



Centre for Professional Learning in Teacher Education

Annual report for 2014



UiT / NORGES ARKTISKE
UNIVERSITET



UiO
Universitetet i Oslo



Centre of
Excellence in
Education

Note: This report is based on the original template in Norwegian. We have translated the items specified in the template into English. Where applicable, we report by referring to ProTed's five developmental areas (or work packages - WPs) in order to make visible the results as specifically as possible.

1. Summary

The overarching goal for the Centre for Excellence in Teacher Education (ProTed) is to develop designs for research based, integrated teacher education for knowledge based practices. After three years of existence, 2014 can be summarized as a phase 3 for ProTed. The first year (2012) was devoted to establishing the organization, establishing communication routines between the two universities, and instigating a series of projects (approx. 20). However, it soon became clear that starting projects is easy compared to maintaining them and gathering data as to how they benefit the overall aim of the center (see below). Thus, the second year (2013) focused more on anchoring the center at both universities and consolidating the work. Also, there was a marked increase in demands for communicating ProTed's results and contributions (see last year's report for an overview of presentations). In many ways, 2014 can be seen as a phase when ProTed started to synthesize findings from the various projects, terminating some of them, and starting a series of new and innovative projects (see sections on WPs below for details). There are no serious deviations from original application and plans regarding the center's vital activities and collective thrust. However, we see more ambitious and innovative approaches in our projects today than was envisaged in the original application. In WP 4 (implementation, staff development), we have agreed on a re-orientation. This is explained in more detail in the body of this report, and can also be found on the center's web pages. The annual report demonstrates that ProTed has a very high activity, and makes progress on a lot of fronts. Also, our work has become even more relevant as the five-year integrated master programs since June 2014 have become the standard model for all teacher education programs from 1-13. This implies that the national MA-pilot for teachers in elementary and lower secondary school in Tromsø will have an increased national interest in the years to come. We argue that the most important development in 2014 has been to operationalize and document how *integration* can be achieved in teacher education. A profile of the center's work in 2014 can be summarized in the following bullet points, which will be elaborated below in separate sections:

General results:

- The most striking development is how the center has become an integrated developmental unit at the two departments (ILS and ILP) that serve as the host institutions. The center serves as a network/cluster or 'moving mosaic' that increasingly involves more staff.
- At UiO, ProTed initiated important collaboration between ILS and faculties involved in the five-year masters courses. The aim is to develop models for MA theses where student teachers who opt for a discipline-specific thesis (and not a subject-didactic one) can combine this with their 15 days of placement practice. We believe this is quite a landmark in integrated models.
- At UiT the students in the pilot of the master degree program started on their master thesis autumn 2014. The focuses in their thesis and the University Schools' interests in and willingness to facilitate the students' work show that the intended design for integration seems functional. The chosen themes for the students' master thesis are of highest relevance for teachers in elementary and lower secondary schools.
- We have succeeded in involving students in ProTed's work to greater extent than before. Piloting new designs for teacher education have implied an extended involvement of students on a regular basis. Formal as well as project based. The many development projects, especially dialogue seminars, involve large a number of students. Two examples worth mentioning are The Innovation Seminar at UiT and a planned meeting (January 2015) with the student teachers' interest organization at UiO. Student teachers from UiT also wrote an article in *Aftenposten* arguing for a design of a holistic integrated master degree program.

- There is continued, fruitful collaboration with a series of national partners, in particular the National center for ICT in education and the Knowledge Center for Education. We have also continued cooperation with international partners (SAC) and together developed an application to Erasmus+ Strategic Partnership during the spring. Both the national and international collaboration will continue to grow into 2015 as well.
- We have conducted widespread, external activities as part of the center's national responsibility (see overview in later sections of the report). However, this is also very taxing and time consuming. One marked tendency is that representatives from the center are consulted on policy issues by e.g. The Norwegian Directorate for Education and Training, Union of Education, The Norwegian Association of Higher Education Institutions etc.
- ProTed participants have been very active at conference presentations, are often invited to meet with actors in the field of teacher education, and ProTed continues to be approached by other institutions, in Norway as well as beyond. The work with a ProTed anthology disseminating the center's results on teacher education designs has continued, and a seminar for contributors was arranged. The volume is expected to be published late 2015. See appendix for full list of publications in 2014. The FaceBook page continues to be the most effective communication medium with approx. 600 followers.

Results applicable to the separate WPs:

- **WP1:** ProTed has been involved in 10 projects, now yielding systematic knowledge about how integrated teacher education can be achieved and further developed through innovative and creative approaches to the scientific subjects taught at the universities. This is a valuable knowledge base for the center (and beyond). During the spring term 2014 ProTed arranged a synergy seminar where 10 projects presented their work innovative tuition, a summary and some projects will find their way into the anthology planned for 2015.
- **WP2:** We have developed the concept of university schools further. Here, integration materializes at the interface of higher education and a specially prepared practice field. In the fall term 2014 we arranged a national conference on the topic. This was followed up by a one-day working seminar for the already existing university schools. The University schools area has developed significantly during the year, and also grown with seven new schools in the Oslo/Akershus region (in total 20), two new in the municipality of Tromsø (in total 8) and projecting for one in connection to the new master degree teacher education program in Alta, which is based on the pilot program at the UiT. From National research council ProTed received NOK 300 000 to develop an application to the FINNUT research program about innovation in professional practice.
- **WP3:** In the wake of reports showing that teacher education does not develop professional digital competence (PDC) among student teachers, we have developed this concept further and published in peer reviewed journals on the theme. We have shown how PDC cuts across several components of the program, thus functioning as yet another type of integrative principle. This is also worked into several new projects and into the masters courses, in particular using a MOOC-like platform to develop professional digital competence and using iPads for student active supervision and mentoring. In Tromsø 2014/2015 is a 'digital year'.
- **WP4:** 2014 has seen the need to further develop organizational structures and developmental arenas for educational leadership and scientific development at the institutions, focusing on information exchange, competence development, and knowledge building related to design and maintenance of integrated study programs. Key elements are documenting reforms, implementation of model elements, and a focus on academic staff development through design for shared knowledge building. Through collective sharing of experiences and knowledge the academic staff in Tromsø is developing the design for the master thesis and qualities in mentoring on a master level.
- **WP5:** During 2014, WP5 has continued the work on quality indicators and design through seminar activity, research and report activity and beginning dissemination. Reports from all major developmental projects have been collected and the information provided through the reports is currently scrutinized and systematized. A systematic compilation of quality indicator

aspects has been developed at UiO. A study of students' knowledge integration during the integrated digital exam has been fulfilled and disseminated through a recent publication. Thus, WP5 pools the various types of integration found in the other WPs into a more holistic design.

There are certain risk factors in the activities listed above. The first is that the sheer number of projects and intensive activities makes the organization fragile. Although many colleagues participate, the relatively small number of people leading the center makes it important to prioritize so that a steady stream of new activities is avoided. We also see a danger of becoming 'event managers' and presenters beyond a sustainable level. Again, this is a result of a mismatch between a great number of tasks and relatively few persons to tend to them all. 2014 brought us realize that our only chance of engaging fully with the total field of teacher education is through alliances with other centers, both SFUs and others. In particular, our collaboration with the Knowledge Center for Education and the National Center for ICT in Education has proved extremely fruitful. Finally, a center that involves two institutions means that decisions have to pass more obligatory passage points and needs to be carefully anchored in both places. This sometimes slows down processes.

In sum, ProTed has had a very busy year where all WPs have produced tangible results. These results add up to a picture where we see what informed, integrated teacher education could look like in practice. We need to carefully assess our high level of activity against the resources we command. There is important work ahead which involves synthesizing and communicating these insights.

In the template for the annual report, the following questions are asked:

- **What measures have been taken, and what are the results and effects of these?**
- **Which measures and activities have had the desired effects?**
- **Which activities have not worked, and what are the lessons learned?**
- **What aims and measures have not been completed? Why have they not been completed and with what consequences?**
 - **In light of this it should emerge how the center has worked with dissemination and how the center has involved others in its activities. In particular, the report should demonstrate the content and the message of the dissemination and at what target groups these efforts have been directed.**

With ProTed's very high activity and great number of projects, we have found it best to respond to these questions in the form of a matrix (enclosed). The matrix consists of four columns: the first revisits the application and identifies the plans and intentions of ProTed, the second lists measures taken, the third documentation, and the fourth identifies results and impact. Also, the matrix shows where plans have been cut short, where measures have not had the desired results, and where original plans have been revised. Note that the matrix is not fully developed; it will be further refined towards the midway self-assessment of ProTed in March 2015. As for the issues of dissemination, this is addressed under item 2.b further down in the annual report.

2. Results in light of application and plans

2a General framework for analyzing results

The main idea and underpinning girder of the center is to exploit apply the collected competencies found in the two universities in order to design future oriented and knowledge based teacher education. Through ProTed, the two universities will utilize their research strengths and broad interface with the practice field in order to continuously develop teacher education. Such development involves making the education of innovative, future oriented and internationally oriented teachers materialize.

The overall aim for the center is to develop integrated teacher education. We define integration as a holistic study design that merges the scientific disciplines, the school subjects, pedagogy, subject didactics and practice in a R&D perspective on teacher education.

In 2014, ProTed has continued to work along the lines drawn up in previous reports and the intentions and plans described in the original application. However, we have made substantial progress, both in terms of establishing new projects and concretizing and summarizing results from existing ones.

ProTed's five prioritized WPs reflect strategies for developing integrated study designs. Although three areas are led from Oslo and two from Tromsø, each developmental area is anchored at both institutions. The five areas contribute to knowledge exchange and activities that 'travel' between the two institutions. For example, the dialogue seminars that involve students, mentors in schools and supervisors from the university was adopted and adapted by UiO. And the new model for digital exams developed at UiO was adopted and adapted at UiT. Such examples point to a great potential for collaboration and knowledge brokering in higher education. Still, there are important but interesting differences between the two teacher education programs. As analytic tools we have developed two different models to visualize how we work with integration in the two teacher educations (Figure 1: UiT - coherence and progression vs Figure 2: UiO - matrix). The models are still under construction and should be considered as objects to think with in order to identify and define integrating elements in our study designs. Thus, in the model from Tromsø, we see how various components are in the process of being systematically and progressively developed and implemented. In the model from Oslo, we see how a matrix model influences the program and how 100 days of practice are inserted in four of the five years. The exciting feature in this model is how in the 9th semester all faculties involved open up for practice also for discipline specific masters theses.

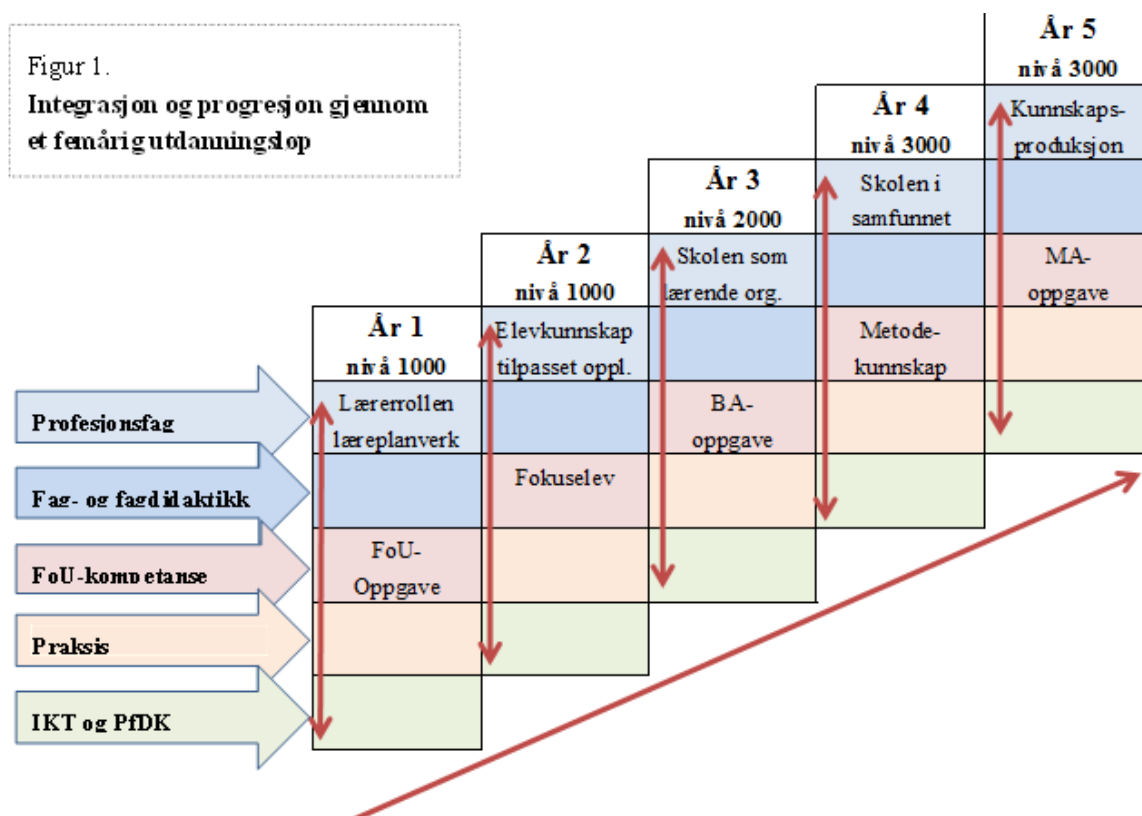


Figure 1: Integrated study design being developed at UiT showing how professional subjects, didactics, R&D competence, practice competence and professional digital competence are progressively developed throughout the program. The models also demonstrate how the different elements within the same year contribute to integrated professional knowledge.





10	Masteroppgave 30 eller 60 stp.			5
9				
8	Fag 1 (10 stp.)	Fag 1 (10 stp.)	Fag 1 (10 stp.)	4
7	Profesjonsfag (30 stp.) 			
6	Fag 1 (10 stp.)	Profesjonsfag (20 stp.) 		3
5	Fag 1 (10 stp.)	Fag 1 (10 stp.)	Fag 1 (10 stp.)	
4	Fag 1 (10 stp.)	Fag 1 (10 stp.)	Fag 1 (10 stp.)	2
3	Ex.Phil (10 stp.)	Fag 1 (10 stp.)	Ex.paed (10 stp.) 	
2	Fag 2 (10 stp.)	Fag 2 (10 stp.)	Fag 2 (10 stp.)	1
1	Fag 2 (10 stp.)	Fag 2 (10 stp.)	Fag 2 (10 stp.)	

Figure 2: Integrated study design at UiO (Humanistic track) involving another faculty and two study subjects plus professional subjects. The stars denote where practice periods occur. R&D basis, student active learning forms, and professional digital competence are currently being implemented, often in collaboration with other faculties responsible for the student teachers' tuition in scientific disciplines.

WP1 Work package 1: subject specific tuition

- WP1 has right from the start had a very high activity with approximately ten projects. This WP aims at researching, developing and documenting subject specific (and subject didactic) tuition in teacher education programs and in close cooperation with the discipline communities at the two universities. The projects aim to promote integration between the scientific disciplines and how these are operationalized in the teaching profession, thus increasing the quality of the teacher education programs. Where the scientific disciplines are driven by research, the school subjects are socio-historical constructions driven by policies. To broker between the two is often very challenging for student teachers. ProTed has continued to work with many of the projects listed in previous reports. However, some have been terminated. At UiT the main challenge when developing the teacher education from a four year to a five year master program has, for the different subjects, been to adjust and develop the tuition to fit the new situation – from a lower to a higher degree. This has been a huge challenge for our academic staff. The vision has been to involve students throughout this process which now has been running for five years.

- Improving math course at MN (UiO)*
Impact: integrating discipline specific and school perspectives. Improving oral presentations of subject. To be terminated in 2015. Short report commissioned.
- The multilingual classroom: teaching for tolerance (UiT)*. A project involving students in their first year introducing the students for classroom observation and data analysis at the university.
- Master course in Language Attitudes (ILN collaborating with UiO)*.
Terminated in 2014 (as planned). Impact on BA paper approaches in Oslo and an example of mutual benefits from collaboration. Report commissioned.
- Involving student teachers in research (UiT)*
The students are introduced to R&D activities from the beginning start of the teacher education. They are directly involved in R&D activities through their BA thesis, based on action research

in partnership with mentoring teachers in practicum schools. There is a progression according to R&D throughout the five-year program ending up in the work with the MA thesis. The MA theses are also school-based, focusing either on pedagogy (1-7) or subject didactics (5-10).

5. *RELEVANT – Conceptual development and reasoning in relativity theory and quantum physics* (MN/UiO)
Impact: The project has been so successful that it was awarded more than 800.000 from the Olav Thon Foundation to continue gathering and analyzing data generated in the project.
6. *Drama pedagogical methods in math teaching* (UiT)
The university teachers in mathematics have revised the curriculum and teaching in the MA-program. This has been so successful that project won the Teaching prize at UiT last year.
7. *Strengthening oral skills in foreign language teaching* (ILOS/UiO).
Pilot finished in 2014. Website in Spanish with sound files further developed. Report commissioned. Use of Adobe Connect in English terminated based on technical complications. However, experience with pilot brought about a renewed focus on orals skills in foreign language, as has been wanted by ILS.
8. *Master course in disseminating History* (IAKH/UiO)
Project finished first digital publication (as planned) 2014. Impact: visualizes student active and innovative approaches to dissemination of domain expertise. Continues.
9. *Development of Biology teaching* (MN/UiO).
Project carried out a survey in 2014. Results to be expected in 2015.
10. *New MA education in the Natural Sciences* (ILP/UiT)
The university teachers in Natural Sciences are working with the development of all aspects of the design of the MA-education. The project covers lectures and seminars, curriculum and obligatory assignments, integration of clinical practice, R&D, and collaboration with other subjects. The students are important partners in the developmental work. The project is inspired by the work of the MA education in mathematics.

At a 'synergy seminar' for WP1, these projects were presented and discussed with the objective of identifying innovative and creative approaches and further develop models for integrating scientific disciplines and school subjects. This is a vital endeavor for ProTed since we know that newly qualified teachers find it difficult to conceptualize abstract and complex disciplines in a language that makes them understandable for young learners. However, it is important to acknowledge the differences between UiT and UiO in this field: At UiT with levels 1-7 and 5-10 the scientific discipline is directly linked to the master programs for primary and junior high school teachers. At UiO the scientific disciplines are offered by cooperating faculties (matrix model). Although this is a substantial difference, we see how the differences also amount to complementary advantages. The observations above are presently worked into a section of the ProTed anthology.

Professor Frøydis Hertzberg who has led WP1 since the start of the center is from 2015 replaced by Associate Professor Kari-Anne Rødnes, ILS, UiO. New co-leader in Tromsø is Magne Olufsen.

Work package 2: university schools and professional practice

A second type of integration is found in WP2. Here integration is linked to the practice field and how the relationship between theory and practice can be made visible and productive, for the schools as well as the universities. A major development is represented by the national conference on university schools and the following day devoted to representatives from the existing university schools engaging in a workshop. The conference also demonstrated our collaboration with the Knowledge Center for Education, as Director of the center, Sølvi Lillejord presented a summary of research on partnerships between schools and universities in teacher education, later published as a separate report. This was followed by a series of presentations from the schools. Finally, Professor Sten Ludvigsen, head of the Future School working group, presented how the group works with issues that will influence schooling as well as teacher education programs, such as deep learning, progression, and 21st century skills. The conference and seminar represents a new stage in the development of university schools. This is further demonstrated by the appointment of 2 new schools in Tromsø and 7 new schools in the Oslo/Akershus region, bringing the total number up to 8 and 20. This expansion followed a survey and

evaluation of the university school project in Oslo. The survey gave positive results, among them that university schools perceived themselves as teacher educators and not just as recipients of them for shorter periods.

In 2014 ProTed got funding from The Research Council of Norway to a pilot study connected to further development of the concept University Schools. The purpose is to develop an application for a research and innovation project framed by the FINNUT program.

The projects in the WP2 have had two main objectives, development of the concept of university schools and to experiment with structures and ideas about cooperation that can enhance integration, knowledge development and quality in the teacher education. The following projects have been important in 2014:

Further development of the university school concept for cooperation with practicum schools at UiT and UiO	The project integrates experiences and knowledge from the others through continued, expanded and intensified contacts. Number of university schools increased in 2014 from 13 to 20 (UiO) and 6 to 8 (UiT).
Bachelor thesis (UiT)	The bachelor thesis is R&D-based and developed within the partnership between university and school. The students are doing smaller developmental projects together with their mentor in the practicum period based on action research. The students disseminate their work to other students, the mentor teachers in school and the university teachers in a seminar.
Dialogue seminars as method in development of the partnership (UiO & UiT)	The dialogue seminars are a meeting place for students, mentors in schools and university teachers, functioning as a tool for innovation in the teacher education. In 2014 the seminars have been broadly used at UiO for all 20 university schools.
R&D projects in the university schools	A range of R&D projects, which assembled contribute to the knowledge about cooperation and partnership. The projects have various aims and participants. Two examples: <ul style="list-style-type: none"> - Focus student. The student teacher observes a learner in school through a year and writes reports, also used for research. - The Math Project. Math teachers in school work with development of their own teaching supervised by teachers from the university.
Development of Intensive Weeks in practice.	Intensive weeks for the student teachers at the university schools. The whole school is engaged in making the student familiar with the work of teachers and the clinical practice in teacher education. The project also covers university teachers both in didactics and in pedagogy.

University schools are demanding in the sense that there will always be many involved and unrealistic expectations may arise. Another important issue is avoiding asymmetry between universities and schools; schools need to be activated as instigators and maintainers of R&D projects, based on the knowledge these schools possess. Thus, university schools have shown that this is a fertile ground for integration theoretical as well as experiential learning. In order to exploit this possibility further, ProTed in Oslo together with ILS will finance a small number of school-initiated R&D projects. Other institutions are currently establishing university schools, and both UiA and NTNU have visited ProTed in order to discuss the concept and its possibilities.

Mentoring in clinical practice is also a focus for WP2. In Oslo, courses in mentoring have been given in the schools for mentoring teachers. The interest has been massive, and the effort had to be doubled. A small project in physical education has been developed in Tromsø: "Together we make the clinical

practice excellent”. The university teachers and the practicum mentors work very close, and follow the students work in the schools in a partnership. The intention is to give the students better conditions for both practical and theoretical learning and development. The feedback and results from mentoring work are very positive.

- Website UiT: http://uit.no/ansatte/organisasjon/artikkel?p_document_id=342555&p_dimension_id=88155&p_menu=182028
- Website UiO: <http://www.uv.uio.no/ils/forskning/prosjekter/universitetsskoleprosjektet/>

Work package 3: Digital learning environments

Major contributions to WP3 in the past year has been in Tromsø to continue to develop our ICT-projects, alongside planning for a more holistic approach through ‘A Digital Year 2015’, and the start of three new projects in Oslo.

At UiT, a holistic approach is put forward as a respond to the challenges related to integration of professional ICT-competences in our new master degree programs. ProTed has taken a central role and suggested a boost in our collegium by having a collective digital year in 2015 and beyond if necessary. The overall intention is to raise quality in the education programs by developing our academic staff and their professional digital competence, develop and define such competence necessary for our student teachers, to work through the coherence and progression in the curriculum (see figure 1) and to upgrade technical facilities for students and staff. The Department of Education has this effort as part of its overall strategy for the period 2014-2020. The spring of 2014 invited the 4th year students at the master degree program all students and staff to take part in a “Innovation seminar” about ICT in the future classrooms. Some of the ProTed-projects at UiT in 2014:

- Study design:
 - Digital exam
- R&D-projects:
 - *Collabosphere*
 - Digital tablets used in supervision of students during practice placements
 - Mapping students competence
- Upgrade technology:
 - FutureLab – a lab for technology based learning and collaboration
 - Digital whiteboard

At UiO using a MOOC-like platform to develop student teachers’ digital competence; developing a flipped model, first piloted by part-time student teachers by using such a MOOC platform; using iPADS to continually monitoring, assessing, and documenting student teachers’ competence when engaging in practice situations. These three projects have been financed by the university’s ICT unit (USIT) as a portfolio on innovative designs for teaching and assessment. The portfolio projects involve collaboration with USIT and the Digital Learning Materials group (DML). All three projects are informed by the work ProTed in 2014 has done to develop and operationalize a model for professional digital competence in teacher education. Based on several reports documenting that such competence is ill-developed and randomly introduced into teacher education programs, we believe this work represents an important milestone. ProTed staff has published two articles and one book chapter on this (see publication list in appendix). This work has generated a lot of interest, also among policy developers, and has been presented extensively. All through this, ProTed has enjoyed a very fruitful collaboration with the National Center for ICT in Education.

The portfolio projects in some more detail:

1. Video based evaluation of students’ practice periods in teacher education
Student teachers use their own video recordings of practice as a foundation for reciprocal feedback and feedback an evaluation from mentors in schools. A pilot was conducted fall 2014.
2. Flipped classroom using a MOOC-like technology.

This project was first piloted in the part-time program in order to intensify work between physical meetings and achieve better coherence in the program. Experiences will inform the integrated master's program. New types of tasks and feedback loops are being developed, along with video sequences.

3. Using MOOC-like technology to foster professional digital competence (PDC) during the five year master program.

Modules with progressive PDC content are integrated into the five year programs, starting spring 2015.

Along these new projects, ProTed has continued to develop and scale up our model for integrated digital exams that involve innovative technical solutions as well as new task designs (see previous reports and <http://www.uv.uio.no/ils/om/aktuelt/aktuelle-saker/2013/digital-eksamen.html>).

The collaboration with the National Center for ICT in Education has involved mapping student teachers' PDC. Both universities have been involved.

Finally, ProTed has funded (seed money) and started collaboration with researchers from iPed (Oslo) on an App called 'Samtavla', a microblogging tool for focused, subject specific plenary talk that can be visualized and shared. To be piloted in a university school and in teacher education simultaneously, spring 2015. This novel approach makes it possible for the teacher to monitor and support shared construction of subject knowledge. The project could just as easily have been listed under WP1, but is listed here since the first step is to assess the technology in use.

Work package 4: studies management and implementation, staff development

According to the application and progress plan, WP4 was to be implemented as from spring 2014. However, it has since the start of the center been developed through a project at UiT on supervising student teachers at MA level in distributed environments. This is an important model, since we expect a severe increase at students at this level as a result of five year programs becoming the norm and challenges in serving large groups of students. Also, the departments (ILS/ILP) have done continuous work on implementing experiences and models from all the projects into their study designs (see previous report for examples). The annual ProTed summer seminars have been instrumental in this respect. This goes to show that within WP4 the boundaries between center and departments are barely visible. This is in line with the way we conceptualize the center as a cluster organization with ideally seamless integration with the total institutional work.

However, as from 2014, we have also re-assessed the original idea in the application and found it to be somewhat lacking as to what the other WPs have taught us so far. We have seen the need to further develop organizational structures and developmental arenas for educational leadership and scientific at the institutions, focusing on information exchange, competence development, and knowledge building related to design and maintenance of integrated study programs. Thus, we address our own teacher educators and how we develop and sustain our professional development to make our own knowledge base more visible. One important step is the cooperation with Stanford and their virtual platform for teacher education (see section on plans for 2015).

There are important differences between the two universities to be observed; the two master programs for primary and junior high levels build on a practical-didactical tradition and where supervision and mentoring at master's level comes across as something new. The 8-13 levels are cross-disciplinary and academic personnel in teacher education must accommodate students with diverse subject specific needs but also common needs. In light of this, teacher educators will have to relate to educational policies and introduction of reforms as well as contributing to such policies and reforms based on recent research and knowledge production. Vital projects within WP4 4 are:

1. Supervision and mentoring of master students at UiT (referred to in the introduction above). Continues based on a model for information exchange, literature studies, diverse types of assessment (individual, collective, digital) aimed at developing supervisors' competence.

2. Structural and conceptual coherence through documentation. By documenting in writing the many reforms and implementation strategies and results at the two institutions, we aim to make visible a shared vision, coherence and common guidelines for teacher educators at the two institutions and for external partners in the sector of teacher education. This work started in 2014 and is ongoing.
3. Building on the point above, develop strategic leadership for transformation through shared knowledge building. Through a strategic plan for staff meetings and seminars, teacher educators at UiO are developing competences for carrying out the various phases of integrated study designs. Related to this is the development of quality assurance and assessment systems in the form of a 'quality map' and a separate organizational map, delegating responsibility to several levels of ILS. The 'quality map' map captures recently introduced elements such as integrated weeks, intensive group practice, dialogue seminars and integrated exam types.

Work package 5: integrated study designs, quality indicators, conceptual framework

During the year 2014, DA5 has continued the work on quality indicators and design through seminar activity, research and report activity and beginning dissemination. The activities listed below inform the ongoing overall work on developing a theoretical and empirical basis for the understanding and description of quality and educational design:

- Reports from all major developmental projects have been collected and the information provided through the reports is currently scrutinized and systematized.
- A seminar has been held to develop a shared understanding of design based on the theoretical positions from the two institutions.
- A systematic compilation of quality indicator aspects has been developed at UiO.
- A study of students' knowledge integration during the integrated digital exam has been fulfilled and disseminated through a recent publication (Vestøl 2014) and through a workshop for teacher educators at UiO.
- A study of quality aspects in teacher education is in process for publication in 2015.
- A study of students' knowledge integration through internship is in process (data analysis).
- Compilation of research results and theoretical perspectives on quality, indicators and educational design is continued.

2b Dissemination

As for dissemination activities and involving others, we include them in the following paragraphs before turning to the results section.

- University school conference and seminar Nov 6-7, 2014, involving schools and the Knowledge Centre for Education. Targeting all in the sector with an interest in integration of schools and academia and innovative partnerships.
- Invitations from a series of policy making organizations and groups, e.g. The Norwegian Research Council, Norwegian Directorate for Education and Training, Union of Education Norway, The Ludvigsen group on the future of school
- Delegations from Norwegian as well as foreign interested parties. These communities seek to elicit insights from ProTed in order to establish related practices, especially our work with university schools.
- Facebook, website, NOKUT SFU magazine. Also, see the list of publications (appendix)

As for the involvement of others, this has particularly been the case for The Knowledge Centre for education, several research groups and projects (TEPEC, Horizon...) The National Centre for ICT in Education, MatRIC Centre of Excellence, the many university schools and student teachers.

In order to complete the picture of dissemination efforts, we enclose the following overview (in Norwegian):

Presentations and dissemination work, spring term 2014:

- 3-5/12/13: Utvikling av læreres digitale kompetanse. Konferansen Eminent arrangert av European Schoolnet. ProTeds bidrag presentert.
- 6/2: ProTed presentert i Forskningsrådets divisjon for helse og samfunn
- 6-7/2: Presentert førsteutkast PfDK fra ProTed. IKT-senteret.
- 10/2: Presentasjon av ProTed på fellesseminar for SFU'er.
- 11/2: Delegasjon fra Chile
- 20-21/2: Presentasjon av ProTeds PfDK, LU-konferansen for UiB (Voss).
- 26/2: Delegasjon fra Göteborg
- 10/3: Møte med delegasjon fra KD
- 12/3: Presentasjon på åpningen av SFU'en MatRIC (UiA)
- 24/3: ProTed om FoU. ILS-personalseminar
- 26-28/3: Presentasjon i Vaasa
- 31/3: Delegasjon fra NTNU om Uni-skoler
- 03/4: Presentasjon på ILN, UiO av UO3 og Veiledning av studentoppgaver vha. screencast-teknologi
- 23/4: Møte med NOKUT. Gjennomgang av virksomhet
- 25/4: Møte med EngageLab
- 28/4: Synergiseminar, UO1
- 30/4: Åpning av BioCEED SFU, UiB.
- 05/5: Utvikling av en IKT-politikk for Utdanningsforbundet
- 12/5: IKT-senteret. Utvikling av begrepet «Profesjonsfaglig digital kompetanse
- 13/5: Presentasjon av artikkel om ProTeds analyse av Profesjonsfaglig digital kompetanse.
- 3-4/6: Deltakelse fra ProTed på HiOAs nasjonalt symposium for fremragende profesjonskvalifisering
- 18-19/6 ProTeds sommerseminar
- 20/6: UHR: ProTed om FoU i LU

Presentations and dissemination work, spring term 2014:

- 18/08/14: ProTed presentert for delegasjon fra Malaysia
- 27/08/14: Integrert femårig mastergradsutdanning for grunnskolelærere. Høyres stortingsgruppe besøker ILP.
- 01/09/14: Fellesmøte med MatRIC
- 24/09/14: Utdanningsdirektoratet
- 07/10/14: Arbeiderpartiets kunnskapsutvalgs møte i Tromsø.
- 12/10/14: ProTed-kommentar til Ludvigsen utvalget. KIS-arrangement
- 15/10/14: Utdanningsdirektoratet. ProTed om PfDK
- 22/10/14: Presentasjon av PfDK, personalseminar ILP
- 23/10/14: Fylkessamling Hedmark og Oppland i regi av HiHm: deltakere skoleeiere, skoleledere og mentorer
- 23-24/10/14: Lektorutdanningskonferansen. Keynote om ProTeds integrerte studiedesign. Eksempler fra Matematikkprosjekter. Paneldebatt.
- 27/10/14: Oslofjordalliansen.
- 29/10/14: Møte CLEAR fra UiA om utviklingen av universitetsskolekonseptet.
- 30/10/14: Samling for kunnskapsutvikling og erfaringsdeling for skoleeiere, skoleledere, universitetsskoler, mentorer, veiledere i Oslo og Akershus
- 30/10/14: Fagpedagogisk dag om PfDK
- 14/11/14: Skolederkonferansen, PfDK.
- 06/11/14: Universitetsskolekonferansen
- 07/11/14: Arbeidsseminar for universitetsskolene
- 12/11/14: ProTed presentert for delegasjon fra Lyon, Frankrike.
- 17-18/11/14: ProTed representert på dialogkonferanse i Ludvigsen-utvalget.
- 19/11/14: Presentasjon av ProTed prosjektet "Video-based assessment for Learning in Teacher Education". Kontekst: seminar med European SchoolNets "Interactive Classroom Work Group" i Brussel.
- 04/12/14: ProTeds arbeid for å fremme kvalitet. SPS-konferansen, HiOA.

- 09/12/14: Fellessamling for SFU.
- 10/12/14: Presentasjon: Hvordan bygge framtidens lærerutdanning? Senter for IKTs juleseminar.
- 11/12/14: ILS forskningsdag. ProTed og PfDK.
- 17/12/14: IKT-senteret – presentasjon av ProTed-artikkel.
- 18/12/14: Presentasjon: Digital lærerutdanning. UiOs EdTech seminar.

In addition, ILS/ProTed's Kirsti Engelen chairs the new program committee for teacher education 2014 – 2018 (MA level) and where UiT's Trude Steingård also participates. Engelen also meets regularly with students teachers' association (LPU) at UiO, and with the National center for ICT in education.

2c International collaboration

ProTed has throughout 2014 participated in and actively initiated exchange of knowledge about teacher education within the international research community. Also, ProTed has throughout 2014 given international relations and collaboration more attention, and have strengthened the content of our work on internationalization in several ways.

There is continued contact with our SAC – Scientific Advisory Committee ProTed visited all the partners during 2014, and met with several of them in different other settings (conferences, academic courses, seminars, international networks etc.). One of the goals for 2014 was to develop a joint application for funding to the Erasmus+ Strategic Partnership Program. SAC member Ian Menter has been invited and accepted to hold the honorary Helga Eng lecturer at UiO in 2015.

- Strategic Partnerships:

Erasmus+ Strategic partnership: To strengthen the collaboration with the members of the SAC, ProTed initiated an application for Erasmus+ Strategic Partnership. The partners involved in the application were from the partners are the University of Oxford, Brunel University, Åbo Akademi University and ProTed with its two institutions. The main goal in the application was to explore the integrated design of the partner's teacher education programs. Throughout a three year period we planned for three main activity chains. First to explore was partnership between students, schools and university (descriptions of the partnership dimension in the education program, to meet in dialogue seminars, visit schools, etc.). The next activity chain was set up to explore how the five education programs was R&D based (descriptions of this dimension in the programs, dialogue seminar on the topic, to make films about best practice R&D projects which involve students etc.). The final activity chain was to explore how to design integrated teacher education programs, focusing on coherence and progression. Several dissemination strategies were suggested, including a final international conference inviting colleagues throughout the three countries to share and participate. Unfortunately we did not get funding through the Erasmus+ program in 2014, but are satisfied with a good project evaluation. ProTed will together with our partners apply again in 2015. To prepare for the new application preliminary meetings with our partners was conducted the autumn of 2014.

Collaboration with Stanford University: ProTed have established a partnership with Stanford University to take part in their Virtual Collaboration Platform (ViCoTEd) together with international teacher education communities. A delegation leaves for Stanford early Feb 2015 (see plans for 2015, below, for more details).

- Other international relations:

Research projects and research groups at the two institutions, engaged with research relevant for our education programs have in total a large number of international partners. For examples, together with the international research project CATE, ProTed will arrange an international conference in June 2016. We experience increased interest in our designs of integrated master programs and have welcomed several delegations where we have presented our models (France, Malaysia, Chile, Sweden, Denmark). In Gothenburg, Sweden, this has led to a local model which also involves university schools. This community will be visiting again in May 2015.

- Student mobility:

At UiT student mobility is a priority, and there have been several efforts to explore and try out how to integrate international practice placements or international semesters as part of the curriculum. As an example the practice placement in South Africa is included in the students' work with their BA-thesis. Student mobility is in progress, different offers made available for the students.

- a) International Semester

The students may choose to take an international semester as part of the program. The teacher students offers, as part of the master degree program, to take teacher education subjects at the following institutions for one semester:

- University of York, UK
- Berkeley University of California, USA
- Auckland University, New Zealand,

- b) International Practice Placements (4-5 weeks)

The student teachers are invited to take their practice placement period in South Africa or Zambia during the third year. They may choose between the following two partners:

- Nelson Mandela Metropolitan University, Port Elizabeth, South Africa
- David Livingstone College of Education (DALICE), Livingstone, Zambia

At UiO, student exchange models and involvement of partner schools internationally are being written into the new master models for semesters 9-10.

International conferences: ProTed participated in the following international conferences in 2014:

- *Future Teachers – A Profession at Crossroads*. Iceland, Reykjavik 13th-14th August 2014
- *The Battle for Teacher Education*. Norway, Bergen 13th-14th November 2014

3.R&D-based education and integrated models

The development through 2014 has continued to bring students and staff together at both institutions. ProTed has contributed to giving students an active role in development and implementation processes.

- a) On the individual level it is important to ensure that students are given the opportunity to engage in facilitating for their own personal development throughout the five year programs. Different strategies to improve mentoring and supervision have priority through projects like the mentor project (UiO), the digital tablets used for supervision during practice placements (UiO/UiT) and the project to develop competence and a common understanding for supervision on the master thesis in the new master degree program (UiT). In both institutions the concept of dialogue seminars are developed to facilitate the dialogue between students, university schools and university – to empower students and to ensure that the students' practice placements periods and research projects match. In all these projects the students are involved as informants as well as important co-developers where the goal is to make sure the students experience opportunities for personal development.
- b) Students are involved in a number of R&D projects that are carried out to develop the integrated teacher education programs (see also the FoU report commissioned by NOKUT <http://www.uv.uio.no/proted/aktuelt/publikasjoner/artikler/fou-basert-utdanning.html>).

Some examples:

- a. WP1: such as Relevant, Drama in math, R&D in the tuition of Norwegian, disseminating the discipline of History through newspaper features.

- b. WP2: Dialogue seminars at both universities where research meets practice. Students also took part in accreditation of seven new university schools in Oslo/Akershus, assessing R&D potential among other criteria.
- c. WP3:
 - i. UiO. Students formed a reference group for the new type digital exam, involved in developing the exam form as well as testing the technology, also interviewed for research purposes.
 - ii. UiT. The whole group of students was involved in all stages of developing and trying out a new type of digital exam. They participated from the first idea of how to use a video-case, design of the exam-text, all the way to the content of the examiner guidance.
 - iii. UiO. MOOC/SPOOC to develop students' professional digital competence over five years and as a module or separate course
 - iv. UiT and UiO. Use of iPads in supervision and making it possible for students to engage in mutual peer supervision.
- d. WP4:
 - i. UiT. Seminars for supervisors at master level at UiT with the aim of following up on students' experiences with supervision. The students report back to the seminars about their needs.
 - ii. New task types (BA thesis and R&D assignment) making much more room for students' conducting their own data gathering and utilizing such data in their responses.
- e. WP5: Research on students' exam papers and interviews with students on their experiences with supervised practice. These types of data will feed back into improving the programs.

ProTed has all the way involved students systematically on an organizational level. They are members of the board, members of reference groups, asked to respond on certain topics, representing ProTed in conferences and seminars etc. The two institutions have from time to time visitors from political parties, national authorities and from educational institutions (national and international). Our students are often invited to share their "inside" experience from participating in our integrated education programs.

ProTed has also, together with students, developed a concept called The Students Innovation Seminar. At these seminars, the students articulate and propose needs and ideas in order to supplement the R&D-based integrated teacher education program. They choose a topic which they want to explore to a further extent than what is possible within the framework of the education program. Example: At UiT ICT was the theme in 2014, in close connection with ProTed's work on Professional Digital Competence. The students invited other students and academic staff to a seminar exploring ICT possibilities for a future classroom situation. The event was arranged in close collaboration with the National Center for ICT in Education.

Our students engage actively in the national discourse on teacher education and school development, and we have several examples of how students participate by writing in local and national newspapers. Quite often our students are invited to present results from their student work (BA- and MA-thesis) at conferences and seminars where they also participate in discussions related to school development. See reference list below.

Reference list 2014:

- Newspaper article: "*Mastergrad er med på styrke lærerkompetansen.*" (A master degree strengthen the teacher competence") In *Aftenposten* November 20th 2014, written by Ingrid W. Lotternes, Kristina Torbergesen, Renate Brandsegg and Thea Ringerike, 5th year student teachers at UiT. <http://www.aftenposten.no/meninger/Mastergrad-er-med-pa-a-styrke-larerkompetansen-7793663.html>

- Newspaper article: “*Kampen mellom læreboka og læreplanen.*” («The battle between the book and curriculum») In *Nordlys* October 23rd 2014 and in *Harstad Tidende* October 25th 2014, written by student Janne Eilen M. Guttorm, Gunnlaug Kristoffersen and Tina Louise Myreng (all 4th year students at UiT), and their lecturer Svein-Erik Andreassen.
<https://www.dropbox.com/s/rn0dbf71v7s56mi/L%C3%A6reboka%20og%20l%C3%A6replanen.pdf?dl=0>
- Newspaper article: “Bedre matteprestasjoner enn antatt.” (“Better math skills than expected”) In *Nordlys* November 8th 2014, written by Renate Brandsegg og Kristina Torbergesen, 5th year student teachers at UiT.

Learning outcomes in five-year, integrated programs cannot be convincingly documented until the five-year course has been completed and the newly qualified teachers have been assessed through a series of exams and practice related activities. However, analysis of students’ exam papers in connection with new style integrated exams and tasks show that students manage to thematize integration in ways we have not seen before. It is interesting to see that four different perspectives of integration evolve: one taking the case (digital video showing a real life classroom situation) as a point of perspective and linking it to pedagogy, subject didactics and experiences from practice. The other three taking each of the remaining components as a point of departure for integrating diverse knowledge sources. These data on learning outcomes inform, in turn, our continued work with the integrated programs.

The many interviews conducted and, in fact, e-mails from students give indications that students find the work on integrative models fruitful:

«When you work as a teacher, the distance between ideals taught in pedagogy and subject didactics on the one hand and in everyday school practice. The R&D assignment taught us a method to link ideals to reality and perhaps to move our teaching closer to the ideals.» Student in reference group, UiO (11.02.14).

One of the most striking developments is how the center has become an integrated developmental unit at the two departments (ILS and ILP) that serve as the host institutions. The center serves as a network/cluster or ‘moving mosaic’ that increasingly involves more staff (see appendix on personnel). Consequently, the term ‘center’ is a little bit misleading as our focus on integration, progression, and a research-based is built on continuously linking our activities to those found in other relevant communities. We firmly believe this is an important organizational insight that is relevant for other SFUs as well.

Also important in the organizational model are the Board and the executive committee with representatives from all levels at the two universities:

ProTed’s board

ProTed’ board has met twice during 2014, once in Tromsø and once in Oslo. The latter was conducted as a seminar to discuss strategies and plans towards the evaluation and beyond.

The Board consists of the following members:

Ragnhild Hennum	Chair and Prorector at UiO
Wenche Jakobsen	Prorector for education, UiT
Rita Hvistendahl	Head of Department, ILS at UiO
Odd Arne Thunberg	Head of Department, ILP at UiT
Eli Ottesen	Representative for the UV-faculty at UiO
Sonni Olsen	Dean at the HSL-faculty at UiT
Marianne Siksjø Brevig	Student representative, UiO
Vegard Dørum	Student representative, UiT
Doris Jorde	Director, Naturfagsenteret at UiO

ProTed's Executive Committee

ProTed's Executive Committee has met at regular intervals throughout 2014. The Committee has consisted of the following members:

Andreas Lund	Head of Center, UiO
Rachel Jakhelln	Head of Center, UiT
Rita Hvistendahl	Head of Department, ILS at UiO
Odd Arne Thunberg	Head of Department, ILP at UiT
Tone Malmstedt Eriksen	Senior adviser, ILS at UiO
Gørill Warvik Vedeler	Senior adviser, ILP at UiT

4. Plans for 2015 and beyond including allocated financing

Plan 2015

	1	2	3	4	5	6	7	8	9	10	11	12
<i>Styringsdokumenter</i>												
Årsrapport2014												
Årsplan2015												
Årsplan2016												
Midtveisevaluering NOKUT – egenevaluering												
<i>Seminarer/konferanser</i>												
NOKUT/UiT/ProTed konferanse (utdanningskvalitet)									?			
Kunnskapsparlament (KSU/ProTed)												
ProTed seminar Sommarøya												
Synergiseminar UO3												
Universitetsskolekonferansen 2015												
<i>Kommunikasjon/spredning</i>												
Oppdatering websider												
Filmproduksjon												
Antologi												
<i>Forskning/innovasjon</i>												
Søknad FINNUT												
<i>Aktivitet i utviklingsområdene</i>												
UO1 Ny prosjektportefølje												
UO2 FINNUT, skoleinitiert forskning												
UO3 Porteføljeprosjektene, kartleggingsundersøkelser												
UO4 Skriftliggjøring av programendringer, kompetanseutvikling MA-veiledning												
UO5 Data på utdanningskvalitet												
<i>Internasjonalt samarbeid</i>												
SAC												
Erasmus+. Ny søknad									?	?	?	?
Stanford University. Besøk og initiering av samarbeid												
<i>Styrearbeid</i>												
Styremøter												

- ProTed will engage in the national discourse about development and implementation of a five year master degree program for teachers in elementary and lower secondary schools when this is to be the national standard from 2017.

- Further strengthen and adjust the design of the new MA-programs in Tromsø. ProTed will provide knowledge about the content and the experience of the Tromsø design.
- ProTed, in cooperation with the trans-disciplinary network KiS (Knowledge in Schools), allocates seed money for projects relevant to teacher education. For 2015 the following projects will be partly funded by ProTed:
 - ‘Samtavla’ – an app that makes it possible to conduct plenary discussions and summing up subject specific discussions. Will be piloted in university schools and in subject didactics spring 2015.
 - ‘ReleKvant’ – continued support for this project which is a collaboration between UiO and university schools on how non-everyday subjects (relativity theory and quantum physics) can be articulated and understood in schooling
 - Project “Biology education 2015”
 - Developing 9th semester master topics with 15 days practice. MN faculty UiO.
- Seed money for University schools leading R&D projects (cluster, clear criteria...). ProTed in Oslo has come to an agreement with the department to allocate seed money for R&D projects where the university schools use their knowledge and competence to initiate and maintain projects in collaboration with UiO. Projects will be selected from criteria to be developed, and the schools should form networks with other schools around the project in order to achieve sharing and dissemination.
- Piloting and implementing the use of ViCoTED – a virtual space for teacher education, led by Stanford University and with participation of teacher education communities from e.g. Chile, Brazil, and Sweden. ProTed applied and got money for five people from UiO and three from UiT to travel to Stanford during one week in February 2015. ViCoTED will be piloted during the spring 2014 and scaled up to accommodate larger groups of staff and students during the fall term and into 2016. This will not represent additional costs for ProTed.
- ProTed is planning a series of seminars together with The Knowledge Center for Education. The format is intended to be that of ‘Knowledge Parliaments’. The first will involve all universities offering integrated masters courses in teacher education and elicit ‘best practice’ from what they do through a survey early 2015. Results from this will be made into a synthesis/systematic overview, and be used at the seminar in order to further concretize integrated models for teacher education.
- ProTed will during 2015 submit applications for a FINNUT research project on innovation related to partnership school – university in teacher education University Schools).
- The application for Erasmus + Strategic Partnership fundings will be a major activity in the collaboration with the SAC-partners in 2015. Professor Ian Menter (The University of Oxford) is giving the Helga Eng Lecture in November, and will also contribute to a PhD-course together with ProTed about teacher education.
- Associate Professor Karen Hammerness who is Director of Educational Research and Evaluation at the American Museum of Natural History in New York City will work together with ProTed as part of her 40% position at ILS. This work will focus on integration of scientific disciplines and school subjects, innovative partnerships, and R&D-dimensions in partnerships with university schools. She will also be linked to the work in WP4 on writing up the experiences from reforms and implementation of initiatives. Karen Hammerness has written extensively on teacher education in Norway. ProTed has set up a meeting with her and representatives from the Ministry (this was arranged on 15 January 2015).
- Anthology. The work on the anthology is progressing and deadline for the finished chapters (before external peer reviewing is February 1, 2015). Expected publication late fall 2015.
- In cooperation with UiT and NOKUT, ProTed arranges a seminar on study program management and quality development in Tromsø, February 2015. The aim is to focus on leadership for quality development in study programs and courses. A similar seminar on learning outcomes is planned in Oslo for late spring or early fall 2015.
- Developing the PhD course «Excellence in Teacher Education» at ILS. The aim is to design a course that builds on international research with a focus on integrated study designs. A subsidiary aim is to involve academic staff, especially newly hired people, who can complete the course as an

integrated part of their competence development. ProTed collaborates with several international partners and it may result in offering the course to PhD students at partner institutions.

- Conference June 2016. In collaboration with the research project CATE and the research group on the GLU reform, we plan on arranging a conference with international participation. The focus will be on common themes in teacher education as documented by the international comparative studies of CATE and the work of ProTed. Will need external funding from NFR, plans for financing under way.

Appendix:

Affiliated staff (attachment 2)