarten level had increased from 2009 to 2013, but its share of R&D activities of total educational R&D had decreased. R&D expenditure on adult learning and research education was lower in 2013 than in 2009.



**Figure 2.11 Educational R&D in Norway by level of education: 2009 and 2013.**

Source: NIFU

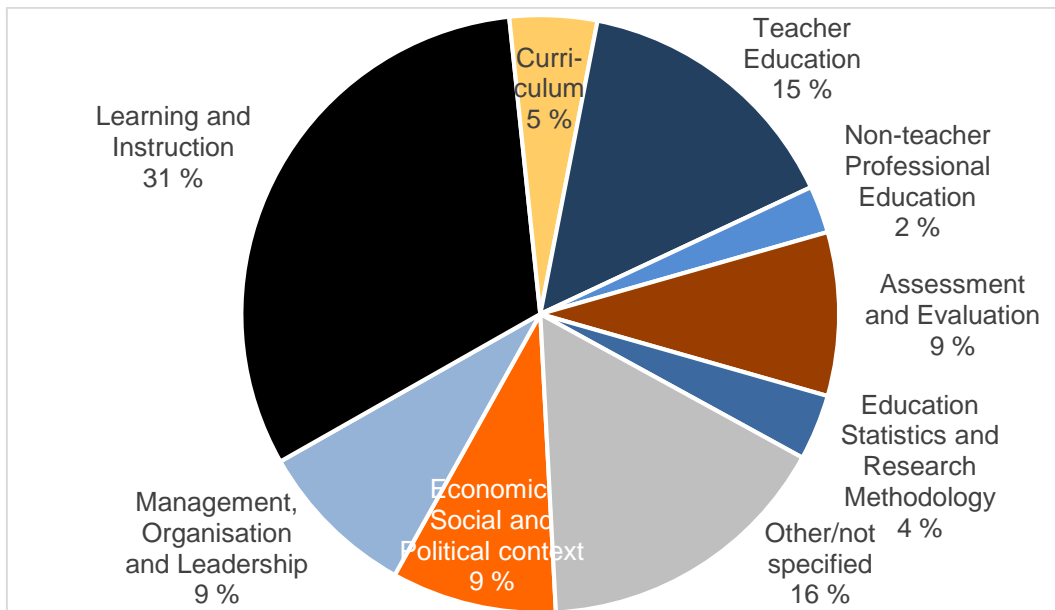
### 2.3.4 Distribution by sub-area

OECD has proposed a classification of sub-areas within educational R&D, which ranges from learning and instruction, curriculum, teacher education and non-teacher professional education to education statistics and research methodology; see figure 2.12.<sup>8</sup> The R&D activities performed at an institution may belong to several of the categories, and the units were asked to classify their R&D efforts on the different sub-areas proportionally. The question related to the classification by sub-area had the highest non-response rate in the survey, as more than 40 of the 147 respondents did not provide this breakdown.

*Learning and instruction* was the largest sub-area in Norway in 2013, followed by *teacher education and assessment and evaluation, economic, social and political context and management, organisation and leadership*, all with 9 per cent of the educational R&D.<sup>9</sup> Figure 2.12 showed that 23 per cent of the educational R&D was related to tertiary education in 2013, and of this, the majority can probably be related to teacher education, according to the breakdown by sub-area. There is, however, not possible to combine the different classifications.

<sup>8</sup> The classification of sub-area proposed by the OECD, relates to the classification of research activity used in the Norwegian surveys. The sub-area classification has more categories than the activity classification, as the OECD's definition of educational R&D is somewhat broader than the classification used in the Norwegian surveys. In this working paper we will present the classification by sub-area, while the project report in Norwegian (Gunnes and Rørstad 2015) presents the activity classification.

<sup>9</sup> In the activity classification, the category *instruction, learning and development* accounted for 54 per cent, while *economics, organisation and leadership* and *politics and management systems* combined amounted to 10 per cent. There was, however, a high share of non-response to the classification of activity, as 28 per cent of the expenditure could not be allocated to an activity.



**Figure 2.12 Educational R&D in Norway by sub-area: 2013.**

Source: NIFU

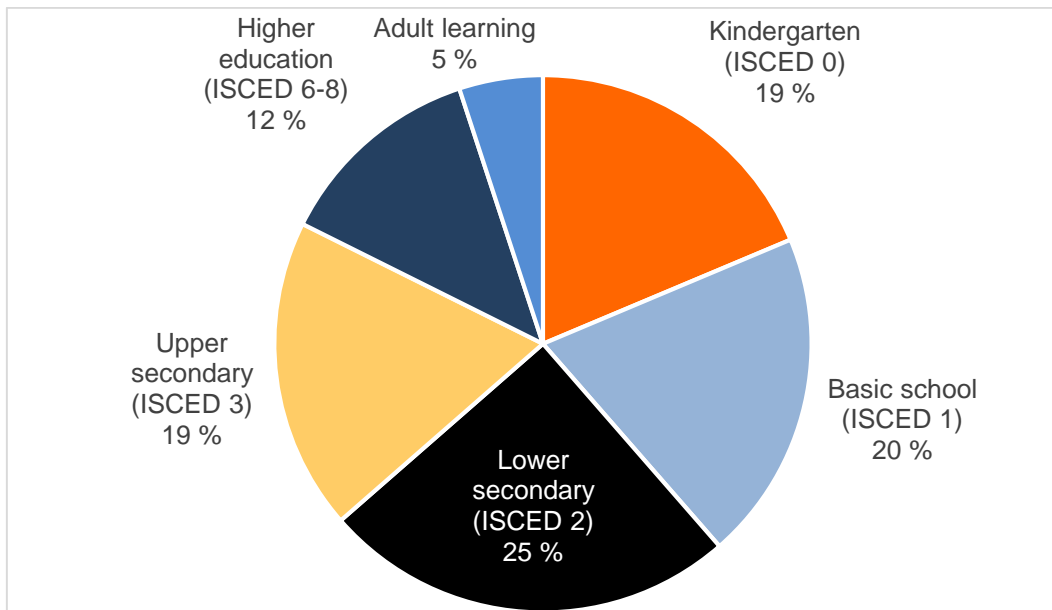
### 2.3.5 Classifications of educational R&D by selected funders

This sub-chapter will present some of the results from the survey sent to the funders of educational R&D. As a major proportion of the Norwegian educational R&D is funded by the higher education institutions' basic funds, it is not expedient to compare the results from a selected group of funders, who funded less than 15 per cent of the educational R&D, with the overall allocation of educational R&D reported by the performing units. The results from the funders' survey, however, gives an indication of which topics are of specific interest to the external funders of educational R&D, compared with the R&D initiated and funded by the institutions themselves.

The three funders that participated in the survey reported that approximately 75 per cent of their funds within educational R&D was allocated to research. NordForsk classified all its funding as research, while both the Research Council of Norway and the Norwegian Directorate for Education and Training funded development.

Figure 2.13 shows that the funds were directed towards all levels in the education system. Note that the number of levels in the questionnaire for the funders was using the OECD's classification, which has fewer details than the Norwegian classification. PhD education and training was not a separate category in the OECD questionnaire, as it was in the Norwegian one, and PhD education and training is in figure 2.13 included in *Higher education*.

The Research Council of Norway reported equal efforts within kindergarten, basic school and higher education, whereas early childhood and adolescent education was of utmost importance for the Norwegian Directorate for Education and Training, where almost half the effort was within lower secondary school. The NordForsk project was at kindergarten level.

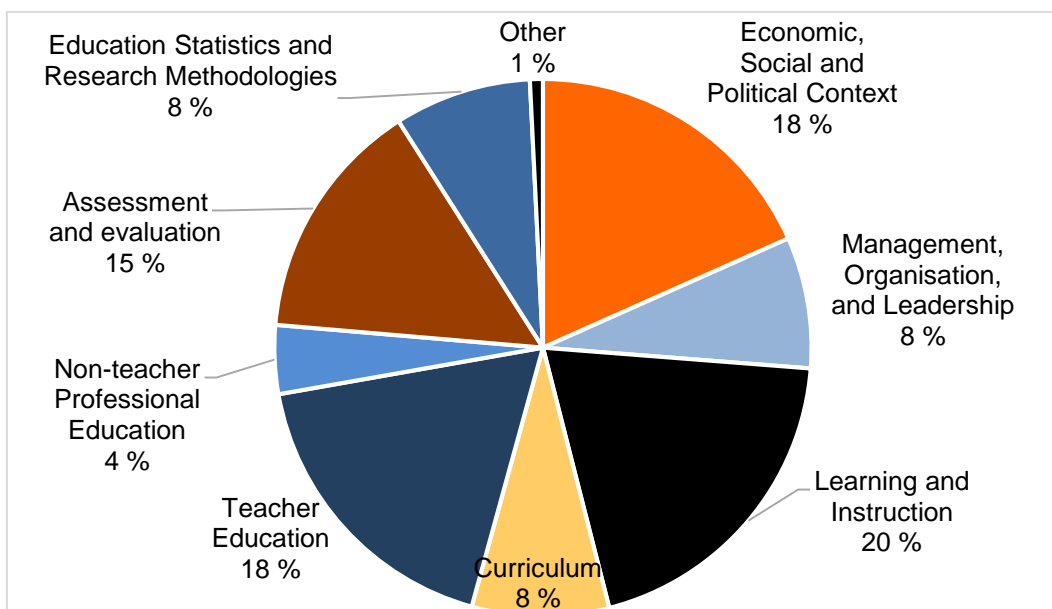


**Figure 2.13 Share of funds for educational R&D in Norway allocated from selected funders<sup>1</sup> by level of education: 2013.**

<sup>1</sup>Includes the Research Council of Norway, the Norwegian Directorate for Education and Training (Udir) and NordForsk.

Source: NIFU

The funders were also asked to classify their funds to educational R&D in 2013 by sub-area. The answers show a certain diversification of focus for research and development funded by the three funders, compared with that of the performing units; see figure 2.14.



**Figure 2.14 Share of funds for educational R&D in Norway allocated from selected funders<sup>1</sup> by sub-area: 2013.**

<sup>1</sup>Includes the Research Council of Norway, the Norwegian Directorate for Education and Training (Udir) and NordForsk.

Source: NIFU

Three areas stand out as focus areas: *Learning and instruction*, *teacher education* and *economic, political and social context*. There is also considerable effort put into *assessment and evaluation*, which is one of the key tasks funded by Udir and RCN.

The R&D-performing units reported that a major share of the effort went into *learning and instruction*, which implies that a large part of the research related to this sub-area was funded by GUF. The fact that educational R&D related to *economic, social and political context* and to *assessment and evaluation* constitute a larger share of the R&D effort reported by the funders could imply that these activities are initiated by the funders rather than by the performing units themselves.

## 2.4 Researchers participating in educational R&D

The 147 units that participated in the survey on educational R&D had 10,600 researchers/academic staff. Approximately 25 per cent of them, 2,790 researchers, participated in educational R&D to some extent. The Norwegian population of researchers within educational R&D is characterised by a high share of women, at 60 per cent. Female researchers had the majority at all levels in the position hierarchy, except for full professor level. The educational R&D researchers are on average 4 years older than the average researcher, but this also coincides with a lower share of research fellows. Key figures for the researchers in educational R&D are shown in table 2.2.

The share of researchers with a doctorate is somewhat lower in educational R&D than in the general population of researchers in Norway – but the share is increasing faster in educational R&D than in the overall research population. 40 per cent of the educational researchers, PhD students excluded, had a doctorate in 2013, and the average age at the time of dissertation for these doctors was 42 years. This is five years higher than the average. In 2009, one third of the educational R&D researchers had a doctorate, and the average age at dissertation was 44 years.

**Table 2.2 Key figures for researchers in educational R&D in Norway: 2013.**

	Educational researchers				All researchers			
	Uni-versi-ties	Univer-sity colleges	Institute sector	Total	Uni-versi-ties	Univer-sity colleges	Institute sector	Total
Number	1,025	1,610	145	2,780	15,207	7,381	8,540	31,128
Share of female researchers (%)	60	62	56	61	44	52	42	45
Share of full professors (%)	18	8	27	13	18	11	20	17
Share of research fellows (%)	17	10	7	12	30	12	8	20
Researchers with a doctorate (%) <sup>1</sup>	57	30	54	41	74	35	52	57
Average age	49.1	50.5	45.0	49.7	44.1	49.6	44.9	45.6

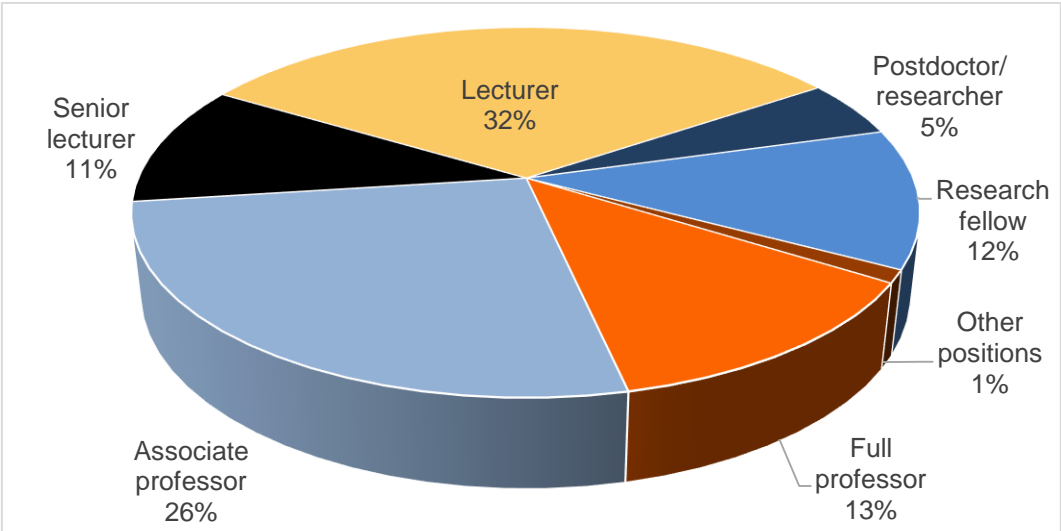
<sup>1</sup>Excluding research fellows.

Source: NIFU

### 2.4.1 Competence of the researchers in educational R&D

Of the 2,780 researchers in educational R&D in 2013, lecturers constituted the largest group; see figure 2.15. Lecturers have teaching and instruction as their major task, and their time allocated to R&D is on average approximately 20 per cent, depending on the field of science and type of institution they are employed in. Senior lecturers, who accounted for 11 per cent of the researchers, have a higher share of time for R&D than regular lecturers. As this position does not require a PhD, they have a somewhat lower R&D time resource than an associate or full professor. Post doctors have the

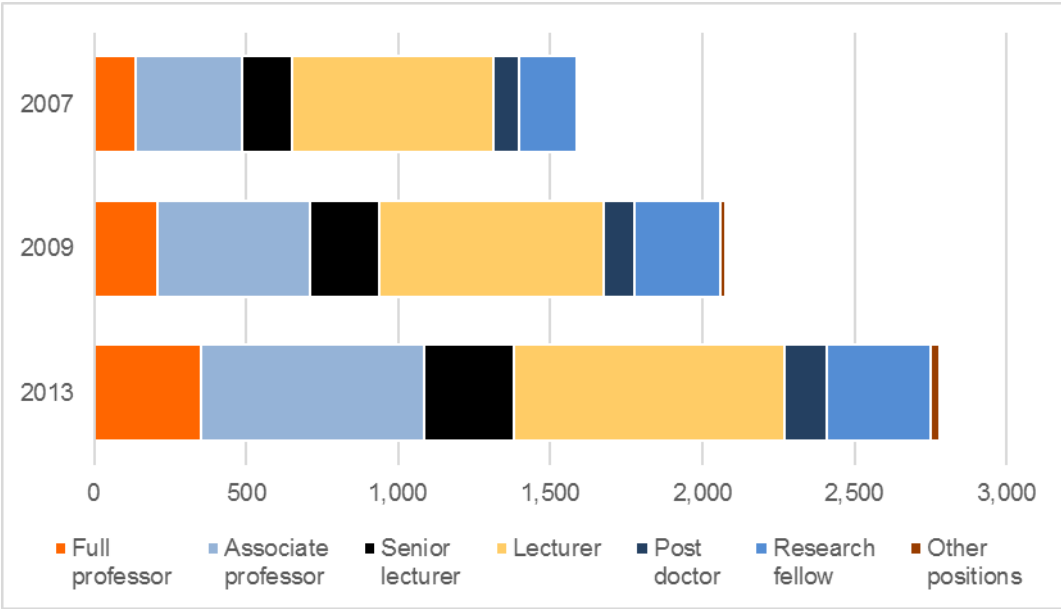
highest R&D share, approximately 80 per cent, while research fellows on average have a 25 per cent obliged time allocated to teaching and instruction, and thus spend 75 per cent of their time on R&D.



**Figure 2.15 Position structure for researchers in educational R&D in Norway in 2013 (N=2780).**

Source: NIFU

The number of post doctors is low within educational R&D compared with other fields of science. Units within pedagogics and teacher education have a tradition of employing externally-funded researchers rather than post doctors, but there are also quite few of these. In the overall population of researchers in Norway, one in five was a research fellow in 2013. In educational R&D, 13 per cent of the researchers were research fellows. Still, the number of research fellows in educational R&D has increased substantially, from 190 in 2007 to 340 in 2013; see figure 2.16



**Figure 2.16 Number of researchers in educational R&D in Norway by position: 2007, 2009 and 2013.**

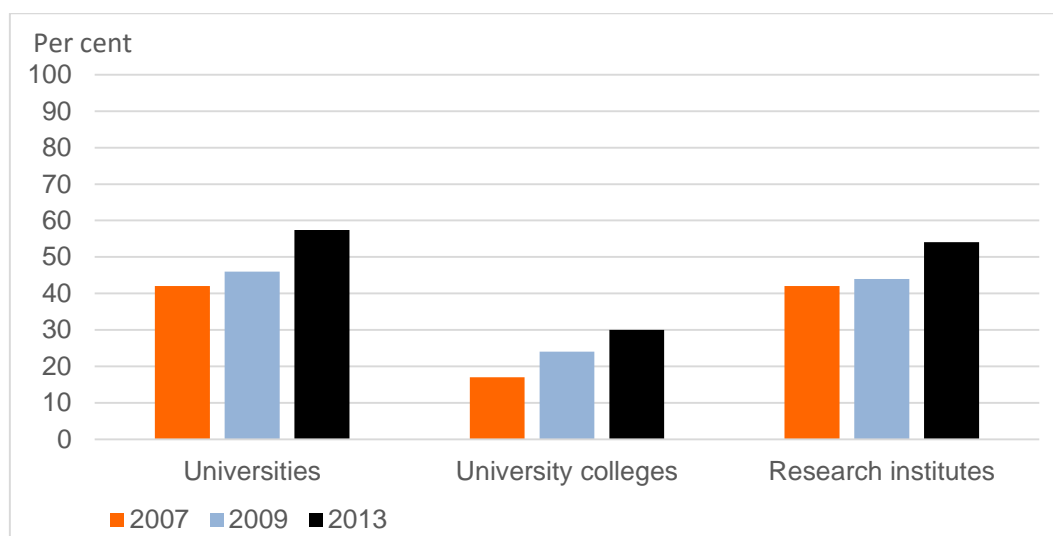
Source: NIFU

In 2007, fewer than 1,600 researchers participated in educational R&D. The number of researchers increased to 2,074 in 2009, and then further on to 2,780 in 2013. There has been an increase in the



number of researchers in all positions, and the highest growth has occurred in top academic positions. The number of associate professors more than doubled in the period, from 350 to 730, and there were 1.5 times as many full professors within educational R&D in 2013 than 6 years previously. In 2007, only 5 per cent of the researchers were full professors. In 2013, full professors amounted to 13 per cent of the researchers educational R&D. The share of associate professors increased from 22 to 26 per cent during the same period. Thus, there has been a noticeable raise of formal competence within the population of researchers in educational R&D.

As for lecturers, there were 230 more junior lecturers and 140 more senior lecturers participating in educational R&D in 2013 than six years previously. There has been a growth in the number of senior lecturers in the overall population of researchers in Norway, due to qualification programmes for lecturers, and the educational R&D researchers follow suit in this matter.



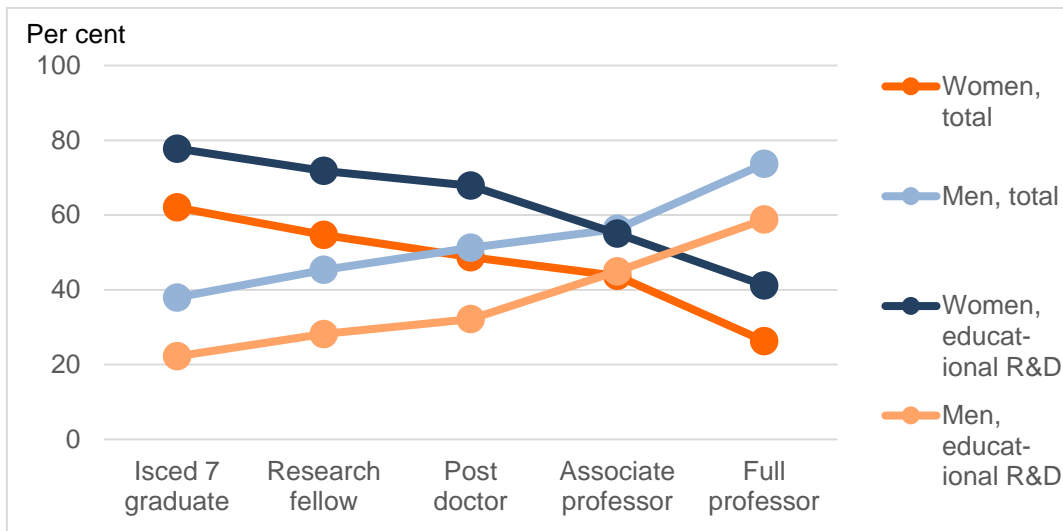
**Figure 2.17 Share of researchers in educational R&D in Norway with a doctorate, excl. research fellows, by type of institution: 2007, 2009 and 2013.**

Source: NIFU

The enhanced competence among the researchers within educational R&D is also apparent in the increased share of personnel with a doctorate. In 2007, 28 per cent of the researchers had a doctorate. Six years later, the share was 41. Figure 2.17 shows that the universities had the highest share of researchers within educational R&D with a doctorate in 2013, followed by the research institutes. The university colleges had the lowest share, which is not surprising, due to the high number of lecturers at this type of institution.

#### **2.4.2 Gender and age of researchers in educational R&D**

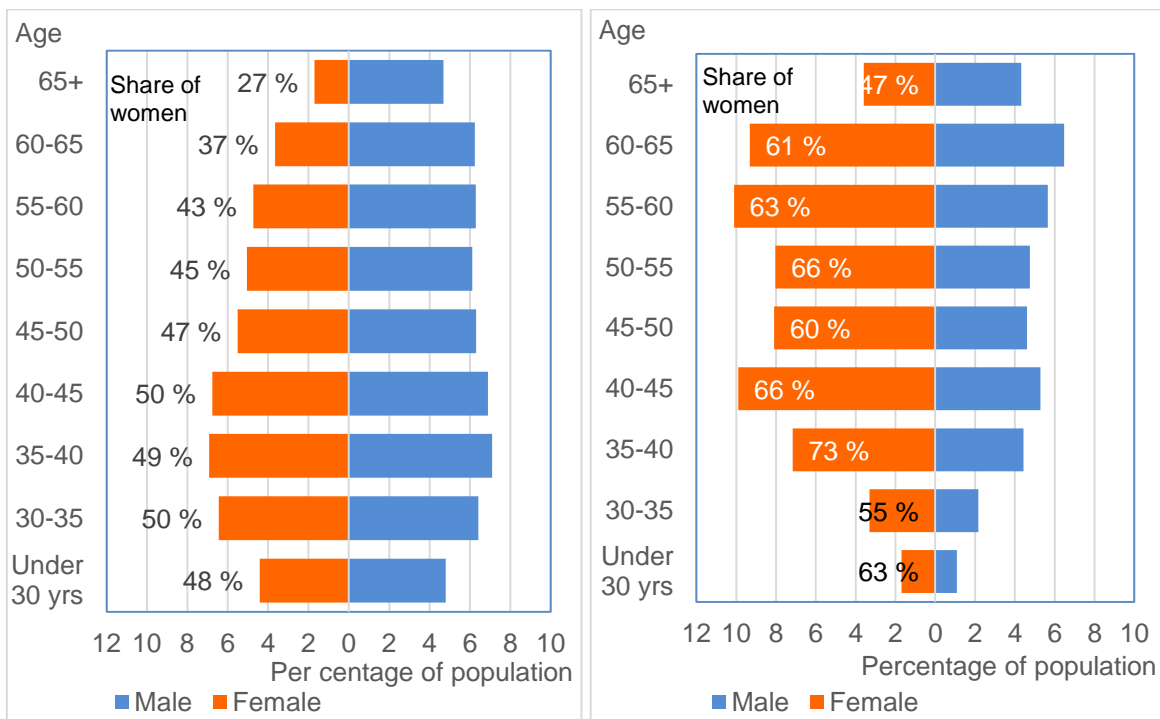
The share of female researchers is considerably higher in educational R&D than in the overall population of researchers in Norway; see figure 2.18. In educational R&D, almost 80 per cent of the master's graduates (ISCED 7 level), and more than 70 per cent of the research fellows, were women. This was more than 15 percentage points over the average population. At post doctor level, almost 70 per cent were women within educational R&D. There were more female than male associate professors in educational R&D, while there was a male dominance at full professor level. To improve the gender balance in educational R&D, more men would have to be recruited at the lower levels in the years to come.



**Figure 2.18 Share of women and men within educational R&D and total population of researchers in Norway at different stages of an academic career: 2013.**

Source: NIFU

The average age of the researchers within educational R&D is somewhat higher than in the overall population of researchers, 50 years to 46 years. This is partly due to a lower share of research fellows and post doctors in this field, as they are mainly younger. Several of the researchers within educational R&D started their career as teachers, and proceeded into academic research after years of teaching. This can be seen in the average age at the time of dissertation – in the overall population of researchers, the average dissertation age was 37 years, and for researchers participating in educational R&D, the average age was 42 years.



**Figure 2.19 Age distribution of total population of researchers and researchers within educational R&D in Norway by age group and gender: 2013**

Source: NIFU

One out of four researchers in educational R&D was 60 years or older in 2013. Among the senior researchers (full professor, associate professor and senior lecturer), the share was 33 per cent, while of the research fellows, 10 per cent were 50 years or older. The number of relatively old research fellows can also be related to the governments demand for more formal competence in teacher education, i.e. that 50 per cent of the teaching staff should be at senior level. This has resulted in several university college lecturers, with a rather high average age, being enrolled as PhD students, either as research fellows or using their part time R&D resources.

The overall research population is distributed fairly evenly across age groups, with a slight exception for the two oldest and the youngest group. The "centre of gravity" is in the 40s. Among educational researchers, the "centre of gravity" is located between the 50s and 60s, and there was also a low proportion of researchers in the two lowest age groups; see figure 2.19.

## 2.5 International cooperation

The Norwegian R&D survey contains a module related to cooperation within educational R&D, both national and international cooperation. In this chapter, we present results related to international cooperation within the field.

Of the 147 units that answered the questionnaire, 78 reported that they had international cooperation related to educational R&D. Almost two thirds of the units at university colleges reported international cooperation in this field, while close to 50 per cent of the university units and only 30 per cent of the research institutes had international cooperation related to educational R&D. 69 units reported no international cooperation related to educational R&D.

**Table 2.3 Number of units with international cooperation in educational R&D by type of institution and collaborator: 2013.**

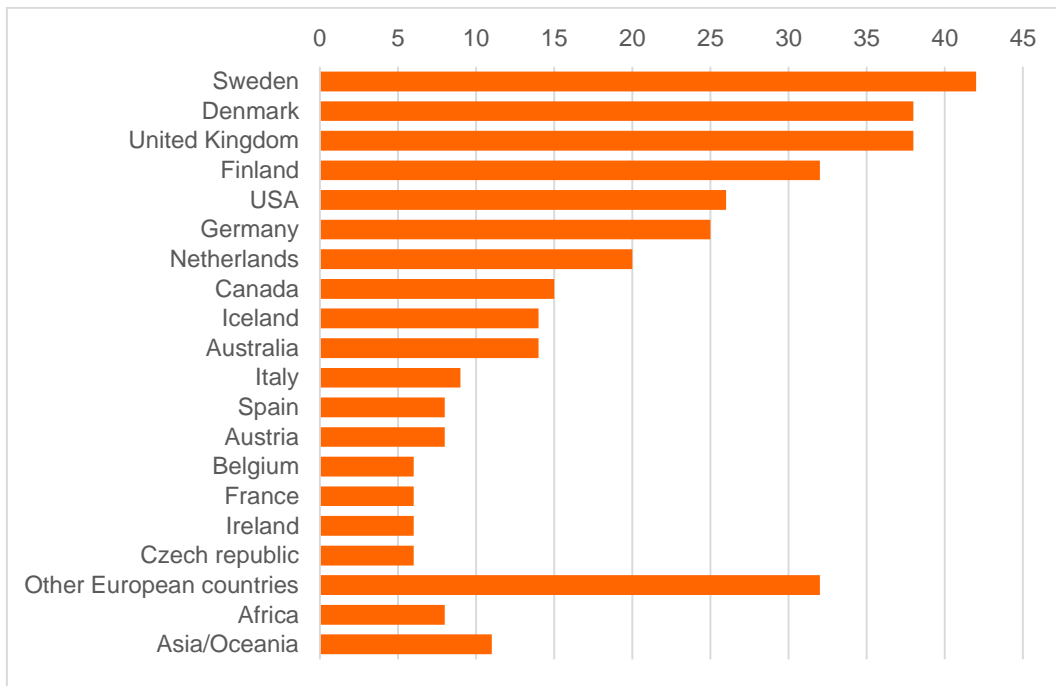
Collaborator \ Performing unit	Higher education institutions	Research institutes	Other units <sup>1</sup>	No international cooperation reported	Total number of units
Universities	26	10	7	30	57
University colleges	42	6	9	25	69
Institute sector	4	2	2	14	21

<sup>1</sup>Includes international organisations and business enterprises abroad.

Source: NIFU

Table 2.3 shows the distribution on international cooperation related to performing unit and collaborator. Most of the units with international cooperation found their collaborators in the higher education sector. This is the case for 26 of 57 university units and 42 of 69 units at university colleges.

The Nordic countries, i.e. Sweden, Denmark, Finland and Iceland, were the most frequently countries reported for collaboration on educational R&D. The education systems in the Nordic countries are similar in many ways, as are the languages in Norway, Denmark and Sweden. Figure 2.20 shows which countries the respondents reported having collaborators in. Several units reported cooperation with institutions in English-speaking countries such as the UK (the second most frequent country for collaboration, along with Denmark), USA, Canada and Australia. Germany and the Netherlands were also important countries for collaboration.



**Figure 2.20 Number of respondents who reported cooperation on educational R&D by country<sup>1</sup> of collaborator: 2013**

<sup>1</sup>Other European countries includes Estonia, Switzerland, Greece, Russia, Latvia, Lithuania, Portugal, Slovenia, Poland, Hungary, Romania, Serbia, Bosnia-Herzegovina, Cyprus and Malta.

Source: NIFU

## 3 Results of educational R&D

The Norwegian system for funding of higher education institutions contains a component related to scientific publishing. Scientific publishing, and bibliometrics, have been subject to increased attention in Norway over the past decades.

In this chapter, we will have a closer look at the outcome of the resources spent on educational R&D, measured by scientific publications. Initially, we present the main findings from the analysis of scientific publications in educational research, focusing on international cooperation. One of the goals of the Ministry of Education and Research's 2008 strategy of educational R&D, as mentioned in chapter 1, was to increase the volume of scientific publications in the field. In this chapter we show results of these efforts.

The survey contained two sets of questions about the outcome of educational research and development respectively, as well as a question on patents and commercial revenue. These results are presented at the end of this chapter.

### 3.1 Scientific publication in educational research

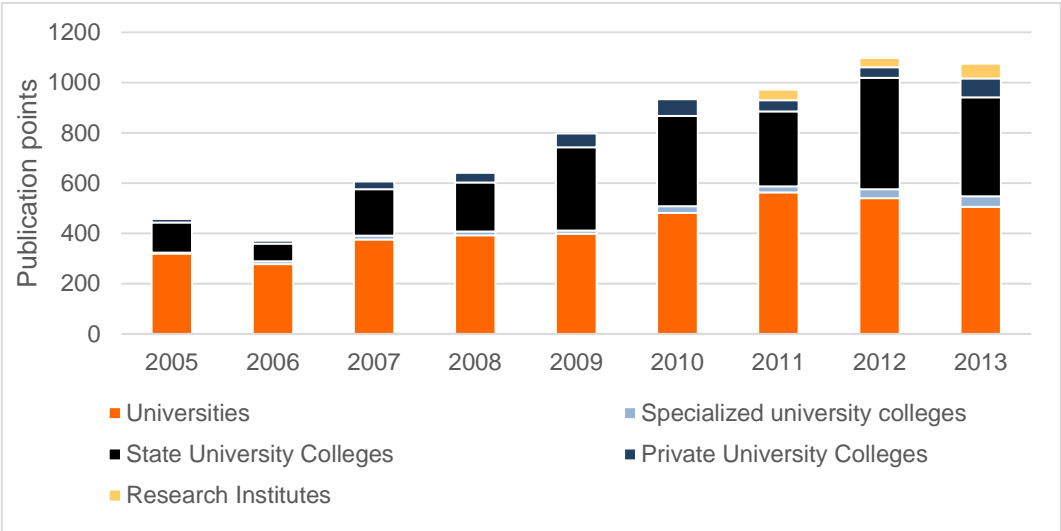
This chapter offers an analysis of scientific publications in educational R&D. Topics discussed include the scope of the Norwegian publishing activity in the field, how the publications are distributed at institutional and departmental levels, the extent of Norwegian versus English as the chosen language for publications, and international co-publishing. The analysis includes publications from 2011–2013. Some representations also show time series back to 2005.

Publication data are widely used as performance indicators. The basis for the use of "bibliometric indicators" is that new knowledge – which is the principal goal with basic and applied research – is communicated to the scientific community through publications. Scientific publishing can thus be viewed as an indirect measure of knowledge production. Scientific publishing in this analysis is limited to publications in approved publication channels (journals and publishing houses) that forms a basis for the result-based redistribution (RBO) for the funding of Norwegian research institutions. Reports and other types of publications that do not result in publication points are not included in the analysis.

#### 3.1.1 *Volume of publications in educational research*

The number of scientific publications in educational research grew steadily during the period 2005–2013, and the publication points more than doubled from about 460 in 2005 to 1100 points in 2012. However, from 2012 to 2013 there was a small decline. The State University Colleges had the

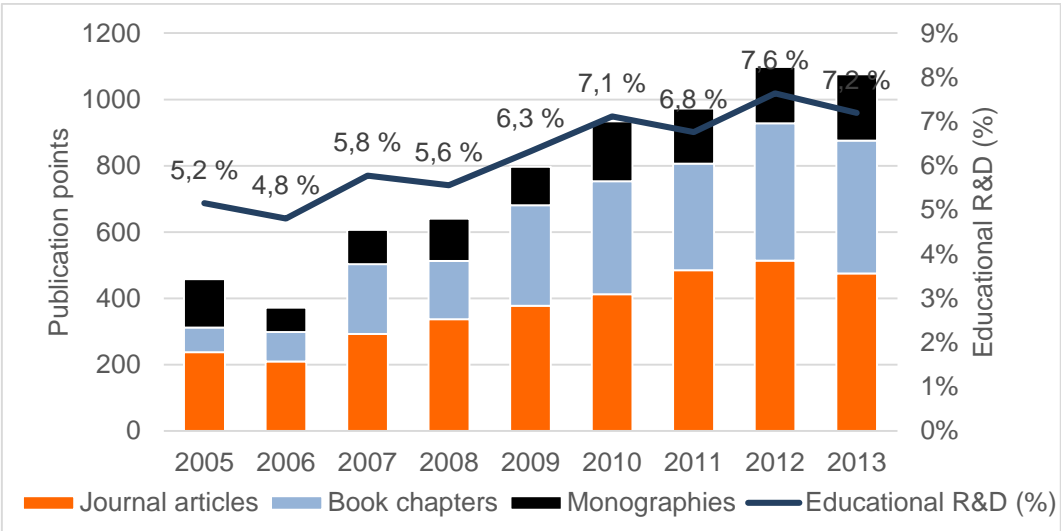
strongest growth from 2005–2013 with more than 200 per cent. Figure 3.1 shows the publication points in educational R&D from all institutions. Note that research institutes were included from 2011.



**Figure 3.1 Scientific publications in educational R&D by sector and type of institution, publication points: 2005–2013.**

Source: CRISTin/NIFU

Specialised university colleges often publish their research in specialist journals which are not necessarily indexed as educational journals. For instance, the Norwegian School of Economics and Business Administration mostly publishes educational R&D related to economics in economic journals, and not educational journals. This indicates that this analysis does not cover all journal articles related to educational R&D. As for the institute sector, research is to a large extent published in reports and policy papers, which are not indexed as approved publishing channels. These publications are not covered by this analysis.



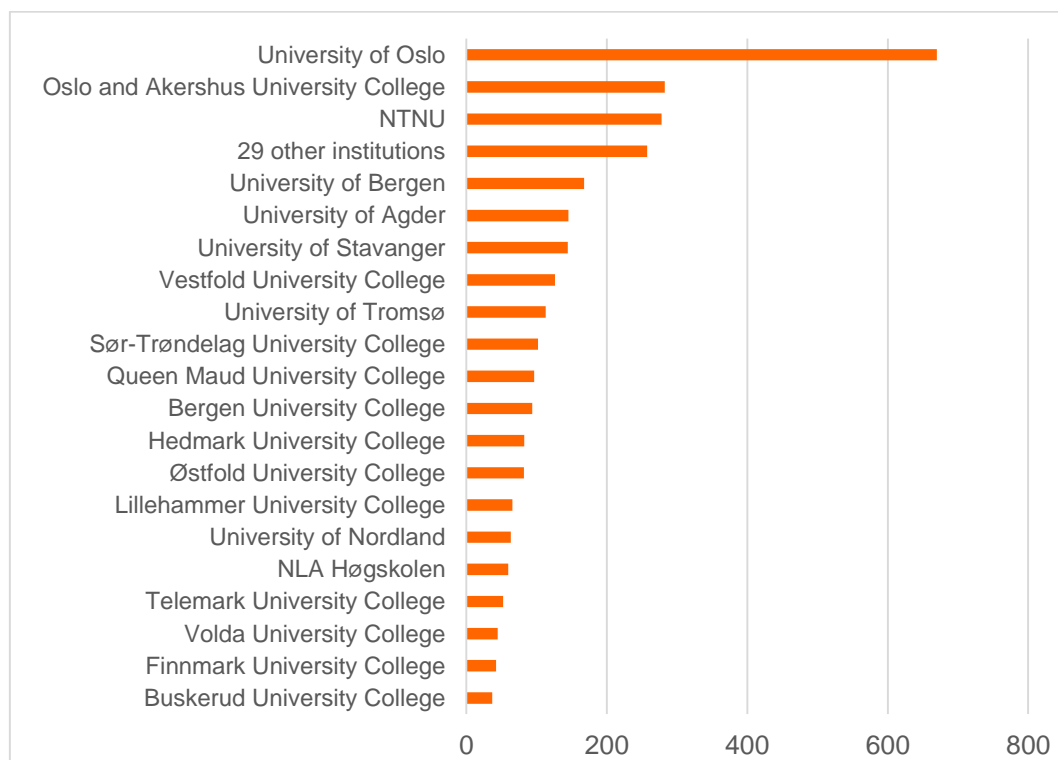
**Figure 3.2 Scientific publication in educational R&D in the higher education sector by publication type, publication points and share of educational scientific publication of total publication points: 2005–2013.**

Source: CRISTin/NIFU

The publication points in educational R&D accounted for 7.2 per cent of the total publications points in the higher education sector in 2013, which was a decrease of 0.4 percentage points from 2012. Figure 3.2 shows that there was a reduction in the number of journal articles that caused this reduction.

In the period 2011–2013, scientific publications at departments amounted to almost 3,150 publication points within the field of education. University units published about half of the publications, units at state university colleges one third, private university colleges five per cent and the specialised university colleges about three per cent of the publications. Altogether, the higher education sector accounted for 95 per cent of the publication points in educational R&D, the rest was accounted for by research institutes. The publication points classified as educational R&D accounted for less than two per cent of all publications in the institute sector, while the share was 20 per cent at the state university colleges. Dedicated departments of teacher education are mostly situated at state university colleges, and they account for a substantial part of these publication points.

About 11 per cent of the publications within educational R&D in the higher education sector were published in a level 2 journal/publisher. Compared with the rest of the higher education sector where the share is about 20 per cent, this is by far substantially lower. The research institutes had 23 per cent of their publications in the field of education in level 2 journals, a much higher share than the units in the higher education sector. One reason for this might be found in the sub-fields within educational research. Didactics is a large sub-field in the higher education sector, but there were fewer journals at level 2 in this sub-field. The same pertains to research on the teaching profession. One of the ministry's strategic goals was to increase the quality of Norwegian educational research. If this is to be measured as the share of publications at level 2, mechanisms also have to exist to ensure approved publishing channels at level 2 in which the units might publish their research.

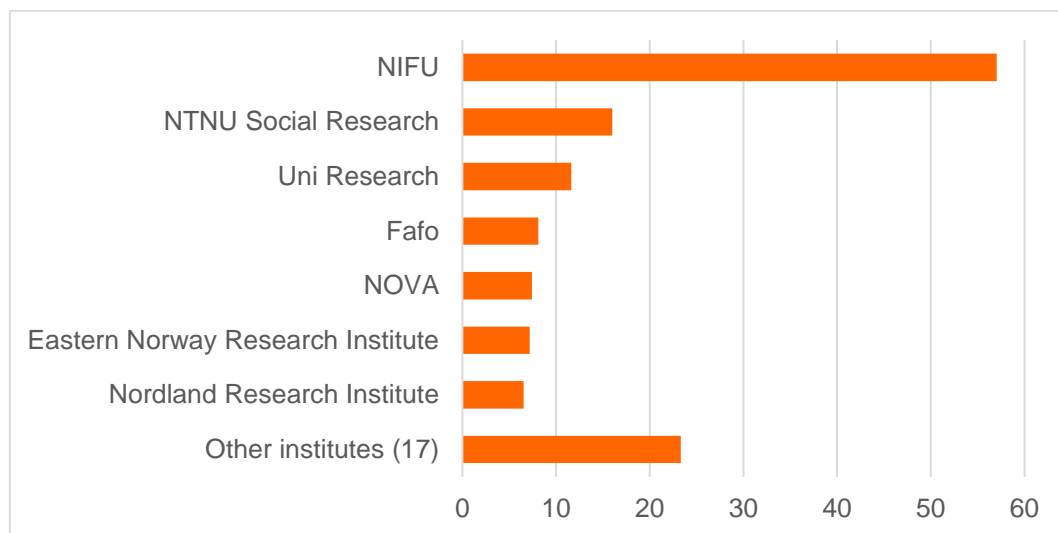


**Figure 3.3 Scientific publication in educational R&D in the higher education sector by institution, publication points: 2011–2013.**

Source: CRISStin/NIFU

The University of Oslo is by far the largest institution in this field with about 670 publication points, see figure 3.3, which is one fifth of the total for the sector. The departments at the Faculty of Educational Science were mainly the largest contributors, and the Department of Education was the unit with most publication points in 2011–2013. The second and third largest institutions, as measured in publication points, were the Oslo and Akershus University College of Applied Sciences and the Norwegian University of Science and Technology, both with about 280 publication points. The universities of Bergen, Agder and Stavanger, as well as Vestfold University College, then follow, each with shares between 4 and 6 per cent.

Educational research is a quite small sub-field in the Institutes sector, and the research institutes accounted for only 137 publication points during a three-year period (2011–2013).



**Figure 3.4 Scientific publication in educational R&D in the institute sector by research institute, publication points: 2011–2013.**

Source: CRISStin/NIFU

NIFU – the Nordic Institute for Studies in Innovation, Research and Education, is by far the largest research institute in the field of educational research, with a share of 20 per cent of the publication points in this field in the institute sector; see figure 3.4. Other contributors with five or more publication points within educational R&D were NTNU Social Research, Uni Research Rokkansenteret, Fafo and the Centre for Welfare and Labour Research (NOVA). While the university departments mostly publish book chapters (about 60 per cent), the research institutes mainly publish journal articles, which accounted for 50 per cent of the publication points.

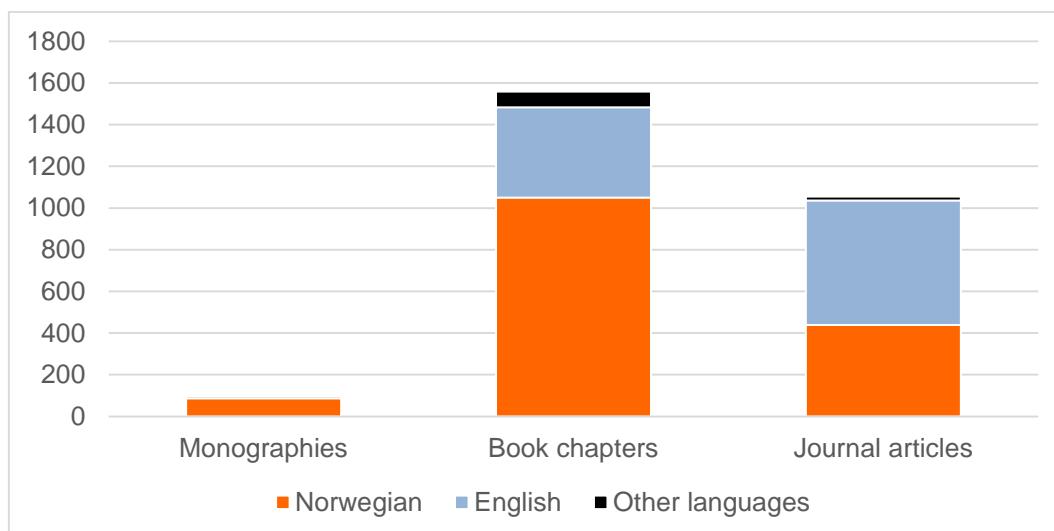
### 3.1.2 Publication channels and languages

The publications in this analysis were published in a number of journals and by a large numbers of publishing houses. The articles were published in 265 different journals, while book chapters and monographs were published by 152 different publishers. The top ten journals and top seven publishers were in fact Norwegian. The top five journals were *Norsk pedagogisk tidsskrift*, *UNIPED*, *Scandinavian Journal of Educational Research*, *Spesialpedagogikk* and *Barnehageforskning*, while the preferred publishers were *Universitetsforlaget*, *Fagboklaget*, *Tapir Akademisk Forlag*, *Gyldendal Akademisk* and *Nordisk Barnehageforskning*.

As the preferred journals and publishers were Norwegian or Scandinavian, most of the contributions (58 per cent), were written in Norwegian. Almost all the rest were written in English. Only four per cent were written in other languages (i.e. Swedish, Danish, German and French). The majority of the



journal articles were in English, while the vast majority of the book chapters were written in Norwegian; see figure 3.5.



**Figure 3.5 Scientific publications in educational R&D by type of publication and language, publication points: 2011–2013.**

Source: CRISTin/NIFU

### 3.1.3 International co-publishing

Of the 962 publications in educational research published in 2013, 11 per cent were published together with a foreign institution. NTNU and the University of Oslo were the two institutions with the most extensive international co-publishing. The institutions co-published mostly with institutions in the USA, the Nordic countries and in the Netherlands. The Norwegian institutions co-published with institutions located in 29 countries, mostly in Europe, but all continents were represented.

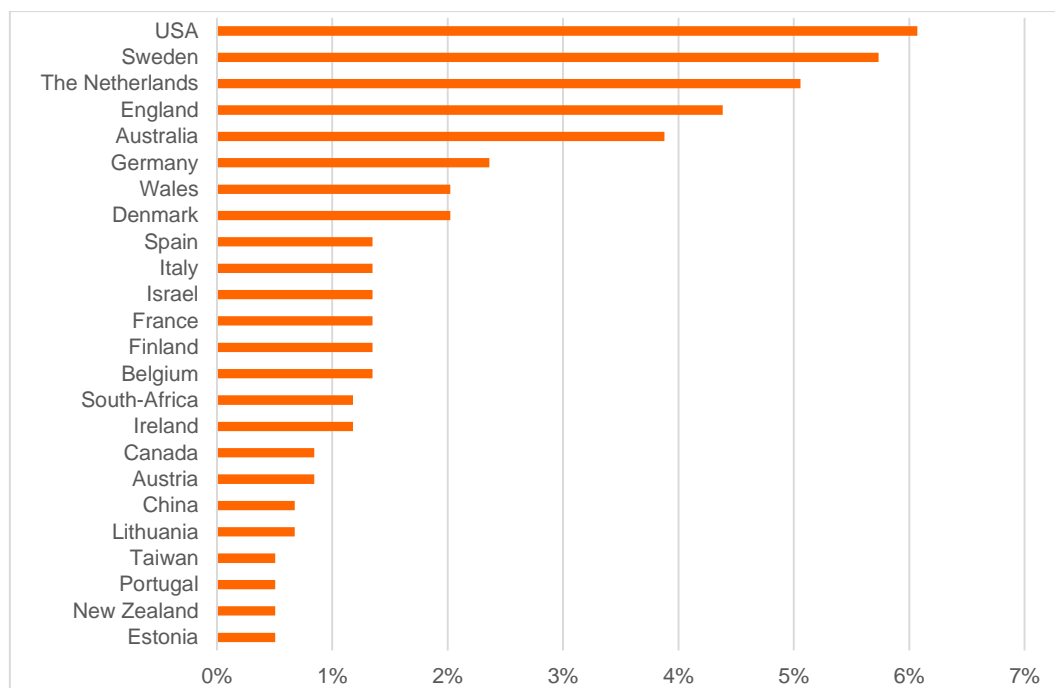


**Figure 3.6 Number of journal articles with international co-publication: 2008–2013.**

Source: NIFU/WoS

Figure 3.6 shows the numbers and share of WoS articles<sup>10</sup> in educational R&D with at least one foreign address, in the period 2008–2013. If we focus on the articles published in educational research by a Norwegian institution, and leave out the book chapters and monographs, the share of international co-publishing is higher. The number of articles increased from 2008 to 2013, as did the share of international co-publishing. However, a fall in the share of international co-published articles can be seen in 2011, and the total numbers of articles decreased between 2011 and 2012.

During the period 2008–2013, Norwegian educational R&D departments published 593 articles within education in international journals. About one third of these were in collaboration with foreign institutions.



**Figure 3.7 Country of origin of co-authors within Norwegian educational research: 2008–2013. Percentage of total number of co-published articles.**

Source: NIFU/WoS

The Norwegian departments collaborated with foreign institutions in altogether 42 different countries. About half these collaboration countries are shown in figure 3.7. About 6 per cent of the articles were written in collaboration with an American university. Swedish collaboration followed, with a share of 5.6 per cent of the articles. Other collaborating institutions were in countries like the Netherlands, England, Australia, Germany, Wales and Denmark. A major part of the collaboration was thus with institutions in English-speaking countries, or in one of the other Nordic countries.

### 3.2 Other results of educational R&D

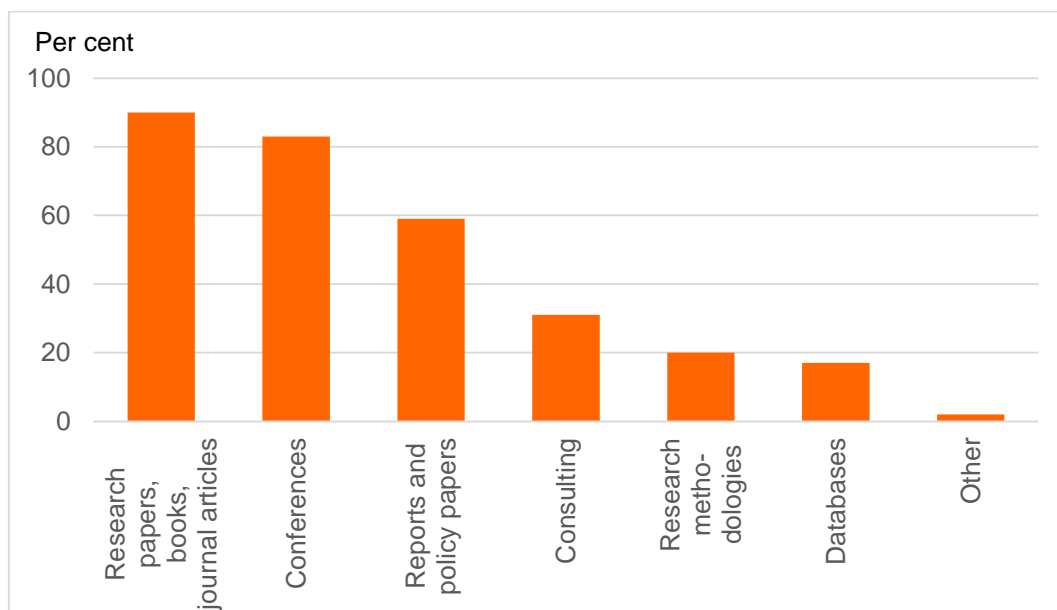
This sub-chapter will present the results from the «OECD module» related to results of educational R&D activities. The respondents were asked to tick the three most relevant outputs of educational research and educational development during the fiscal year 2013. They were also asked to state whether the research and development outputs led to patents or commercial revenues in 2013. 115 of the 146 respondents in the survey answered these questions in the survey, and these 115 units are the basis for the analysis in this sub-chapter.

<sup>10</sup> Web of Science database.

### 3.2.1 Results of educational research

109 of the 115 units that responded to this question in the «OECD module» reported research on education. Of these, 90 per cent reported that research papers, books and journal articles were among the three most important outputs of educational research; see figure 3.8. This is not surprising, as the funding of higher education institutions in Norway from the Ministry of Education and Research is dependent on the number of scientific publications. Older studies have shown that policy papers, lectures, papers and presentations were the most used ways of presenting educational research ten years ago (Borgen et al. 2004). According to interviews conducted as part of the Norwegian mapping of educational R&D, scientific publishing has become more important in the field of education over the past decade, after the introduction of the publication indicator in the funding system in 2005.

Presentations at *Conferences* were the second most important outcome of educational research, followed by *Reports and policy papers*. This is in accordance with prior studies of the field.



**Figure 3.8 Most important outcome of educational research in Norway: 2013.**

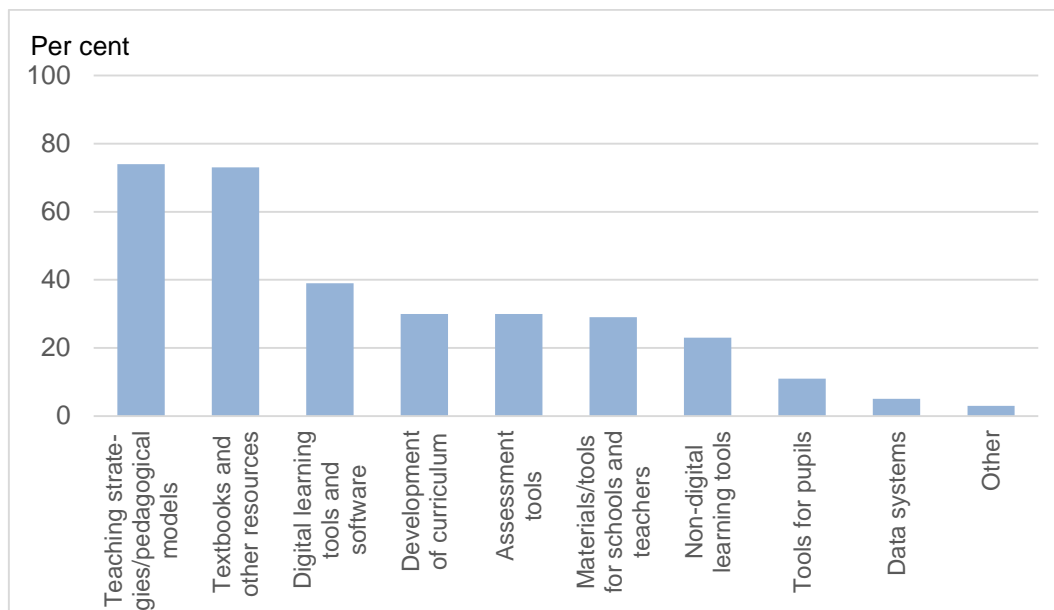
Source: NIFU

A considerably lower number of units have stated consulting, research methodologies, and databases as the most important outcomes of their R&D. Four units have also reported other outcomes as most important, namely “data collection”, “websites”, “recruitments” and “technology development”.

### 3.2.2 Results of educational development

92 of the 115 units that responded to the «OECD module» reported development activities within education. Of these, approximately 75 per cent reported that *teaching strategies or pedagogical models* and *textbooks and other resources* were among the three most important outputs of educational development; see figure 3.9. These two outcomes stand out as the overall most important outcomes, while the third-placed, *digital learning tools and software*, was considered one of the three most important outcomes by approximately 40 per cent of the units.

*Development of curriculum*, *Assessment tools* and *materials/tools for schools and teachers* were considered the most important outcome of educational development by approximately 30 per cent of the units, while *non-digital learning tools* was considered equally important by 25 per cent. Three units reported other outcomes as most important: “recruitment tools”, “courses for teachers” and “internal change of study plans”.



**Figure 3.9 Most important outcome of educational development in Norway: 2013.**

Source: NIFU

### 3.2.3 Patents or commercial revenues

Two of the 115 units that answered this question in the «OECD module», reported that educational R&D led to patents in 2013. One of them was a university department, the other a department at a university college. Three units reported that educational R&D had led to commercial revenue in 2013. One unit was at a university, one at a university college and the last one at a private higher education institution.

No units had both patents and commercial revenue as a result of educational R&D in 2013.

## 3.3 Funders' view of the results of educational R&D

The funders were asked in the questionnaire to tick the three most important results of educational R&D from a list of products/services. All three funders reported that their funding has resulted in *research papers, books and journals, as well as conferences*. Two of three also state that *reports and policy papers* are among the three most important outcomes, while *consulting and databases* are mentioned as important results by one of the funders.

Only two of three funders reported that they had funded educational development. *Assessment tools, digital learning tools and software* and *teaching strategies and pedagogical models* were among the most important results reported by the funders.

The answers provided by the funders correspond fairly well to the results from survey of the performing units. Both funders and performers have reported *research papers, books and journals, as well as participating in conferences* and *reports and policy papers*, as the most important outcomes of research.

As for the results of educational development, none of the two most important outcomes for the performing units, *teaching strategies or pedagogical models* and *textbooks and other resources*, was mentioned by the funders. Which implies that the educational development of these two categories mainly is initiated, and funded, by sources other than the funders that participated in the OECD survey.

## 4 Barriers to educational R&D

The «OECD module» contains two questions related to barriers to educational research and development respectively, where the respondents are asked to rank the two most significant barriers to educational R&D from a predefined list; they also had the opportunity to tick “no barriers”. Of the 146 units that returned the questionnaire, 107 responded to the question about barriers.

### 4.1 Barriers seen by the performing units

20 out of 104 respondents with educational research stated that they experienced no barriers to educational research. This implies that more than 80 per cent of the units experienced some kind of barrier to their research in the field of education. 45 per cent of the units listed *inadequate access to funding* as the main barrier to educational research; see figure 4.1. The share of units that experienced access to funding as a barrier was somewhat higher at the university colleges than at the universities and the research institutes.

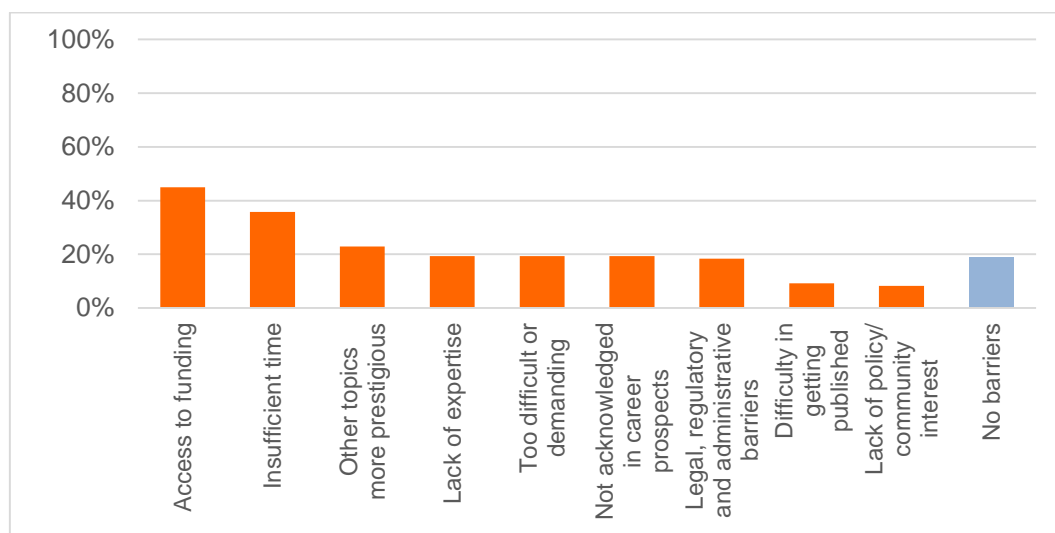


Figure 4.1 Barriers to educational research in Norway: 2013. Per cent.

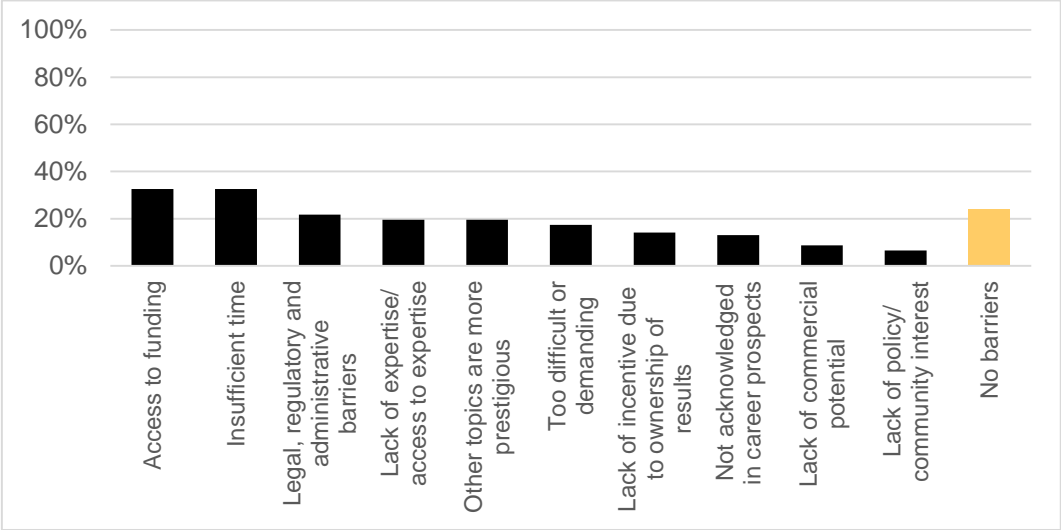
Source: NIFU

The second most important barrier to educational research in 2013 was *insufficient time due to teaching/other non R&D activities*, which was listed as one of the three most important barriers by 39 per cent of the units. A slightly higher share of the units at the university colleges than at the

universities experienced this as a barrier, 42 and 39 per cent respectively. Only 15 per cent of the research institutes with educational research listed this as a barrier.

*Other topics being more prestigious* than educational research was reported by as the third most important barrier by close to one quarter of the units. One third of the university units, 25 per cent of the research institutes and 17 per cent of the university college units reported this as an important barrier. Many of the respondents at the university colleges are teacher education units, and educational research is thus one of their main activities. None of the teacher education units reported that other fields were more important than educational research. Units which reported this barrier also reported a low share of educational R&D of their total R&D effort, and educational R&D had to compete with the research in other fields and disciplines at these units.

Of the 94 units with educational development in 2013, 23 reported that they experienced no barriers to educational development. Of the units that experienced barriers, *inadequate access to funding* and *insufficient time due to teaching/other non-R&D activities* were listed as the two most important barriers; see figure 4.2. More units at university colleges saw *access to funding* as one of the three most important barriers than was the case for the university units (hence 40 per cent and 25 per cent).



**Figure 4.2 Barriers to educational development in Norway: 2013. Per cent.**

Source: NIFU

The third most important barrier to educational development was *legal, regulatory and administrative barriers*, reported by 20 units as among the top three most important barriers. This barrier was mainly listed by units at university colleges (28 per cent), while less than 15 per cent of the university units saw this as a barrier.

Very few units in the institute sector reported educational development. The institute sector in Norway is mainly engaged in applied research, and overall has less development work than the higher education institutions.

## 4.2 Barriers to funding educational R&D

The three funders responding to the survey for funders; the Research Council of Norway, the Norwegian Directorate for Education and Training, and NordForsk, are fairly different types of organisations, and thus have different priorities and face different barriers to increase their funding of educational R&D.

The OECD questionnaire for funders asks for a ranking of the two most significant barriers the organisation would face in increasing its funding of educational R&D. The following topics are ranked as the most important obstacles for the funders participating in the survey, in random order:

- Other fields of research are of higher priority
- Funds available for educational R&D are determined externally (e.g. by central government)
- Difficulty raising additional funds
- Insufficient quality/relevance of educational project proposals
- Proposals are too small/ transaction costs are too large

## References

- Aasen, P., Sandberg, N og Borgen, J. S. (2007): *Utdanningsforskning. Fagdepartementets sektorforskningsansvar*. Oslo: NIFU report 15/2007
- Aksnes, D. W., K. S. Larsen, L. Nielsen and K. Rørstad (2014): *Polar research in the Kingdom of Denmark 2013. A mapping survey*. Oslo, NIFU report 18/2014.
- Borgen, J. S., Stensaker, B og Geschwind, L (2010): *Nordisk utdanningsforskning. Sentrale kjennetegn - nye muligheter*. Copenhagen, 2010.
- Borgen, J. S., Gunnes, H. og Sivertsen, G (2007): *Kartlegging av norsk utdanningsforskning*. Oslo, NIFU report 32/2007.
- Egeland, C. og A. C. Bergene (2012): *Tidsbruk, arbeidstid og tidskonflikter i den norske universitets- og høyskolesektoren*. Oslo, AFI-WRI report 1/2012.
- Frølich, N (2006): *Funding Systems and Their Effects on Higher Education Systems. National study - Norway*. OECD.
- Gunnes, H. and Rørstad, K. (2015): *Utdanningsforskning i Norge 2013. Ressurser og resultater*. Oslo, NIFU report 8/2015.
- Gunnes, H, Rørstad, K and D. W. Aksnes (2013): *Utdanningsforskning i Norge 2013. Ressurser og resultater*. Oslo, NIFU report 31/2013.
- Gunnes, H. and Wendt, K. K. (2013): *Tidsbruksundersøkelser for FoU-statistikk i UoH-sektoren for 2011*. Oslo, NIFU wokring paper 6/2013.
- Gunnes, H. og Vabø, A. (2011): *Ressurser til utdanningsforskning 2009*. Oslo, NIFU-rapport 13/2011.
- Gunnes, H. (2011): *Utdanningsforskere og nylig avlagte doktorgrader. En gjennomgang av doktorgrader avlagt i perioden 2008-våren 2011*. Oslo, NIFU arbeidsnotat 11/2011.
- Gunnes, H. (2009): *Ressurser til utdanningsforskning 2007*. Oslo, NIFU STEP-rapport 16/2009.
- Larsen, I. M. og S. Kyvik (2006): *Tolv år etter høyskolereformen - en statusrapport om FOU i statlige høyskoler*. Oslo, NIFU report 7/2006.
- Smeby, J. C. (2001): *Forskningsvilkår ved universiteter og vitenskapelige høyskoler*. Oslo, NIFU report 16/2001.
- The Ministry of Education and Research (2009): *Strategy for educational research: Kunnskap for kvalitet (Knowledge for quality) 2008-2013*.



# Appendix

- Appendix I: List of respondents..... 48
- Appendix II: R&D survey in Norway ..... 54
- Appendix III: Method for mapping of educational R&D in Norway..... 55
- Appendix IV: Questionnaire for performing units ..... 57
- Appendix V: Questionnaire for funders ..... 66
- Appendix VI: Analysis of non-responding units ..... 73
- Appendix VII More about the Norwegian R&D system ..... 74
- Appendix VIII More about the educational system in Norway ..... 76

## Appendix I: List of respondents

# Units performing educational R&D in 2013

## Universities

### NTNU, The Norwegian University of Science and Technology

- Department of Adult Learning and Counselling
- Department of Computer and Information Science
- Department of Physics
- Department of Industrial Economics and Technology Management
- Department of Social Work and Health Science
- National Centre of Mathematics in Education
- Department of Historical studies
- Department of Economics
- Department of Education
- Department of Language and Literature
- Department of Psychology
- Department of Product Design
- Programme for Teacher Education
- The Renate Centre

### University of Life Sciences

- Department for Plant Sciences
- Department of Natural Science and Technology

### University of Agder

- Faculty of Engineering and Science
- Faculty of Fine Arts
- Faculty of Economics and Social Science
- Faculty of Health and Sports Sciences
- Faculty of Humanities and Education

### University of Bergen

- Department of Administration and Organisational Science
- Department of Health Promotion and Development
- Department of Chemistry
- Department of Education
- Department of Foreign Languages
- Department of Mathematics
- Department of Linguistic, Literary and Aesthetic Studies
- Department of Physics and Technology
- Department of Social Psychology
- Department of Sociology
- Griegakademiet - Department of Music

### University of Nordland

- Department of Sports and Outdoor Activities
- Centre for Practical Knowledge
- Department of Nursing and Health
- Department of Teacher Education, Art and Culture
- Faculty of Social Sciences

### **University of Oslo**

- Centre for Gender Research
- Department of Basic Medical Sciences
- Department of Theoretical Astrophysics
- Department of Linguistics and Scandinavian Studies
- Centre for Technology, Innovation and Culture (TIK centre)
- Department of Economy
- Department of Education
- Department of Informatics
- Department of Literature, Area Studies and European Languages
- Department of Physics
- Department of Public Law
- Department of Psychology
- Department of Special Education
- Department of Teacher Education and School Research
- Department of Health and Society
- National Centre of Natural Science in Education

### **University of Stavanger**

- Centre for Learning Environment
- Department of Cultural Studies and Languages
- Department of Early Childhood Education
- Department of Education and Sports Science
- Department of Music and Dance
- Department of Social Studies
- Department of Media, Culture and Social Sciences
- The Norwegian School of Hotel Management
- Department of Health Studies
- The Reading Centre

### **University of Tromsø**

- Centre for Sami Studies
- Regional Centre for Child and Youth Mental Health and Child Welfare (RKBU North)
- Department of History and Religious Studies
- Department of Education
- Department of Engineering Science and Safety
- Department of Health and Care sciences
- Department of Language and Linguistics
- Department of Music, Dance and Drama
- Department of Culture and Literature
- Tromsø School of Economics

## **Specialised Universities**

### **The Oslo School of Architecture and Design**

- Department of Form, Theory and History
- Department of Urbanism and Landscaping

### **Norwegian School of Economics and Business administration**

- Department of Finance
- Department of Professional and Intercultural Communication

### **Norwegian School of Sport Sciences**

- Section of Coaching and Psychology
- Section of Sports Medicine
- Section of Sports Sciences and Education

### **Norwegian Academy of Music**

### **Norwegian School of Theology**

### **School of Mission and Theology**

### **BI - Norwegian School of Management**

- Department of Innovation and Economic Organisation
- Department of Communication and Culture
- Department of Management and Organisation
- Department of Social Economics

### **Molde university college – specialised university in logistics**

- Department of Social Studies and Health

## **University colleges**

### **Aalesund university college**

- Department of Engineering and Natural Science
- Department of Health

### **Bergen university college**

- Department of Teacher Education

### **Buskerud university college**

- Department of Health
- Department of Economics and Social Sciences
- Department of Teacher Education
- Department of Technology

### **Finnmark university college**

- Department of Education and Humanities
- Department of Social Studies

### **Gjøvik university college**

- Department of Health, Care and Nursing

### **Harstad university college**

- Department of Health and Social Studies
- Department of Economics and Social Science

### **Hedmark university college**

- Department of Teacher Education and Natural Science

### **Lillehammer university college**

- Centre for Lifelong Learning
- Faculty of Education and Social Work
- Department of TV-education and Film Studies

**Narvik university college**

- Department of Technology
- Department of Health and Society

**Nesna university college**

- Department of ICT
- Department of Education
- Department of Nursing

**Nord-Trøndelag university college**

- Department of Driving Instructor Education
- Department of Health
- Department of Teacher Education

**Oslo and Akershus university college**

- Centre for the Study of Professions
- Department of Behavioural Sciences
- Department of Early Childhood Education
- Department of Occupational Therapy, Prosthetics and Orthotics
- Department of Art, Design and Drama
- Department of Physiotherapy
- Department of Primary and Secondary Teacher Education
- Department of Computer Science
- Department of International Studies and Interpreting
- Department of Product Design
- Department of Radiography and Dental Technology
- Department of Nursing and Health Promotion
- Department of Vocational Teacher Education

**Sami university college**

- Division of Duodji, Industry and Natural Sciences
- Division of Languages
- Division of Social Science

**Sogn and Fjordane university college**

- Department of Health
- Department of Social Science
- Department of Teacher Education and Sports Sciences

**Stord/Haugesund university college**

- Faculty of Health Education
- Faculty of Technology/Business/Maritime Education
- Department of Teacher Education and Cultural Science

**Sør-Trøndelag university college**

- Department of Education and Interpreter Education
- Department of Technology
- Trondheim Business School
- Department of Informatics and e-Learning
- The Norwegian Centre for Writing Education and Research (The Writing Centre)
- Department of Nursing

**Telemark university college**

- Department of Education
- Department of Electronics, IT and Cybernetics
- Department of Art and Folk Culture
- Department of Health
- Department of Social Science
- Department of Teacher Education

**Vestfold university college**

- Faculty of Humanities and Education
- Faculty of Economics and Social Science

**Volda university college**

- Department of Culture
- Department of Humanities and Teacher Education
- Department of Social Science and History
- National Centre for New Norwegian Language in Education

**Østfold university college**

- The Norwegian National Centre for Foreign Languages in Education (The Foreign Language Centre)
- Department of Teacher Education

**Other tertiary education institutions with state funding (private institutions)****Haraldsplass Deaconess University College****Lovisenberg Diaconal University College****Diakonhjemmet University College**

- Department of Nursing and Health
- Department of Social Work and Family Therapy
- Department of Diakonia and Leadership
- Department of Social Education and Occupational Therapy
- Centre of Diakonia and Professional Practice

**NLA University College****Norwegian Defence university college**

- Department at Norwegian School of Sport Sciences

**The Norwegian Police University College****Queen Maud University College of Early Childhood Education**

## **Research institutes**

### **Government sector**

Centre for Economic Research at NTNU  
Eastern Norway Research Institute  
Fafo Research Foundation  
Institute for Research in Economics and Business Administration  
Institute for Social Research  
Møre Research  
Nordic Institute for Studies in Innovation, Research and Education  
Nordland Research Institute  
Northern Research Institute Tromsø AS  
Norut Alta  
Institute for Urban and Regional Research  
Norwegian Social Research  
Norwegian Social Science Data Services  
NTNU Social Research  
Ostfold Research  
Ragnar Frisch Centre for Economic Research  
Research Foundation TISIP  
Foundation for Folk Music and Folk Dance  
Statistics Norway Research  
Telemark Research  
Uni Research Rokkan centre  
Work Research Institute  
National Institute for Consumer Research  
Uni Research Polytec AS  
Trøndelag R&D Institute

### **Research institutes serving enterprises**

International Research Institute of Stavanger AS - social science  
SINTEF, the Foundation for Scientific and Industrial Research at the Norwegian Institute of  
Technology

## **Funders of educational R&D in 2013**

Government bodies:

Ministry of Education and Research  
NordForsk  
Research Council of Norway  
The Norwegian Association of Local and Regional Authorities  
The Norwegian Directorate for Education and Training

## Appendix II: R&D survey in Norway

NIFU and Statistics Norway carry out the statistical surveys on resources devoted to R&D in Norway. NIFU is responsible for collecting, processing and disseminating statistics and indicators regarding the institute sector and the higher education sector, while Statistics Norway is responsible for the industrial sector. NIFU is also responsible for compiling the information into national totals for Norway. In the industrial and institute sectors, as for the health trusts, annual statistical surveys are carried out. In the higher education sector the survey is carried out every second year. For all sectors main figures are presented annually. The statistics are produced using guidelines by the OECD (2002), "Frascati manual".

The Frascati manual defines research and development (R&D) as "creative work undertaken on a systematic basis in order to increase the stock of knowledge, including knowledge of man, culture and society, and the use of this stock of knowledge to devise new applications". R&D is divided into three types of activity:

- *Basic research* – experimental or theoretical work undertaken primarily to acquire new knowledge of the underlying foundation of phenomena and observable facts, without any particular application or use in view
- *Applied research* – original investigation undertaken in order to acquire new knowledge directed primarily towards a specific practical aim or objective
- *Experimental development* – systematic work drawing on existing knowledge gained from research and/or practical experience, which is directed to producing new materials, products or devices, to installing new processes, systems and services, or to improving substantially those already produced or installed

Of particular note, research by students at the PhD level carried out at universities should be counted, whenever possible, as a part of R&D. However, all education and training should be excluded, as should centralised supporting activities and expenditure such as human resources and finance.

The production of the Norwegian R&D statistics is based on a combination of survey and the use of administrative registers.

In the higher education sector, each individual department or corresponding equivalent unit is surveyed. Supplementary sources of information include surveys on staff time distribution,<sup>11</sup> information on personnel and expenditure from the institutions' central administration, information from the Research Council of Norway, and from medical foundations. The institute sector is also fully covered by exhaustive surveys. Questionnaires are sent to research institutes and other institutions that are expected to perform R&D activities. R&D performed at museums is estimated.

Norwegian national R&D statistics are based on the following funding categories:

- Industrial sources: expenditure made by business enterprises or other industrial activity, in most cases for R&D activities within the enterprise itself
- Government sources: expenditure made by the government, especially contributions by the Norwegian ministries directly to universities and other R&D institutions, as well as contributions channelled through the Research Council of Norway. A small proportion also comes from county and municipal administrations
- Other national sources: private trusts, gifts, loans, grants from voluntary organisations and own funds in the higher education and institute sectors and SkatteFUNN (Tax deduction system for R&D) in the industrial sector
- Sources from abroad: contributions made by foreign enterprises, institutions and foreign trusts as well as those from the EU, Nordic and other international organisations

---

<sup>11</sup> Time use surveys are conducted on individual level with an interval of maximum 10 years. Questionnaires are sent to all individuals in tenured positions, and the response rate has normally been 60–70 per cent. R&D coefficients are calculated on institutional level and by field of science, for use in the R&D statistics in the higher education sector. The last nationwide time survey was carried out in 2010.



## **Appendix III: Method for mapping of educational R&D in Norway**

### **Mapping of performing units**

The national R&D survey for Norway has a special module that maps the R&D effort within selected governmental priorities, so-called thematic areas. The respondents of the R&D survey are asked to state the size of the R&D effort within each thematic area as a proportion of total R&D expenditure. Since 2009, Education (i.e. educational R&D, as the definitions are identical) has been one of these thematic areas. The other thematic areas that are currently mapped in this module are Global challenges, Health, Food, Marine R&D, Maritime R&D, Welfare and Tourism. The questions regarding governmental priorities are part of the survey on departmental level, and is not mapped on individual level. FTE on educational research is thus mapped per department, with no link to individuals.

The definition used to define Education in the national R&D survey is identical to the definition used in the surveys of educational R&D conducted by NIFU on behalf of the Ministry of Education and Research. All units that reported R&D activity within the thematic area of Education in the National R&D survey were included in the surveys on educational R&D.

Since the definition of educational R&D in the OECD survey was somewhat broader than the Norwegian survey, especially when it comes to Development and statistics, a number of other units were approached. Of these, The Norwegian Centre for ICT in Education answered the questionnaire. As they were the only extra institution, their answers are not included in the totals of this working paper, which presents the results from the main survey.

Statped, the National service for special needs education, replied that they conduct research and development in all their disciplines. Moreover, they carry out development and production of personalised learning resources and technology for use in special education. Unfortunately, they do not have sufficient overview of the resources that were used for research and development in 2013. In 2014, they developed an R&D strategy which also includes means for measuring the R&S activity, and presume that they will be able to report their R&D activities according to the guidelines for 2015.

Statistics Norway collects and prepares a large part of the statistics on Education in Norway. According to the OECD's guidelines, this should be included in the survey. The unit of Educational statistics within the Department of Social statistics were approached. The Research department of Statistics Norway had already answered the questionnaire, and the unit of Educational statistics decided this would count as a total for the institution.

An initiative was taken to map out in-house development and statistics production related to Education and educational R&D within the Ministry of Education and Research and The Norwegian Directorate for Education and Training. Other ministries were also approached, such as the Ministry of Health and Care services (education within medicine and health) and the Ministry of Labour and Social Affairs (adult learning). Some of these institutions do have in-house activities, but only to a minor extent. It was thus decided that the in-house activities at the ministries and the directorate were too marginal for them to participate in the survey.

### **Mapping of funding units**

The process of mapping the funding units was done in accordance with the OECD's guidelines. According to the survey, the institutions themselves was the most important funders of educational R&D through the basic funding of the institutions, i.e. through General University Funds (GUF). As the department units can utilise these funds themselves, and they had already filled in a questionnaire, they were ruled out from the survey of the funders.

Major funders of educational R&D in Norway, according to the performing units, were the Research Council of Norway and The Norwegian Directorate for Education and Training. Other contributors through project funding are the ministries, and especially the Ministry of Education and Research, but there are also some funds related to research about professions within medical and health sciences

from Ministry of Health and Care Services. Other contributors are NordForsk and the Norwegian Association of Local and Regional Authorities.

The Association of Local and Regional Authorities was approached, in order to clarify their role as a funder of research and development related to basic school. Municipalities are responsible for providing basic school in Norway, whereas county authorities are responsible for upper secondary education, and the Association has initiated research projects. The Association considered filling in the questionnaire for funders in 2013, but it was not submitted.

NordForsk funds educational R&D in all of the Nordic countries. NordForsk funded educational research in six joint Nordic research projects and one Nordic Centre of Excellence within the research programme Education for Tomorrow in 2013. The funds are disbursed to the project leader's university, who then distribute the sum to the partner universities. In 2013, NordForsk funded one research project in the field of educational research lead by a Norwegian university (University of Stavanger), and there were Norwegian partners in all the other research projects in the field. NordForsk has detailed budgets, but cannot separate the funds used by the Norwegian partners from the project totals, as well as the results produced within each project. They have thus reported the funding and the results of the Norwegian-lead project (the whole project) for 2013.

### ***Calculation of R&D expenditure on educational research***

R&D expenditure on educational research is specified in the questionnaire as a percentage of total R&D expenditure at the department (or other statistical unit). This percentage is linked with the amount of current R&D expenditure at the corresponding statistical unit.<sup>12</sup>

The amount on R&D expenditure within educational research is calculated on departmental level. Information about mother institution, field of science and region (i.e. municipality) is linked to the dataset through NIFU's registry on R&D institutions, which is an integrated part of the R&D statistics.

---

<sup>12</sup> Detailed surveys with data for each department are not available in all countries. An alternative method, which NIFU previously had used for mapping polar research in Norway and Denmark, uses work-years as a key input indicator to calculate R&D efforts in the field, see Aksnes et. al (2014, page 49) <http://www.nifu.no/files/2014/06/NIFUreport2014-18.pdf>

## Appendix IV: Questionnaire for performing units

The Norwegian questionnaire, with the «OECD module» as the last part. This appendix also includes information about where and how the Norwegian survey differs from the planned OECD survey.

### Part 1: Basic information (in Norwegian)

The mapping of units with educational R&D was done through a special module in the national R&D survey for Norway. We used the infrastructure of this survey to identify organisational information and to find contact information for the units. The first part of the survey was thus pre-filled by NIFU, and additional information about performing sector, institution, faculty and field of science was provided by NIFU from our registries.

We have only included the questions in the national survey on educational E&D that are presented in this working paper in this appendix. Only the questions are translated into English, the introductions are not.



## Kartlegging av FoU-ressurser innenfor utdanningsforskning 2013

For universitets- og hogskolesektoren

Kartleggingen av utdanningsforskning gjennomføres etter avtale med Norges forskningsråd. Det er tredje gang en slik kartlegging gjennomføres. Spørreskjemaet sendes ut til miljøer som har oppgitt at de hadde FoU-aktivitet innenfor satsningsområdet Utdanning i spørreskjemaet for FoU-statistikken 2013 og 2011, samt til miljøer som deltok i kartleggingen for 2009. I tillegg til spørsmål knyttet til finansiering av og innretning på utdanningsforskningen ved enheten, inneholder spørreskjemaet en egen modul som inngår i en kartlegging på feltet i regi av OECD.

Vi er klar over at det kan være vanskelig å gi presise svar på flere av spørsmålene og understreker at vi ber om skjønsmessige anslag. Resultatene vil sammenholdes med øvrige data som NIFU innhenter, FoU-statistikk og nøkkeltall (forskningsinstituttene).

### Definisjon av utdanningsforskning:

Utdanningsforskning er et flerfaglig og tverrfaglig forskningsfelt som studerer forhold vedrørende undervisning, læring, ledelse og styring på alle nivå og undervisningssystemer, inklusive læremidler og tekniske hjelpemidler i utdanningstilbudene. Forskningen kan være rettet mot ulike formål, som sosiale forhold, arbeidsforhold, offentlig forvaltning og allmennvitenskapelig utvikling, i tillegg til utdanningsforhold.

Kilde: Kunnskapsdepartementet

### Teknisk informasjon om den nettbaserte undersøkelsen:

Enhetene logger seg på sitt webskjema via en unik lenke sendt i e-post til instituttet/avdelingen. Man kan gå inn og ut av skjemaet så mange ganger man vil. Informasjonen som legges inn lagres når man trykker på frem- eller tilbakeknappene. Lukk fanen/vinduet i nettleseren når økten er ferdig. Prøv gjerne å åpne skjemaet i en annen nettleser hvis skjemaet ser rart ut. Hvis man legger inn e-postadresse i undersøkelsens siste side, får man tilsendt en kopi av det utfylte skjemaet.

### Svarfrist for undersøkelsen er 1. november

Spørsmål kan rettes til Hebe Gunnes, tlf 22 59 51 16, e-post: hebe.gunnes@nifu.no

Vennligst oppdater/oppgi kontaktopplysninger:

NIFUs ref:	<input type="text"/>
Institutt/avdeling:	<input type="text"/>
Lærested	<input type="text"/>
Kontaktperson	<input type="text"/>
e-post:	<input type="text"/>



Start

## Part 2: Scope and organisation of educational R&D in Norway (in Norwegian)

### Share of total R&D expenditure related to educational R&D.

During fiscal year 2013, how much of the organisation's R&D expenditures (%) were allocated to perform educational R&D?

Please specify the full time equivalent (FTE) in-house personnel devoted to educational R&D activities in fiscal year 2013.

Hvor stor andel (%) av instituttets/avdelingens totale FoU-virksomhet i 2013 anslås å omfatte utdanningsforskning ifølge definisjonen på forrige side?

Hvor mange FoU-årsverk ble det utført ved instituttet/avdelingen innenfor utdanningsforskning i 2013?

FoU-årsverk innebærer her årsverk utført av både vitenskapelig/faglig personale og teknisk/administrativt personale innenfor utdanningsforskning

The OECD questionnaire also asks the respondents to add extramural educational R&D (i.e. purchase of R&D services). In Norway, only business enterprise units are asked to state the extramural R&D activities in the national R&D survey, as the higher education institutions and the research institutes do not have much extramural activities of this kind. On basis of this, we did not ask the units about extramural R&D activities.

### Type of R&D

Please specify the percentage of the total intramural educational R&D performed by type of R&D

Skjønsmessige fordelinger av FoU-ressursene i 2013 på aktivitetstyper

FoU-virksomheten inndeles i følgende FoU-typer:

**Grunnforskning:** Eksperimentell eller teoretisk virksomhet som primært utføres for å skaffe til veie ny kunnskap om det underliggende grunnlag for fenomener og observerbare fakta - uten sikte på spesiell anvendelse eller bruk.

**Anvendt forskning:** Virksomhet av original karakter som utføres for å skaffe til veie ny kunnskap. Anvendt forskning er primært rettet mot bestemte praktiske mål eller anvendelser.

**Utviklingsarbeid:** Systematisk virksomhet som anvender eksisterende kunnskap fra forskning og praktisk erfaring, og som er rettet mot å fremstille nye eller vesentlig forbedrede materialer, produkter eller innretninger, eller å innføre nye eller vesentlig forbedrede prosesser, systemer og tjenester.

Vi ber om en skjønsmessig prosentvis fordeling av FoU-virksomhetens samlede forskningsvirksomhet på utdanningsforskning på kategoriene nedenfor.

Aktivitetstype	Prosent
Grunnforskning	<input type="text"/>
Anvendt forskning	<input type="text"/>
Utviklingsarbeid	<input type="text"/>
Totalt (skal summere til 100)	0

From top to bottom: Basic research, applied research, development.

### Educational R&D by discipline

Please specify the percentage of the total intramural educational R&D by discipline. *This question is not part of the OECD questionnaire.*

From top to bottom: Education, Special education, Didactics, Psychology (including developmental psychology), Health (including neuro sciences), Social economics, Sociology (including educational sociology and research on professions), Political sciences (including administration and organization science/theory and management studies). Other, please specify.

Vennligst fordel FoU-aktiviteten innen utdanningsforskning etter følgende fagfelt

Fagfelt	Prosent
Pedagogikk	
Spesialpedagogikk	
Fagdidaktikk	
Psykologi (inkl. utviklingspsykologi)	
Helsefag (inkl. nevrovitenskap)	
Samfunnsøkonomi (inkl. utdannings- og arbeidslivsøkonomi)	
Sosiologi (inkl. utdannings sosiologi og profesjonsforskning)	
Statsvitenskap (inkl. administrasjons- og organisasjonsvitenskap og ledelsesstudier)	
Annet, vennligst spesifiser under:	
<input type="text"/>	
Totalt	0

### Funding of educational R&D

The question on sources of fund is adapted to the main categories in the Norwegian R&D survey. As municipalities and county authorities are responsible for different levels of the education system, they also fund research in these areas. Norwegian authorities thus wanted to single them out in the questionnaire. We've also included the EU commission as a separate funding category.

For Higher education institutions: Please specify the percentage of the total intramural educational R&D by source of funds

Vennligst angi skjønsmessig prosentvis fordeling av utført utdanningsforskning i 2013 knyttet til de enkelte finansieringskilder.

Finansiering	Prosent
Basisbevilgning/grunnbudsjett (gjelder fast personale, UoH-stipendiater, UoH-post.doc og andre lønnet over lærestedets eget budsjett)	
<b>Annen finansiering</b>	
Næringsliv	
Departementer, direktorater m.v.	
Fylker og kommuner	
Norges forskningsråd	
Utlandet (ekskl. EU-kommisjonen)	
EU-kommisjonen	
Andre kilder (fond, gaver, egne inntekter med mer.)	
Totalt	0

From top to bottom:

- General university funds (GUF)/basic funding.
- External funding: Business enterprises, Ministries/directorates, Counties/municipalities, Research council of Norway, Abroad (excl. EU commission), EU commission, Other National sources (i.e. foundations, gifts, own income).

For research institutes (below): Please specify the percentage of the total intramural educational R&D by source of funds

- Basic funding over the government budget and Basic funding from the Research council of Norway
- The Research council of Norway (revenues from programmes and projects), Ministries/directorates, Counties/municipalities, Abroad (excl. EU commission), EU commission, Other National sources (i.e. foundations, gifts, own income)

Vennligst angi skjønsmessig prosentvis fordeling av utført utdanningsforskning i 2013 knyttet til de enkelte finansieringskilder.

Finansiering	Prosent
Grunnbevilgning (direkte bevilgning over statsbudsjett)	
Grunnbevilgning fra Norges forskningsråd	
Norges forskningsråd (program- og prosjektinntekter)	
Departementer, direktorater m.v.	
Fylker og kommuner	
Næringsliv	
Utlandet (ekskl. EU-kommisjonen)	
EU-kommisjonen	
Andre kilder (fond, gaver, egne inntekter med mer.)	
Totalt	0

### Educational R&D by level of education

Please specify the percentage of the total intramural educational R&D by source of level of education.

Hvilke forskningsområder hadde instituttet/avdelingen utdanningsforskning innenfor i 2013?

(vennligst kryss av)

- Barnehage
- Grunnskole trinn 1-7
- Grunnskole trinn 8-10
- Videregående skole
- Fagskole
- Høyere utdanning
- Forskerutdanning
- Voksenopplæring/læring i arbeidslivet
- Ikke mulig å klassifisere, vennligst spesifiser

From top to bottom:

- ISCED 0 – kindergarden
- ISCED 1 – basic school (1-7 year)
- ISCED 2 – lower secondary school (8-10 year)
- ISCED 3 – upper secondary school (11-13 year)
- ISCED 4/5 – vocational education
- ISCED 6/7 – higher education
- ISCED 8 – PhD education
- Adult learning
- Not elsewhere classified

*This scheme deviates from that of the OECD on tertiary education level. There is no clear distinction between ISCED level 4 and 5 in the Norwegian education system. Besides, the research training (ISCED 8, PhD education) is surveyed as a separate category, as there has been quite some focus on this level of education, but less research.*

### Cooperation on educational R&D

*The question of cooperation on educational R&D is not part of the OECD study. The Norwegian survey asks the respondents to state both national and international cooperation, as well as listing the types of collaborators. Only the questions related to international cooperation is included here.*

**Did the unit have international cooperation on educational R&D in 2013? (yes/no)**

Hadde instituttet/avdelingen internasjonalt forskningssamarbeid om utdanningsforskning i 2013?

Ja  Nei

**If yes, please state the type of collaborator**

From top to bottom: University, Specialized university institution, University college, Research institute, International organization, Business enterprises abroad, Other.

**Oppgi type samarbeidspartner(e) (sett kryss)**

- Universiteter
- Vitenskapelige høyskoler
- Statlig høyskole/annen høyskole
- Forskningsinstitutter
- Internasjonal organisasjon
- Utenlandsk næringsliv
- Annen:

**Vennligst oppgi hvilke(t) land samarbeidspartnerne kom fra:**

- Danmark  Finland  Island  Sverige
- Belgia  Estland  Frankrike  Irland
- Italia  Latvia  Litauen  Luxemburg
- Nederland  Spania  Storbritannia  Sveits
- Tsjekkia  Tyrkia  Tyskland  Østerrike
- Australia  Canada  Israel  Taiwan
- USA  Annet:

Please state the country of the collaborator:

Denmark	Finland	Iceland	Sweden
Belgium	Estonia	France	Ireland
Italy	Latvia	Lithuania	Luxembourg
Netherlands	Spain	UK	Switzerland
Czech republic	Turkey	Germany	Austria
Australia	Canada	Israel	Taiwan
USA	Other (please specify)		

### Part 3: Researchers in educational R&D

The following is a list of employees at the department/institute per 1.1.2013. Please tick those who were involved in educational R&D in 2013, and who participated in research on kindergarten level.

*Information about the researchers at each unit was imported into the questionnaire from NIFU's Register of Research Personnel. This part of the survey is part of the special methodology adapted for Norway to perform this kind of mappings. As we have excellent registries on research personnel, doctorates and graduated, which contains information on the individual level, we have the possibility to do various analyses on the population of researchers within educational R&D.*

#### Vitenskapelig/faglig personale

Under følger en liste over vitenskapelig/faglig personale ved instituttet per 1.10.2013. Vennligst kryss av for hvem som deltok i utdanningsforskning i 2013. Hvis vedkommende også deltok i utdanningsforskning på barnehageområdet, vennligst kryss av for dette også.

Enheter med mange ansatte vil få tilsendt lister i etterkant av utsendelsen av dette skjemaet. Listen er stykket opp pga tekniske tilpasninger.

#### Ansatte innen utdanningsforskning.

Løpe- nr. (NIFUs ref.)	Navn	Deltok i utdannings forskning	Deltok i barnehage forskning
		<input type="checkbox"/>	<input type="checkbox"/>
		<input type="checkbox"/>	<input type="checkbox"/>
		<input type="checkbox"/>	<input type="checkbox"/>
		<input type="checkbox"/>	<input type="checkbox"/>
		<input type="checkbox"/>	<input type="checkbox"/>
		<input type="checkbox"/>	<input type="checkbox"/>
		<input type="checkbox"/>	<input type="checkbox"/>
		<input type="checkbox"/>	<input type="checkbox"/>
		<input type="checkbox"/>	<input type="checkbox"/>
		<input type="checkbox"/>	<input type="checkbox"/>
		<input type="checkbox"/>	<input type="checkbox"/>
		<input type="checkbox"/>	<input type="checkbox"/>
		<input type="checkbox"/>	<input type="checkbox"/>
		<input type="checkbox"/>	<input type="checkbox"/>
		<input type="checkbox"/>	<input type="checkbox"/>
		<input type="checkbox"/>	<input type="checkbox"/>



## Part 4: «OECD module» (in English)



### OECD CERI Survey on Educational Research and Development

The Organisation for Economic Co-operation and Development (OECD) gjennomfører høsten 2014 en kartlegging av Educational Research and Development i noen medlemsland.

Kunnskapsdepartementet støtter dette arbeidet fordi det er viktig å få internasjonale sammenlignbare data om FoU på utdanningsområdet. OECD har den beste kompetansen til å gjennomføre et slikt prosjekt. Sammenlignet med andre land er Norge kommet langt i å samle inn statistikk om utdannings FoU. OECD nyter godt av dette i sitt arbeid.

Store deler av OECDs kartlegging sammenfaller med spørsmålene som inngår i den norske undersøkelsen, og miljøene som skal kartlegges er de samme. Kunnskapsdepartementet har derfor samordnet de to undersøkelsene. OECD-undersøkelsen omfatter imidlertid noen spørsmål som ikke inngår i den norske kartleggingen. Disse spørsmålene er derfor tatt inn som en egen modul i den norske undersøkelsen.

Spørsmålene i denne delen av web-skjemaet er hentet direkte fra OECDs spørreskjema, og er på engelsk. NIFU samler inn data på vegne av OECD og Kunnskapsdepartementet, og vil rapportere aggregerte data til dem.

#### Introduction

Innovation and improvement in education partly relies on the knowledge and insight generated through research and development (R&D) in the field of education. However, existing measures of public educational R&D have limited ability to support educational and research policy. More comprehensive data would allow better comparisons of R&D spending between education and other fields, help identify who funds of educational R&D in different countries, and help countries diagnose some of the strengths and weaknesses of their innovation systems in education.

OECD and its member countries are seeking to improve the quality and international comparability of data on educational R&D by undertaking a new data collection. As part of the "Innovation Strategy for Education and Training" project of the Centre for Educational Research and Innovation (CERI), the OECD Secretariat has designed an ad hoc survey on educational R&D. The survey follows the guidelines of the Frascati Manual (which underpins the collection of official R&D statistics).

#### Use of data

The answers collected through this survey are to be used by the OECD Secretariat for the drafting of research reports. In all reports, the survey results will be aggregated to ensure individual responses cannot be identified. The data will not be used for any other purposes. Responses to the survey are confidential, and will not be shared with third parties outside of the Organisation.



Tilbake Neste

**Please specify the headcount and full time equivalent (FTE) in-house personnel devoted to total R&D activities and educational R&D activities in fiscal year 2013, by occupation.**

	Headcount	FTE in R&D
<b>Total number of staff of the institution:</b>	<input type="text"/>	<input type="text"/>
<i>Of which: Total R&amp;D (all fields of science)</i>		
Researchers	<input type="text"/>	<input type="text"/>
Other staff (including technicians and administrative support staff)	<input type="text"/>	<input type="text"/>
<i>Of which: Educational R&amp;D</i>		
Researchers	<input type="text"/>	<input type="text"/>
Other staff (including technicians and administrative support staff)	<input type="text"/>	<input type="text"/>
<i>Personnel not devoted to R&amp;D</i>	<input type="text"/>	<input type="text"/>

**Please specify the headcount and full time equivalent (FTE) of external contract personnel devoted to educational R&D activities in fiscal year 2013.**

*This question refers to individuals who do not form part of your organisation's headcount but who undertake educational R&D on a per-project or subcontracted basis. These staff may be engaged on a contract basis for specific projects and will not be covered by organisational policies such as pension schemes. Typically these staff will be paid for the total services specified in a contract rather than salaries/wages*

	Headcount	FTE in R&D	Not applicable
Total external FTE staff devoted to educational R&D	<input type="text"/>	<input type="text"/>	<input type="checkbox"/>

Please specify the amount or percentage of expenditure on total intramural educational R&D performed in fiscal year 2013 by sub-area of educational R&D.

Sub area	Definition	Percentage
Economic, Social and Political Context	Research on educational policy, including political, economic, legal and fiscal issues, including financing. Research on relations between educational processes and the economic, social and political contexts in which they occur. Research on the evaluation of educational processes.	<input type="text"/>
Management, Organisation, and Leadership	R&D on administration, management and organisation in the education sector, and sources and types of educational leadership, including administrators and other actors inside and outside of schools.	<input type="text"/>
Learning and Instruction	Research on learning processes and instruction practices in formal and informal settings, for all age groups. Development of instructional methods based on learning and instruction research. R&D on psychological and health aspects of education and special education.	<input type="text"/>
Curriculum	Research on curriculum. Development of new curricula.	<input type="text"/>
Teacher Education	R&D on teaching, on teacher development and education from pre-service through professional induction to the in-service stages of teachers' careers.	<input type="text"/>
Non-teacher Professional Education	R&D on professional development and education for professions other than teaching (e.g., architecture, engineering, health professions, law).	<input type="text"/>
Assessment and Evaluation	R&D relating to the assessment and evaluation of pupils, schools, teachers and systems. Psychometric R&D, and quantitative and qualitative evaluation of educational interventions. Development of assessment tools.	<input type="text"/>
Education Statistics and Research Methodologies	R&D aimed at development and consolidation of educational indicators at different levels. Research aimed at improving quantitative and qualitative research methods in education.	<input type="text"/>
Other (please specify)	<input type="text"/>	<input type="text"/>
Total		0

What methodology have you used to answer this question?

During fiscal year 2013, did your educational R&D activities result in the following products/services, in whole or in part?

(Please tick the three most relevant outputs for research)

- Research papers, books, journal articles
- Reports and policy papers
- Research methodologies
- Conferences
- Consulting
- Databases
- Other:

During fiscal year 2013, did your educational R&D activities result in the following products/services, in whole or in part?

(Please tick the three most relevant outputs for development)

- Development of national/regional-level curriculum
- Textbooks and other learning/teaching resources (including online courseware)
- Assessment tools
- Non-digital learning tools (learning objects etc.)
- Digital learning tools and software (electronic devices, learning objects, maps, etc.)
- Data systems for educational institutions
- Teaching strategies or pedagogical models
- Materials and tools for school management and teacher development
- Development of tools for pupils in need of special assistance or care
- Other:

Did any of your research and development outputs lead to patents or commercial revenue for the organisation/unit?

- Patents
- Commercial revenue (consulting fees, licences, sales etc.)

**Please rank the following barriers to your institution's educational research activities?**

*(1=most significant barrier, 9=least significant barrier or 0=no barriers)*

	0	1	2	3	4	5	6	7	8	9
No barriers	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Access to funding	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Lack of expertise or access to expertise	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Other topics are more prestigious in my field	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Too difficult or demanding	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Not acknowledged in career prospects	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Insufficient time due to teaching/other non-R&D activities	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Lack of policy/community interest	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Difficulty in getting published	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Legal, regulatory and administrative barriers	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

**Please rank the following barriers to your institution's educational development activities?**

*(1=most significant barrier, 10=least significant barrier or 0=no barriers)*

	0	1	2	3	4	5	6	7	8	9	10
No barriers	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Access to funding	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Lack of expertise or access to expertise	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Other topics are more prestigious in my field	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Too difficult or demanding	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Not acknowledged in career prospects	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Insufficient time due to teaching/other non-R&D activities	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Lack of policy/community interest	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Lack of incentive due to ownership of results (e.g. IP)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Lack of commercial potential	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Legal, regulatory and administrative barriers	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

*This part of the questionnaire is imported from the OECD questionnaire, but with minor adjustments in set up and order of the questions.*

## **Appendix V: Questionnaire for funders**

### **OECD CERI Survey on Educational Research and Development**

Innovation and improvement in education partly relies on the knowledge and insight generated through research and development (R&D) in the field of education. However, existing measures of public educational R&D have limited ability to support educational and research policy.

The Organisation for Economic Co-operation and Development (OECD) and its member countries are seeking to improve the quality and international comparability of data on educational R&D by undertaking a new data collection. As part of the “Innovation Strategy for Education and Training” project of the Centre for Educational Research and Innovation (CERI), the OECD Secretariat has designed an ad hoc survey on educational R&D. The survey follows the guidelines of the Frascati Manual (which underpins the collection of official R&D statistics).

#### **Purposes**

Research and development is a key pillar of educational innovation systems. Current indicators on countries’ investment in educational R&D face problems of accuracy and comparability. The main purpose of this survey is to allow better comparisons of R&D spending within countries and to provide a clearer picture of the relative weight of educational R&D in the total expenditure on R&D in a country and to better understand how educational R&D is organised and funded.

#### **Methodology and data collection**

Because institutional frameworks vary greatly across countries, the first phase of the project has been to conduct a mapping of educational R&D in each participating country. National experts in participating OECD countries have been asked to identify the relevant establishments performing and funding educational R&D in their country. After reviewing these mapping results to establish a similar scope and coverage across countries, the resulting database of units within institutions represents the non-negligible actors in each country’s educational research ecosystem.

The target population of the survey is defined as specific units or departments within higher education, government and non-profit institutions in participating OECD countries which have performed or funded educational R&D activities during the fiscal year 2013. The survey method chosen is an online questionnaire. Finally, the Educational R&D Survey login information is provided for respondents to access the online survey platform.

#### **Definitions**

Research and development (R&D) is defined as creative work undertaken on a systematic basis in order to increase the stock of knowledge, including knowledge of man, culture and society, and the use of this stock of knowledge to devise new applications. In practice, R&D covers three types of activity:

- *Basic research* – experimental or theoretical work undertaken primarily to acquire new knowledge of the underlying foundation of phenomena and observable facts, without any particular application or use in view
- *Applied research* – original investigation undertaken in order to acquire new knowledge directed primarily towards a specific practical aim or objective
- *Experimental development* – systematic work drawing on existing knowledge gained from research and/or practical experience, which is directed to producing new materials, products or devices, to installing new processes, systems and services, or to improving substantially those already produced or installed

Educational R&D consists of a broad range of activities, including but not limited to research and development on: educational policies; management, organisations and leadership; curriculum studies; learning; instructional methods; teaching, teaching profession and teacher education; assessment and evaluation; education statistics; and educational technology. To demark R&D from other related activities, we recommend using the principle that R&D enhances the stock of publicly-available knowledge on education and education policy.

### **Guidelines and scope**

Respondents are encouraged to read the guidelines attached as an Annex to this questionnaire. The questionnaire largely follows the methodological guidelines of the OECD Frascati Manual, and a short explanation is provided before each question. Further clarification of the terms used in the questionnaire can be found in the Frascati Manual. The guidelines in the Annex set out the activities that do and do not meet the definition of R&D. Of particular note, research by students at the PhD level carried out at universities should be counted, whenever possible, as a part of R&D. However, all education and training should be excluded, as should centralised supporting activities and expenditure such as human resources and finance.

### **Use of data**

The answers collected through this survey are to be used by the OECD Secretariat for the drafting of research reports. In all reports, the survey results will be aggregated to ensure organisation/unit's responses cannot be identified. The data will not be used for any other purposes. Responses to the survey are confidential, and will not be shared with third parties outside of the Organisation. Institutions may submit their responses directly to the OECD, or via the national government representatives overseeing the project.

---

## **Funding of Educational R&D**

*You should complete this section if you fund other organisations to undertake educational R&D and the outputs of this R&D (e.g., publications, patents or products) belong to the funding recipient. Funding primarily concerns research grants and awards. Extramural R&D, or the purchase of R&D services where the original organisation retains ownership of the outputs (e.g. commissioned or sub-contracted R&D), should not be considered as funding. Funds passing through your organisation to another organisation should not be reported as funding either, for example if you coordinate a project funded by another agency and allocate the funding to different partners.*

### **1. During fiscal year 2013, how much of your organisation's expenditures were allocated to fund educational R&D? (Please write down the amounts in your national currency)**

*Please first read the guidance contained in the Annex. Educational R&D consists of a broad range of activities, including but not limited to research and development on: educational policies; management, organisations and leadership; curriculum development; learning; instructional methods; teaching and teacher education; assessment and evaluation; education statistics; and educational technology. All education and training of personnel in universities and special institutions of higher and post-secondary education should be excluded. However, research by students at the PhD level carried out at universities should be counted, whenever possible, as a part of R&D.*

*Funding is when your organisation gives another institution a grant to undertake educational R&D, and the recipient institution maintains ownership of the outputs. R&D grants may be given via a range of mechanisms and can include those granted for specific areas of R&D, specific types of R&D, or those where researchers have freedom to choose the topics and methods. Funding does not include extramural R&D for which you retain ownership, or the purchase of R&D services from external bodies (see Section 3). If your organisation both funds and performs educational R&D, please respond to both Section 3 and Section 4 and ensure no expenditure is counted twice.*

	Amount (National Currency)
Fund educational R&D <i>R&amp;D is considered funded by your organisation if its outputs (e.g., publications, patents, product, services) belong to the recipient of the funds. Do not count the same resources twice: amounts in this cell should not overlap with performance of intramural or extramural R&amp;D.</i>	

**Comments** \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

**2. Is education or educational science the main target of your organisation's R&D funding activities? (Please tick one answer.)**

- Yes  
 No

**Comments** \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

**3. Please specify the amount or percentage of the total educational R&D funded by your organisation during fiscal year 2013 by level of education**

*If the R&D activities funded by your institution belong to several of the education levels below, please allocate them proportionately to the amount spent on the different education levels. Should this be too difficult to estimate, please allocate the expenditure equally between the levels concerned and indicate this below. R&D that cannot be allocated to a single category (for instance that which relates to education or learning as a whole) should be allocated evenly between the relevant categories.*

*R&D on vocational education would normally fall into group 'ISCED-P 4/5: Post-secondary, non-tertiary education; and short-cycle tertiary education'.*

		Amount (national currency)	Percentage
ISCED-P Level 0:	Early childhood education		
ISCED-P 1:	Primary education		
ISCED-P 2:	Lower-secondary education		
ISCED-P 3:	Upper-secondary education		
ISCED-P 4/5:	Post-secondary, non-tertiary education		
ISCED-P 5:	Short-cycle tertiary education		
ISCED-P 6/7/8:	Tertiary education (bachelor's, master's and doctoral or equivalent level)		
	Adult education and professional development		
	Total (sum of all rows)		100

**What methodology have you used to answer this question? (e.g. budget information)**  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

**4. Please specify the amount or percentage of the total educational R&D funded by your organisation during fiscal year 2013 by sub-area of educational R&D.**

*If the R&D activities funded by your institution belong to several of the categories below, please allocate them proportionately to the amount spent on the different sub-areas. Should this be too difficult to estimate, please allocate the percentage evenly between the sub-areas concerned and indicate this below.*

*Example: a research grant may produce indicators on the management of schools. If the research mainly emphasises the statistical dimension, you may allocate its expenditures as 80% in "Education statistics" and 20% in "Management, Organisation, and Leadership". If you do not find a satisfactory allocation, please allocate 50% to each sub-area and indicate that you have done so.*

	Amount (national currency)	Percentage
<b>Economic, Social and Political Context</b> <i>Research on educational policy, including political, economic, legal and fiscal issues, including financing. Research on relations between educational processes and the economic, social and political contexts in which they occur. Research on the evaluation of specific educational policies. Educational policy design.</i>		
<b>Management, Organisation, and Leadership</b> <i>R&amp;D on administration, management and organisation in the education sector, and sources and types of educational leadership, including administrators and other actors inside and outside of schools.</i>		
<b>Learning and Instruction</b> <i>Research on learning processes and instruction practices in formal and informal settings, for all age groups. Development of instructional methods based on learning and instruction research. R&amp;D on psychological and health aspects of education and special-needs education should be included here.</i>		
<b>Curriculum</b> <i>Research on curriculum. Development of new curricula.</i>		
<b>Teacher Education</b> <i>R&amp;D on teaching, on teacher development and education from pre-service through professional induction to the in-service stages of teachers' careers.</i>		
<b>Non-teacher Professional Education</b> <i>R&amp;D on professional development and education for professions other than teaching (e.g., architecture, engineering, health professions, law).</i>		
<b>Assessment and Evaluation</b> <i>R&amp;D relating to the assessment and evaluation of pupils, schools, teachers and systems. Psychometric R&amp;D, and quantitative and qualitative evaluation of educational interventions. Development of assessment tools.</i>		
<b>Education Statistics and Research Methodologies</b> <i>R&amp;D aimed at development and consolidation of educational indicators at different levels. Research aimed at improving quantitative and qualitative research methods in education.</i>		
<b>Other (please specify)</b> _____		
<b>Total (sum of all rows)</b>		100

**What methodology have you used to answer this question? (Plus other comments)** \_\_\_\_\_

**5. Please specify the amount or percentage of the total educational R&D funded by your organisation during fiscal year 2013 by the sector of recipient institution**

	Amount (national currency)	Percentage
<p><b>Government</b>  <i>This sector includes all bodies, departments and establishments of government at all levels –central, state or provincial, district or municipal. It includes non-private institutions controlled and mainly financed by government, but not administered by the higher education sector.</i></p>		
<p><b>Higher education</b>  <i>This sector includes all universities, colleges and other institutions of post-secondary education. It also includes all research institutes and experimental stations operating under the control of, administered by or associated with higher education institutions.</i></p>		
<p><b>Industry/business</b>  <i>This sector includes all firms, organizations and institutions whose primary activity is the market production of goods and services for sale to the general public at an economically significant price.</i></p>		
<p><b>Private non profit</b>  <i>This sector includes non-market, private non-profit institutions serving the general public, other than those mainly financed by government or providing higher education services or administered by higher education institutions</i></p>		
<b>Total (sum of all rows)</b>		100

**Comments** \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_



**6. Please specify the amount or percentage of the total educational R&D funded by your organisation during fiscal year 2013 by type of R&D**

*R&D is considered funded by your organisation if its outputs belong to the recipient of the funds. Please do not include any research sub-contracted to another organization.*

	Amount (national currency)	Percentage
<b>Research (Basic and Applied)</b> <i>Experimental or theoretical work undertaken primarily to acquire new knowledge of the underlying foundation of phenomena and observable facts, without any particular application or use in view AND original investigation undertaken in order to acquire new knowledge but directed primarily towards a specific practical aim or objective.</i>		
<b>Development</b> <i>Systematic work, drawing on existing knowledge gained from research and/or practical experience, which is directed to producing new materials, products or devices, to installing new processes, systems and services, or to improving substantially those already produced or installed.</i>		
<b>Total (sum of all rows)</b>		<b>100</b>

**Comments**

---



---

**7. During fiscal year 2013, did your organisation's funding result in any of the following products/services, in whole or in part? (Please tick the three most relevant for research, and the three most relevant for development.)**

**Research**

- Research papers, books, journal articles
- Reports and policy papers
- Research methodologies
- Conferences
- Consulting
- Databases
- Other: (please specify) \_\_\_\_\_
- Other: (please specify) \_\_\_\_\_

**Development**

- Development of national/regional-level curriculum
- Textbooks and other learning/teaching resources (including online courseware)
- Assessment tools
- Non-digital learning tools (learning objects etc.)
- Digital learning tools and software (electronic devices, learning objects, maps, etc.)
- Data systems for educational institutions
- Teaching strategies or pedagogical models
- Materials and tools for school management and teacher development
- Development of tools for pupils in need of special assistance or care
- Other: (please specify) \_\_\_\_\_
- Other: (please specify) \_\_\_\_\_

**Comments**

---



---

8. Please rank the two most significant barriers your organisation would face in *increasing its funding of educational research and development activities?* (Place a "1" for the most significant barrier and a "2" for the second most important barrier.)

Funds available for educational R&D are determined externally (e.g. by central government)	
Difficulty raising additional funds	
Other fields of research are of higher priority	
Insufficient quality/relevance of educational project proposals	
Proposals are too small/ transaction costs are too large	
Risk of non-delivery	
Previous outputs have not had large impact	
Legal, regulatory and administrative barriers	
Other (please specify) _____	
Other (please specify) _____	

**Comments**

---



---



---

9. What process does your organisation use to distribute funding for educational R&D? (Please tick all that apply.)

Open competitive grants on predefined educational themes	
Open competitive grants on any theme proposed by applicants	
Certain researchers/units invited to undertake R&D on predefined educational themes	
Certain researchers/units invited to undertake R&D on any theme they propose	
Other (please specify) _____	

**Comments**

---



---



---

## Appendix VI: Analysis of non-responding units

A total of 195 units reported that they had educational R&D in 2013. 146, or 75 per cent of these, participated in the survey. The response rate was lowest in the institute sector, 71 per cent, and highest at the universities, 78 per cent. However, the highest number of non-responding units was found at the university colleges, see table V1.

**Table V1 Participants and non-responding units in 2013.**

	Participants		Non-respondents	
	Number	Share of R&D exp.	Number	Share of R&D exp.
Universities	58	90 %	16	10 %
University colleges	68	88 %	25	12 %
Institute sector	20	86 %	8	14 %
Total	146	89 %	49	11 %

The participants in the survey accounted for 89 per cent of the expenditure on educational R&D in 2013. The share was highest at the universities, lowest in the institute sector, which accords with the overall response rate.

The non-responding units either had a share of educational R&D that was lower than 30 per cent, or they were small, i.e. had few employees and little R&D expenditure.

At the universities, all units within pedagogics responded to the survey. Those which did not were in various fields, among them medicine and health, economics, psychology and language studies. At the university colleges, the non-response units were mainly in health sciences or in economics and other social sciences. Some of the non-responding units in the institute sector were regional research institutes, and most of them had their research in the social sciences.

## **Appendix VII More about the Norwegian R&D system**

The higher education sector encompasses the *universities*, the *specialised university institutions* and the *state university colleges*, as well as *private higher education institutions* receiving basic funding from the government, and the *university hospitals*. The higher education institutions are regulated by the same Act, but the different formal status of the institutions implies different degrees of independence. For example, only universities have full autonomy in establishing PhD programmes. In 2013, there were eight universities in Norway: the four “old” universities in Oslo (UiO established in 1811), Bergen (UiB 1946), Trondheim (NTNU 1910/1968) and Tromsø (UiT 1968), and the four “new” universities that have acquired status as full universities during the last decade: the University of Life Sciences/NMBU 2005; University of Stavanger/UiS 2005; University of Agder/UiA 2007 and University of Nordland (UiN 2011). Moreover, there were eight accredited specialised university institutions and 36 accredited university colleges,<sup>13</sup> of which 18 were state university colleges.

The Norwegian institute sector consists of heterogeneous units, which on an overall level can be divided into *Research institutes serving enterprises* and *Government sector*. The research institutes under governmental regulations for funding of research institutes represent the largest group measured in R&D activities. These research institutes are divided into agricultural and fishery research institutes, technological and industrial research institutes, environment and development research institutes, national social science research institutes and regional research institutes. Other institutions with R&D, such as the Research department at Statistics Norway, the Norwegian Institute of Public Health, museums and Health trusts that are not university hospitals, are also included in the institute sector.

The research institutes receive basic funding from the government, allocated by the Research Council of Norway, but for most of them the major part of their activity is based on competitive funding for specific research projects, such as projects grants from the Research Council and the European Framework Programme, as well as commissioned research projects from government agencies and private enterprises. Unlike many other countries, a large part of the R&D activities in Norway takes place in the institute sector. However, the relative size of the higher education sector and the institute sector varies considerably between the different research fields and disciplines. The institute sector dominates in engineering and technology and agricultural sciences, and also plays a large role in the natural and social sciences, whereas the higher education sector clearly dominates the humanities and medical and health sciences.

### **Funding of R&D in the higher education and institute sectors**

The higher education institutions (HEIs) in Norway are subject to an output-oriented, formula-based funding model used to allocate funds with three main components. The “education component” accounts for 25 per cent of the total allocation, based on the number of credits, number of graduates and number of international exchange students. The “research component” encompasses 15 per cent of the total allocation and is partly a result-based allocation introduced in 2006 based on the number of publications. The largest component is the “basic component”, which is 60 per cent of the total allocation (Frølich 2006). One half of the funds related to the “research component” are redistributed on the basis of performance, and the other half is related to quality and strategic considerations, which include funding of positions for doctoral students. In addition to block grants from the Ministry of Education and Research, the institutions finance their activities through external funding from the Research Council of Norway in particular and other research agencies or contractors in general.

### **Employment structures in Norwegian research institutions**

The higher education sector has teaching as an important task, and the academic/professional positions have both a teaching and a research component. Roughly speaking, the positions at the higher education institutions are divided into scientific/academic staff, recruiting staff and other staff. Scientific/academic staff includes full professors, associate professors, assistant professors, senior lecturers, university and college lecturers, and specialised positions associated with professions, such

---

<sup>13</sup> Of these, seven are for various reasons not included in the R&D statistics.

as specialist dentists and psychologists. There are differences between universities and university colleges in the composition of the staff, as the proportion of full professors is higher at universities, whereas the university colleges have a higher proportion of lecturers, i.e. positions that do not require doctoral qualifications. Other staff in the higher education sector includes researchers, post doctors, research fellows and research assistants.

Full professor is the top position in the hierarchy at Norwegian higher education institutions. One can either achieve a full professorship through applying for a vacant position, or through “professor by competence” – a system where your competence is evaluated by an appointed committee of peers. A full professor position requires the competence equivalent of two doctorates. It is very rare, but not impossible, to achieve a full professorship without formal research training through a PhD degree. Full professor competence requires a substantial number of scientific publications in approved publishing channels.

The Norwegian institute sector is heterogeneous, as are the position structures at the research institutions. Institutes owned by the government follow the government’s standard for employment, whereas private research institutes have their own position structures. For the social science institutes, however, there is a common structure of three levels of researchers – researcher I has full professor competence, researcher II has a PhD or equivalent competence, and researcher III is a junior researcher without a PhD. In the analysis presented in this working paper, the employment structures in the higher education sector and institute sector is customised by NIFU.

## **Appendix VIII More about the educational system in Norway**

This appendix lists the different levels of education in Norway, how they are funded and the number of pupils/students on each level.

### **Preschool/kindergarten (Early childhood education, ISCED level 0)**

Kindergarten is an educational service for children under compulsory school age. It is voluntary, and children can start attending kindergarten at different ages, but all children are entitled to a kindergarten place in their home municipality from the age of one. Since 2011, municipalities have had sole responsibility for funding the building and running of municipal kindergartens, which account for just over half of all kindergartens. Non-municipal kindergartens can also receive municipal operating grants, and are mainly run by private operators. Parents are entitled to pay a fee for the children attending kindergarten.

Approximately 287,000 children between 1 and 6 years attended kindergarten or preschool in Norway in 2013.<sup>14</sup>

### **Primary and lower secondary school (1-10 year, ISCED level 1-2)**

There are two main parts in basic schooling in Norway: primary school (years 1–7) and lower secondary school (years 8–10). Pupils start primary school in the calendar year when they turn 6, and they normally complete lower secondary school in the year they turn 16. Most schools in Norway are municipal, and the running and administration of these schools is a municipal responsibility. Primary and lower secondary education is free of charge and mandatory, and it is based on the principle of equal and adapted education for all in an inclusive comprehensive school system. The goal is that all children and young people shall acquire certain fundamental skills, be included in a common knowledge, culture and value base, and experience mastery and challenges at school. Before and after school programmes are not part of primary education, but all municipalities are required by law to offer before and after school care in years 1–4 for all pupils, and in years 1–7 for children with special needs. The Norwegian Directorate for Education and Training is responsible for supervising the quality of primary and secondary education.

Norway had 430,000 pupils in primary schools and 190,000 pupils in lower secondary schools in 2013.

### **Upper secondary education (11-13 years, ISCED level 3)**

Upper secondary education consists of either a general studies programme preparing pupils for further studies, or a vocational programme. The education is intended to qualify pupils for work or higher education. The county authorities fund upper secondary education. Everyone who completes primary and lower secondary education, or an equivalent education, is entitled to upper secondary education. Adults over the age of 25 are entitled to upper secondary education for adults upon application. Upper secondary education is divided into twelve programmes; three general study programmes and nine vocational programmes. General study programmes are three-year programmes that emphasise theoretical subjects and lead up to the Higher Education Entrance Qualification. Vocational programmes usually lead to a trade or journeyman's certificate, normally after two years at school and a two-year apprenticeship period.

Norway had 200 000 students in upper secondary schools in 2013.

### **Tertiary vocational education (ISCED level 4-5)**

Tertiary vocational programmes are short programmes of vocational study that build on upper secondary education or equivalent prior learning and work experience. Tertiary vocational programmes vary in length, but they should have a scope corresponding to between six months and two years of study. There are both public and private vocational schools. Among other things, the county authorities offer publicly funded technical and maritime programmes as well as health and social work programmes. Private providers offer many different programmes in the areas of creative, commercial, service, media, multimedia and ICT studies.

---

<sup>14</sup> Source for the number of attendees in the different levels of education is Statistics Norway (ssb.no).

In 2013, there were approximately 15,000 students in vocational education in Norway, of which 9,000 were at the tertiary education level.

### **Higher education (ISCED level 5-8)**

There was a total of 53 accredited higher education institutions in Norway (spring 2015), including 8 universities, 8 specialised university institutions and 37 university colleges, 2 of which are art academies. In addition, there are 22 non-accredited university colleges offering approved first degree programmes. Overall responsibility for accreditation rests with the Ministry of Education and Research, and is regulated in the Act of Higher Education Institutions and in NOKUT's regulations, among others. The universities and most university colleges are run by the Norwegian state, and studying at these institutions is free of charge. Students at private institutions pay tuition fees, but many of the institutions also receive financial support from the state. The Ministry of Education and Research has overall responsibility for higher education in Norway. Since 2003, higher education has been structured as three-year bachelor's programmes, two-year master's programmes and three-year PhD programmes, with some exceptions.

Universities have a right to establish study programmes at all levels, and specialised university institutions can establish PhD programmes within their majors. A number of university colleges have the right to award doctorates in one or more subjects. In 2013, 25 institutions had PhD programmes: 8 universities, 9 specialised university institutions and 8 university colleges.

Norway had approximately 250,000 students in higher education (ISCED level 6-7) in 2013, of these, 9,400 had a PhD contract at Norwegian higher education institutions.

### **Adult education and lifelong learning**

Adult education in Norway aims to enable adults to acquire necessary basic skills and allow them to formalise and develop their qualifications. The municipalities and county authorities are responsible for providing primary and secondary education for adults. Under the Norwegian Working Environment Act, all employees are entitled to full or partial leave for up to three years in order to attend organised courses of education. Vocational schools provide flexible and vocationally oriented courses that can be used in the workplace without further education being required. The range of tertiary vocational education offered will therefore be governed by the demand for qualifications in the labour market. The higher education institutions also play an important role as providers of continuing and further education. Close contact between the education sector and the labour market is necessary in order for the institutions to be able to develop continuing and further education programmes that correspond to the needs of enterprises and the individual employees.

## List of tables

Table 1.1 The R&D system in Norway. ....	15
Table 2.1 Key figures on educational R&D expenditure in Norway: 2013. Mill. NOK and per cent. ....	20
Table 2.2 Key figures for researchers in educational R&D in Norway: 2013. ....	29
Table 2.3 Number of units with international cooperation in educational R&D by type of institution and collaborator: 2013. ....	33



## List of figures

Figure 1.1 The educational system in Norway .....	16
Figure 2.1 Thematic priorities in Norway: 2013 .....	17
Figure 2.2 R&D expenditure on educational R&D in Norway by type of performing institution; 2007, 2009, 2011 and 2013 (million EUR <sup>1</sup> ). Share of total R&D by type of institution (per cent). Fixed 2010-prices. ....	18
Figure 2.3 Performers of educational R&D in Norway: 2013. Per cent. ....	19
Figure 2.4 Educational R&D in Norway from selected funders <sup>1</sup> by receiving sector: 2013. Per cent. ...	20
Figure 2.5 Educational R&D in Norway by source of fund: 2013. Per cent. ....	21
Figure 2.6 Educational R&D in Norway by type of research: 2013. ....	22
Figure 2.7 Educational R&D in Norway by field of science <sup>1</sup> : 2013. ....	23
Figure 2.8 Educational R&D in Norway by field of science <sup>1</sup> : 2009-2013. Fixed 2010 prices. ....	24
Figure 2.9 Educational R&D in Norway by discipline and type of institution: 2013. ....	24
Figure 2.10 Educational R&D in Norway by level of education: 2013. ....	25
Figure 2.11 Educational R&D in Norway by level of education: 2009 and 2013. ....	26
Figure 2.12 Educational R&D in Norway by sub-area: 2013. ....	27
Figure 2.13 Share of funds for educational R&D in Norway allocated from selected funders <sup>1</sup> by level of education: 2013. ....	28
Figure 2.14 Share of funds for educational R&D in Norway allocated from selected funders <sup>1</sup> by sub-area: 2013. ....	28
Figure 2.15 Position structure for researchers in educational R&D in Norway in 2013 (N=2780). ....	30
Figure 2.16 Number of researchers in educational R&D in Norway by position: 2007, 2009 and 2013. ....	30
Figure 2.17 Share of researchers in educational R&D in Norway with a doctorate, excl. research fellows, by type of institution: 2007, 2009 and 2013. ....	31
Figure 2.18 Share of women and men within educational R&D and total population of researchers in Norway at different stages of an academic career: 2013. ....	32
Figure 2.19 Age distribution of total population of researchers and researchers within educational R&D in Norway by age group and gender: 2013. ....	32
Figure 2.20 Number of respondents who reported cooperation on educational R&D by country <sup>1</sup> of collaborator: 2013. ....	34
Figure 3.1 Scientific publications in educational R&D by sector and type of institution, publication points: 2005–2013. ....	36
Figure 3.2 Scientific publication in educational R&D in the higher education sector by publication type, publication points and share of educational scientific publication of total publication points: 2005–2013. ....	36
Figure 3.3 Scientific publication in educational R&D in the higher education sector by institution, publication points: 2011–2013. ....	37
Figure 3.4 Scientific publication in educational R&D in the institute sector by research institute, publication points: 2011–2013. ....	38

Figure 3.5 Scientific publications in educational R&D by type of publication and language, publication points: 2011–2013.....	39
Figure 3.6 Number of journal articles with international co-publication: 2008–2013.....	39
Figure 3.7 Country of origin of co-authors within Norwegian educational research: 2008–2013. Per cent of total number of co-published articles.....	40
Figure 3.8 Most important outcome of educational research in Norway: 2013.....	41
Figure 3.9 Most important outcome of educational development in Norway: 2013. ....	42
Figure 4.1 Barriers to educational research in Norway: 2013. Per cent. ....	43
Figure 4.2 Barriers to educational development in Norway: 2013. Per cent. ....	44



Nordisk institutt for studier av  
innovasjon, forskning og utdanning

Nordic Institute for Studies in  
Innovation, Research and Education

[www.nifu.no](http://www.nifu.no)