Research Mapping report

This document is a report from Linköping University and the municipality of Linköping. Since focus is on collaboration between our institutions, we have chosen to produce a joint report rather than two separate ones. Where applicable, each institution is described separately, in different subsections.

Name of institution:
- (1) Linköping University
- (2) Linköping Municipality

Name of faculty, institute, etc (if applicable):
- (1) Department of Behavioural Sciences and Learning
- (2) Department of Education

Name of department or section involved in mapping:
- (1) Division of Education, Teaching and Learning
- (2) N/A

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Number of staff involved in mapping exercise:
- (1) 53
- (2) Appr. 40

Number of research-active staff (apart from PhD/master students in department (etc) as a whole:
- (1) 35
- (2) 2

Number of PhD/master students in in department (etc) as a whole:
- (1) 15   (2) N/A

Number of PhD/master students involved in mapping exercise:
- (1) 15   (2) N/A

Externally funded projects

The list comprises the externally funded projects related to educational sciences and teacher education that we have been able to identify. To save space we have only included the project title and the funding organisation in the table. Additional information can be found at:

https://www.swecris.se/betasearch/?q=*&view=cards&coordinating_organizations_sv=Link%C3%B6pings+universitet&tags_sv=50301+-+Pedagogik&tags_sv=50302+-+Didaktik&tags_sv=50304+-+Pedagogiskt+arbete&tags_sv=50303+-+L%C3%A4rande&sort=start_desc&lang=sv

Name of Project	Funded by:
ULF (Nation-wide project on practice-related research)	Ministry of Education
University schools	Ministry of Education
LIKVÄRDIG UTBILDNING FÖR BARN MED SPRÅKSTÖRNING? – En studie av måluppfyllelse, erfarenheter och deltagande	Vetenskapsrådet
Med små steg: Barns trafiksocialisation i förskolan	Vetenskapsrådet
FontD – En nationell forskarskola i naturvetenskapernas och teknikens didaktik för lärarutbildare	Vetenskapsrådet
Barn, bord och broccoli: En multimodal studie av den institutionella organisationen av luncher i förskolan	Vetenskapsrådet
Randomiserade kontrollerade studier av interventionsprogram för elever med tidiga läs- och matematiksvårigheter.	Vetenskapsrådet
Simuleringsträning inom gymnasial yrkesutbildning	Vetenskapsrådet
Utvecklingskonceptet MIO - rekonceptualisering för ökad spridning och nyttiggörande	Vinnova
Livsfrågornas didaktik - Att arbeta med frågor om döden i förskolans praktik	Vetenskapsrådet
"Världen behöver en ny berättelse" – narrativets roll I förskolors arbete med samhällsomställning	Formas
Nordic Journal of Vocational Education and Training	Vetenskapsrådet
Revideringar i digitalt samskrivande	Vetenskapsrådet

Erasmus+

Marknadiseringen av svensk vuxenutbildning – upphandlingseran	Vetenskapsrådet
Europeisk tidskrift för forskning om vuxnas utbildning och lärande	Vetenskapsrådet
Ett modelleringsperspektiv på undervisning och lärande i statistik genom informella statistiska resonemang och IKT	Vetenskapsrådet
Interprofessionellt lärande i praktiken: Studenters samarbete och samverkan med patienter i olika arrangemang för klinisk verksamhetsförlagd utbildnin...	Vetenskapsrådet
Mobbningsarenor: en socialekologisk undersökning av skolmobbning	Vetenskapsrådet
Utvecklad undervisningseffektivitet genom virtuell praktik: En longitudinell experimentell studie	Vetenskapsrådet
En nationell svensk forskarskola i naturvetenskapernas och teknikens didaktik för lärare och förskollärare	Vetenskapsrådet
Webbaserad utbildning om sexuell och reproduktiv hälsa och rättigheter (SRHR)	Vetenskapsrådet
Interaktion mellan kunskapstraditioner inom icke -formell vuxenutbildning: skandinaviska influenser, lokala kunskapssystem och det koloniala arvet i ö.	Vetenskapsrådet
Varför är ungdomar med utvecklingsstörning så svaga läsare? En jämförelse av person- och miljöfaktorer som predicerar läsförmåga	Vetenskapsrådet
Specialpedagogiska undervisningsinsatser för deklarativ kunskap i matematik	Vetenskapsrådet
Att utveckla undervisningen och förbättra lärandet genom klassrumsledarskap, klassrumsklimat och skolklimat	Skolforskningsinstitutet
Nytt lärande genom animerad kemi	Skolforskningsinstitutet

Departmental priorities in research (if any):
  (1) The department/division has no specific priorities of its own.
  (2) If the municipality engages in research, prioritisation is placed on projects that have a broad impact, contribute to pupils' learning and are consistent with the general priorities of the municipality.

Research governance

Generally, there is a great amount of academic freedom and research autonomy at Linköping University and thus a low degree of institutional research governance. This applies to the topic of investigation and the selection of collaboration partners as well as to the choice of theory and method. There is, however, a great deal of informal discussion on research and publication strategies among colleagues. One could also argue that researchers are directed towards certain publication channels, since the university obviously wants to score well in bibliometric ratings. Government funding is to some extent dependent on these measurements.

There is also no systemised way to generate research questions. The academic freedom is highly appreciated at the university and members of staff can freely choose subject, method and theory. Many of the teaching staff at the division of Education, Teaching and Learning have a background as schoolteachers and might derive their research questions from experiences in their own practice. Department members have a great interest in school practice which is reflected in the wide range of research projects that focus on school-related issues.

As for the relationship between university and schools there are some formalised structures including "LiU Skolsamverkan" and "UV skolsamverkan". More common, however, is informal collaboration between individual researchers and schools. Schools or municipalities might contact researchers which specific requests. These contacts can take place on an institutional or an individual level, mostly being teachers contacting the university. In some cases, researchers or doctoral students initiate the contact, e.g. to gather empirical data for a research project.

The project ULF "Utveckling Lärande Forskning" (ULF) deserves mentioning here as well. As a nation-wide project to strengthen collaboration between HEIs and municipalities it will influence research governance in this area.

For the municipality, research governance, when applicable, is based the priorities mentioned above: broad impact, contribution to pupils' learning and consistency with the general priorities of the municipality. If the municipality has to prioritise between different research or collaborative projects, prioritisation will always be based on these principles. In "ULF", where LiU and the municipality participate together, the research topics digitization and classroom management have been jointly chosen by both organisations, but in accordance with the same priorities. In individual, local cases, however, schools might prioritise according to their specific needs.

Current researchers and their topics

Linköping University

It has not been possible to consider the whole university for this overview. We have concentrated on the Division of Education, Teaching and Learning at the Department of Behavioural Sciences, which has a large portion of research related to teacher education and school collaboration. For this overview, 53 individual interviews have been conducted with relevant researchers and doctoral candidates. The following broad topics or clusters of topics have been identified:

- Teaching and learning of mathematics
- Teaching and learning of Swedish
- Reading and writing
- Social relations and bullying
- Assessment
- General didactics / school / teacher's professional work
- Outdoor education / sustainability
- Special needs

It seems from the interviews that the individual research topics have generally developed:

(1) as a result of an experienced need for additional knowledge rooted in the researcher's own (previous) teaching practice,

(2) as a response to an ongoing research discourse
    or

(3) as an answer to a specific call or an advertised position, i.e. as a Ph.D. student or a researcher in a project with an already defined topic.

Municipality:

A great deal of the research mentioned above includes, at least indirectly, the municipality as well, through different forms of school collaboration.

The municipality participates in research at different levels. Firstly, there are individual initiatives either from researchers or from schoolteachers or principals that result in bilateral cooperation between a single school and the researcher. Secondly, there are larger projects with external funding. Currently, the municipality participates in three such projects: "Hälsofrämjande skolutveckling" (promoting well-being at schools), "ULF" (Utveckling, lärande, forskning, i.e. 'development, learning, research'), and the recently concluded "University schools".

All these three are nation-wide, governmentally funded projects run in partnership with the university. The first one, ULF can be considered a research project in its own right, while the other two initiatives draw on existing research and the collaboration between schools and established researchers.

"Hälsofrämjande skolutveckling" aims to develop, evaluate and disseminate teaching methods that support well-being at schools. Researchers contribute their expertise in different formats, including lectures, mentoring, evaluation, and the designing of teaching methods. The individual schools have identified their specific areas for development and according to their needs they have teamed up with researchers from relevant fields. In both projects (University schools and Hälsofrämjande skolutveckling), the areas identified by the schools show a remarkable correlation with the on-going research at the Division of Education, Teaching and Learning as described above.

The aim of "ULF" is to establish sustainable models for collaboration between HEIs and school authorities in order to more firmly root teaching and learning in scientific evidence and to strengthen the scientific approach to teaching and learning at schools. The idea is that not only academic researchers but also professionals from schools should be able to take the initiative to research activities and that this will enhance the relevance of the research for schools.

In the "University school pilot project", a recently concluded project that now continues as part of regular activities, all participating schools have been offered the opportunity to pair up with a researcher to work on an area of development identified by their individual school. The idea is that the researcher be used as a sounding board as well as for short lectures and mentoring sessions. This model emanated from a request from the involved principals and is also consistent with the purpose of the original project: finding and trying out new forms of collaboration between university and schools.

Workshops

Four workshops have been conducted with senior researchers and student teachers from the university as well as head teachers and teachers from the municipality. Each workshop had 4-8 participants and comprised a semi-structured focus group discussion, using as a starting point questions related to (1) the importance and relevance of educational research for teacher education and for school development; (2) existing dialogue between stakeholders; (3) utilisation of results, and (4) a SWOT analysis of the current situation. The discussion took different paths in each group and emphasis shifted according to the circumstances and experience of the participants. A brief summary of each workshop is given below.

The senior researchers emphasise the close link between research activities at the department and teaching practice at schools, thus claiming high relevance of the ongoing research for the teacher education as well. The research questions, according to the group, often derive from an ongoing collaboration between researchers. There is, however, also a lot of action research where problems and questions come from schools. The same applies for the "ULF project" and other intervention studies.

The group views collaboration between the university on one hand and schools and municipalities on the other as a mutual gain: researchers need data, and school education is supposed to be based on science and proven experience. The ability to contribute to school development also gives legitimacy to researchers.

The researchers consider the close link between research and practice a strength. The provision of in-service training for teachers and publication of popular science articles are important means for dissemination. The online magazine Venue constitutes a positive example.

In terms of difficulties and threats, new public management with its one-sided focus on economics and short-term, quantifiable goals is highlighted as an important general problem. In individual cases there might also be problems related to accessibility to schools for researchers and hidebound attitudes that want to maintain borders between institutions. Finally, according to the researchers, the economy poses a threat. Resources are needed to maintain infrastructures, and economic cuts at school and/or university level might jeopardise the collaboration.

The student teachers focused on the importance for them to be informed about research. They consider it important to be critical and, as a teacher, to ask the question what is feasible "for me and my class". In-service teachers, according to the group, do not have the same access to research as student teachers do, since the latter can use electronic resources and different search engines through the university library. Also, in-service teachers often do not have much time to catch up on new research. The students mention a phenomenon that they have come across and that they call a "collegial paradox", meaning that you might be treated with suspicion or envy if you engage in research activities. These teachers might end up feeling alienated in a school environment.

The group stresses the importance of research for their own professional and personal development since they acquire the ability to read research articles and understand the main points. This will enable them to draw on research in their professional life and to give reasons for certain pedagogical choices in discussions with parents and colleagues. Furthermore, they can contribute to making research-based thinking an integral part of school activities.

The student teachers consider as most important research that can contribute to school development. Mention is made of research that deals with the question how a teacher can get through to their students, as well as research on group processes. Subject-related research is also valued, e.g. biological research that has shown that, contrary to what has been taught at many schools, the ability to sense a particular taste is not limited to a specific part of the tongue.

The student teachers express the opinion that some older research sources used in the programme could preferably be exchanged for newer ones. They also point to some areas that they would like to be more clearly included: high achievers, collaborative learning, and young learners. They also see a need for more Scandinavian or local studies, since they are under the impression that they read many

studies from other cultural contexts, the results of which might not be transferrable to their own educational context.

The group reflects on the fact that some current school development trends such as the use of i-pads in the classroom are not based on research.

The student teachers believe that research is governed primarily at a national policy level, and that the government funds what they consider relevant and of current importance. They also believe that research result that are controversial or discomforting might be suppressed and not published.

According to the students, research reaches the schools through the head teachers who find something important that they want to share with everybody. Teachers themselves do not have time to search for relevant research. A way around this might be organised group discussions on research articles. School authorities should also have the obligation to spread research results on Pisa and on local or national priorities. The students suggest that there could be a corner in the staff room where research articles could be presented. The student teachers have experienced that they are considered a resource at schools since they bring with them knowledge of relevant and current research.

The students have not noted much contact between university and schools during their practice placements, even though they find that the proximity to the university makes collaboration easier. They are under the impression that universities would normally contact the schools to perform field studies and collect data.

The group would consider it helpful for schools to have more of a direct contact with the university , enabling a teacher to get in touch with the university and ask for research on a matter of importance for every-day teaching, e.g. how to best teach mathematics to autistic children. Researchers could also have open lectures where they present their research.

The Head teachers consider school development one of their most important tasks. They find that they work all day to develop the schools in order to benefit the learning of students. They want always to improve their practice, find functionable ways, improve the situation for staff, and make time for teacher to engage in things of importance.

Governmental actions control school development to some extent, e.g. when it comes to nationally funded projects such as swimming in pre-school, or "läslyftet", a nation wide initative to strengthen pupils' reading abilities. Instead, the group thinks that the head teachers should control the development. As a positive example, the new Linköping model is mentioned: "School development from the middle" (based on Michael Fullan: "Leadership from the middle") where each school is to develop their own objectives based on their conditions, in accordance with an over-arching strategy for the municipality.

Research is complicated and results from different studies are often contradictory. There is a tendency that decision-makers might only look for research or popular science that justifies their own decisions. The principals think that many things that

happen in schools are yet to be researched. Specific mention is made of the dual teacher system. On the other hand, the discussants feel that they in their role as school leaders sometimes have to shield themselves from research and only adjust their direction a little based on their practical experience.

At the same time, they sometimes see a need for a joint action plan between university and schools, for instance when the pupils' results in mathematics are worsening. Currently, most contacts take place on an individual basis and there are limited areas for interaction.

Some positive development is connected to the university schools which provide increased opportunities for collaboration. Some action research already exists, for example regarding pedagogic planning at after-school centres.

From their perspective as principals, the group finds that most of their contacts with the teacher education are linked to practicalities and not to research. Each year, for instance, one of the headmasters is asked to talk to future teachers about how to build an attractive résumé.

The head teachers are under the impression that student teachers still lack important areas of knowledge. The importance of research-based education might have to be stressed even more firmly. The risk is that students are given a traditional education that will result in traditional schools. The group finds that teacher education and research should always be one step ahead in order for the students to be given access to new knowledge.

Regarding the importance of research for the school activities it varies from school to school, not least due to time issues. The municipality sometimes organises lectures and seminars with invited researchers. These have, however, not always been consistent with local school priorities. As an example, Professor Nottingham is mentioned who was invited to give lectures on no less than five different occasions a couple of years ago.

One school has a "development group", led by a "development teacher" using research articles to enhance their work with the linguistic development of the pupils. According to the head teachers, there is a greater interest in research among the logopedists and school psychologists than among teachers.

As for weaknesses and strengths, the group discusses the absence of a general platform for collaboration, the time issues and and the difficulty to prioritise between all obligations. Contacts with the university seems often to focus on practical matters and on recruiting of new teachers.

On the other hand, all head teachers present are interested in strengthening the connection with the university. There is already some collaboration through informal contacts via principals. The group can identify several areas that would need research: boys' reading skills, education of refugees, educational shortcomings, motivational factors, school culture, leadership. They would also be happy to try new formats for interaction. "Research cafés" are mentioned as a means for dissemination of research results.

The in-service teachers also view themselves as clearly involved in school development work. School development, in their opinion, aims at creating high-quality and equal education and should lead to improved results and increased motivation among pupils. This work is carried out both informally and systematically through organised quality assurance efforts.

The teachers identify some common arenas for school development: network meetings, the in-service training modules of the national school authority, the new municipality strategy "School development from the middle" and collaborative learning. In Linköping, the aim is now to be the "best school municipality" in 2020. Local politicians, directors of education, teachers and principals work together. This also puts pressure on teachers, however: teachers should attend to their daily work, not be afraid to try new things, but also fend off strange or distracting ideas. Another concern of the teachers is the commonly experienced growing inequality of education in Sweden.

As an important source of information on research, the specialised publication IFOPUS ("Innovation, forskning och utveckling i skolan") is mentioned. The group sees a problem with what they perceive as an inflationary use of the word "research", which they would like to be concretized.

The teachers experience little or no dialogue between researchers and teachers. They believe that research questions are often derived from previous research ant not rooted in practice. For teachers, on the other hand, questions arise from their daily practice which makes you want to learn more.

Research is of great importance for teacher education, according to the teachers, but they find that theories must be tested in practice since they see a gap between theory and practice. An ideal situation would be that a researcher, who might also be an ex-teacher, comes back to the schools, informs, and finds out about current needs in discussions with teachers. It would be important for the researchers to meet students, as this can generate ideas for new research, for example with regard to how you deal with all new students.

There are two lecturers (schoolteachers with a doctoral degree) working for the municipality but the teachers are not sure to what extent they are really made use of. Time is mentioned as a complicating factor. Nevertheless, the teachers consider these lecturers an important strength, forming a bridge between schools and university. The ongoing project "School development from the middle" and the University schools are also perceived as a strength.

Major perceived weaknesses and threats are connected to time issues, according to the teachers. The individual teachers often have let others choose research articles for reading since they don't find the time to search for material themselves, and they find it difficult to commit themselves to even more work.

The teachers can identify many opportunities to increase the contact between teachers and researchers, teacher education and students, but it would be important to allocate time for this. The same applies to some in-service training, for example within the framework of "Lärarlyftet", where individual teachers have to use some

time of their own to take part in educational activities. If everything could be part of their regular workload it would be easier to participate.

Special needs education

The question of participants with special needs will be revisited in the course of Recite. There are research and school development projects that focus on or include special needs education as well as other marginalised groups. Time has not allowed for a specific inventory all these activities, but two aspects can be mentioned. Within "Hälsofrämjande skolutveckling", one specific area of focus has been the special needs elementary school with the aim to develop classroom settings in a way that helps identify and eliminate factors that may impede the pupils' learning. In the same project, the language introduction programme for newly arrived immigrants has developed methods to, among other things, promote exercise and health.

Some general conclusions

There is certainly still a lot of work ahead to formulate an action plan that takes current developments on different levels and the interests of all stakeholders into account, but the mapping exercise has delivered some important insights:

- It has been clear that all participants would like to see an even more solid cooperation between schools and university. This is an important prerequisite for the next steps of the Recite project.
- The mapping showed a considerable correlation between the research needs as expressed by the school representatives and the research interests actually pursued by the researchers at the university.
- There seems to be a need for arenas or platforms where teachers and researchers can come together based on shared interests.
- Research results often do not get through to teachers at schools.
- Student teachers and, to some extent, also in-service teachers seem to be somewhat less optimistic regarding research cooperation than researchers and school leaders. This lack of optimism might be due to lack of information.

The results from the mapping exercise should provide us with a good basis for the continued work on the action plan. It will, however, be important to coordinate this effort as strongly as possible with the project "ULF", so that the two projects can mutually benefit each other instead of competing. This will probably have some influence on the local timeline of Recite but will on the other hand increase the chance for the action plan to have a real impact.

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