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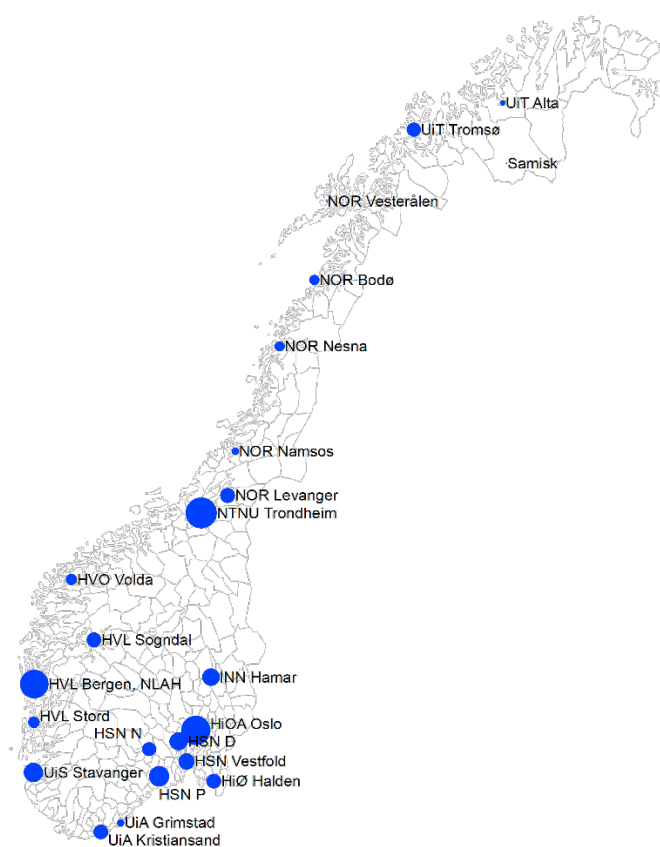
Report

R&D in teacher education milieus

A descriptive mapping of research and development in milieus that educate teachers for primary and lower secondary schools in Norway (GLU)

Author(s)

Håkon Finne, Andreas Landmark, Siri Mordal, Eli Fyhn Ullern



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ABSTRACT
R&D in GLU

Teacher education for primary and lower secondary schools (GLU) is going through a transformation to become more research based. As a support measure for this, NOKUT has commissioned the present study to give an overview of R&D activities and outputs among the 13 higher education institutions offering GLU study programs. An international expert group established by NOKUT will be the first user of this study.

This study is not an evaluation, only a mapping. It shows a broad range of R&D activities and publication habits that vary greatly between HEIs. GLU milieus co-publish with authors from other organizations at home and abroad, but only to a small extent with other GLU milieus.

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Håkon Finne

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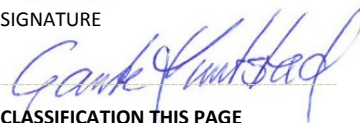
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Foreword

This report is a descriptive mapping of research and development (R&D) activities and outcomes in Norwegian education programs for teachers in primary and lower secondary schools (*grunnskole-lærerutdanning*, GLU). These GLU programs have very recently been upgraded to master studies and as a part of this transition, an upgrade of relevant R&D activities is being planned for. NOKUT – the Norwegian Agency for Quality Assurance in Education – has established an international advisory group to provide strategic assistance for the sector in this transition, in particular as developing upgrade paths for R&D is concerned. NOKUT has commissioned this report as an input to the work of said group.

We would like to emphasize that although we present some quantitative indicators that may lend themselves to comparison between institutions, this report is in no way intended as an evaluation, merely a mapping of the state of R&D activities and outcomes. This is particularly important not only because it was spelled out in our mandate but also because at the time of data collection for this report, most of the universities and university colleges providing GLU programs were going through organizational mergers in a ministry-initiated effort to make universities and university colleges more robust. Because of the wide geographical distribution of teacher education in Norway, most GLU programs have been affected by these processes and, for most, (re)arrangement of plans for R&D simply have not converged yet. This means less – and less precise – data for this report but perhaps a more salient timing for the intervention of NOKUT's strategic advisory group.

We convey our thanks to NOKUT for an interesting assignment and in particular to their officers Andreas Snildal and Pål Aam for their assistance throughout. Any factual errors and misrepresentations of available data are of course our responsibility.

Trondheim, May 8th 2017

Håkon Finne
Project manager

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1 Introduction

1.1 Teacher education and its organization in Norway

Although this is not a research study, we have judged it relevant to provide some background for a better contextual interpretation of our findings.

Teacher education in Norway for all levels of kindergarten, schooling and vocational training is delivered by universities, university colleges, and a small number of specialized colleges – here collectively called higher education institutions (HEIs). University colleges across the entire country have typically delivered teacher education at the bachelor level for compulsory schools (primary and lower secondary) while the universities have provided master education for teachers for higher grades (lower and upper secondary). This division of labour is gradually changing.

HEIs require accreditation from NOKUT – the Norwegian Agency for Quality Assurance in Education – for each study program¹. Two main study programs currently provide students with qualifications to teach in primary school (grades 1-7, age 6-13) and lower secondary school (grades 8-10, age 13-16). One of these qualifies for grades 1-7 and the other for grades 5-10; the overlap is intended to improve flexibility. These are called GLU 1-7 and GLU 5-10, respectively, where GLU is an acronym for *grunnskolelærerutdanning* (teacher education for primary and lower secondary schools).²

An expert group on the teacher role (Ekspertgruppa om lærerrollen, 2016) remarked that teacher education has gone through more reforms than any other comparable education. Five major reforms in 25 years (1992, 1999, 2003, 2010 and 2017) have transformed both the contents of, and the delivery of, teacher education. The study programs for primary and lower secondary school teachers have increased gradually over time to a three-year program in 1973 and a four-year program in 1992 called ALU (*allmennlærerutdanning*; generic teacher education program). It was integrated in a more generic bachelor framework in 2003 as a part of the homologization of European tertiary degree requirements. The GLU 1-7 and 5-10 programs superseded the single ALU program in 2010, still as four-year programs. In 2017, the GLU study programs are being extended to five-year master studies (following a pilot period in Tromsø).

The teacher education sector has also undergone several reorganizations, mostly initiated by national authorities, and in theory only partly linked to specific changes in study programs. In 1973, elementary teacher education institutions were given university college status. Some were integrated with other professional study institutions as well. A 1994 reform reduced the number of HEIs in Norway from over 100 to about 30. This was mostly an organizational reform, as the geographically distributed campus location pattern was basically maintained. Around 2016, many of the HEIs merged during another restructuring of the HEI sector.

We show the current organization of GLU programs in Table 1 below, with acronyms³ that we will use throughout the report, and the organizational status before the latest wave of mergers. The pro-

¹ The accreditation authority is in some cases delegated to the university itself.

² Additionally, some study programs qualify for teaching specific aesthetic and practical subjects.

³ We chose to use geographical names for campus acronyms since these give meaning in the sector, preceded by the organizational acronym whenever necessary.

grams also vary in size; we include the number of first year GLU students admitted for the autumn term of 2016 (or the nearest year with useable data) for each milieu for a rough comparison. The order of the listing follows a conventional geographical sequence, northwards along the coast. For further details on mergers, see the individual HEI chapters.

Table 1: Organization of GLU programs

HEI and GLU campus (milieu)	Acronym	Recently merged from exist. HEIs	GLU admission 2016
Østfold University College	HiØ		114
Halden	Halden		114
Oslo and Akershus Univ. Coll. of Applied Sciences	HiOA		429
Oslo	Oslo		429
Innland Norway University of Applied Sciences	INN	Merged 2017 from 2 HEIs	156
Hamar	Hamar	Hedmark University of Appl. Sci.	156
University College of Southeast Norway	HSN	Merged 2016 from 2 (3) HEIs⁴	427
Drammen	Drammen	Buskerud Univ. College	102
Vestfold	Vestfold	Vestfold Univ. College	127
Notodden	Notodden	Telemark Univ. College	132
Porsgrunn	Porsgrunn	Telemark Univ. College	66
University of Agder	UiA		138
Grimstad	Grimstad		29
Kristiansand	Kristiansand		109
University of Stavanger	UiS		196
Stavanger	Stavanger		196
NLA University College	NLAH		111
Bergen	NLA		111
Western Norway University of Applied Sciences	HVL	Merged 2017 from 3 HEIs	572
Stord	Stord	Stord/Haugesund Univ. College	64
Bergen	Bergen	Bergen Univ. College	400
Sogndal	Sogndal	Sogn & Fjordane Univ. College	108
Volda University College	HVO		63
Volda	Volda		63
NTNU	NTNU	Merged 2016 from 4 HEIs⁵	383
Trondheim	Trondheim	NTNU, Sør-Trøndelag Univ. College	383
Nord University	NOR	Merged 2016 from 3 HEIs	239
Levanger	Levanger	Nord-Trøndelag Univ. College	109
Ytre Namdal ⁶	Namsos	Nord-Trøndelag Univ. College	27
Nesna	Nesna	Nesna Univ. College	50
Bodø	Bodø	University of Nordland	53
Vesterålen	Vesterålen	University of Nordland	(incl. in Bodø)
UiT The Arctic University of Norway	UiT	Merged 2016 from 3 (5) HEIs	116
Tromsø	Tromsø	University of Tromsø	101
Alta	Alta	Finnmark Univ. College	15
Sámi University of Applied Sciences	SAM		0
Kautokeino	Samisk		70

Data source for admission figures: DBH (<http://dbh.nsd.uib.no>).

⁴ Admission figures for Drammen and Vestfold relate to 2013.

⁵ Both these HEIs delivered teacher education in Trondheim, only one of them GLU programs; now both the previous milieus are involved. The admission figures are about 100 below previous levels, apparently because of a head start in 2016 on the master's degree solution that did not carry the GLU label.

⁶ Nord University has now transferred the responsibility for the activities at the Namsos campus to its Nesna campus.

⁷ Sámi University of Applied Sciences admitted 17 students to their GLU programs in 2013.

We have summarized the data from Table 1 in a map in Figure 1 below, with location markers proportional to the number of GLU students admitted 2016, superimposed on an outline of municipality borders. The locations more or less follow the population density. Other locations for distance learning, without permanent staff presence, may exist.

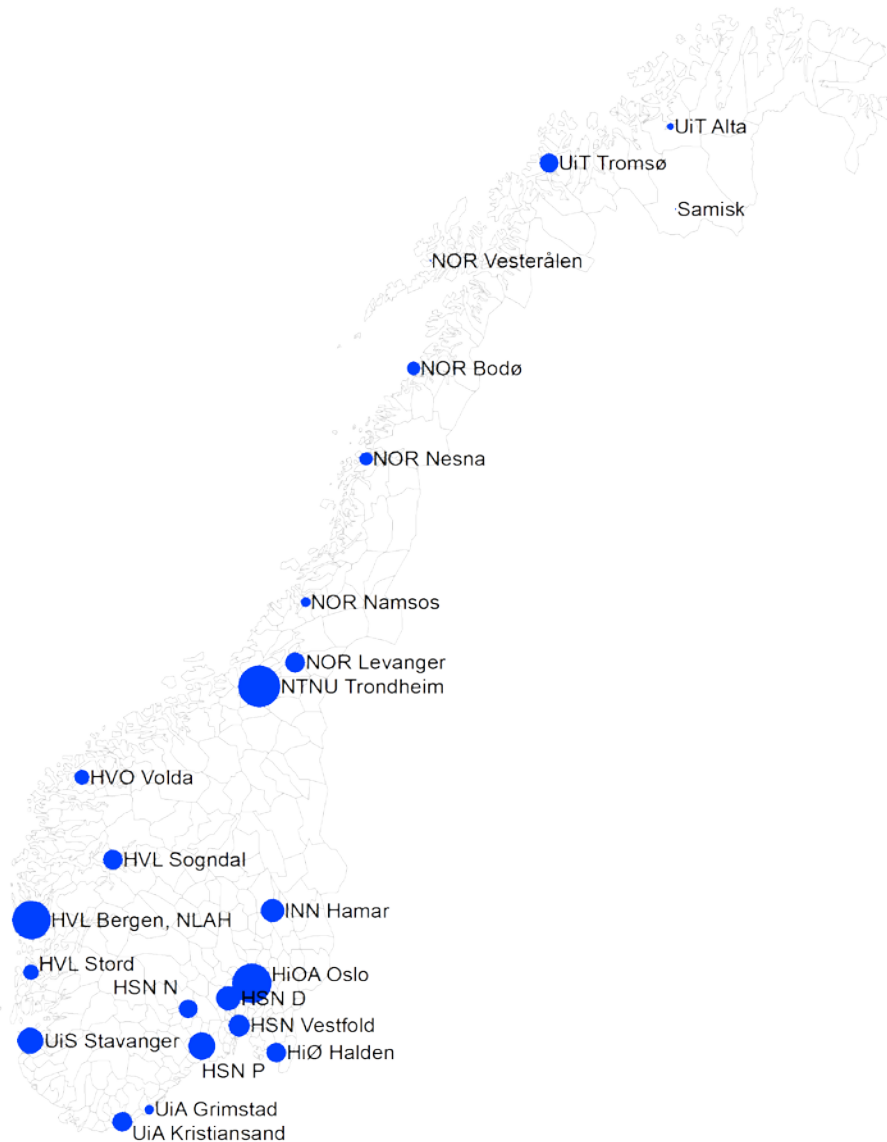


Figure 1: GLU locations

Because this reorganization is still in process, NOKUT has asked that we map each campus (or "GLU milieu") separately wherever possible. This would also allow for displaying any specializations that well established milieus might have. There are a total of 24 milieus currently belonging to two 'old' (comprehensive) universities (in Trondheim and Tromsø), three 'new' universities (upgraded over time from university colleges in Kristiansand, Stavanger, and Bodø), six university colleges or universities of applied sciences (*høgskoler*), and two specialized colleges (Samisk høgskole for the indigenous Sámi culture and NLAH, a private specialized teacher education college)⁸. Hence

⁸ Samisk høgskole has no prior GLU program. As mentioned before, the responsibility for the activities at the Namsos campus (flexible and distance learning) now rests with the Nesna milieu.

although there has been a concentration of organizational structures, the geographical centralization has been much less pronounced.

Other universities do deliver teacher education but are not included in this study because they do not provide GLU study programs. The main institution to mention in this respect is the University of Oslo, with a high output of teachers for upper (and lower) secondary school.

On the organizational side, we should also mention that in many HEIs, pedagogics and teacher education are organized in different units and the participation of the former in the latter may vary. And, finally, several universities offer teacher education for primarily upper secondary schools to a substantial number of students without offering GLU programs. These universities are not included in this study.

1.2 R&D in teacher education

The move to a five-year master degree follows a trend of enhancing the research base of professional education. "Research based" is rooted in the Humboldt idea of university teaching emanating from the professors' own research activities. It is, however, adapted to modern forms of mass education, prolific relevant research activities globally, available resources, divisions of labour between different levels of study programs, and organizational specialization between universities and other HEIs. A study (Hyllseth, 2001) identified multiple interpretations of what it meant for teaching to be research based:

- to be consistent with the latest research results
- to be (organizationally) linked to a research milieu
- to be delivered by qualified researchers
- to be delivered by active researchers
- to include student training in scientific method in collaboration with practicing researchers.

What exactly will be the profile of the new GLU master programs on these characteristics will be a matter of strategies, resources, prioritizations, and interests, although it is interesting to note that even bachelor degrees in general are now required to provide also some training in scientific method. We would think that while stepping up this ladder obviously requires resources, it may be another thing altogether to convert teaching staff recruited on the basis of their skills and interests in teaching to also become researchers. If this is to happen on a broad scale, we believe specific strategies are required for this; it may not just be a question of money.

A time-use study in 2010 showed that on average, scientific staff in university colleges spent 19 per cent of their working time on R&D and professional updating, compared with 23 to 26 per cent at comprehensive, new, and specialized universities⁹ (Egeland and Bergene, 2012). It is worth noting that studying new material without contributing to the production of new knowledge oneself (in writing) is included in these figures. Also, note that in that study, R&D output correlated strongly with actual working time and that nearly one in five reported a working week of 55 hours or more, and that "sufficient contiguous time" was the most important factor for being able to publish. The report does not distinguish between staff at different programs.

⁹ *Gamle og nye universiteter og vitenskapelige høyskoler.*

Several studies have found that teacher education runs in two circuits: the 'theoretical' education at the university (college) and the 'practical' training in schools (NOKUT, 2006a, b), and that there is a strong need and a pronounced wish in the sector to integrate those two circuits better (Finne *et al.*, 2011; Finne *et al.*, 2014; Finne *et al.*, 2017). In fact, actors in the sector itself emphasize the need to improve the connection between the two circuits much more than the need to increase the length of the education and to augment the R&D activities of scientific staff at the HEIs. Voices from all sides have raised concerns that if teacher education becomes more oriented towards producing academic research, it will become (even) less oriented towards understanding the practicalities of everyday teaching in schools and therefore become less relevant for students and, ultimately, schools.

One may interpret several developments as measures that could possibly counteract such problems, should they indeed arise. Universities offer courses in guidance for training teachers (*praksislærere*) that guide teacher students through their practice periods in elementary and secondary schools. Universities collaborate with schools rather than individual teachers for organizing the guiding effort. Some universities have developed much tighter relations with 'university schools' for connecting pupils, classrooms, teachers and schools more closely into the development of staff and curricula and practices in the universities. The Research Council of Norway have geared some of their R&D programs more explicitly towards classroom practices. Some of their programs also allow schools themselves rather than HEIs or research institutes to be project owners, modelled on similar arrangements in R&D programs for businesses. The national evaluation of educational research just under way will no doubt address the effects of these and other measures.

Individual GLU staff may certainly perform R&D on the time resources administratively allocated and there are plenty of examples of that. However, experience shows that this often results in fragmented work with low priority and, consequently, low output. It most certainly helps with external funding. The Research Council of Norway is a prime source for relevant grants and projects. The focus of most of their programs is thematic rather than disciplinary. Most programs are also highly competitive and the Council puts a strong emphasis on scientific quality through peer review of applications. Norway has a large research institute sector that relies up to 100 per cent on competitive funding from the Research Council and similar sources, often competing with HEIs in the same programs. HEIs may have a cost advantage but their incentive to compete strongly for funding is obviously lower on average; although some HEIs also expand through the establishment of specialized R&D departments or staff that have the same dependence on project funding as the research institutes. This competitive stance may be good for selecting the highest quality proposals for funding but other criteria may be better for raising the research qualifications of staff that have a career of high level teaching but little research experience. For this purpose, two main instruments exist: Individual PhD grants allocated by the HEI itself and a project type called Strategic HEI Program (SHP), which has the additional aim of developing the research strength of a milieu rather than of an individual. Local arrangements to enhance interest and activity in research, mostly organizational in character, also obviously exist.

Finally, the general move of HEI systems (also in Norway) towards adding "the third task" of contributing directly to local, social, or business development and not just indirectly through teaching and research, has opened up for a wider interpretation of what to count as development within the R&D category. While this discussion has developed significantly within some other professions, our impression is that it is only in its infancy in teacher education and that it may or may not surface

in the discussions around the current topic of enhancing the R&D capacity and practices of individual GLUs and HEIs.

1.3 The study: Topics and limitations

NOKUT requested descriptive mappings of profiles of R&D activities and outputs of each GLU milieu. A profile would consist of

- time spent on R&D activities
- quantitative indicators of output of scientific publications
- ditto of other R&D outputs (such as reports, performances, outreach activities)
- if possible, the above indicators split by categories of staff
- descriptions of thematic and disciplinary orientation
- if possible, also connections to relevant PhD programs.

Operationally, a GLU milieu would consist of all (scientific) staff contributing at least 10 per cent of a full time equivalent (FTE) to the development and operation of a particular GLU study program, including people in adjunct positions (with their primary position in other institutions). The time period for output to be mapped should be at least 2012-2015.

As will be shown in greater detail below, the intention of describing the various milieus separately was greatly hampered by lack of data at this level of organization. On the other hand, we have been able to extend the data on publication output back to 2006 and also to get a closer look at R&D collaboration across organizational borders in the HEI system.

2 Mapping methodology, data sources, data quality

The unit of *analysis* is each GLU milieu, broken down on campuses wherever possible. Organizationally this is not a homogeneous matter, as we have shown in Table 1.

We have, however, several units of *observation*. These are:

- individuals (persons) working to deliver and develop one or more GLU programs
- organizational units that employ these people
- relevant R&D activities (typically projects) and outputs (mostly publications) that these people produce.

As a final unit of observation we have made a list of concepts (as this term is often used in discourse analysis) by harvesting and combining thematic and disciplinary characteristics of publications, projects, people, organizational groups, and some others. We have done this in an attempt at identifying topical R&D interests that may have some strongholds, either within individual GLUs or in wider networks. We stress that this is experimental and we only intend it to be an aid in looking for potential fields of development.

For identifying staff for each GLU milieu, we used rosters provided by the educational institutions themselves to NOKUT, either as a part of the formal accreditation of their GLU study programs by NOKUT, or as a documentation of the formal self-accreditation¹⁰ of their GLU study programs. These rosters also provided data on their organizational unit, their job titles, and the time allocated to GLU (including R&D activities). The data from most institutions refer to the time around January 1st, 2017.

These data are administrative in character. They reflect, *i.a.*, the variety of organizational patterns in the sector. Many institutions do not have a single department or faculty of teacher training that also does nothing else, let alone a specialized GLU unit. It is not unusual for a person to be dividing their time between different study programs, including study programs not aimed at teacher education. Some may also teach at different HEIs, in adjunct positions, or they may have part time positions at research departments or at external research institutes.

The administrative data systems of HEIs differ to some extent, as did the way they interpreted the data requirements for the accreditation documentation. There were also some technical difficulties in one or two documents. Despite this, we managed to find more or less complete administrative datasets for all the 13 HEIs in question and some of their campuses.

For identifying R&D output, we searched the National Research Information System (CRISTin) database for scientific and popular publications, using the name lists (rosters) extracted from the administrative data, and limiting the search to publication years 2006-2015. We checked manually for consistency and resolution of name ambiguity. The time span should be sufficient to level out some of the variations in publication activity levels between years (and project phases). However, we may have missed out on R&D strongholds established prior to this period that still define the study program in some way but has been lying dormant as a separate R&D activity over the last few

¹⁰ NOKUT has delegated this power to some institutions.

years, particularly because we have only been able to identify works of current GLU staff. Not all important R&D is fresh produce.

CRISTin covers the entire HEI, research institute, and university hospitals sector. It is quite reliable for peer reviewed scientific publication because HEIs depend on part of their funding for publications reported through this system. Most HEI web sites also implement CRISTin searches in the personal pages of staff instead of manually maintained publication lists.

CRISTin is much less reliable for publications, lectures, etc. that are not peer reviewed and therefore do not impact funding to any significant degree. Individuals typically have to register events and publications themselves and it therefore varies considerably between people how much they record their outreach activities. When we provide outreach data from CRISTin, we therefore use it merely as illustrations.

CRISTin quite reliably links publications to individuals – within reasonable error margins, statistically speaking. In CRISTin, both individuals and publications are linked to organizations. Individuals may have different organizational affiliations simultaneously and over time. The incentive for correct attribution lies in the funding mechanism, and most HEIs apply a rigorous quality control for this each year. However, when organizational details change, such as through internal reorganization or through mergers between HEIs, the organizational names in question change throughout the CRISTin database. For example, all publications associated with Sogn & Fjordane University College at the time of publication, have become associated with Western Norway University of Applied Sciences after the merger in 2016. This creates some problems because we have only harvested the data from CRISTin at one point in time (February 2017). Also, attribution practices for publications are inconsistent when it comes to recording the organizational level to which the author belongs (HEI, faculty, department, even research group). We mostly had to rely on our roster data. This means that all publications of an individual are associated with that individual's current employment, regardless of their degree of mobility between HEIs over time and their possible current multiple employment. Please remember this when interpreting the findings, although it should not be cause for concern for the purpose of this report.

Whenever GLU staff co-publish with people who are not on our administrative rosters, we have entered these new people into our dataset, as well as the organizations with which their publication is associated in CRISTin. These could be the same HEI as the GLU author(s), they could be at other HEIs (or other institutions) in Norway, or they could be foreign institutions. We use these data to show how the R&D relations of GLU staff weave into national and international webs of collaboration.

We also to some extent use projects as units of observation. For this we resort to projects funded by the Research Council of Norway under the auspices of the FINNUT program (research and innovation in education; 2016-2020). These data consistently provide names of responsible institution and of project managers. Usually other data also exist that identify other individuals participating in the project.

The most difficult part of our study has been to establish consistent thematic communities as units of observation (derived from characteristics of R&D activities and publications). We considered three sources.

The first source was the subjects under which the teaching of GLU programs were organized and to which each person in the roster was allocated. These mostly correspond with subjects taught in school. Some staff were listed under different subjects and it was sometimes difficult to decide with which subject a publication should be associated; it could be more than one. Manual review was not possible within the frame of the present study.

The second source was the subjects, themes, or topics that each publication channel focused on, according to either the publisher or Web of Science. The primary challenge again was ambiguity, particularly since most of the high volume publication channels were either generic teaching research journals or they belonged to fields of medicine and life sciences where it was obvious that the relevance for GLU was either minor or indirect.

The third source that we considered, was keywords associated with individual publications or individual projects. We rapidly abandoned this, as it turned out that even homogenized keywords provided by indexing services would require much more work and a much larger data set in order to provide any substantial advance over the two other sources.

In the final data chapter, we use techniques from social network analysis to illustrate thematic linkages between GLU milieus.

Finally, a word on metrics. It is people that run and develop the GLU programs. Most have part time engagements in their GLU programs (even though they may be full time employees at their HEIs) and we have also calculated the capacity in terms of full time equivalents (FTEs). However, when it comes to R&D in general and scientific publication in particular, we do not divide publications into subunits, even though many have multiple authors. In other words, we count one full publication for each and every author that has their name on it. This is because we have found it useful to think not so much of increasing the number of publications per organizational unit as the number of publishing (or co-publishing) individuals per organizational unit. This is certainly more helpful when moving a bachelor program into a master program that is more R&D based: it is more important that many instructors convey a research based attitude towards future teachers, than that the department is known for a single, prolific researcher who hardly ever teaches.

3 R&D at individual GLU milieus

3.1 Introduction and overview

In the following, we present each of the 13 HEIs and their GLU milieus (to the extent possible) in a relatively standardized format. We emphasize prior R&D outputs, resources for R&D, and – whenever available – summaries of strategies for R&D. Bear in mind that many HEIs are in the process of reorganizing and that some of the information may be out of date or not quite accurate.

We start the description of each HEI with an "... at a glance" box. It contains pie charts showing the shares that GLU and other teacher education activities have relative to the entire HEI. One chart for staff and one chart for students. The size of each pie reflects the total size of the HEI. This is why some pies may look rather small for the space available in the box.

For publication output we present several metrics and also a chart showing publications per current staff over a ten year period, ordered by number of publications and normalized along the x-axis to all GLU staff at the BGLU milieu in question. The charts have about the format as in Figure 2 below, which shows the chart for the entire GLU staff population for which we have data.

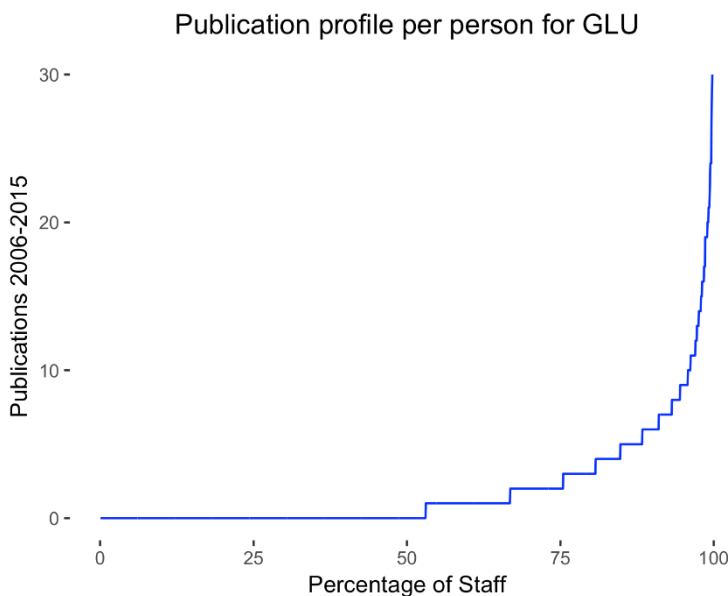



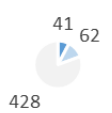


Figure 2: Publication output, all GLUs

The figure shows that 52 per cent have no peer reviewed publications, and the highest score for one person is just above 30 publications over the ten year period. In the GLU specific charts to follow, we superimpose this total curve in blue over the GLU specific curve in red for comparison.

3.2 HiØ: Østfold University College

3.2.1 Østfold University College and its teacher education

Box 1: HiØ at a glance

		Staff HiØ	
Higher Education Institution (HEI)			
Acronym	HiØ		
Name (Norwegian)	Høgskolen i Østfold		
Name (English)	Østfold University College		
Category	State university college		
Latest major reorg	1994: Established through merger of 5 colleges		
Geography	Halden, Fredrikstad in Østfold county		
Staff (FTE)	531		
Students	5,972		
Teacher education (TE)			
Programs	For all levels		
Organization	Dept of teacher education		
Staff (FTE)	104		
Students	1,571		
Teacher education for 1-7/5-10 (GLU)			
Campuses	Halden		
Staff (FTE)	41 (81 persons)		
Students	402		
Remarks			
<p>HiØ provides professional education for teaching, health & social work, engineering, ICT, economics, social science, modern languages, and stage arts. About one fourth of its students pursue a teacher education.</p>			
		Based on data for 2016 from DBH, NOKUT, hiof.no.	

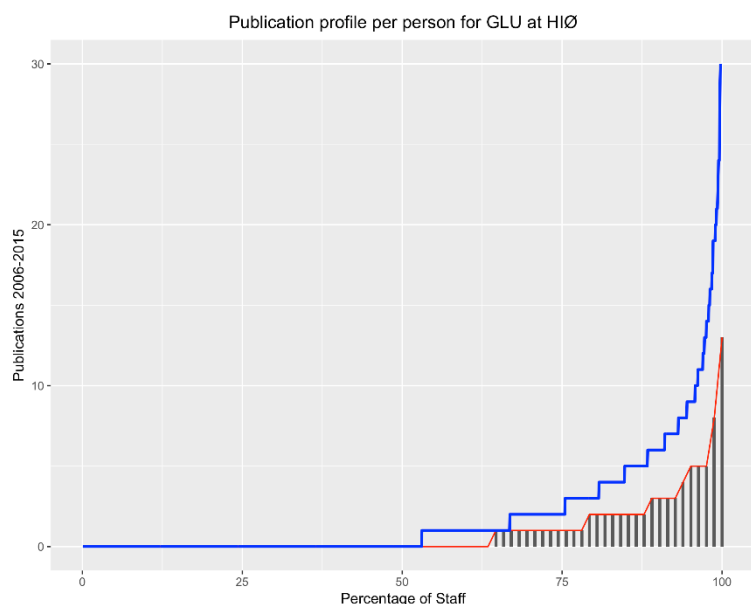
Østfold University College is located in the southeast part of Norway, between Oslo and the Swedish border in the south. Østfold University College has around 100 study programs taught in new and modern premises. It has a total of just under 7,000 students. There are nearly 3,600 ordinary students at campus Halden, nearly 2,400 ordinary students at campus Fredrikstad, and nearly 1,000 students are pursuing continuing and further education programs under the auspices of HiØ VIDERE (Centre for Continuing Education) at both campuses.

The department of teacher education lies at campus Halden. It offers professional education to qualify for teacher positions in kindergarten, primary school, lower and upper secondary school, as well as relevant MSc study programs related to these professions. Flexible and distance learning is provided in several forms; those study programs organized as Massive Open Online Courses (MOOCs) on ICT in education are very popular.

3.2.2 Prior R&D output

Table 2: R&D output indicators for GLU at HiØ

R&D output from current GLU staff	2006-2015	2012-2015
Peer reviewed publications in total	80	61
Peer reviewed publications per person per year	0.1	0.2
Other (outreach) publications on record	1,014	699
Percentage of current staff with peer reviewed publications	38 %	32 %
Percentage of current professors with peer reviewed publications	62 %	62 %
Percentage of current adjuncts with peer reviewed publications	0 %	0 %
Percentage of current associate-level staff with peer reviewed publ.	55 %	45 %
Percentage of current assistant-level staff with peer reviewed publ.	19 %	16 %
Percentage of current other staff with peer reviewed publications	71 %	57 %
Percentage of current staff with > 1 peer reviewed publications/year	1 %	1 %



Publication scores are well below the national average for GLU staff. Scores for professors are around four times the scores for assistant professors. Total non-publishing rate is also slightly high. Outreach activity on record is high.

Figure 3: Publication profile for current GLU staff at HiØ

3.2.3 Current resources for R&D

Table 3: R&D resource indicators for GLU at HiØ

Resources	Persons	FTEs	FTE for R&D	R&D/person
Total staff involved in GLU	81	41	12	0.15
Of which professors	8	4	2	0.20
Of which adjuncts	1	0	0	0.00
Of which associate professors	22	11	3	0.15
Of which assistant professors	49	25	7	0.15
Of which other staff	1	0	0	0.10

The allocated time for R&D is relatively evenly distributed between staff categories. 15 per cent of one's time for R&D is just above 200 hours per year.

3.2.4 R&D strategies and organization of R&D

The department of teacher education has extensive research and development / artistic development work. The main part of this work is gathered in the department's interdisciplinary R&D groups, see the list below. In addition, the department has primary responsibility for one of the university's three institutional focus areas: A school for the knowledge society: knowledge development for 5-year teacher education.

The employees conduct professional research organized in nine multidisciplinary research groups (see below) that work together with internships and partner institutions at home and abroad. They also take part in external research groups at other HiØ departments or in external research groups.

3.2.5 PhD programs

HiØ does not provide its own PhD programs. Staff pursuing PhD programs enrol at other HEIs.

3.2.6 R&D focus areas

Staff at the faculty of education is organized in the following nine research groups, many of which are directly relevant for GLU.

- Human movement and art in teacher education
- Ethics in pedagogical practices - EtiPP
- Multilingualism and education
- Computer programming in primary school (with department of computer science)
- Teacher education as pedagogical practices
- Early childhood studies (0-3 years)
- Special education research
- Young children and teaching at beginner's level
- Learning organizations
- Mentoring in education and profession


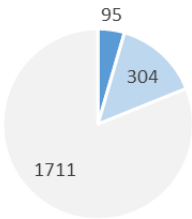
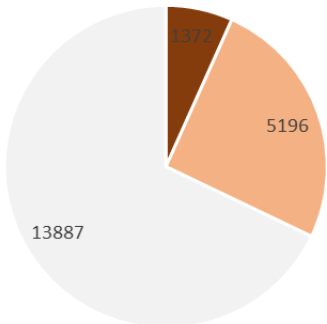
3.2.7 Discussion

Publication scores are fairly low but increasing over time, and the number of assistant professors is fairly high. Outreach seems to have strong traditions. The topics for research groups are fairly general and it might be helpful to use these groups to target smaller and more specific studies, possibly with staff working in pairs.

3.3 HiOA: Oslo and Akershus University College of Applied Sciences

3.3.1 Oslo and Akershus University College of Applied Sciences and its teacher education

Box 2: HiOA at a glance

		<h3>Staff HiOA</h3>  <p>■ GLU ■ Other TE ■ Other HEI</p>
Higher Education Institution (HEI)		
Acronym	HiOA	<h3>Students HiOA</h3>  <p>■ GLU ■ Other TE ■ Other HEI</p>
Name (Norwegian)	Høgskolen i Oslo og Akershus	
Name (English)	Oslo and Akershus University College of Applied Sciences	
Category	State university college	
Latest major reorg	2014, 2016: Inclusion of four research institutes 2011: Established through merger of Oslo UC and Akershus UC	
Geography	Kjeller, Sandvika in Akershus county; Oslo	
Staff (FTE)	2,110	
Students	20,455	
Teacher education (TE)		
Programs	For all levels, driving	
Organization	Fac. of teacher education and int'l studies	
Staff (FTE)	399 (excl. dept. int'l studies)	
Students	6,568 (excl. dept. int'l studies)	
Teacher education for 1-7/5-10 (GLU)		
Campuses	Oslo	
Staff (FTE)	95 (132 persons)	
Students	1,372	
Remarks		
<p>HiOA is the largest university college in the country. It provides professional education for teaching, health & social work, engineering, ICT, journalism, economics, social science, languages, and a host of others. It harbours several specialized social science research departments. About one third of its students pursue a teacher education.</p>		<p>Based on data for 2016 from DBH, NOKUT, hioa.no.</p>

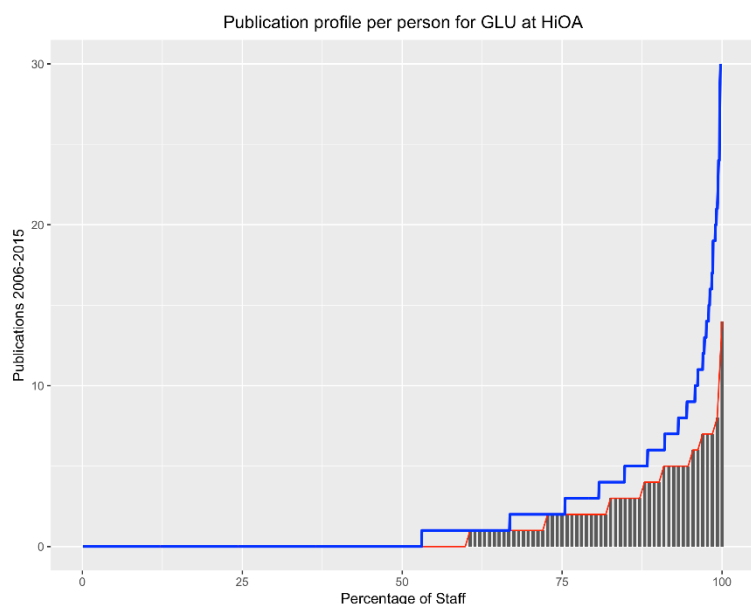
The Faculty of Education and International Studies (LUI) at Oslo and Akershus University College offers teacher education in a lifelong learning perspective qualifying for work in kindergartens, primary schools, lower and upper secondary schools. The faculty also offers programmes within multicultural understanding, interpretation and development studies.

The department of Primary and Secondary Teacher Education (GFU) has around 2,150 students and 140 employees. The largest education at the department is primary school teacher education for 1st to 7th grade (GLU 1-7) and primary school teacher education for 5th to 10th grade (GLU 5-10). GFU also offers three other teacher education programs: Teacher Education for Bilingual Teachers (TOSBA), Physical Education in Physical Education in the Bachelor of Sport, Outdoor Life and Health (IFH), which also includes an opportunity for specialization in public health and a complementary teacher education for preschool teachers / kindergarten teachers for work at primary school 1 to 4 Step (GLSM). GFU works closely with the master of multicultural and international education at the Department of International Studies and Interpreting Education (IST). GFU also contributes to the faculty's PhD, Educational Science for Teacher Education.

3.3.2 Prior R&D output

Table 4: R&D output indicators for GLU at HiOA

R&D output from current GLU staff	2006-2015	2012-2015
Peer reviewed publications in total	164	104
Peer reviewed publications per person per year	0.1	0.2
Other (outreach) publications on record	647	306
Percentage of current staff with peer reviewed publications	40 %	37 %
Percentage of current professors with peer reviewed publications	100 %	89 %
Percentage of current adjuncts with peer reviewed publications	-	-
Percentage of current associate-level staff with peer reviewed publ.	59 %	53 %
Percentage of current assistant-level staff with peer reviewed publ.	24 %	21 %
Percentage of current other staff with peer reviewed publications	37 %	37 %
Percentage of current staff with > 1 peer reviewed publications/year	1 %	0 %



Publication scores are below the national average for GLU staff. Scores for professors are nearly five times the scores for assistant professors. Total non-publishing rate is also slightly high.

Figure 4: Publication profile for current GLU staff at HiOA

3.3.3 Current resources for R&D

Table 5: R&D resource indicators for GLU at HiOA

Resources	Persons	FTEs	FTE for R&D	R&D/person
Total staff involved in GLU	132	95	27	0.20
Of which professors	9	6	3	0.31
Of which adjuncts	0	0	0	-
Of which associate professors	34	30	9	0.26
Of which assistant professors	77	55	14	0.19
Of which other staff	12	4	0	0.00

The allocated time for R&D is relatively evenly distributed between staff categories. 20 per cent of one's time for R&D is around 300 hours per year. It is slightly higher than many other GLUs, possibly reflecting a strategy to increase publication output.

3.3.4 R&D strategies and organization of R&D

At the Department of Primary and Vocational Teacher Education (GFU), Faculty of Teacher Education and International Studies (LUI) at HiOA, there has been a conscious effort to increase the proportion of scientific publications in the last three years. Since the establishment of the institute (August 2011), there has been a large increase in average scientific publishing per employee in teaching and research positions.

The department's plan of action (2016) states that GFU will intensify the international engagement for targeted action towards strategic, international partners. The intention is increasing research with international partners in all fields, exchanges of teachers and students as well as the development of common international modules.

In recent years, a conscious choice has been made to gather more of the ongoing projects in scientific anthologies. This has been done for several reasons. To help get more employees into collective processes and succeed in scientific publishing, but also to contribute to thematic collections of scientific works that become more accessible to students, teachers, and colleagues. It is also worth noting that the professional environment at GFU has a large dissemination production. They contribute in articles both about their research and their development work, in publishing sites where teachers and school leaders are the readers.

HiOA has a total of 19 research and development groups, seven of which belong to GFU. The purpose of the R&D communities (research groups) at the Faculty of Teacher Education and International Studies is to strengthen R&D work individually and collectively.

A number of measures have been implemented to improve the management, operation, and strategic significance of these groups.

3.3.5 PhD programs

A prerequisite for a LUI-R&D-group to be granted a PhD position is that the project in question is to be executed in collaboration with the HiOA research centres and national or international partners.

3.3.6 R&D focus areas

The GFU has the following officially approved R&D communities:

- R&D in primary school - with emphasis on initial education. This is a multidisciplinary research community where the common denominator for the various R&D projects and interests is education on the primary level in a broad sense.
- Classroom research - Classroom Research is about studying what goes on in the classroom. It includes both research on student learning and teacher education. Within the qualitative research paradigm of teaching research, classroom observation is central.
- Body, learning, diversity - This research community focuses on the theoretical and empirical relationship between the concepts of body, learning and diversity.
- Arts and Culture – This is a research group for practical and aesthetic subjects, and for R&D in other subjects where the aesthetic and cultural dimension is central. This research community has three subgroups: (1) Art-based learning (2) Aesthetic expressions - visual, material and musical (3) Artistic developmental work.
- Teacher Qualification - Research and development measures related to teacher education and teacher qualification are areas where many within the GFU and elsewhere in LUI have significant research efforts. The area is highly multidisciplinary, and gradually it is important to develop cooperation with kindergarten and vocational education.
- School, management and guidance - School research is a broad subject area that includes educational research studies aimed at teachers' professional teaching, learning and reflection in education and work.
- TEKST - A research community - TEKST is an R&D community with participants from the sections of Norwegian, RLE, Social Sciences and Natural Sciences at the teacher education. Participants are interested in research and development related to understanding and using text. In this community, text is widely defined. The term includes both written and oral texts, as well as composite texts in different formats. Text interpretation, reading and writing are the participants' most typical research interests.


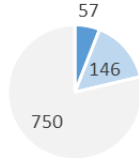
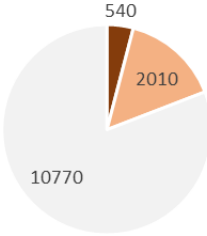
3.3.7 Discussion

Publication scores are relatively low but increasing over time, and the number of assistant professors is fairly high. Outreach seems to have strong traditions. Several internal organizational, motivational, and financial measures have been put in place in order to further increase R&D activities and outputs.

3.4 INN: Innland Norway University of Applied Sciences

3.4.1 Innland Norway University of Applied Sciences and its teacher education

Box 3: INN at a glance

 HØGSKOLEN i INNLANDET		Staff INN 
Higher Education Institution (HEI)		
Acronym	INN	Students INN 
Name (Norwegian)	Høgskolen i Innlandet	
Name (English)	Innland Norway University of Applied Sciences	
Category	State university college	
Latest major reorg	2017: Established through merger of Hedmark UC and Lillehammer UC	
Geography	Hamar, Elverum, Rena, Kongsvinger, Blæstad in Hedmark county; Lillehammer in Oppland; Oslo	
Staff (FTE)	H 578 + L 375 = 953	
Students	H 8,546 + L 4,774 = 13,320	
Teacher education (TE)		
Programs	For all levels	
Organization	Fac. of teacher education and science (and Dept. of pedagogics and social work)	
Staff (FTE)	203 (incl. science, excl. ped&soc)	
Students	2,550 (est.)	
Teacher education for 1-7/5-10 (GLU)		
Campuses	Hamar	
Staff (FTE)	57 (98 persons)	
Students	540	
Remarks		
INN provides professional education for teaching, health & social work, engineering, ICT, agriculture, humanities, and a host of others. About one fifth of its students pursue a teacher education.		

Based on data for 2016 from DBH, NOKUT, inn.no.

As of January 1st, 2017, Hedmark University of Applied Sciences and Lillehammer University College merged into the new institution Inland Norway University of Applied Sciences (INN University).

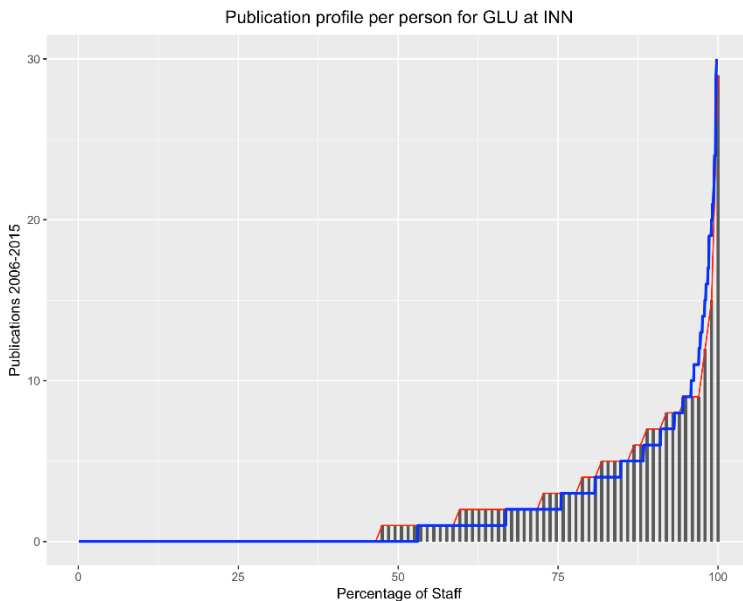
INN University has eight campuses in south-eastern Norway: Lillehammer, Hamar, Blæstad, Elverum, Rena, Kongsvinger, Evenstad, and Oslo, with approximately 13,000 students and close to 1,000 employees. The new institution offers 35 one-year study programs, 52 Bachelor programs, 31 Master programs, and 4 PhD programs (plus one in cooperation with the Norwegian University of Science and Technology), in addition to a number of programs in teacher education and further education.

Teacher education is offered by the faculty of teacher education and natural science, in cooperation with staff from other locations. GLU is located at the Hamar campus, together with 5 master study programs in different educational related themes. Campus Hamar also offers a PhD program in teaching and teacher education.

3.4.2 Prior R&D output

Table 6: R&D output indicators for GLU at INN

R&D output from current GLU staff	2006-2015	2012-2015
Peer reviewed publications in total	233	139
Peer reviewed publications per person per year	0.2	0.4
Other (outreach) publications on record	388	195
Percentage of current staff with peer reviewed publications	54 %	44 %
Percentage of current professors with peer reviewed publications	93 %	93 %
Percentage of current adjuncts with peer reviewed publications	100 %	100 %
Percentage of current associate-level staff with peer reviewed publ.	70 %	55 %
Percentage of current assistant-level staff with peer reviewed publ.	25 %	12 %
Percentage of current other staff with peer reviewed publications	33 %	33 %
Percentage of current staff with > 1 peer reviewed publications/year	3 %	1 %



Publication scores are on the national average for GLU staff. Scores for professors are between four and eight times the scores for assistant professors, depending on the time scale applied. Total non-publishing rate is also slightly low.

Figure 5: Publication profile for current GLU staff at INN

3.4.3 Current resources for R&D

Table 7: R&D resource indicators for GLU at INN

Resources	Persons	FTEs	FTE for R&D	R&D/person
Total staff involved in GLU	98	57	23	0.24
Of which professors	14	9	6	0.40
Of which adjuncts	1	0	0	0.00
Of which associate professors	8	6	3	0.34
Of which assistant professors	32	16	3	0.10
Of which other staff	3	1	0	0.12

The allocated time for R&D is somewhat unevenly distributed between staff categories, with assistant professors having around 150 hours per year on average. It seems low, given prior publication record.

3.4.4 R&D strategies and organization of R&D

INN University has set strategic goals to increase research efforts, the quality of research and strengthen R&D culture by building strong R&D environments. The strategic research areas (see below) are important tools in this work. The funds will be used to establish new and strengthen existing research groups so that they will be better able to assert themselves within national and international research arenas and establish themselves as outstanding research groups.

The university college has ambitions for increased research quality and a stronger international profile. Participation in international research projects is an important instrument for achieving these goals. Achieving the standards in the international research arena requires that you have professional strength and have a good international network. In order to help develop this, it is now introduced a separate sum of money where researchers can apply for funds to write applications for international research programs. The scheme provides support for application writing aimed at Horizon

2020, Erasmus +, Interreg, Nordforsk, and EEA programs. The purpose of the support is to help cover the costs incurred in establishing international networks and the application writing process.

Research groups, ideally consisting of four to nine people, are established for a period of two years at a time and may apply for strategic funding to the amount of maximum 250 kNOK per year.

3.4.5 PhD programs

The teacher education department's own PhD program in profession based teacher education will continue to be an important measure when it comes to securing the recruitment of associate professorship positions as well as conducting high quality custom program's content.

The PhD program was originally accredited based on the subjects of pedagogy and religious education, Norwegian, English, and music. Since then, both the academic environment related to the PhD program, and the academic environment at the department responsible for teacher education at bachelor and master levels, have been significantly strengthened.

The PhD program is still in a development phase. In 2016, the graduation plans were as follows: The first two theses to be completed in 2016, up to ten new theses in 2017, six more theses in 2018, and another ten thesis in 2019.

3.4.6 R&D focus areas

The strategic research areas are directly linked to the PhD initiatives in the departments that offer these. This means that for the teacher education, the strategic research area will be the same as the PhD area, which is profession oriented teacher education. Eight research groups have been established for the period 2017 to 2019 within this strategic focus:

- Nordic literature or literature didactics
- Norwegian as a second language: Secondary language didactics (NOA-D)
- Cultural-oriented music education
- Diversity in Education (DivE)
- Corpus Linguistics (CorLing)
- Research Group for Children and Young People's Learning at the Center for Practical Education Research (SePU)
- Childhood and early years education (CEE)
- Studies in Professional Development, Learning and Policy (SPLP)


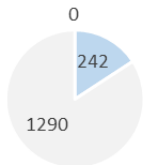
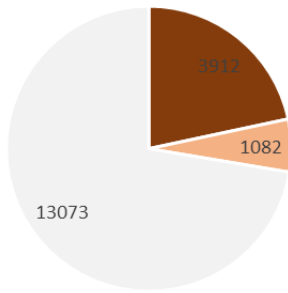
3.4.7 Discussion

Publication scores are around the national average and have increased significantly over time. The gaps in publication records and in R&D time allocations for different categories of staff seem to be consistent.

3.5 HSN: University College of Southeast Norway

3.5.1 University College of Southeast Norway and its teacher education

Box 4: HSN at a glance

		<p>Staff HSN</p>  <p>■ GLU ■ Other TE ■ Other HEI</p>
<p>Higher Education Institution (HEI)</p>		
Acronym	HSN	<p>Students HSN</p>  <p>■ GLU ■ Other TE ■ Other HEI</p>
Name (Norwegian)	Høgskolen i Sørøst-Norge	
Name (English)	University College of Southeast Norway	
Category	State university college	
Latest major reorg	2016: Established through merger of Telemark UC, Buskerud & Vestfold UC 2014: B&V UC established through merger of B UC, V UC	
Geography	Drammen, Kongsberg, Ringerike in Buskerud county; Vestfold (Horten) in Vestfold; Bø, Rau-land, Notodden, Porsgrunn in Telemark	
Staff (FTE)	1,532	
Students	18,067	
<p>Teacher education (TE)</p>		
Programs	For all levels	
Organization	Fac. of humanities, sports, and educational subjects (HSE) and Fac. of humanities and educational science (HES)	
Staff (FTE)	HSE 172 + HES 199 = 371 all incl.; or ped/teacher depts = HSE 66 + HES 176 = 242	
Students (2016)	4,994 (est.)	
<p>Teacher education for 1-7/5-10 (GLU)</p>		
Campuses	Drammen, Vestfold, Porsgrunn, Notodden	
Staff (FTE)	n/a (234 persons)	
Students	D 294 + V 296 + P 220 + N 452 = 3,912	
<p>Remarks</p>		
<p>HSN provides professional education for teaching, health & social work, engineering, ICT, humanities, social science, and a host of others. About one fourth of its students pursue a teacher education.</p>		

Based on data for 2016 from DBH, NOKUT, usn.no.

University College of Southeast Norway was established on January 1st, 2016, through the merger of Telemark University College and Buskerud and Vestfold University College. Two years earlier, the latter had been established through the merger of Buskerud University College and Vestfold University College.

Teacher education is provided by The Faculty of Humanities, Sports and Educational Science, which operates on all eight campuses. GLU study programs are provided at four of these: Porsgrunn, Notodden, Drammen, and Vestfold (Horten).

3.5.2 Prior R&D output

Table 8: R&D output indicators for GLU at HSN

R&D output from current Drammen GLU staff	2006-2015	2012-2015
Peer reviewed publications in total	96	52
Peer reviewed publications per person per year	0.2	0.3
Other (outreach) publications on record	171	57
Percentage of current staff with peer reviewed publications	49 %	44 %
Percentage of current professors with peer reviewed publications	60 %	60 %
Percentage of current adjuncts with peer reviewed publications	-	-
Percentage of current associate-level staff with peer reviewed publ.	67 %	60 %
Percentage of current assistant-level staff with peer reviewed publ.	30 %	25 %
Percentage of current other staff with peer reviewed publications	0 %	0 %
Percentage of current staff with > 1 peer reviewed publications/year	8 %	0 %
R&D output from current Notodden GLU staff	2006-2015	2012-2015
Peer reviewed publications in total	96	56
Peer reviewed publications per person per year	0.2	0.2
Other (outreach) publications on record	106	37
Percentage of current staff with peer reviewed publications	47 %	41 %
Percentage of current professors with peer reviewed publications	36 %	36 %
Percentage of current adjuncts with peer reviewed publications	0 %	0 %
Percentage of current associate-level staff with peer reviewed publ.	53 %	47 %
Percentage of current assistant-level staff with peer reviewed publ.	49 %	40 %
Percentage of current other staff with peer reviewed publications	0 %	0 %
Percentage of current staff with > 1 peer reviewed publications/year	2 %	2 %
R&D output from current Vestfold GLU staff	2006-2015	2012-2015
Peer reviewed publications in total	125	76
Peer reviewed publications per person per year	0.1	0.2
Other (outreach) publications on record	390	143
Percentage of current staff with peer reviewed publications	35 %	34 %
Percentage of current professors with peer reviewed publications	50 %	50 %
Percentage of current adjuncts with peer reviewed publications	-	-
Percentage of current associate-level staff with peer reviewed publ.	36 %	36 %

Percentage of current assistant-level staff with peer reviewed publ.	33 %	31 %
Percentage of current other staff with peer reviewed publications	14 %	14 %
Percentage of current staff with > 1 peer reviewed publications/year	2 %	1 %
R&D output from current Porsgrunn GLU staff	2006-2015	2012-2015
Peer reviewed publications in total	14	7
Peer reviewed publications per person per year	0.1	0.1
Other (outreach) publications on record	53	30
Percentage of current staff with peer reviewed publications	19 %	14 %
Percentage of current professors with peer reviewed publications	60 %	40 %
Percentage of current adjuncts with peer reviewed publications	-	-
Percentage of current associate-level staff with peer reviewed publ.	0 %	0 %
Percentage of current assistant-level staff with peer reviewed publ.	7 %	7 %
Percentage of current other staff with peer reviewed publications	-	-
Percentage of current staff with > 1 peer reviewed publications/year	0 %	0 %

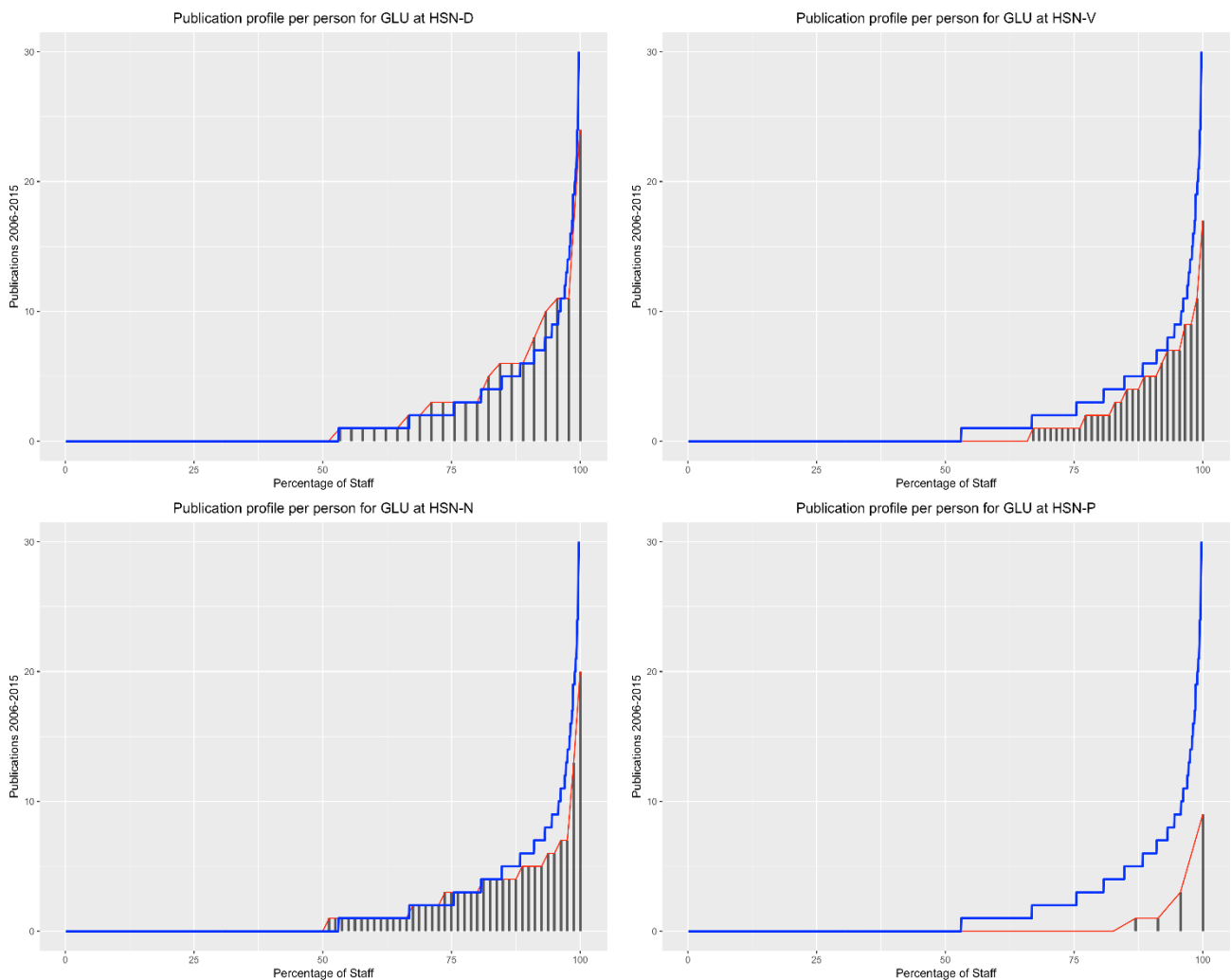


Figure 6: Publication profile for current GLU staff at HSN

Publication scores for Drammen, Vestfold, and Notodden are near or slightly below the national average for GLU staff. Porsgrunn is well below. The differences between staff categories vary between the four campuses. Total non-publishing rate is around average at Drammen and Vestfold, slightly high at Notodden, and high at Porsgrunn.

3.5.3 Current resources for R&D

Table 9: R&D resource indicators for GLU at HSN

Resources	Persons	FTEs	FTE for R&D	R&D/person
Total staff involved in GLU	234	n/a	n/a	n/a
Of which Drammen campus	46	n/a	n/a	n/a
Of which Vestfold campus	87	n/a	n/a	n/a
Of which Notodden campus	79	n/a	n/a	n/a
Of which Porsgrunn campus	22	n/a	n/a	n/a
Of which professors	33	n/a	n/a	n/a
Of which adjuncts	1	n/a	n/a	n/a
Of which associate professors	62	n/a	n/a	n/a
Of which assistant professors	132	n/a	n/a	n/a
Of which other staff	6	n/a	n/a	n/a

3.5.4 R&D strategies and organization of R&D

R&D activities are organized in areas and research groups. The research areas are the main school subjects: pedagogy, mathematics, Norwegian, arts and crafts, social science, religion, philosophies of life and ethics, music, and others. People working with pedagogy are working with national and international networks where academic discourses are defined. Internationalization is emphasized as important both for students and teachers exchange and for new joint research projects.

3.5.5 PhD programs

The department offers PhD programme in "Research training in pedagogical resources and learning processes". Two PhD candidates are currently enrolled in a mathematics program connected to teacher education.

3.5.6 R&D focus areas

- In mathematics, research areas comprise the mathematics teachers' competency, ethical questions related to teaching of mathematics, pupils' understanding of key mathematical concepts, adapted education, mathematical understanding among teachers and students, and digital tools in mathematics education.
- The research on Norwegian as a subject is primarily didactically oriented. They are both doing language, text, literature and culture. Members of the academic community have also highlighted nationally and internationally related to teaching materials and educational texts, as well as reading as basic skills in all subjects.
- Within arts and crafts, many of the researchers work towards teaching and other school related professions. Many of the researchers work towards the field of education aimed at school.
- In the research area of religion, philosophies of life and ethics, many from the academic community participate in the research group MMM (Human Rights, Diversity and Citizen-

ship). Since the background of the academic community is composed, there is also breadth in research themes, but it is researching academically relevant topics for teacher education and also on subject didactics.

- Different research groups within music are established, which are active in relation to development work, research and artistic development work, among other things aimed at primary school. There are also research groups for food and health. These groups are: "learning and teaching for sustainability (LETS)", "Classroom research – quality in teaching" and "Publication across subjects in education (PASIE)".


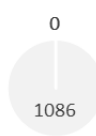
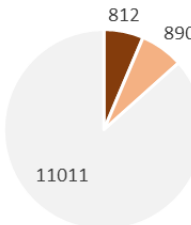
3.5.7 Discussion

Three of the GLU milieus (Drammen, Vestfold, Notodden) are close to the national GLU staff publication average. There is a slow increase over time. Porsgrunn is a much smaller campus and their R&D interests might well be different from those of the others; if not, there could be a basis for exchanging experiences between campuses in the newly integrated HEI.

3.6 UiA: University of Agder

3.6.1 University of Agder and its teacher education

Box 5: UiA at a glance

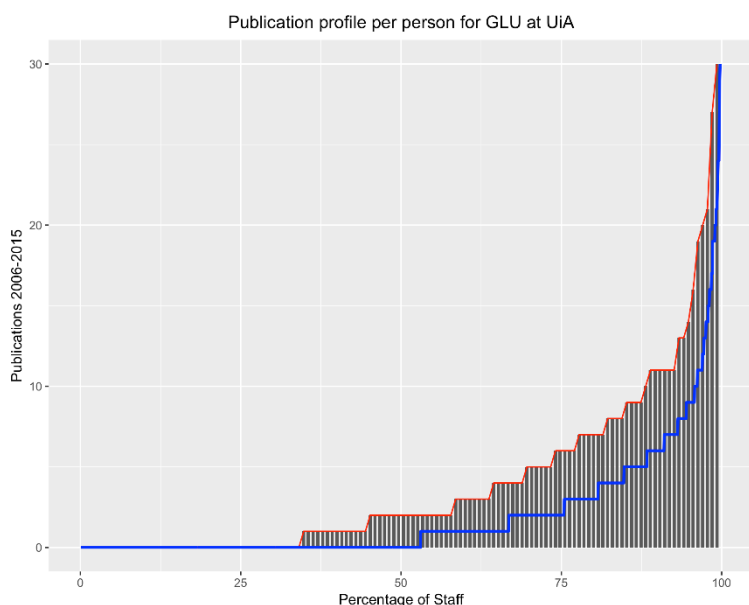
 UNIVERSITETET I AGDER		<p>Staff UiA</p>  <p>0 1086</p> <p>■ GLU ■ Other TE ■ Other HEI</p>	
Higher Education Institution (HEI)			
Acronym	UiA		
Name (Norwegian)	Universitetet i Agder		
Name (English)	University of Agder		
Category	University		
Latest major reorg	2007: Upgraded to university		
Geography	Kristiansand in Vest-Agder county; Grimstad in Aust-Agder		
Staff (FTE)	1,086		
Students	12,713		
Teacher education (TE)			
Programs	For all levels		
Organization	Teacher education (admin.) sources its teaching staff from multiple depts		
Staff (FTE)	22 + n/a		
Students	1,702		
Teacher education for 1-7/5-10 (GLU)			
Campuses	Kristiansand, Grimstad		
Staff (FTE)	n/a (142 persons)		
Students	812		
Remarks			
<p>UiA provides professional and academic education for teaching, health & social work, engineering, ICT, social science, humanities, and a wide range of other areas. About one in seven of its students pursue a teacher education.</p>			
		<p>Students UiA</p>  <p>812 890 11011</p> <p>■ GLU ■ Other TE ■ Other HEI</p>	
Based on data for 2016 from DBH, NOKUT, uia.no.			

The department of Teacher education at the University of Agder (UiA) has offered teacher education since 1839. Five faculties are collaborating on different parts of the teacher education programme, and the education is taking place at both the campus in Grimstad and the campus in Kristiansand. In total about 1,600 students are enrolled at the teacher education programmes at UiA.

3.6.2 Prior R&D output

Table 10: R&D output indicators for GLU at UiA

R&D output from current GLU staff	2006-2015	2012-2015
Peer reviewed publications in total	557	327
Peer reviewed publications per person per year	0.4	0.6
Other (outreach) publications on record	1,247	666
Percentage of current staff with peer reviewed publications	67 %	61 %
Percentage of current professors with peer reviewed publications	86 %	86 %
Percentage of current adjuncts with peer reviewed publications	100 %	100 %
Percentage of current associate-level staff with peer reviewed publ.	81 %	73 %
Percentage of current assistant-level staff with peer reviewed publ.	57 %	51 %
Percentage of current other staff with peer reviewed publications	38 %	38 %
Percentage of current staff with > 1 peer reviewed publications/year	13 %	5 %



Publication scores are well above the national average for GLU staff. Scores for professors are less than two times the scores for assistant professors. Total non-publishing rate is also low.

Figure 7: Publication profile for current GLU staff at UiA

3.6.3 Current resources for R&D

Table 11: R&D resource indicators for GLU at UiA

Resources	Persons	FTEs	FTE for R&D	R&D/person
Total staff involved in GLU	142	n/a	n/a	n/a
Of which professors	14	n/a	n/a	n/a
Of which adjuncts	3	n/a	n/a	n/a
Of which associate professors	48	n/a	n/a	n/a
Of which assistant professors	70	n/a	n/a	n/a
Of which other staff	7	n/a	n/a	n/a

3.6.4 R&D strategies and organization of research

Insufficient data available at the time of data collection.

3.6.5 PhD programs

Insufficient data available at the time of data collection.

3.6.6 R&D focus areas

Insufficient data available at the time of data collection.


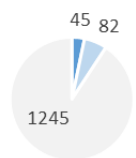
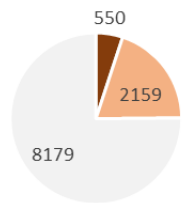
3.6.7 Discussion

Publication records are well above national GLU average and increasing over time. We have too little information to be able to link with efforts and measures.

3.7 UiS: University of Stavanger

3.7.1 University of Stavanger and its teacher education

Box 6: UiS at a glance

		<p style="text-align: center;">Staff UiS</p>  <p style="text-align: center;">■ GLU ■ Other TE ■ Other HEI</p>
Higher Education Institution (HEI)		
Acronym	UiS	
Name (Norwegian)	Universitetet i Stavanger	
Name (English)	University of Stavanger	
Category	University	
Latest major reorg	2005: Upgraded to university status	
Geography	Stavanger in Rogaland county	
Staff (FTE)	1,372	
Students	10,888	
Teacher education (TE)		<p style="text-align: center;">Students UiS</p>  <p style="text-align: center;">■ GLU ■ Other TE ■ Other HEI</p>
Programs	For all levels	
Organization	Dept. of kindergarten teacher education and Dept. of primary and lower secondary teacher education, sports, and special needs education	
Staff (FTE)	127	
Students	2,709 (est.)	
Teacher education for 1-7/5-10 (GLU)		
Campuses	Stavanger	
Staff (FTE)	45 (62 persons)	
Students	550	
Remarks		
<p>UiS provides professional and academic education for teaching, health & social work, engineering, ICT, humanities, social science, and a wide range of other areas. About one fourth of its students pursue a teacher education.</p>		

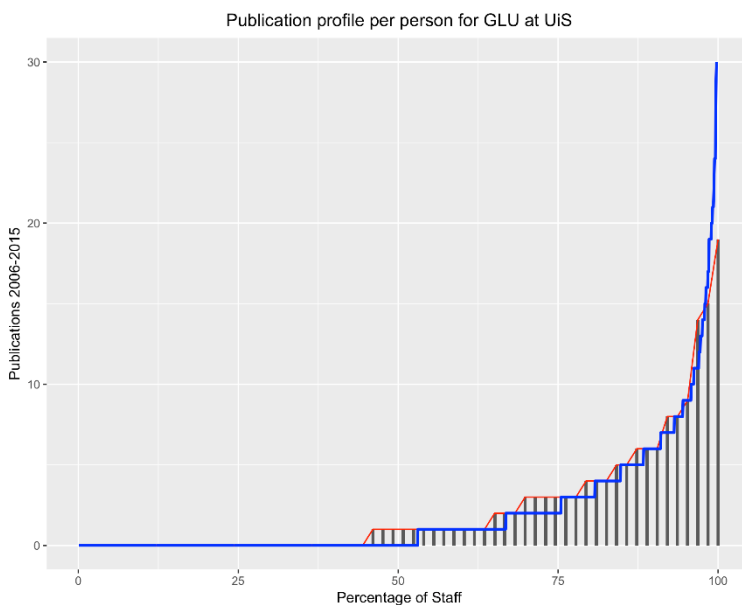
Based on data for 2016 from DBH, NOKUT, uis.no.

The University of Stavanger is located in the oil & gas capital of Norway. They have an open and innovative climate for education, research, entrepreneurship, and museal activities. The department of primary and lower secondary school education, sports and special needs education offers studies at all levels including PhD.

3.7.2 Prior R&D output

Table 12: R&D output indicators for GLU at UiS

R&D output from current GLU staff	2006-2015	2012-2015
Peer reviewed publications in total	149	91
Peer reviewed publications per person per year	0.2	0.4
Other (outreach) publications on record	462	243
Percentage of current staff with peer reviewed publications	56 %	47 %
Percentage of current professors with peer reviewed publications	71 %	71 %
Percentage of current adjuncts with peer reviewed publications	100 %	100 %
Percentage of current associate-level staff with peer reviewed publ.	77 %	58 %
Percentage of current assistant-level staff with peer reviewed publ.	27 %	23 %
Percentage of current other staff with peer reviewed publications	100 %	100 %
Percentage of current staff with > 1 peer reviewed publications/year	5 %	3 %



Publication scores are close to the national average for GLU staff. Scores for professors are around four times the scores for assistant professors. Total non-publishing rate is also slightly low.

Figure 8: Publication profile for current GLU staff at UiS

3.7.3 Current resources for R&D

Table 13: R&D resource indicators for GLU at UiS

Resources	Persons	FTEs	FTE for R&D	R&D/person
Total staff involved in GLU	62	45	n/a	n/a
Of which professors	7	3	n/a	n/a
Of which adjuncts	1	0	n/a	n/a
Of which associate professors	26	20	n/a	n/a
Of which assistant professors	28	22	n/a	n/a
Of which other staff	0	0	n/a	n/a

3.7.4 R&D strategies and organization of research

Two specialized research centres, focusing on literacy and learning environment, respectively, channel a large proportion of the relevant R&D, but not to the exclusion of GLU staff conducting their own research.

3.7.5 PhD programs

- PhD in educational science. A multi-disciplinary program within pedagogics, social sciences, and humanities.
- PhD in literacy. Studies text culture and text practices in domains such as school, working life, political and aesthetic domains.

3.7.6 R&D focus areas

- Research on testing and evaluation on models of physical activity models in upper secondary school in cooperation with Norges Idrettshøgskole.
- The research group in mathematics is working with researchers at University of Michigan and University of Malawi about teachers teaching skills in mathematics. They are also represented in the National research School, NATED. Further, there is a collaboration project on new ways of learning mathematics, known as "Russian mathematics" with Sandnes municipality.
- Another research programme is established on "Teacher's Professional Development" in collaboration with University of Leicester and as a part of the Nordic Network for Lesson Study. They are also participating in the Interdisciplinary Group on Active Learning and Assessment at the Universidad Catolica de Valencia.
- The research group on pedagogy is collaborating on research and PhD education with the University in Aarhus, the University of Oslo and Birmingham University. The research group has participated in the NATED, and has for several years been represented in NESH.
- The research group on Norwegian is active on research within *nynorsk* (neo-Norwegian, a literacy form of the Norwegian language) and in the national network on literacy, NOLES. They also participate in the Nordic Network for Literature Pedagogy and the SASS Society for the Advancement of Scandinavian Study.



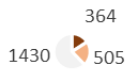
3.7.7 Discussion

Publication records are around the national GLU average and increasing over time. We have too little information to be able to link with efforts. Organizational and other measures seem to be in place.

3.8 NLA: NLA University College

3.8.1 NLA University College and its teacher education

Box 7: NLA at a glance

		<p>Staff NLA</p>  <p>■ GLU ■ Other TE ■ Other HEI</p>
Higher Education Institution (HEI)		
Acronym	NLA	<p>Students NLA</p>  <p>■ GLU ■ Other TE ■ Other HEI</p>
Name (Norwegian)	NLA Høgskolen	
Name (English)	NLA University College	
Category	Private university college	
Latest major reorg	2013: Merged with Media UC Gimlekollen, UC Staffeldtsgate	
Geography	Bergen in Hordaland county; Kristiansand in Vest-Agder; Oslo	
Staff (FTE)	183	
Students	2,299	
Teacher education (TE)		
Programs	For kindergarten, primary and lower secondary schools	
Organization	Bergen campus	
Staff (FTE)	54 (incl. sports and theological subjects)	
Students	869	
Teacher education for 1-7/5-10 (GLU)		
Campuses	Bergen (Breistein)	
Staff (FTE)	30 (71 persons)	
Students	364	
Remarks		
<p>NLA is a private Christian institution that offers professional education in teaching, media, music, and management. About two thirds of its students pursue a teacher education.</p>		

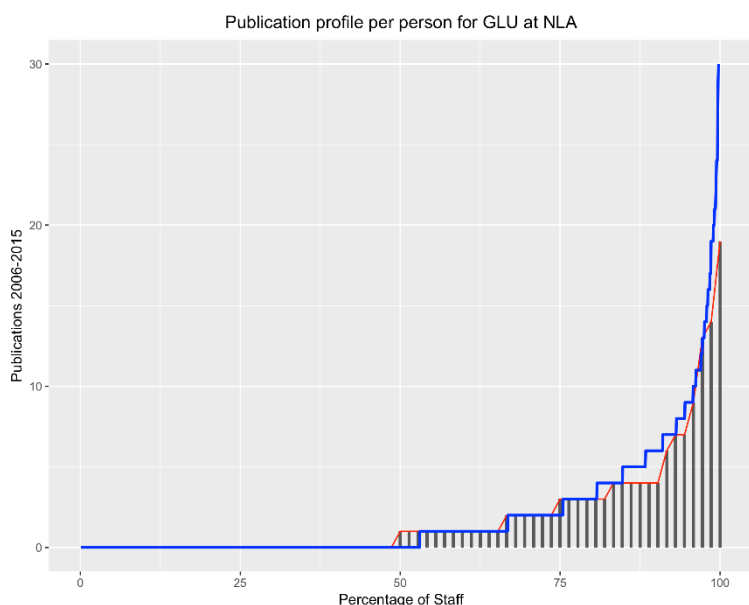
Based on data for 2016 from DBH, NOKUT, nla.no.

The Norwegian Teacher Academy (NLA) is a Christian private accredited university college. NLA have approximately 2,000 students at three different campuses (Bergen, Oslo and Kristiansand). Their teacher education is located in Bergen and offers study programs for teachers in kindergarten, primary school, and lower secondary school.

3.8.2 Prior R&D output

Table 14: R&D output indicators for GLU at NLA

R&D output from current GLU staff	2006-2015	2012-2015
Peer reviewed publications in total	141	78
Peer reviewed publications per person per year	0.2	0.3
Other (outreach) publications on record	192	78
Percentage of current staff with peer reviewed publications	52 %	45 %
Percentage of current professors with peer reviewed publications	80 %	80 %
Percentage of current adjuncts with peer reviewed publications	100 %	100 %
Percentage of current associate-level staff with peer reviewed publ.	74 %	63 %
Percentage of current assistant-level staff with peer reviewed publ.	30 %	24 %
Percentage of current other staff with peer reviewed publications	43 %	29 %
Percentage of current staff with > 1 peer reviewed publications/year	4 %	0 %



Publication scores are around the national average for GLU staff. Scores for professors are between three and four times the scores for assistant professors. Total non-publishing rate is around average.

Figure 9: Publication profile for current GLU staff at NLA

3.8.3 Current resources for R&D

Table 15: R&D resource indicators for GLU at NLA

Resources	Persons	FTEs	FTE for R&D	R&D/person
Total staff involved in GLU	71	30	9	0.13
Of which professors	10	3	2	0.17
Of which adjuncts	2	0	0	0.00
Of which associate professors	19	10	4	0.19
Of which assistant professors	35	15	4	0.11
Of which other staff	5	1	0	0.00

The allocated time for R&D is evenly distributed between staff categories. It seems low, given prior publication record.

3.8.4 R&D strategies and organization of R&D

R&D work should be on a high international level. NLA staff are involved in several internal collaboration projects in South Africa, Uganda, Nepal, Kyrgyzstan, and the U.S. Furthermore, NLA has international agreements with a wide range of higher educational institutions within the Erasmus+ program as well as other partner institutions. They emphasize international collaboration in their strategy plan as an arena for development of their R&D work. R&D activity is organized through interdisciplinary research groups. At least 90 per cent of teaching and research staff should be part of a research group, either internally or externally.

3.8.5 PhD programs

NLA has a goal is to establish a PhD program within one of the main areas of the institution. Within the area of the program, NLA aims to be "nationally leading" and also to play an important role internationally.

3.8.6 R&D focus areas

Research groups at NLA

- Children, media and philosophy of life
- Children in motion
- Early education
- Gifted children in school and child care
- Existence and education
- Didactics research group for religion
- Research group for social science
- R&D in elementary teacher training programmes
- Global journalism
- Hallesby
- Human Development and Capability Approach
- Christian Schooling
- Artistic Development work
- Teacher education in Nepal
- Didactics of mathematics
- Didactics of nature science
- Nordic language, text and culture
- Oppbyggelige eksempler
- Religion and ethics in PEL

- Religion and culture
- Religion and Music
- Research statement Educational Studies
- Text meets text
- Theology and spirituality


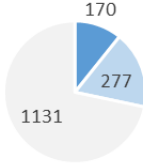
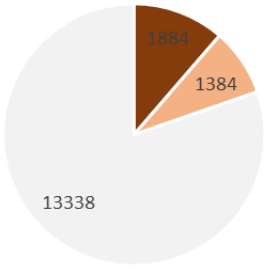
3.8.7 Discussion

Publication records are around the national GLU average and slowly increasing over time. Current time resources for R&D efforts may seem on the low side to keep up the output level.

3.9 HVL: Western Norway University of Applied Sciences

3.9.1 Western Norway University of Applied Sciences and its teacher education

Box 8: HVL at a glance

		<p style="text-align: center;">Staff HVL</p>  <p style="text-align: center;">■ GLU ■ Other TE ■ Other HEI</p>
Higher Education Institution (HEI)		
Acronym	HVL	<p style="text-align: center;">Students HVL</p>  <p style="text-align: center;">■ GLU ■ Other TE ■ Other HEI</p>
Name (Norwegian)	Høgskulen på Vestlandet	
Name (English)	Western Norway University of Applied Sciences	
Category	State university college	
Latest major reorg	2017: Established through merger of Bergen UC, Sogn & Fjordane UC, Stord/Haugesund UC	
Geography	Førde, Sogndal in Sogn & Fjordane county; Bergen, Stord in Hordaland; Haugesund in Rogaland	
Staff (FTE)	S&F 362 + B 886 + S/H 330 = 1,578	
Students	4,002 (F+S) + 9,205 (B) + 3,399 (S+H) = 16,606	
Teacher education (TE)		
Programs	For all levels	
Organization	Dept. of teacher ed. and sports (S&F), Dept. of teacher ed. (B), Dept. of teacher ed. & culture (S/H)	
Staff (FTE)	So 109 (incl sports) + B 248 + St 90 (incl. culture) = 447	
Students	So 875 + B 3,575 + St 1,100 = 3,268	
Teacher education for 1-7/5-10 (GLU)		
Campuses	Sogndal, Bergen, Stord	
Staff (FTE)	170 (286 persons)	
Students	So 347 + B 1,293 + St 244 = 1,884	
Remarks		
<p>HVL provides professional education for teaching, health & social work, sports, engineering, music, social and natural science, economics, management. About one fifth of their students pursue a teacher education.</p>		

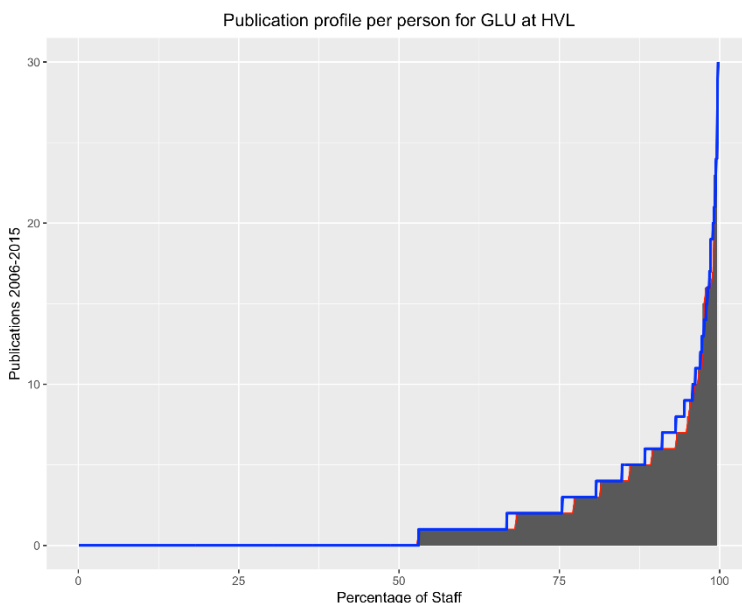
Based on data for 2016 from DBH, NOKUT, hvl.no.

Western Norway University of Applied Sciences (HVL) was established in 2017, when Bergen University College, Sogn & Fjordane University College and Stord / Haugesund University College merged. It is one of the largest university colleges in the country with about 16,000 students divided into 5 campuses. HVL has a department for teacher education both in Bergen, Sogndal and Stord, it also has a PhD program affiliated with teacher education.

3.9.2 Prior R&D output

Table 16: R&D output indicators for GLU at HVL

R&D output from current GLU staff	2006-2015	2012-2015
Peer reviewed publications in total	571	311
Peer reviewed publications per person per year	0.2	0.3
Other (outreach) publications on record	1,166	517
Percentage of current staff with peer reviewed publications	48 %	41 %
Percentage of current professors with peer reviewed publications	36 %	24 %
Percentage of current adjuncts with peer reviewed publications	22 %	22 %
Percentage of current associate-level staff with peer reviewed publ.	45 %	36 %
Percentage of current assistant-level staff with peer reviewed publ.	55 %	50 %
Percentage of current other staff with peer reviewed publications	48 %	43 %
Percentage of current staff with > 1 peer reviewed publications/year	4 %	2 %



Publication scores are around the national average for GLU staff. Scores for professors are half the scores for assistant professors, which is a notable difference from the usual pattern. Total non-publishing rate is around average.

Figure 10: Publication profile for current GLU staff at HVL

3.9.3 Current resources for R&D

Table 17: R&D resource indicators for GLU at HVL

Resources	Persons	FTEs	FTE for R&D	R&D/person
Total staff involved in GLU	286	170	45	0.16
Of which professors	33	20	5	0.17
Of which adjuncts	9	5	1	0.16
Of which associate professors	87	50	13	0.15
Of which assistant professors	141	86	23	0.17
Of which other staff	16	9	2	0.14

The allocated time for R&D is evenly distributed between staff categories. It seems a little bit low, given prior publication record.

3.9.4 R&D strategies

HVL has a strategic goal to strengthen research and the research environment connected to the teacher-education. One way to achieve this has been to formalize research groups and research group activities. The research groups will be profiled on the HVL website. A formalization also opens the possibility of 'small assets' for travel, etc. and additional time courses for R & D / research management. Although research groups will not solve all challenges related to R & D according HVL, the organizational form can create better conditions and support for research.

HVL has completed a self-assessment of their own R & D activities, and it concluded with the following.

3.9.5 Organization of research

HVL's own review concludes that the sections appear to vary widely with regard to R & D organization. Some sections have clearly defined research groups where single projects are placed. Some (also) have a research group composed of (almost) all section members. In other sections, the groups are based on single researchers and their external partners, with different levels of internal participation. In many sections, there are several forms of organization. There are also several research groups that deal with sectional and professional boundaries (e.g. basic skills in all subjects, ethnic diversity in kindergarten, school and society). The centres also house interdisciplinary research groups, such as the three groups associated with SEKKK: Artistic Research, Composite Art Expression and Aesthetic Bildung.

Although many sections report a research group-based R & D organization, there are also several sections that express uncertainty about how to understand the term 'research group' and about the type of organization that the section has 'qualifying' like this. In several cases section members belong to several research groups, this makes it somewhat unclear how binding such participation is, and how and to what extent the individual's R & D activity is linked to one or more groups.

The types of activity taking place in the groups varies. Common to most of them are meetings and seminars. While some groups are working on applications for external funding, others are engaged in development projects related to the school or kindergarten. Links to the education also varies.

3.9.6 PhD programs

The PhD programme in Bildung and Pedagogical Practices at the Bergen campus is a research training programme that qualifies for scientific work and research within the field of Bildung and peda-

gical practices. The programme gathers academic traditions ways of understanding and reflecting on epistemology, aesthetics and ethics in children's learning and exploration. This programme entails the study of Bildung as something that arises and is understood through various types of pedagogical practices and challenges within educational institutions.

In order to strengthen high quality research and development within Teacher Education the following activities are part of the program:

- **Colloquium:** The students meet 3 times per semester in a workshop. The meetings are organized by the students and led by a professor who is an expert within the field of interest. The students present parts of their research projects and discuss them with the participants.
- **Research groups:** With their doctoral research project, the students are part of a wider research group at the institution. A commission acknowledges the quality of the research group. By doing this they strengthen the relation between the profile of the program and the profile of the Bergen campus (e.g. common publications, project applications, conference presentations).
- **Guest lectures:** Qualified researchers are presenting their work and experiences within the regularly courses and in additional organized events (e.g. book café and debates).

The aim of these activities is to provide a space that opens up for problem related presentations and discussions, to develop an understanding of the Ph.D. students of empirical research that leads to publishable scholarly work.

3.9.7 R&D focus areas

Insufficient data available at the time of data collection; but see above for some details.


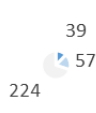
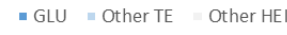

3.9.8 Discussion

Publication output is around the national GLU average and slowly increasing. Interestingly, assistant professors publish more frequently than professors on average. We do not have sufficient data to identify any differences or similarities between the three GLU campuses.

3.10 HVO: Volda University College

3.10.1 Volda University College and its teacher education

Box 9: HVO at a glance

 HØGSKULEN I VOLDA		Staff HVO	
Higher Education Institution (HEI)			
Acronym	HVO		
Name (Norwegian)	Høgskulen i Volda		
Name (English)	Volda University College		
Category	State university college		
Latest major reorg	1994: Established through merger of 2 colleges		
Geography	Volda in Møre & Romsdal county		
Staff (FTE)	320		
Students	3,848		
Teacher education (TE)			
Programs	For all levels		
Organization	Dept. of humanities and teacher education		
Staff (FTE)	96 (incl. humanities)		
Students	1,836 (incl. humanities)		
Teacher education for 1-7/5-10 (GLU)			
Campuses	Volda		
Staff (FTE)	39 (81 persons)		
Students	250		
Remarks			
<p>HVO provides professional education for teaching, health & social work, media, sports, social and natural science, and a number of other areas. Nearly half of its students pursue a teacher education.</p>		<p>Based on data for 2016 from DBH, NOKUT, hivolda.no.</p>	

Volda University College (HVO) is located in a small town on the west coast of Norway. The four faculties offer a variety of courses in their subject areas: Humanities and Education, Social Sciences and History, Art and Physical Education and Media and Journalism.

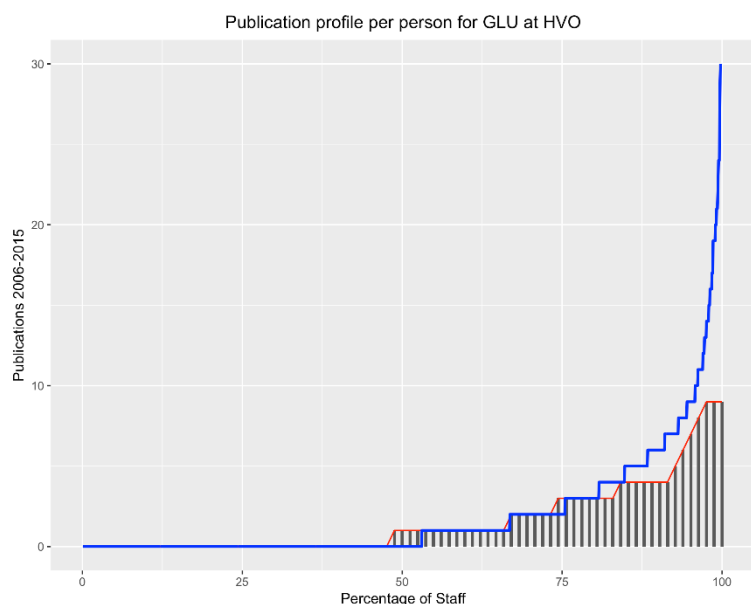
Volda University College is known for its focus on internationalization and high figures in student mobility. HVO recently added new cooperation agreements in Japan and South Korea to the already large portfolio of international partnerships. HVO has a staff of approximately 350 and around 4000 students. Regarding students, more than 200 are international, representing 30-40 different nations. Most international students are exchange students applying through one of the 100+ partner universities.

The Faculty of Humanities and Education is the largest faculty at HVO, both in regards of student- and staff numbers. The faculty is deeply involved in teacher education, continuing education and further education for primary, lower and upper secondary school. The faculty staff are active in research, and the faculty conducts several education-related research projects financed by The Research Council of Norway. The University College has established a research programme in subject-specific didactics with seven associated research grants, for which the faculty is responsible.

3.10.2 Prior R&D output

Table 18: R&D output indicators for GLU at HVO

R&D output from current GLU staff	2006-2015	2012-2015
Peer reviewed publications in total	132	70
Peer reviewed publications per person per year	0.2	0.2
Other (outreach) publications on record	361	178
Percentage of current staff with peer reviewed publications	53 %	43 %
Percentage of current professors with peer reviewed publications	92 %	62 %
Percentage of current adjuncts with peer reviewed publications	-	-
Percentage of current associate-level staff with peer reviewed publ.	62 %	50 %
Percentage of current assistant-level staff with peer reviewed publ.	35 %	32 %
Percentage of current other staff with peer reviewed publications	40 %	40 %
Percentage of current staff with > 1 peer reviewed publications/year	0 %	0 %



Publication scores are somewhat below the national average for GLU staff. Scores for professors are between two and three times the scores for assistant professors. Total non-publishing rate is around average.

Figure 11: Publication profile for current GLU staff at HVO

3.10.3 Current resources for R&D

Table 19: R&D resource indicators for GLU at HVO

Resources	Persons	FTEs	FTE for R&D	R&D/person
Total staff involved in GLU	81	39	15	0.19
Of which professors	13	5	2	0.14
Of which adjuncts	0	0	0	0.00
Of which associate professors	26	13	5	0.20
Of which assistant professors	39	19	7	0.19
Of which other staff	3	2	1	0.30

The allocated time for R&D is fairly evenly distributed between staff categories. It seems low if there is an ambition to increase R&D output.

3.10.4 R&D strategies

It is a fundamental aim for Volda University College to produce high quality research and furthermore offer research based education.

The R&D Committee at HVO is responsible for the strategic development of R&D activities. Members of the committee are the assistant principal of HVO, the deans of the four faculties, a representative from Møreforskning, a student representative, and the Research Department. Other important tasks for the committee are organizing research training, recruitment of researchers, allocating research scholarships and research leaves.

3.10.5 Organization of research

The R&D committee has set the following research aims for Volda University College for the coming years:

- Develop special expertise in the fields of existing and planned master's degree programmes and doctoral degree programmes
- Strengthen research within professional education programmes
- Nynorsk (New Norwegian) language and culture is important for the R&D activity
- Develop R&D activity contributing to regional development and regional policies
- Cooperate with Møreforsking in developing common research activity
- The academic staff has a high research activity. The research results are published and disseminated nationally and internationally.
- Bachelor and master students are given opportunities to participate in R&D projects.

HVO also have four focus areas of research, where educational research is one of them. HVO is a co-owner of Møreforsking Volda AS, and a private cooperation agreement has been entered into between VUC and the research institute.

3.10.6 PhD programs

Insufficient data available at the time of data collection.

3.10.7 R&D focus areas

Insufficient data available at the time of data collection.


3.10.8 Discussion

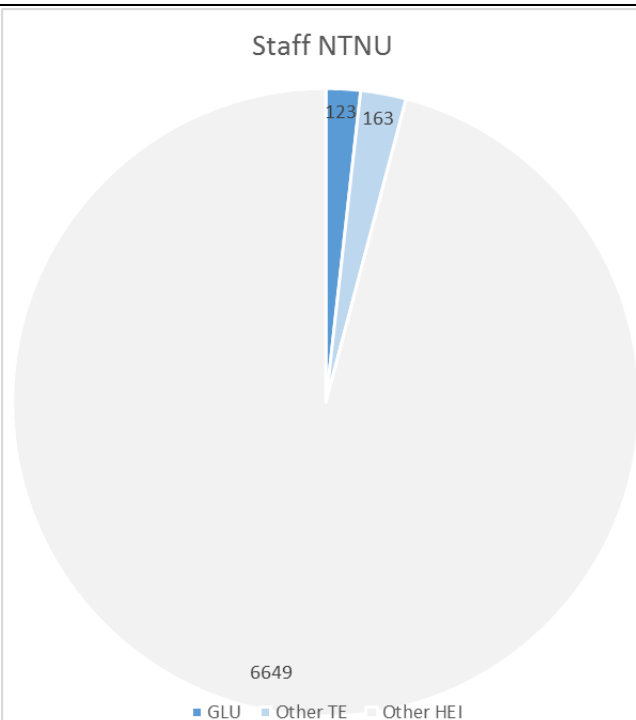
Publication scores are somewhat lower than average and they are not changing over time. Resources are evenly distributed and may not be sufficient if an increase is aimed for.

3.11 NTNU: NTNU

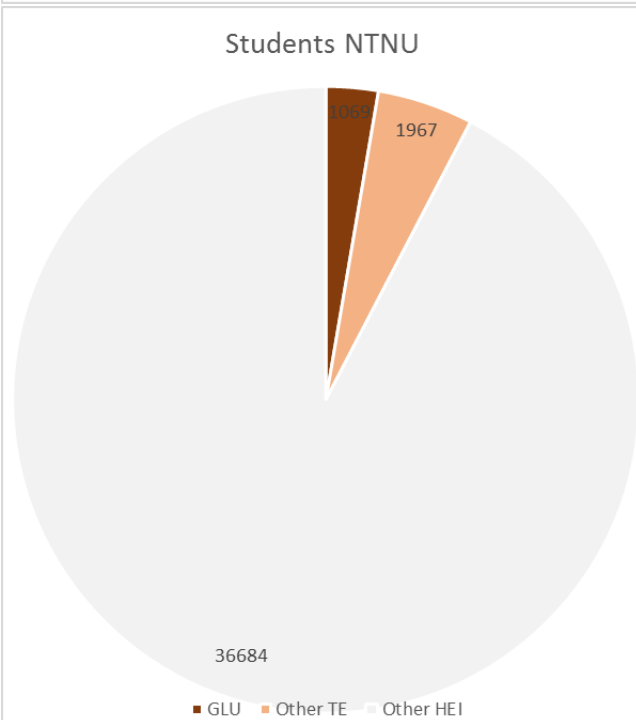
3.11.1 NTNU and its teacher education

Box 10: NTNU at a glance

	
Higher Education Institution (HEI)	
Acronym	NTNU
Name (Norwegian)	NTNU (Norges teknisk-naturvitenskapelige universitet)
Name (English)	NTNU (Norwegian University of Science and Technology)
Category	University
Latest major reorg	2016: Merged with Sør-Trøndelag UC, Ålesund UC, Gjøvik UC
Geography	Trondheim in Sør-Trøndelag county; Ålesund in Møre & Romsdal; Gjøvik in Oppland
Staff (FTE)	6,935
Students	39,720
Teacher education (TE)	
Programs	For all levels
Organization	Fac. for teacher and interpreter education (TIE) and Program in teacher education (TE)
Staff (FTE)	TIE 192 + TE 94 = 286
Students	R 1,770 + M 1,029 + D 237 = 3,036
Teacher education for 1-7/5-10 (GLU)	
Campuses	Trondheim (Rotvoll)
Staff (FTE)	123 (169 persons)
Students	1,069
Remarks	
NTNU is Norway's largest university. It provides professional and academic education in teaching, medicine, health & social work, engineering, ICT, architecture, management, humanities, social and natural science, and a wide range of other areas. About one tenth of its students pursue a teacher education.	



Category	Value
GLU	123
Other TE	163
Other HEI	6649



Category	Value
GLU	1069
Other TE	1967
Other HEI	36684

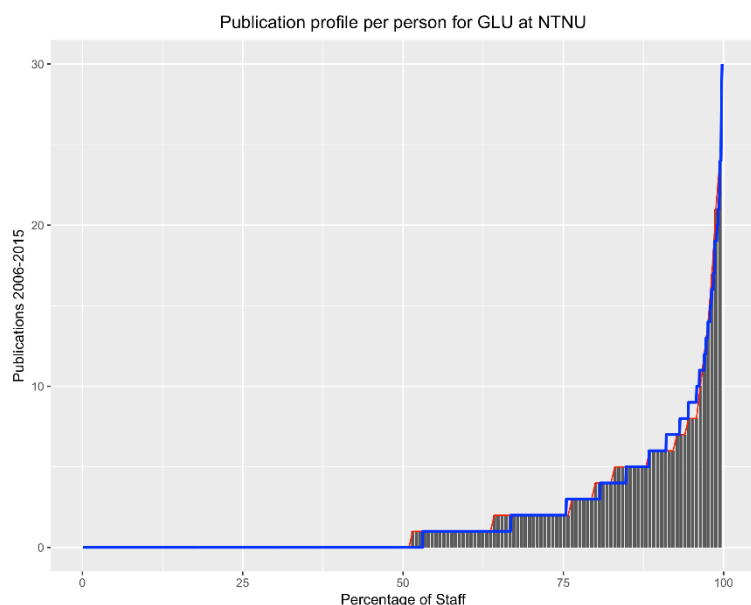
Based on data for 2016 from DBH, NOKUT, ntnu.no..

The Department of Teacher Education at the Norwegian University of Science and Technology (NTNU) is the largest academic environment within teacher education and educational research in Norway. The Faculty was formally established January 1st 2017 after the merge of the Norwegian University of Science and Technology and Sør-Trøndelag University College.

3.11.2 Prior R&D output

Table 20: R&D output indicators for GLU at NTNU

R&D output from current GLU staff	2006-2015	2012-2015
Peer reviewed publications in total	365	185
Peer reviewed publications per person per year	0.2	0.3
Other (outreach) publications on record	703	356
Percentage of current staff with peer reviewed publications	51 %	44 %
Percentage of current professors with peer reviewed publications	78 %	69 %
Percentage of current adjuncts with peer reviewed publications	33 %	33 %
Percentage of current associate-level staff with peer reviewed publ.	72 %	70 %
Percentage of current assistant-level staff with peer reviewed publ.	21 %	21 %
Percentage of current other staff with peer reviewed publications	67 %	67 %
Percentage of current staff with > 1 peer reviewed publications/year	4 %	1 %



Publication scores are around the national average for GLU staff. Scores for professors are between three and four times the scores for assistant professors. Total non-publishing rate is around average.

Figure 12: Publication profile for current GLU staff at NTNU

3.11.3 Current resources for R&D

Table 21: R&D resource indicators for GLU at NTNU

Resources	Persons	FTEs	FTE for R&D	R&D/person
Total staff involved in GLU	169	123	54	0.32
Of which professors	32	16	9	0.28
Of which adjuncts	2	0	0	0.00
Of which associate professors	57	46	21	0.37
Of which assistant professors	76	60	23	0.31
Of which other staff	2	1	1	0.38

The allocated time for R&D is evenly distributed between staff categories. It is higher than in most other GLU milieus. We don't know whether this will increase or maintain current publication levels.

3.11.4 R&D strategies and organization of R&D

Insufficient data available at the time of data collection.

3.11.5 PhD programs

NTNU and the Department of Teacher Education hosts The Norwegian National Research School in Teacher Education (NAFOL).

The department offers PhD programme with focus on Teacher Education and School Practice.

3.11.6 R&D focus areas

Research areas at the department are Norwegian, Mathematics, English, Science, Social science, Religion and ethics, Physical education, Music, Special needs education and Pedagogy.

Within Religion and ethics they are conducting research on literacy both nationally and internationally.

Ongoing research projects in Physical education is as an example "pupil's experiences of physical education" and "flipped classroom learning in Physical education".

In Mathematics they have projects like "apps in math", where they are developing a model for mobile application in Mathematics. Another project, "TransMaths" studies the transition between different levels of education and the particular challenges on each level.

In Science research areas are within ecology, cultural landscape, vegetation dynamics, reproductive studies, pollination economics and more didactic research. They are active in both national and international research networks.


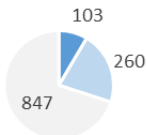
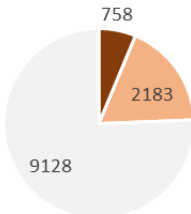
3.11.7 Discussion

R&D output is around the national GLU average and resources are somewhat higher. The focus areas are fairly generic but only a few examples of projects have been mentioned here.

3.12 NOR: Nord University

3.12.1 Nord University and its teacher education

Box 11: NOR at a glance

		<p>Staff NOR</p>  <p>■ GLU ■ Other TE ■ Other HEI</p>
Higher Education Institution (HEI)		
Acronym	NOR	<p>Students NOR</p>  <p>■ GLU ■ Other TE ■ Other HEI</p>
Name (Norwegian)	Nord Universitet	
Name (English)	Nord University	
Category	University	
Latest major reorg	2016: Established through merger between University of Nordland, Nesna UC, Nord-Trøndelag UC	
Geography	Bodø, Vesterålen, Mo i Rana, Nesna, Sandnessjøen in Nordland county; Steinkjer, Namsos, Levanger, Stjørdal in Nord-Trøndelag	
Staff (FTE)	1,210	
Students	12,069	
Teacher education (TE)		
Programs	For all levels, driving	
Organization	Dept. of teacher education and arts and culture	
Staff (FTE)	L 119 + others 244 (incl. other professions) = 363	
Students	L 1,682 + B 752 + L 9 + N 451 + V 47 = 2,941	
Teacher education for 1-7/5-10 (GLU)		
Campuses	Levanger, Nesna, Bodø, Vesterålen	
Staff (FTE)	B 32 + L 52 + N 19 = 103 (45 + 82 + 30 = 157 persons)	
Students	B 231 + N 111 + L 410 = 758	
Remarks		
<p>NOR provides professional and academic education for teaching, health & social work, ICT, management, social and natural science, humanities, and a wide range of other areas. About one fourth of its students pursue a teacher education.</p>		

Based on data for 2016 from DBH, NOKUT, nord.no.

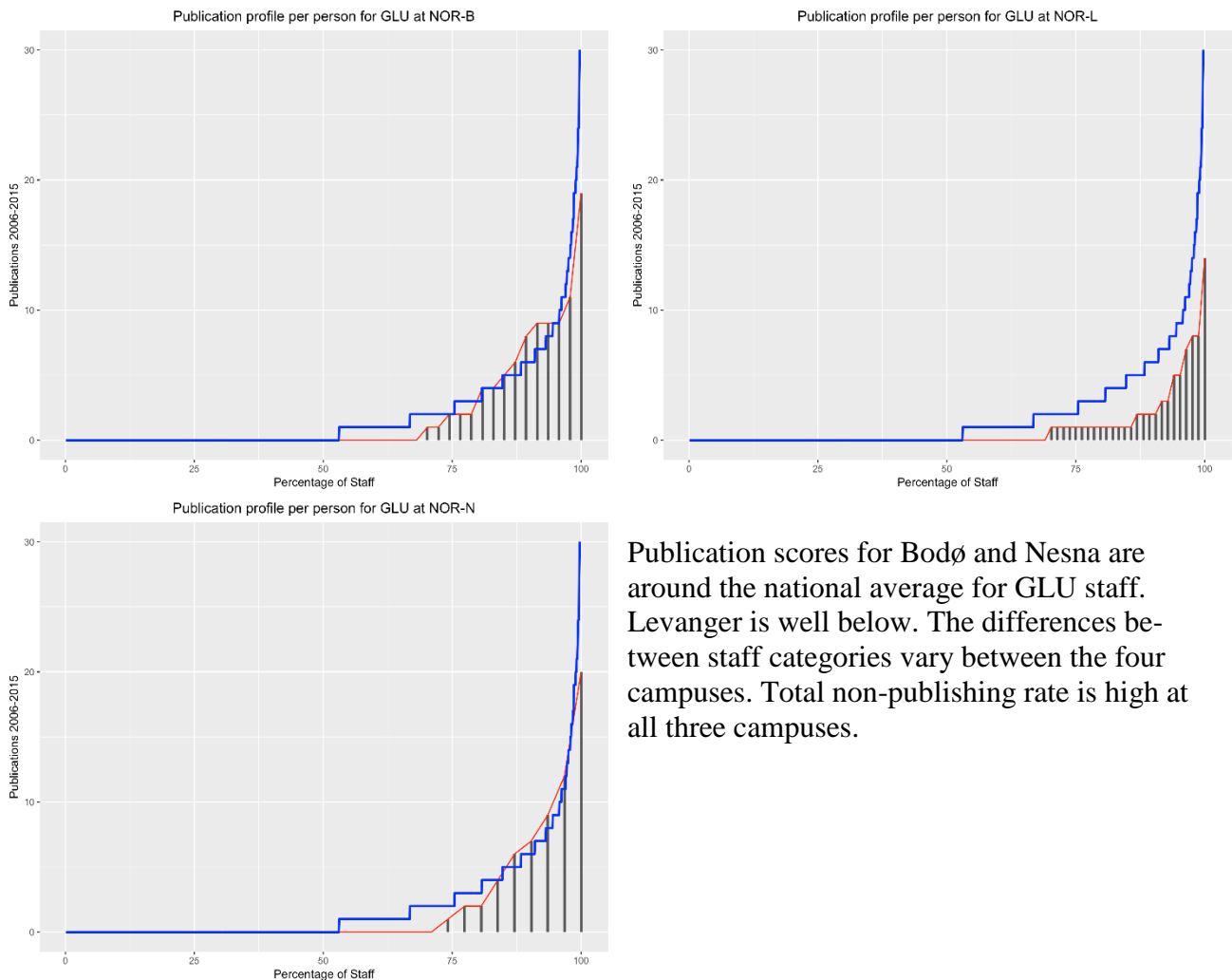
Nord University is one of the newer universities. The Faculty of Education and Arts has an education profile with teacher education and art and cultural subjects in the centre. The Faculty was formally established January 1st 2017 after the restructuring at Nord University. The Faculty of Education and Arts is the largest faculty of North University, and is responsible for a large offer of bachelor, master and PhD studies. The research at the faculty is related to the teacher profession and art and cultural subjects with themes such as flexible learning, the teacher as cultural bearer, special needs education, didactics of mathematics and mathematics education and literacy. The Faculty has 3346 students divided into four campuses, Vesterålen, Bodø, Nesna and Levanger and the teacher training is represented in all campuses. Two full-time campus programs and two for pulsed education.

3.12.2 Prior R&D output

Table 22: R&D output indicators for GLU at NOR

R&D output from current Bodø (incl. Vesterålen) GLU staff	2006-2015	2012-2015
Peer reviewed publications in total	92	50
Peer reviewed publications per person per year	0.2	0.3
Other (outreach) publications on record	129	46
Percentage of current staff with peer reviewed publications	34 %	30 %
Percentage of current professors with peer reviewed publications	71 %	57 %
Percentage of current adjuncts with peer reviewed publications	-	-
Percentage of current associate-level staff with peer reviewed publ.	38 %	33 %
Percentage of current assistant-level staff with peer reviewed publ.	13 %	13 %
Percentage of current other staff with peer reviewed publications	0 %	0 %
Percentage of current staff with > 1 peer reviewed publications/year	5 %	2 %
R&D output from current Levanger GLU staff	2006-2015	2012-2015
Peer reviewed publications in total	75	44
Peer reviewed publications per person per year	0.1	0.1
Other (outreach) publications on record	330	153
Percentage of current staff with peer reviewed publications	32 %	25 %
Percentage of current professors with peer reviewed publications	75 %	62 %
Percentage of current adjuncts with peer reviewed publications	-	-
Percentage of current associate-level staff with peer reviewed publ.	38 %	31 %
Percentage of current assistant-level staff with peer reviewed publ.	27 %	19 %
Percentage of current other staff with peer reviewed publications	15 %	15 %
Percentage of current staff with > 1 peer reviewed publications/year	1 %	0 %
R&D output from current Nesna GLU staff	2006-2015	2012-2015
Peer reviewed publications in total	63	35
Peer reviewed publications per person per year	0.2	0.3
Other (outreach) publications on record	127	85
Percentage of current staff with peer reviewed publications	30 %	27 %
Percentage of current professors with peer reviewed publications	80 %	80 %
Percentage of current adjuncts with peer reviewed publications	-	-
Percentage of current associate-level staff with peer reviewed publ.	33 %	0 %

Percentage of current assistant-level staff with peer reviewed publ.	15 %	15 %
Percentage of current other staff with peer reviewed publications	50 %	50 %
Percentage of current staff with > 1 peer reviewed publications/year	7 %	3 %



Publication scores for Bodø and Nesna are around the national average for GLU staff. Levanger is well below. The differences between staff categories vary between the four campuses. Total non-publishing rate is high at all three campuses.

Figure 13: Publication profile for current GLU staff at NOR

3.12.3 Current resources for R&D

Table 23: R&D resource indicators for GLU at NOR

Resources	Persons	FTEs	FTE for R&D	R&D/person
Total staff involved in GLU	157	103	n/a	n/a
Of which Bodø campus	45	32	n/a	n/a
Of which Nesna campus	30	19	n/a	n/a
Of which Levanger campus	82	52	n/a	n/a
Of which professors	20	15	n/a	n/a
Of which adjuncts	0	0	n/a	n/a
Of which associate professors	37	29	n/a	n/a
Of which assistant professors	88	56	n/a	n/a
Of which other staff	12	4	n/a	n/a

3.12.4 R&D strategies and organization of R&D

The mapping of R&D strategies for Nord University consists of strategy documents from the four different campuses. In the strategy document of the former HiNT (Nesna and Levanger), they aim to become a leading environment in practice-based competence raising through the prioritization of practice- or professional oriented R&D.

The restructuring of Nord University is expected to increase the internationalization in both education and research.

The principles of organizing R&D activities at the department of teacher education at former HINT was build upon an annually internal allocation of R&D resources. This was based on an internal announcement and subsequent treatment, which took into account the priorities and focus areas. The distribution results in the allocation of hours and possible assets to individuals or groups and their projects.

3.12.5 PhD programs

As a part of strengthen the R&D work in the teacher training programme, PhD positions is seen as an important systematic competency raising.

3.12.6 R&D focus areas

Research group at the Faculty of Education and Arts are: "Public health", "Cultural Diversity", "Elementary school research", "Child care research" and "Learning and skills development", "Movement science", "Exploratory working methods", "Music", "Theatre", "South-sami", "NTE", "Outdoor school" and "Trøndelag knowledge".

The purpose of the research groups is that members should support and strengthen each other in R&D work, through ensuring broad participation in research, increased research and relevant research at their department.

Three research centres are connected to the Faculty, namely ""The centre for practical knowledge", "The Norwegian centre for art and culture in education" and "The centre for pedagogical entrepreneurship".

At former HiNT, there were four interdisciplinary research programmes: "Local community and childhood", "Create and manage learning", "Cultural-based community and business development" and "Green industry development".


3.12.7 Discussion

R&D output varies between campuses; Levanger in particular is well below the national GLU average and is not increasing over time. We do not have sufficient data to link this to resources.

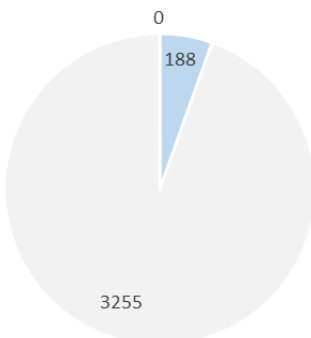
3.13 UiT: UiT The Arctic University of Norway

3.13.1 UiT The Arctic University of Norway and its teacher education

Box 12: UiT at a glance

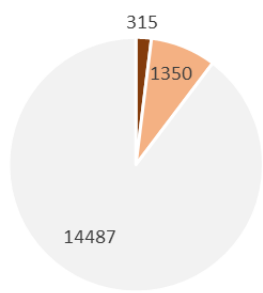
	
Higher Education Institution (HEI)	
Acronym	UiT
Name (Norwegian)	UiT Norges arktiske universitet
Name (English)	UiT The Arctic University of Norway
Category	University
Latest major reorg	2016: Merged with Harstad UC, Narvik UC 2013: Merged with Finnmark UC 2009: Merged w/ Tromsø UC
Geography	Alta, Hammerfest, Kirkenes in Finnmark county; Tromsø, Harstad in Troms; Narvik in Nordland
Staff (FTE)	3,443
Students	16,152
Teacher education (TE)	
Programs	For all levels
Organization	Dept. of teacher education and pedagogics
Staff (FTE)	188
Students	A 380 + H 2 + T 1,283 = 1,665
Teacher education for 1-7/5-10 (GLU)	
Campuses	Tromsø, Alta
Staff (FTE)	n/a (96 persons)
Students	A 50 + T 265 = 315
Remarks	
UiT provides professional and academic education in teaching, medicine, health & social work, social & natural sciences, engineering, ICT, humanities, and a wide range of other areas. About one tenth of its students pursue a teacher education.	

Staff UiT



Category	Count
GLU	0
Other TE	188
Other HEI	3255

Students UiT



Category	Count
GLU	315
Other TE	1350
Other HEI	14487

Based on data for 2016 from DBH, NOKUT, uit.no.

The Arctic University of Norway (UiT), previously called the University of Tromsø, is a medium-sized research university that contributes to knowledge based development at the regional, national and international level.

UiT is the third largest university in Norway and the northernmost university of the world. Its location on the edge of the Arctic implies a mission. The Arctic is of increasing global importance. Climate change, the exploitation of Arctic resources, and environmental threats are topics of great public concern, and which the University takes special interest in. At UiT The Arctic University of Norway you can explore global issues from a close-up perspective.

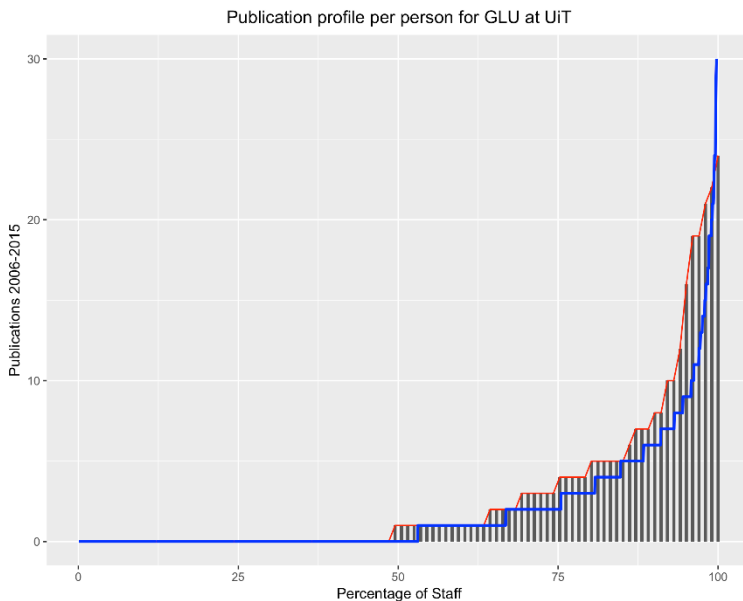
The University of Tromsø has been through three mergers. On the 1st of January 2009 UiT merged with the University College of Tromsø, and on the 1st of August 2013 with the University College of Finnmark. The latest merger was on the 1st of January 2016 with both the University College of Harstad and the University College of Narvik. After the merge UiT has become a multi-campus university spread throughout Northern Norway. The main campuses are located in Tromsø, Alta, Narvik and Harstad, with smaller departments in the towns of Mo i Rana, Hammerfest, and Kirkenes.

Department of Teacher Education and Pedagogy (ILP) have campuses in Tromsø and Alta, and education facilities throughout northern Norway. ILP is one of Norway's largest communities with in pedagogy and teacher education. The Institute has approximately 2000 students and a broad set of educational programs; Teacher education for kindergarten, elementary school and high school, bachelor and master of pedagogy, bachelor and master of special education, master of logopedia, experience-based master in educational management and practical pedagogical education.

3.13.2 Prior R&D output

Table 24: R&D output indicators for GLU at UiT

R&D output from current GLU staff	2006-2015	2012-2015
Peer reviewed publications in total	289	150
Peer reviewed publications per person per year	0.3	0.4
Other (outreach) publications on record	594	286
Percentage of current staff with peer reviewed publications	51 %	45 %
Percentage of current professors with peer reviewed publications	94 %	83 %
Percentage of current adjuncts with peer reviewed publications	-	-
Percentage of current associate-level staff with peer reviewed publ.	79 %	71 %
Percentage of current assistant-level staff with peer reviewed publ.	24 %	20 %
Percentage of current other staff with peer reviewed publications	44 %	33 %
Percentage of current staff with > 1 peer reviewed publications/year	9 %	3 %



Publication scores are somewhat above the national average for GLU staff. Scores for professors are about four times the scores for assistant professors. Total non-publishing rate is around average.

Figure 14: Publication profile for current GLU staff at UiT

3.13.3 Current resources for R&D

Table 25: R&D resource indicators for GLU at UiT

Resources	Persons	FTEs	FTE for R&D	R&D/person
Total staff involved in GLU	101	n/a	n/a	n/a
Of which professors	18	n/a	n/a	n/a
Of which adjuncts	0	n/a	n/a	n/a
Of which associate professors	24	n/a	n/a	n/a
Of which assistant professors	54	n/a	n/a	n/a
Of which other staff	5	n/a	n/a	n/a

3.13.4 R&D strategies and organization of R&D

In recent years, the department has strengthened itself through participation in national research schools and has been awarded the first SFU (Centre for Outstanding Education) in Norway (in a consortium with UiO); ProTed Center for outstanding teacher education. SFU is awarded to research-communities that already demonstrate excellent quality and innovative practice in education. The reason why ILP through ProTed has been awarded as SFU was, among other things, that the institutes' early development of five-year integrated teacher education for primary and secondary schools, and for the establishment of university schools.

On the other hand, ILP needs to develop expertise in successfully gaining funds from research programs in both Norway and the EU, as well as increasing the publishing rate (publication points per academic year). ILP has been through several comprehensive mergers and is in the process of consolidating and developing a robust educational discipline for the region. ILP aims to be a visible and relevant academic environment that makes a difference (the HSL faculty's vision) in terms of educational education and research both regionally, nationally and internationally.

University schools are new in Norway, and the project has helped to establish a new standard for practice in teacher education at ILP. The project has tried out new forms of collaboration between universities, municipalities, and schools that have been perceived as innovative and useful. In addition, the project has helped to integrate studies, practices and research in a way that correlates with the Ministry of Education's ambition that Norwegian teacher education should help create a new role in teaching. Teachers taught at the UiT are trained in strategies that make them prepared to change and develop Norwegian schools.

The Department of Teacher Education and Education (ILP) has developed a plan of action for 2014-2017, based on the strategic plan of the UiT Norwegian Arctic University 2014-2020 and the Faculty of Humanities, Social Sciences and Teacher Education 2014-2017.

ILP's main occupation is teaching-, research-, innovation- and developmental-activities in the field of teacher education and pedagogy. The institute cooperates both locally, regionally, nationally and internationally, with a particular relevance for cooperation with kindergartens, schools, municipalities / counties and county governors in the region.

One of the strategy decisions at UiT is to have nationally leading teacher education and become a national leader in practice-oriented study of professions. Primary and General objectives for ILP is:

- ILP will be a robust research environment with a relevant research profile
- ILP will strengthen the relationship between research and education at the Institute.
- ILP will take a place locally and nationally as an attractive environment for students and employees

This will be achieved through the following priority areas:

- Research Groups
- Professional field of focus / professional profile
- Internationalization
- PhD degrees
- Communication and competence building

3.13.5 PhD programs

Insufficient data available at the time of data collection.

3.13.6 R&D focus areas

ILP (Department of Teacher Education and Pedagogy) has several research groups related to teacher education:

- School development and educational management
- Language and society
- Didactics of mathematics and the natural sciences (campus Alta)
- Inclusion and adapted teaching
- Teacher training in times of change
- Didactics in mathematics
- Dissemination of the natural sciences and ICT in a northern area perspective
- Education, society and upbringing
- Counselling




3.13.7 Discussion

R&D output records are above the national GLU average and the Centre for Outstanding Education is a mark of distinction for teacher education in Tromsø. We do not have sufficient data to link it with resources.

3.14 SAM: Sámi University of Applied Sciences

3.14.1 Sámi University of Applied Sciences and its teacher education

Box 13: SAM at a glance

 Sámi allaskuvla <small>Sámi University of Applied Sciences</small>		<p>Staff SAM</p>  <p>■ GLU ■ Other TE ■ Other HEI</p>
Higher Education Institution (HEI)		
Acronym	SAM	<p>Students SAM</p>  <p>■ GLU ■ Other TE ■ Other HEI</p>
Name (Norwegian)	Samisk høgskole	
Name (Sápmi)	Sámi allaskuvla	
Name (English)	Sámi University of Applied Sciences	
Category	State university college	
Latest major reorg	2005: Merged with Nordic Sámi Institute	
Geography	Kautokeino in Finnmark county	
Staff (FTE)	98	
Students	188	
Teacher education (TE)		
Programs	For kindergarten, primary and lower secondary school	
Organization	Dept. of duodji & teacher education	
Staff (FTE)	15	
Students	65	
Teacher education for 1-7/5-10 (GLU)		
Campuses	Kautokeino	
Staff (FTE)	20 (27 persons)	
Students	14	
Remarks		
<p>SAM is directed primarily towards the indigenous sámi culture. It provides professional education for teaching, arts, language, reindeer husbandry, and other areas. About one third of its students pursue a teacher education.</p>		

Based on data for 2016 from DBH, NOKUT, samas.no.

Sámi University of Applied Sciences is primarily directed towards fostering Sámi culture and language.

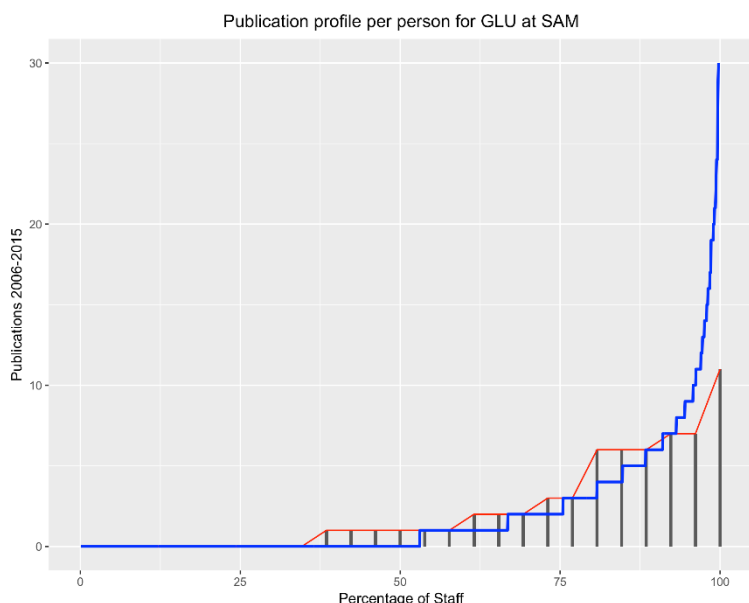
The Department of Duodji and Teacher Education is in Sámi language and is only offered at the Sámi University of Applied Sciences. The programs are given both online and by gatherings. The department plan to establish a master program in pedagogics in connection with the Sámi teacher education. Sámi research is promoted as an integral part of the indigenous research.

14 students were admitted to the GLU study programs once they were established in 2014.

3.14.2 Prior R&D output

Table 26: R&D output indicators for GLU at SAM

R&D output from current GLU staff	2006-2015	2012-2015
Peer reviewed publications in total	61	32
Peer reviewed publications per person per year	0.2	0.3
Other (outreach) publications on record	164	73
Percentage of current staff with peer reviewed publications	68 %	52 %
Percentage of current professors with peer reviewed publications	100 %	100 %
Percentage of current adjuncts with peer reviewed publications	50 %	50 %
Percentage of current associate-level staff with peer reviewed publ.	88 %	75 %
Percentage of current assistant-level staff with peer reviewed publ.	44 %	11 %
Percentage of current other staff with peer reviewed publications	33 %	33 %
Percentage of current staff with > 1 peer reviewed publications/year	4 %	0 %



Publication scores are somewhat below the national average for GLU staff. Scores for professors are between two and nine times the scores for assistant professors, depending on the time scale. Total non-publishing rate is low.

Figure 15: Publication profile for current GLU staff at SAM

3.14.3 Current resources for R&D

Table 27: R&D resource indicators for GLU at SAM

Resources	Persons	FTEs	FTE for R&D	R&D/person
Total staff involved in GLU	27	20	6	0.23
Of which professors	5	4	1	0.23
Of which adjuncts	2	1	0	0.00
Of which associate professors	8	8	3	0.35
Of which assistant professors	9	6	2	0.19
Of which other staff	3	2	1	0.17

The allocated time for R&D is fairly evenly distributed between staff categories. This seems to be in line with prior publication output.

3.14.4 R&D strategies and organization of research

Insufficient data available at the time of data collection.

3.14.5 PhD programs

A PhD program in pedagogy is offered in cooperation with universities in Tromsø, Oslo, Trondheim, Oulu, Rovaniemi, Uppsala, Umeå, and St. Petersburg. PhD candidates usually spend their time at the Sámi University. In the strategy plan, strengthening of the framework for successful implementation of PhD projects is emphasized as an important strategic priority.

3.14.6 R&D focus areas

Insufficient data available at the time of data collection.

3.14.7 Discussion

Publication scores are somewhat below the national GLU average but slowly rising. Available resources are in the middle range.

3.15 Closing remarks on activities and outputs

The average number of publications per person (not FTE) and year varies between the GLU milieus, from 0.1 to 0.4 (and a single outlier at 0.6). Obviously there is also a great variation within each GLU milieu. The share of GLU staff that have not published (peer review) varies between around 30 per cent and 70 per cent. We expect there is some correlation with the composition of staff in these latter figures.

We do not have time allocation figures for all GLU milieus but the typical average figures of 15 to 20 per cent of a full time position seem somewhat low, particularly if the goal is to increase R&D activity and output. We expect that external funding may alleviate some of this.

For those GLU milieu where we have sufficient data, research groups are listed, and some institutions also have displayed a number of organizational, motivational, and financial measures to improve the situation. There may be some room for learning across GLU milieus what measures work well and under what conditions.

4 Thematic concentrations

4.1 Introduction

All GLU milieus cannot excel at everything and they also specialize to some degree. Even though R&D is frequently driven by personal interests, some concentrations at the level of individual GLU milieus can be expected. Furthermore, much R&D is driven through national and international networks, which means that concentrations and specialization may just as well be found between HEIs as inside them. In this chapter we will be looking at the footprint of GLU R&D from three angles: we will

- characterize the journals most popular for publication
- look at co-publication networks within different fields of study
- look briefly at the position of GLU milieus on the scene of R&D funding of GLU related topics from the Research Council of Norway.

4.2 Output concentration

In Table 28 below, we list the peer reviewed journals that appear most frequently in the GLU publications in our study (2006-2015).

Table 28: Most popular journals for GLU publication

Rank	Journal Name	N
1	Norsk pedagogisk tidsskrift	150
2	Acta Didactica Norge - tidsskrift for fagdidaktisk forsknings- og utviklingsarbeid i Norge	68
3	Tidsskriftet FoU i praksis	67
4	Nordisk matematikdidaktikk	46
5	Scandinavian Journal of Medicine & Science in Sports	45
6	Scandinavian Journal of Educational Research	41
7	BMC Public Health	39
8	Spesialpedagogikk	37
9	International Journal of Behavioral Nutrition and Physical Activity	37
10	Prismet	36
11	UNIPED (Tromsø)	36
12	Public Health Nutrition	34
13	International Electronic Journal of Elementary Education	31
14	Scandinavian Journal of Public Health	31
15	Sámi dieđalaš áigecála	31
16	Nordic Journal of Digital Literacy	29
17	Teaching and Teacher Education : An International Journal of Research and Studies	28
18	Nordisk Barnehageforskning	28
19	Nordic Studies in Education	28
20	Heimen	27

The five journals marked in light blue are essentially health oriented. Those marked in light green (four) cover a specialized domain within teaching. The remaining 11 journals have a wider span of teaching or general interest.

It turns out, in fact, that nearly half of the peer reviewed GLU staff publications have a medical or health orientation, and a cursory look suggests that they may be more relevant to promoting health than to promoting education. It has been outside the scope of this study to look deeper into this and see how it influences the interpretation of the figures that we have harvested and calculated.

4.3 Cross-institutional co-publication in various fields

In order to get a picture of R&D co-operation between GLU milieus, we have looked at co-publishing across organizational boundaries. Within each HEI, we used the rosters to tag GLU staff with the field of study with which they were chiefly associated. The fields in question were mostly subjects that they would be teaching students, ranging from mathematics to pedagogics. From the 2006-2015 publications dataset, we then identified peer-reviewed publications that each person had authored or co-authored. For co-authored publications, we identified the HEIs (or other institutions) to which the other authors belonged. We then used social network analysis software (Gephi) to draw a network between all institutions involved in these publications. Each organization is a node in the network, its size in the network graph is proportional to its number of publications within the field in question. The thickness of the connections between the institutions in the graph is proportional to the number of co-authored publications in the field in question. We have displayed the resulting networks for the eight most prominent fields of study in Figure 16 below, removing all nodes connected by less than five publications in order to reduce clutter.

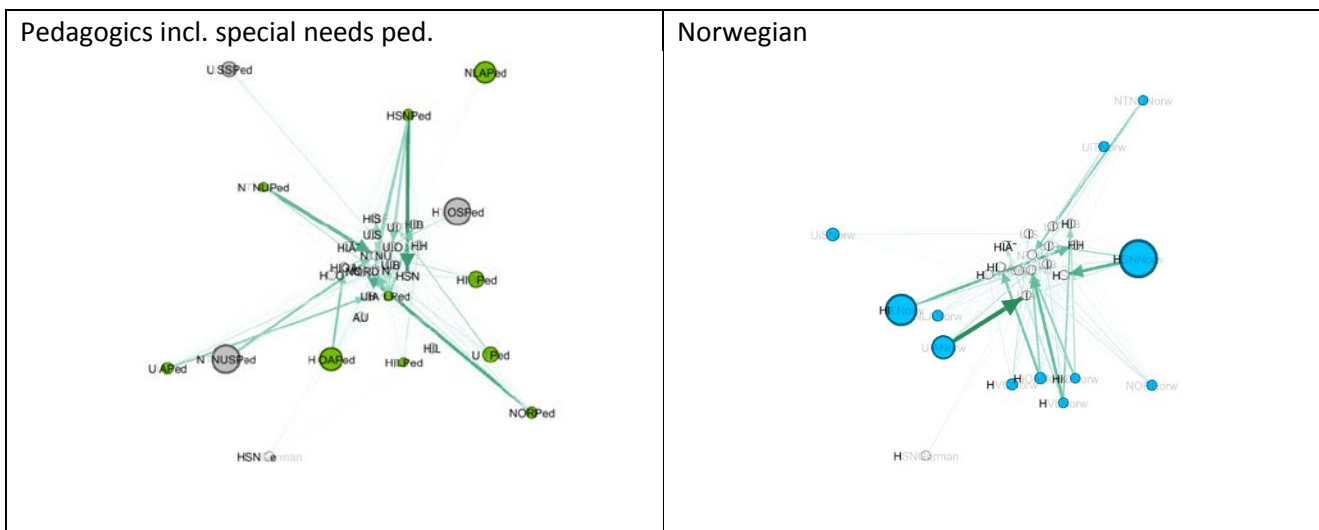




Figure 16: Co-publishing networks in eight GLU teaching fields

There are distinct differences between the eight fields, in terms of dominance, total density of connections, and more. However, the most striking feature is common to them all: There is very little co-publication between GLU milieus. (This would have been visible by connections between nodes of the same colour.) Practically all co-publication outside one's own GLU milieu takes place with non-GLU milieus. There is also a tendency to co-publish with non-GLU personnel at the same HEI. This could be a sign of collaboration with specialized research units that many HEIs harbour.

4.4 External R&D project funding from the Research Council of Norway

The current program for R&D research is FINNUT (R&D and innovation for education). In its list of currently funded projects related to primary and lower secondary school, we find the following 19 projects.

Table 29: GLU related projects in FINNUT

Project title	Partner org	GLU milieu
Special education: ... (SPEDU-EFFECT)	NTNU Social research	
Preventing and improving special needs education ...	UiO	
Language use and development in the mathematics classroom	NTNU	v
På Sporet	UiS	
Down Syndrome Language Plus	UiO	
Long-term effects of school-wide intervention ...	Frisch centre	
Practices of data use in municipalities and schools	HiOA	
Supporting shy students	UiO	
The function of special education	HVO	v
Local culture for understanding mathematics and science (LOCUMS)	NTNU	v
RESPONS	UiS	
Klasseledelse - teori til praksis	UiS	
Responsiv undervisning i matematikk på ungdomsskolen ...	HVL	v
Lederskap i skolen - lov og regler og profesjonell dømmekraft	UiO	
Valuing the past, sustaining the future: ...	NTNU	
RUR-ED Stedlige ulikheter og stedlig rettferdighet i utdanning	UiT	v
Pedagogisk måling i det 21. århundre: ...	UiO	
Tracing learning outcomes across policy and practice (LOaPP)	HSN	v
Heterogenitet i internasjonale undersøkelser: ...	UiO	

Six of the 19 projects are co-ordinated from GLU milieus. Since many of the projects include many people, it is quite possible that GLU staff participate in other projects as well, possibly (although rarer) in projects managed outside their own HEI.

We expect the ongoing evaluation of education research in Norway, under the auspices of the Research Council of Norway, will also comment on the linkages between teaching and R&D in GLU milieus and related parts of teacher education.

5 References

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Ekspertgruppa om lærerrollen (2016): *Om lærerrollen. Et kunnskapsgrunnlag*. Bergen: Fagbokforlaget.

Finne, Håkon, Heidi Jensberg, Bjørg Eva Aaslid, Halvdan Haugsbakken, Ida Holth Mathiesen and Siri Mordal (2011): *Oppfatninger av studiekvalitet i lærerutdanningen blant studenter, lærerutdannere, øvingslærere og rektorer*. Trondheim: SINTEF Teknologi og samfunn, Innovasjon og virksomhetsutvikling.

Finne, Håkon, Siri Mordal and Trine Marie Stene (2014): *Oppfatninger av studiekvalitet i lærerutdanningene 2013*. Trondheim: SINTEF Teknologi og samfunn, Regional utvikling.

Finne, Håkon, Siri Mordal and Eli Fyhn Ullern (2017): *Oppfatning av kvalitet i lærerutdanningene 2016*. SINTEF Teknologi og samfunn.

Hyllseth, Berit (2001): *Forskningsbasert undervisning*. Norgesnettrådets rapporter Oslo: Norgesnettrådet.

NOKUT (2006a): *Evaluering av allmennlærerutdanning i Norge 2006. Del 1*. Oslo: Nasjonalt organ for kvalitet i utdanningen.

NOKUT (2006b): *Evaluering av allmennlærerutdanning i Norge 2006. Del 2*. Oslo: Nasjonalt organ for kvalitet i utdanningen.

6 Appendices

6.1 Roster data

NOKUT has provided publicly available documents that contain data on individuals working at the various GLU milieus, their job titles (positions), the organizational unit to which they belong, their planned or actual contribution to GLU programs in qualitative terms (what subject areas) and quantitative terms (how much time spent on teaching, research, and other tasks). The level of detail, the degree of completeness, the internal consistency, and the format of these data have varied somewhat. We have constructed a roster with the aforementioned variables, based on this information, homogenizing it as much as reasonably possible without requesting more data from the HEIs themselves. We have not included individuals with less than 10 per cent of their time allocated to GLU.

Many HEIs have campuses where they do not provide GLU programs. Whenever we have found GLU people listed as belonging to non-GLU campuses, we have re-assigned them to the nearest one. This involves only a very small number of individuals.

We have recoded job positions according to the following table.

Table 30: Assignment (grouping) of positions

Position category	Positions
Professor	Professor
Adjunct position	Førsteamanuensis II, Professor II
Associate Professor	Associate professor, Førsteamanuensis
Assistant Professor	Assistant professor, Førstelektor, Høgskolelektor, Universitetslektor
Other	Dosent, Dosent emeritus, Høgskolelærer, Instituttleder, Postdoktor, Professorløp, Rådgiver, Stipendiat

The three first positions indicate a formal researcher qualification. Some individuals in the two remaining categories may also be formally qualified. When one person is listed with more than one position in the data, we have chosen the one that indicates a permanent job over a qualifying position. This involves a small number of individuals.

Table 31: Time usage allocation

GLU milieu	N	Unique N	Total FTE	Total Teaching	Total Research	Mean±SD FTE	Mean±SD Teaching	Mean±SD Research
HIØ	146	98	40.55	26.75	12.25	0.28±0.14	0.18±0.09	0.08±0.06
HiOA	210	134	95.16	57.65	26.98	0.45±0.22	0.27±0.13	0.13±0.08
INN		98	57.?		23.?			0.24±?
HSN	244	236	n/a	n/a	n/a	n/a	n/a	n/a
UiA	145	135	n/a	n/a	n/a	n/a	n/a	n/a
UiS	116	60	45.3	n/a	n/a	0.39±0.19	n/a	n/a
NLA	118	71	30.2	20.94	9.26	0.25±0.20	0.18±0.14	0.08±0.07
HVL	291	288	170.7	112.67	45.04	0.59±0.31	0.39±0.20	0.15±0.10
HVO	131	81	39.09	22.34	15.24	0.30±0.15	0.17±0.09	0.12±0.07
NTNU	181	164	123.3	72.25	54.35	0.68±0.36	0.40±0.20	0.30±0.23
NOR-B	47	47	31.6	n/a	n/a	0.67±0.31	n/a	n/a
NOR-L	84	84	52.1	n/a	n/a	0.62±0.33	n/a	n/a
NOR-N	31	31	19.2	n/a	n/a	0.62±0.32	n/a	n/a
UiT	102	96	n/a	n/a	n/a	n/a	n/a	n/a
SAM	86	27	20.26	13.55	6.15	0.24±0.18	0.16±0.13	0.07±0.06

Data source: Extracted and calculated from material provided by NOKUT. n/a = not available.

N is higher than Unique N because many individuals contribute to different parts of the GLU programs. The planning and reporting practices vary between HEIs; the N may therefore not be comparable between them. FTE is full time equivalents (or percentages of a full job) for each person's assignment to GLU tasks. Total FTE includes teaching, research, and other (administration etc; this is not listed), summed over all individuals. Mean±SD is the mean value and the standard deviation for FTE assignments for all the people on the roster for the GLU milieu in question.

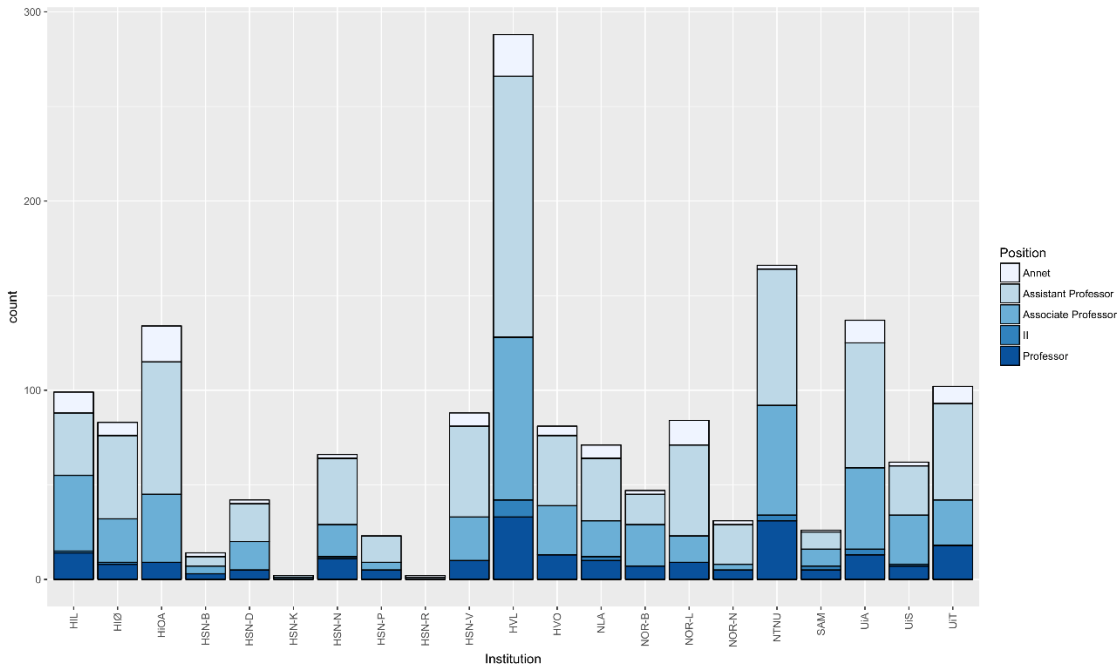


Figure 17: Total staff per GLU milieu and category

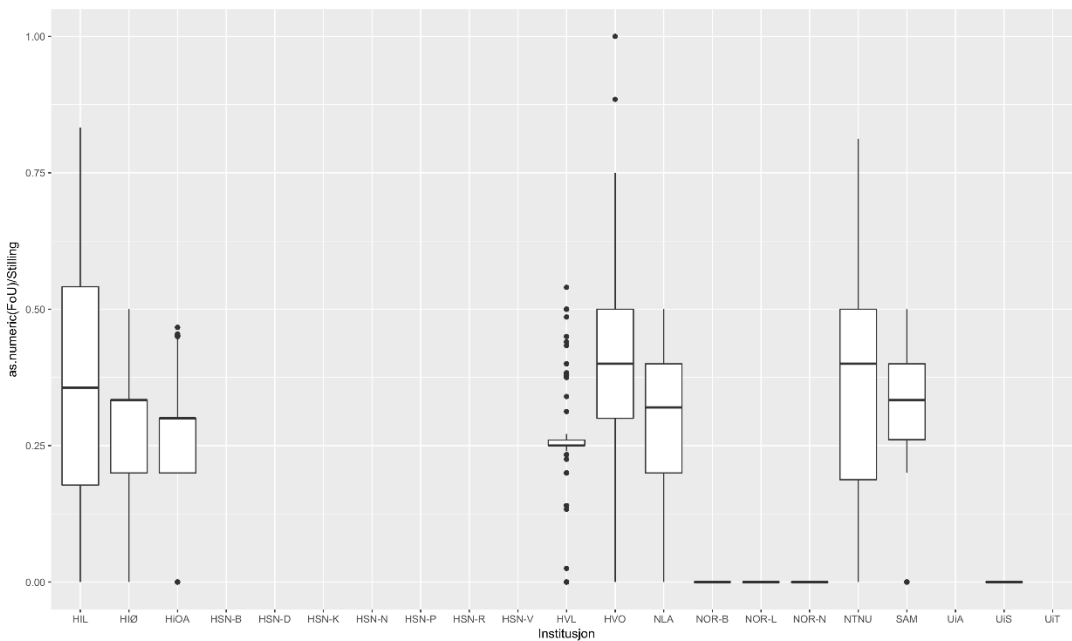


Figure 18: Distribution of R&D time allocation

6.2 Publication data

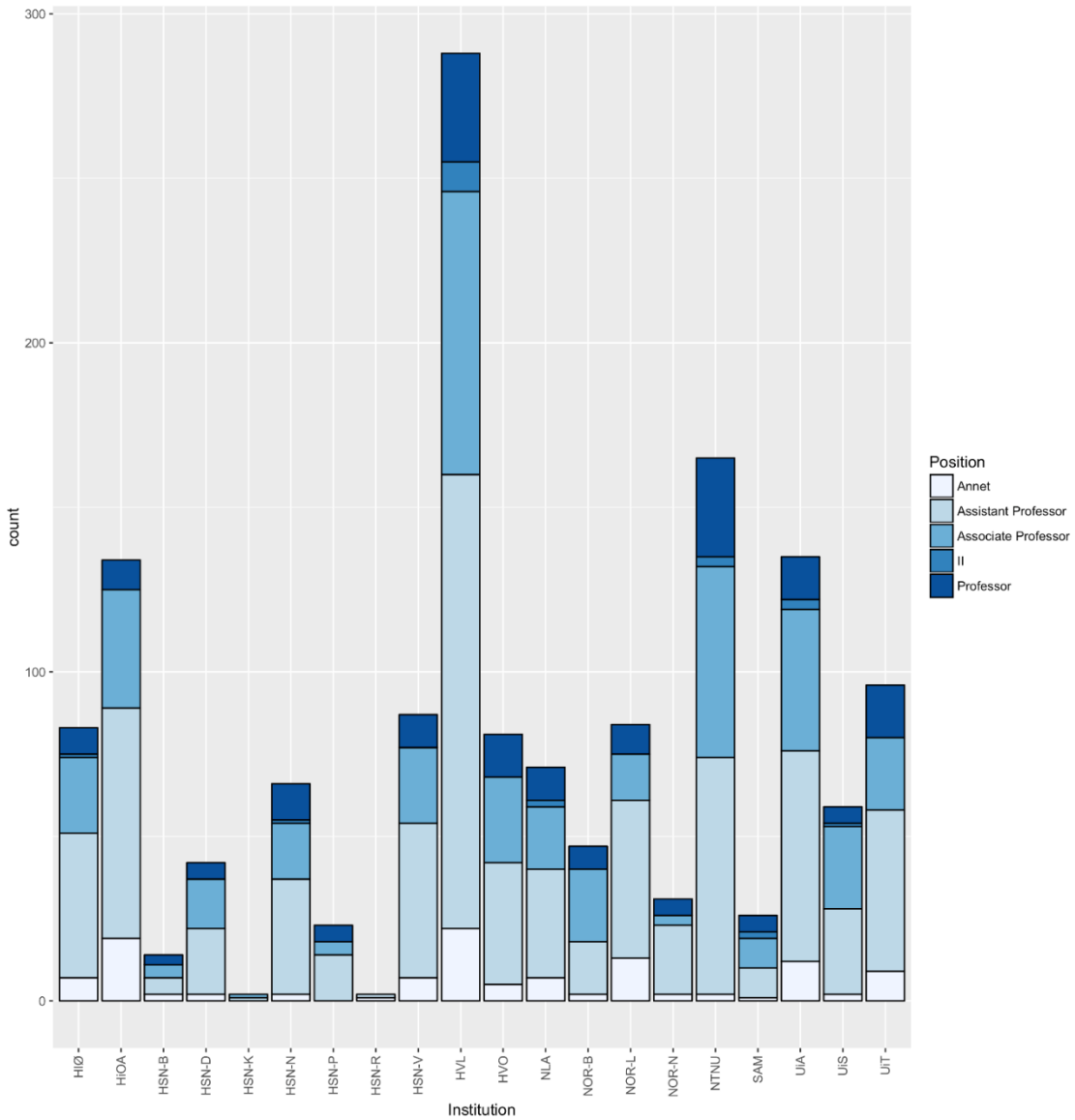


Figure 19: Total peer reviewed publications for current GLU staff 2006-1015

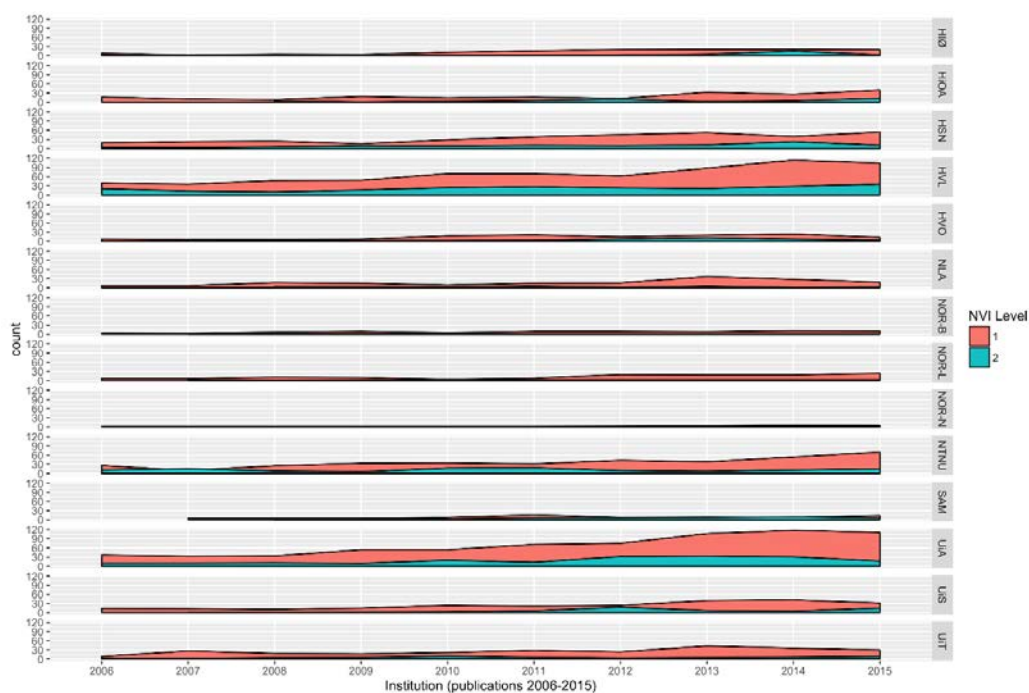


Figure 20: Peer reviewed publications per GLU, over time¹¹

6.3 Terminology

Table 32: Select terminology

Norwegian	English	Remarks
organizational terminology		
fakultet	faculty	Neither the Norwegian terms nor their translation is standardized. Some HEIs have more levels of organization than others. We have standardized on department as the basic unit, which in large HEIs typically are grouped in faculties.
avdeling	division	
institutt	department	
gruppe	group	
types of study		
akademisk, frie studier	academic, academic study	Professional studies lead directly to formal or actual certification for performing a profession (teacher, nurse, ...). The adjective professional is used in this sense and not as an antonym of unprofessional, but rather as a distinction from academic. Professional research, then, is research (and development) aimed at understanding or improving professional practices. Vocation(al) is conventionally interpreted as relating to work without requirements for a higher education.
profesjon, profesjons-	profession, professional	
yrke, yrkes-	vocation, vocational	
teacher education specific terms		

¹¹ NVI levels affect publication points (2 = highest level).

Norwegian	English	Remarks
studieprogram, program	study program, program	A program is much more general than a study program. GLU 1-7 and GLU 5-10 are separate study programs, taught according to criteria determined by the state
naturfag, naturvitenskap	(natural) science	
KRLE	KRLE	Christianity, religion, philosophy, ethics
rådgiving	counseling, mentoring	
utdanning	education	
opplæring	training	
miscellaneous		
n/a	n/a	not available or not applicable, depending on context



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