NGL 2014
NEXT GENERATION LEARNING CONFERENCE
March 19–20 2014, Dalarna University, Falun, Sweden

Conference Summary
Foreword

On the 19th-20th March, the Next Generation Learning Conference 2014 took place in Falun. Together with KTH (The Royal Institute of Technology), Dalarna University arranged the conference at Campus Falun. NGL2014 was an international conference on the implications of the digital revolution for learning and education. The conference presented research and development projects as well as initiatives in the field of NGL in educational settings. The conference was the second biannual conference and was as well-received as the one held in 2012. NGL development holds a natural place in the future plans of Dalarna University. A conference is simply one way to reach our goal, that being to be leading the field in Next Generation Learning by 2015.

Alongside the presentations, an exhibition fair was held. Nine companies and organizations showcased their products and services, providing conference participants with the opportunity to see what is new within the combined field of education and technology.

During the conference we gained insight into research and development projects, as well as other work that is being done in the field of what we call Next Generation Learning. This is a presentation of some of the presentations that were given during the conference. For more information about the conference or about our work in the area of Next Generation Learning, please visit [http://www.du.se/en/NGL/](http://www.du.se/en/NGL/).

To summarize, we would like to give a warm thank you to every participant who made the conference possible by helping with and attending the Next Generation Learning Conference 2014. Until next time!

Erik Brunnert Walfridsson, Organizing Chair

on behalf of the Conference Committee for the Next Generation Learning Conference 2014
Keynotes

John Traxler

John Traxler is the world’s first Professor of Mobile Learning. He has been a professor in the UK since September 2009 as well as Director of the Learning Lab at the University of Wolverhampton. He has guest edited six special editions of peer-reviewed journals devoted to mobile learning, including Digital Culture and Education, Distance Education, UNESCO Prospects and an African edition of the International Journal of Mobile and Blended Learning.

John has co-written a guide to mobile learning in developing countries for the Commonwealth of Learning and is co-editor of the definitive book Mobile Learning: A Handbook for Educators and Trainers with Professor Agnes Kukulska-Hulme. They are now working on a second book, this one entitled Mobile Learning: the Next Generation, which is due to be published in 2014. He is currently developing the world’s first online master’s course in mobile learning, as part of a network of African universities interested in innovative teacher development and the UNRWA ICT for Education Strategy.

Martha Cleveland-Innes

Dr. M. Cleveland-Innes is Professor and Chair in the Centre for Distance Education at Athabasca University in Alberta, Canada. She teaches Research Methods and Leadership in the graduate programs of this department. Martha has received awards for her work on the experience of the student in online environments and holds a major research grant through the Canadian Social Sciences and Humanities Research Council.

Gard Titlestad

Gard Titlestad is the Secretary General for the International Council for Open and Distance Education (ICDE). ICDE is the leading global membership organization regarding open, distance, flexible and online education, including e-learning. ICDE has consultative partner status with UNESCO and shares the same key value – the universal right to education for all.

Titlestad joined the organization after working at the Nordic Council of Ministers in Copenhagen where he was Head of Department for Knowledge and Welfare.
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Performance Assessments in Computer Science - An example of student perceptions

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Abstract
Computer science studies in universities have changed from broad study programs to more specialized study programs in the last decade. This change stems from a growing field, need from the industry, and from students. In some areas of applied computer science such as for example information security and networking, professional certifications play an important role as a way of assessing the practical knowledge, but also to meet the needs from the industry. A study by Morris et al. (2012) reveals that companies value some certifications more than a university degree in the area of networking, highlighting the issue of assessing practical knowledge. Since many of the certifications offered are too vendor dependent (Ray and McCoy, 2000) or lack educational rigor (Jovanovic et al., 2006) it is not always feasible to include them in higher education for practical assessment.

Another way of assessing how students perform in practical tasks is to use performance assessments. Using performance assessments as a complement or replacement of written examinations or lab reports is also a way of decreasing plagiarism among students.

This work presents a case study performed to investigate the perceptions of performance assessments among educators and students. The case study object selected is the Network and system administration study program given at the University of Skövde, Sweden, which has a long tradition of using performance assessments as an integrated part in the courses. Data collection has been performed using on-line questionnaires, document studies and interviews.

The results from the case study clearly indicate that the students perceive the performance assessments as something useful that measures their practical skills in a good way. It also shows that most of the students do not perceive the performance assessments as something more stressful than handing in a written lab report. We also present how a progression of performance assessment can be built into courses, and how the students perceive the progression.
Keywords
Performance assessment, examinations, progression, computer science studies.

Introduction and background
In the last decade, studies in computer science have transformed away from the broad computer science study program given at most universities, and today there are more than 300 computer science study programs to choose from only in Sweden\(^1\). Students strive for specialization since it increases their career possibilities, and this strive is met by the universities offering more and more specialized study programs. The specialization is also wished for by companies looking to hire students without having to invest too much time or money in training the employee in the initial employment period. The specialization has led to niched study programs such as for example game developer, web developer, enterprise system developer, interaction designer, and network and system administrator. Many of the specialized study programs are created to fit a specific job role, making it clearer for the student applying to the program, but also to employers looking to hire. There is not only a demand for theoretical specialization, but also for getting practical knowledge as a part of the university studies, that is also requested by the potential employers (Guzmán, 2011).

One way of assessing the practical knowledge in the IT field is through professional certifications that often assesses both practical and theoretical knowledge. In the IT field, Microsoft and Cisco dominate the vendor-specific certification market (McGill and Dixon, 2007), and they are also the most requested certifications by employers (Morris et al., 2012). In the field of network and systems administration, a university degree is important, but certifications are at least as important. For example, according to Morris et al. (2012) who analyzed 1,199 job advertisements for network engineers found that 26,1% requested a degree in computer science, and 30,9% requested a Cisco Certified Network Professional certificate. Certificate knowledge can be viewed in terms of a standardized course given at many universities with a very similar outcome regardless of where it has been taken. There are a number of benefits using certifications as an integrated part of higher education. From an employer perspective, Ray and McCoy (2000) mentions greater knowledge and increased productivity, a certain level of expertise and skill, improved support quality, reduced training costs and higher morale and commitment as benefits of employing students that have undertaken certification. From an educational perspective, the certification examination provides an additional tool for evaluating course and program content (Ray and McCoy, 2000), in attracting students (Brookshire, 2000), and it provides additional and generalizable measures of student competencies (McGill and Dixon, 2007). There is however a number of risks associated with IT certification. Since many of the certifications offered are vendor dependent, there is an absence of unbiased neutral groups for determining course contents, creating exams and authorizing examiners (Ray and McCoy, 2000). Jovanovic et al. (2006) describes the lack of educational rigor, too focused material,

\(^1\) http://studera.nu
training-oriented rather than education oriented, and that it is too market and popularity driven.

We see that it is important from both a student, and employer perspective to give the students practical knowledge as a part of their university studies. However, the introduction of too many certifications might impact the quality of courses, and thereby the study program. One example is a network security course given as a part of the Network and Systems Administration study program (NSA) at the University of Skövde. Cisco has developed a CCNA Security course that is a continuation of the CCNA courses with the aim of learning how to secure Cisco networks. The course is in large extent Cisco-dependent, and parts of the course material are too basic, it is very vendor oriented and hard to generalize from. Furthermore, some important aspects of security, such as security in virtualization and cloud computing are missing, a belief shared by for example (Maj et al., 2010). In the light of this, a decision to develop a network security course that were not based on the CCNA Security material were taken, even if it might have been more attractive for both students and employers to give the CCNA Security course. In this course, and in the field, practical knowledge is very important, and labs and examinations need to reflect this.

Traditionally, many courses in computer science have a varying level of practice embedded in some way. An example could be a basic programming course where programming paradigms are presented theoretically, and labs complement the lectures. The practical part are assessed by a lab report, where the source code to solutions of questions posted in the lab instructions, complemented by a lab report are presented for examination. Despite the use of practical assignments computer science educators expresses concern for their students’ lack of programming skills and studies often confirm their concern (McCracken et al., 2001, Lister et al., 2004). The kind of practical assignment described above is also prone to plagiarism (McCracken et al., 2001, Daly and Waldron, 2004).

One way of assessing how students perform in practical tasks is to use performance assessments. Performance assessments “can measure students’ cognitive thinking and reasoning skills and their ability to apply knowledge to solve realistic, meaningful problems” (Lane, 2010, p.3). They “emulate the context or conditions in which the intended knowledge or skills are actually applied” (American Educational Research Association, 1999). There are other similar terms used for performance assessments, such as “performance tests,” “performance assessment,” or “authentic assessment” as pointed out by Lane (2010) and Sackett (1998), and in related fields “work samples” or “assessment center exercises” as mentioned by Lievens and Patterson (2011). Furthermore, Daly and Waldron (2004) gives an example of using “lab exams” which also appears to be a performance assessment.

Students consuming or producing information electronically experience greater level of tiredness and increased feelings of stress than when working on paper according to Wästlund et al. (2005). If the com-
puterized tests are used instead of a paper-and-pencil examination, the results might be that the students even feel less stress (Peterson and Reider, 2002). In the field of Computer Science, the alternative to a performance assessment is normally not a written examination but rather some kind of extended written report.

From this we draw the conclusion that there are broad issues concerning performance assessment, how it is implemented in a study program, and how the students perceive them. In this work we present a case study performed on the Network and Systems Administration study program given at the University of Skövde, where we present an approach with performance-based assessments with a clear progression and how the students perceive the performance assessments. The aim is to investigate the perception of performance assessments among educators and students. More specifically, three interrelated research questions have been specified:

- Do the students perceive the performance assessment as more stressful than examination with a written lab report?
- Do the students perceive the performance assessment as a positive aspect to highlight when applying for jobs?
- How do the students experience the progression of performance assessment between courses?

The authors of this article teaches courses and administrate the study program which implies full insight in course development, students progression in learning and the work on assessment as well. However, teachers share challenges in didactics that are necessary to raise in scientific debates.

**Method and case study context**

The method selected for this work is a case study as described by Walsham (1993). Case studies can take many shapes and be constructed with different aims. This case study is positioning as an interpretative case with the aim of gaining understanding as described by Braa and Vidgen (1999). The case study object selected is the Network and systems administration study program given at the University of Skövde. The program started in 2004 and was among the first in the Nordics to educate network- and system administrators. The study program includes certifications from Cisco (mandatory), and Microsoft (voluntary\(^2\)), but also performance assessment in a number of courses where no certifications are available or if certification is considered unfitting.

The data collection has been performed using documents describing the courses in which performance assessment are used, such as course plans and examination criteria, questionnaires and through group discussions. The questionnaires have been used to get a quantitative input on the students' perceptions of performance assessment. The questionnaires were designed to target three categories of students in three study programs. All of the students have participated in at least one course employing performance assessment. For all of the students this was their first course taken in

\(^2\) There is a fee associated with the Microsoft certifications (contrary to the Cisco academic certification), so the courses prepare the students for certification.
their respective study programs. The student groups selected were (1) first year students in the NSA study program, (2) first year students in the web development and computer science study programs, and (3) second and third year students of the NSA program. With this setup we target primarily (a) one group of students exposed to several performance assessments, but also other types of examinations such as written examinations and lab reports. Secondly, we target one group (b) with limited performance assessment experience but with more experience of written examinations and examinations of lab reports. In the third group (c) we target students with more experience of performance assessment, but also other types of examinations. The third group also helps to answer whether or not the intended progression of the performance assessments is perceived. Data collection was performed in May-June of 2013, when the students had at least studied for almost one full year.

Case study
In this chapter, we will present the lab setup, and how the performance assessments are implemented in three selected courses given on the NSA study program. The selection of courses was made because there is a formal progression between them, both in terms of content, but also in terms of performance assessment progression. The progression of performance assessments will be outlined by detailing three courses, Computer Fundamentals, Windows-administration I, and Windows-administration II.

The lab used in the NSA study program is configured so that each work station is set up with two computers. The two computers are both equipped with hard drive carriers and the students are given their own hard drives for the course. The two computers have different hardware, where the more potent one is the server, and the other one is the client. The computers are isolated in their own IP subnets for optimum flexibility in different lab scenarios.

The trend in network and system administration labs is moving toward more and more virtualization\(^3\) (Stackpole et al., 2008, Stewart et al., 2009, Wang et al., 2010). The students use virtualization techniques in a number of their labs to enable them to have multiple computer environments installed simultaneously. We mainly use the decentralized technique described by Li (2010) but provide the computer to install the virtual machine on and do not relay on the students’ personal computers. We can and do use disk cloning\(^4\) techniques for students in some courses where the installation of an operating system is not deemed as an integral part of the practical assignment. The lab is equipped with VPN\(^5\) (virtual private network) functionality, enabling the students to connect to their computers remotely.

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\(^3\) Virtualization in this context refers to the creation and usage of a virtual machine that acts like a real computer with an operating system. This is possible due to a separation of the system itself and the underlying hardware that is shared with other virtual machines.

\(^4\) One copy of all the content of a hard drive is duplicated from one disk to another, to save time and effort in re-installation of a system.

\(^5\) Enables a computer to send and receive (encrypted) data across a public networks such as Internet as if it were directly connected to the private network.
Computer Fundamentals is the first course given in NSA and two other study programs. The course normally has over 130 students, which mean that efficient assessment is of interest in this course. It is a 7.5 ECTS course where the lab part constitutes 4.5 ECTS and addresses these course objectives:

- describe the fundamental parts of operating systems and their different implementations
- install and configure computers

The lab is divided into two parts, each ending in a performance assessment. The first part involves installing two different Linux operating systems, one with a text based user interface and one with a graphical user interface. The student will then continue to set up necessary network configurations, add users and configure file system permissions and partitions, mainly in the text based system. The lab also introduces basic scripting. The students need to present their solutions to a supervisor as a prerequisite to the performance assessment.

The performance assessment is performed on the student’s own hard drive. The time allowed is 2.5 hours and no conversations are allowed during the test. The students have full access to the Internet and other written resources. The test consists of three tasks, where one is considerably harder and gives extra credits toward a higher grade if passed. The two basic tasks test the skills that have been trained during the lab, often including adding users, adding a new shared directory with correctly set permissions, doing additional partitions, and/or doing an additional backup script. The higher grade task also tests skills trained during the practical lab but forces the students to combine them in other ways and check for details on the Internet to be able to successfully complete the task.

In the second part of the lab, the students install a Windows Server operating system on one of their hard drives and install virtualizing software on top of the Linux operating system on the other computer to be able to set up three different Windows client computers. The student will then continue on with, in many ways, the same sort of tasks as earlier but in a new environment. The students need to present their solutions to a supervisor as a prerequisite to the performance assessment.

The performance assessment for the second part of the lab follows the same pattern as the one for the first part. In this course no additional work from the students are needed from them. The completion of the labs, examined by the presentation, in combination with their two performance assessments will be the base of their grade for the lab part of the course.

Windows-administration I is a succeeding course of Computer fundamentals, given in the second semester of the first year. The course is a 7,5 ECTS of which 6 ECTS are for the practical assignment. It focuses on the need for centralization of system administration and backup and recovery. The practical part of the course addresses the following course objectives:

- independently install and perform basic configuration of servers and client computers
• create and realise backup and recovery plans for computer systems and data
• use tools for centralized administration of servers, clients and network resources
• describe and explain the theoretical foundations and central concepts within the area

In the practical lab the students will use their two assigned computers to set up a system consisting of two subnets and multiple servers and clients in respective subnet using virtualization. The students practice synchronization and replications issues between different physical sites (realized by the different subnets), central distribution of policies and software to clients, file sharing and centralized location of home directories, backup issues and strategies, and recovery of backed up data. This is a major practical assignment and it is divided into chapters (rather than parts) that need to be completed in sequence. Each chapter ends with a number of questions that the students need to be able to answer when presenting the lab. The students need to have presented their entire solution to a supervisor as a prerequisite to the performance assessment.

The performance assessment is performed on the student’s own hard drives. The time allowed is 2.5 hours and no conversations are allowed during the test. The students have full access to the Internet and other written resources including their own documentation for their system. The test consists of three tasks, where one is considerably harder and gives extra credits toward a higher grade if passed. The two basic tasks test the skills that have been trained during the lab, often including running a small program that will add information to their system. The students will then have to perform a backup of files and be able to restore. Furthermore, identity and account management is tested as well as centralized administration.

Windows-administration II is a succeeding course of Windows-administration I, given in the second semester of the second year. It is meant to measure the student’s ability to use their knowledge in multiple disciplines by having the students design and set up a complete computer system. The course is 4,5 ECTS and to enable them to set up a whole system, they are divided into groups of 5-6 students and need to collaborate and divide labor for the task to be feasible. The course objectives are:

• collaborate in groups to identify, implement, and document technical solutions based on a requirement specification
• describe and discuss the challenges in migrating data between different computer systems
• practically apply technical solutions that ensures high availability in computer systems
• reflect and discuss over the deficiencies and flaws in the proposed solutions from both a technical perspective and user perspective

The lab instructions give the students a lot of freedom to design their own system as long as it fulfills certain requirements regarding availability and functionality. Requirements can include efficient deploy-
ment of new clients, email and restoring of email-accounts, calendar, shared file storage, centralized user account management and the ability to restore all information even in the event of a complete physical destruction of one of the system sites. The students within the group are required to keep each other updated about their part of the solution and the overall understanding of the computer system is assessed in the individual presentation of the lab. Each individual will be asked to explain at minimum one aspect of the computer system that they have not personally been involved in.

The performance assessment is performed on the students’ own hard drives. The time frame is around 3 hours, but since this is a test of a complex system there are circumstances that sometimes allow the students to ask for additional time. The students have full access to the Internet and other written resources including their own documentation for their system and the performance assessment is taken as a group test. It is a test to ensure that their plans for the system’s availability work. The test involves turning off one of their hard drives, and wait for their monitoring system to tell them that an error has occurred. They then have to return their system to equivalent functionality and information availability as before the simulated hard drive failure.

In this course the students in addition to complete the lab and passing the practical test also need to document their system in a system documentation wiki and submit a report which reflects over their solution in regard to at least functionality, maintainability and security.

**Results**

The results presented in this chapter are divided into two categories, the results from the interviews with the educators and the results from the student survey.

**Educators’ experience**

The interviews reveal that the experience of the educators that uses performance assessments in the NSA study program is positive and their opinion is that they measure the practical skills of the students well. The assessments seem to catch those students that may have gotten a little too much help during the lab, either from supervisors or other students, and not really absorbed any of the skills. This relieves some of the concern about the risk of helping students too much during supervised lab sessions, since there is an independent test of their skills in the end of the course. The possibility of plagiarism is also almost impossible in practical exams, and there is no greater need to cheat since they normally possess the possibility to use any available resource they like on the Internet. The educators point out that it is important to understand what skills are measured by the assessments and what knowledge is better examined in other ways.

In similar way as Daly and Waldron (2004) describe that their lab exams assess the student’s programming ability, the educators of the NSA study program state that the performance assessments in the program assess the students skills at administering increasing complex systems, starting from a single computer in the first performance assessment in Computer Fundamentals to a system ranging over, at least, ten different servers, routers and multiple clients in Windows-administration II.
In regard to disparities between academic and practical skills, the educator seem to be united in their experience that it is the same students that excel at the performance assessments that excel at their theoretical academic work. This perception corresponds well with results presented by Buchanan (2006).

**Students’ experience**

The students of the NSA study program are assessed and examined by performance assessments in multiple courses throughout their study program. In the questionnaire, distributed as an on-line survey, the students got to answer questions about how they felt about performance assessments. 44 students participated in the study that was conducted at the end of the school year (June of 2013).

The first questions asked whether the students’ feel that performance assessments measure their practical skills, and if the students perceive it as a good way of measuring practical knowledge. There was very little difference between the three groups in this question. The large majority of the participating students perceive the performance assessments as a good way of measuring their practical knowledge. An even larger majority think it is a good thing to be examined by performance assessments. Figure 1 displays the results of these questions.

![Figure 1](image1.png)

**Figure 1. Students’ response to questions regarding the desirability of performance assessments**

a) Does performance assessments measure your practical skills?
b) Do you think it's good to be examined by performance assessments?

The next question investigated if the students perceive performance assessments as more stressful than submitting a written lab report. Figure 2 displays the combined view of all students participating in the survey, and about two thirds found performance assessments are less stressful.

![Figure 2](image2.png)

**Figure 2. Students’ response to:**
Do you perceive performance assessments as more stressful than submission of a written lab report?

Figure 3 displays the answers per group, and there is a clear difference between the NSA students (group 1 and 3), and the non-NSA students (group 2). Almost half of the non-NSA students perceive performance assessments as more stressful than submitting a lab report.
The next question focuses on the student’s perception of the believed usefulness of performance assessments when applying for jobs. This question was only asked to the NSA students since it is more important in their field. The results, as displayed in Figure 4, clearly indicate that the students perceive it as a positive thing when applying for jobs. It should be noted that some of the students had already started applying for jobs since the survey were performed just days before they had their last scheduled activity.

Figure 4. Students’ response to: Do you think that the performance assessments in the NSA program is a positive aspect to point out when you apply for jobs?

The last question investigates if the students perceive that there is a clear progression in the performance assessments in the NSA study program. The question has only been asked to the second and third year NSA students, since they are the only group that has experienced the progression. A broad majority of the students feel that there is a progression in the performance assessments as Figure 5 indicates.

Figure 5. Students’ response to: Do you feel that there has been a progression in the performance assessments in the program?

All students that participated in the survey had the chance to give a free-text comment. Of the 44 participants, 17 (39%) chose to leave a comment. The comments have been categorized into pros and cons.

The pros contained the most answers and one of the commenters wrote “I think all courses with a practical part should have performance assessment”, and another “many companies wish for practical knowledge when applying for jobs… add even more performance assessments”. The pros category also brings up an important aspect of working in the industry, where best practice is a rule of thumb. Among the answers were comments like “best practice need to be prioritized” and “a bad solution that might work but most likely will cause problems along the line should not be ok, best practice need to be considered”. Some of the positive aspects from the students were related to the fact that they have to write less written reports, and views in-
cluded that performance assessments “proves in a better way the student have learned the course goals than repetitive “how-to” reports based on manuals and Google” and “the only real good argument [educators] have for examining lab reports is that it gives training for the FYP”. Among the positive aspects, one individual commented that “performance assessment in the first course served as a soft start of the studies”, an aspect of performance assessments previously unknown among the educators.

Among the cons we found individuals explaining that lab presentations and lab reports are a better way to examine and that performance assessments are too stressful. Furthermore, some raised notion about practicalities that can be improved, for instance regarding the preparations of the labs before a performance assessment. One of the commenters highlighted for instance a faulty network interface card in one of the computers in one of the performance assessments.

Conclusions
A single case study can provide important learning and insights (Siggelkow, 2007), but the authors acknowledge inherent limitations concerning generalization of results.

That both educators and students in the NSA study program in general were positive towards performance assessments were suspected prior to the study, and the study confirmed this belief. The most surprising results of the study are in regard to the experience of the stressfulness of taking performance assessments, which also is the main focus of the study. Of those less experienced in performance assessments (non-NSA students, group 2) about half consider them to be more stressful than submitting a written lab report. Of those that have performed multiple performance assessments, two thirds consider them less stressful than submitting a lab report. It also differs between the first year and the second and third year students. Among the second and third year students, one third thinks the performance tests are more stressful than submitting a lab report, while the first year students are more divided between more stressful and “don’t know”. This might be because of the progression and difficulty of the performance assessments. They are intended to get harder, and the higher stress from higher grades may reflect this fact. Another explanation could be that the students may have become more comfortable in writing lab reports. To be able to answer that question, a more in-depth study needs to be carried out.

An interesting comment coming from the free-text comments is the experience that a performance assessment is seen as a “soft start”. This is not an aspect that the educators of the NSA program have considered earlier. Some of the problems with performance assessments are also mentioned in the free-text comments, for example with equipment that sometimes fail during a test.

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Fan Culture: The Use of Informal Learning Environments by Dalarna University Language Students

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Abstract
Learning outside the academic institution, or affinity-based informal learning, has been studied by various scholars (e.g., Paul Gee and Henry Jenkins). One place where this type of learning can occur is in online participatory fan culture activities, where fans create, for example, works of literature, films, and translations, as well as comment on one another’s work and teach one another.

In Sweden, very little research on fan culture as a place for collaborative learning has been conducted and existing research has mainly focused on high-school students (Olin-Scheller); therefore, our examination of fan culture activities and learning processes among university students will serve as an important contribution. The general purpose of our project is to find out more about informal learning activities that exist among our own students so that we can then apply that knowledge to our teaching and pedagogical methods as university teachers. We are interested to see how the practitioners themselves experience informal learning activities and how they benefit from these.

As such, a two-step project was designed: first, a questionnaire was distributed to all students of ten language departments at Dalarna University (2432 students). The questionnaire contained questions about the level of awareness of online fan activities and the degree of student participation in these activities: 368 students participated in the survey. The second part of the project comprised qualitative interviews (in the autumn of 2013) of some of the students who responded to the survey. Here, we examine the kind of fan culture activities that they are consuming and the reasons for their participation. As well, we examine whether they think they have developed any language, cultural, or other skills and knowledge through the communities and whether they consider the online fan activities to be learning environments or learning processes. In our paper we present the results of this study.

Keywords
Fan culture, fan communities, informal learning environment, participatory culture,
Introduction

Learning outside the academic institution, also called affinity-based informal learning, has been studied by a number of scholars (e.g., Paul Gee and Jenkins). One place where this type of learning can occur is in online participatory fan culture activities, where fans can produce anything from literary works to films and translations, as well as comment on one another’s work and tutor one another. In our previous NGL-funded project (The Literary Worlds of New Generations, 2012), we studied how online fan communities function as an informal learning environment on the internet with the examples of two subgenres, namely fan fiction and scanlation (Edfeldt, Fjordevik & Inose 2012). We identified and discussed some elements of these fan communities that arguably benefit the learning situation, such elements being passion for the subject, quick and sometimes very detailed feedback, and maybe also anonymity. In line with previous research in the fields of Education and Media, our analyses showed a very dynamic, creative and highly productive environment where knowledgeable people gather to create new texts and translations with passion.

In Sweden, very little research on fan culture as a place for collaborative learning has been conducted, and existing research has mainly focused on upper-secondary school students (Olin-Scheller 2010). Therefore, the general purpose of our second project was to gather information about informal online learning environments not only by studying the activity on these websites as well as secondary literature (as was the case with the first project) but also by finding out if our own language students participate in fan culture activities and, if so, how they think the activity supports their learning in terms of language, literature and understanding of other cultures. We also wanted to deepen our knowledge of how informal learning environments on the internet, created by the practitioners themselves, function as an educational practice and how participants perceive these. In a broader sense, the aim was to form a picture of how students at Dalarna University experience these informal learning environments and analyze the extent to which they participate in them. Our further aim was to learn about the skills they think they acquire there and the way they benefit from these.

The research project was conducted in two stages. First, a questionnaire was distributed to all students in the language departments at Dalarna University: 2432 students in 10 languages - Arabic, Japanese, German, French, English, Portuguese, Russian, Italian, Chinese and Spanish - to find out how widespread activity in and practice of fan activities online are among our students. The response rate to the survey was 15 percent (368 students). The questionnaire asked about the level of awareness among students about the existence of different online fan culture activities and the level of participation in these activities. From the questionnaires, we could see some slight differences based on gender, age and language of study. For example, more people younger than 25 are familiar with online activities than those who are older than 25. Also, the students of Japanese are more familiar with these activities and are much more active in these sites.
than students of other languages. While 35 percent of the students of Japanese (that answered the survey) were aware of these activities, only between 7 and 20 percent of students of other languages were aware of these. Women accounted for 74 percent of students who answered the questionnaire; however, in relation to the extent at which they were aware of the existence of fan activities, of the type of activities they are involved in, or of what they actually do on these websites, there was no major difference between the sexes. Yet a small difference in percentage was noted: men are more into consuming, i.e. they watch, read, listen, make comments and review the material, while women show a higher rate of creating and producing their own material in the communities. There was a further interesting phenomenon observed among students of Japanese: in the other languages, the majority of students that answered the questionnaire were women, but in Japanese, the rate was 48 percent women and 52 percent men.

The second part of the project consists of qualitative interviews (in the autumn of 2013). We identified nine candidates for interviews among the students who responded to the survey. At the time of writing, we had interviewed and recorded seven of them. The interviews examined the qualitative aspects of the participants’ involvement in fan communities with four different question areas: What kind of fan culture activities are they consuming/participating in?; Why do they participate, and what makes participation attractive to them?; What kind of knowledge and skills (such as language or cultural or other skills) do they think they have developed through participation?; and do they consider the online fan activities to be learning environments or learning processes that can be implemented in university courses? We also asked whether they see any connection between informal learning in the fan communities and their learning at university / college.

**Language skills**

Several of the interviewed students pointed to the language skills they gained at an early stage in their lives, especially in English. Some of the (Swedish) students began to express themselves and write in English as early as at the age of 10. One stated reason for this was that they did not want to wait for a Swedish translation of a movie / TV series or other, and therefore began to search for information, read, comment, and so forth on their own: “You learn passively through reading; you read something you’re genuinely interested in, e.g., when I learned English on the internet, I didn’t have the feeling that I was studying. And I think that’s how you benefit from this learning”. One student told us that she did little study during the first semester of her studies in Japanese at Dalarna University as she had been active in various fan activities in Japanese and thus knew many words and expressions already: “Most of the things we went through, I knew. I didn’t have to study, even though I haven’t actively studied Japanese before. Though now that the second term is more about grammar rather than just words and expressions, it is more difficult”. Another student pointed out that even though many words can be learned online, most are

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6 Interview 131127
7 Interview 131030
slang and therefore not appropriate at the higher education level: “I have a friend who learns Japanese through fan sub, and then went to a class to learn Japanese. He found it very difficult, because everything he had learned before then was slang. He could talk, but he could not talk politely”.

**Cultural skills**

Apart from the purely linguistic skills, most of the interviewed students mentioned their expanded cultural knowledge that had resulted from, for example, reading manga series translated by fans (scanlation). In such a way, a lot can be learned about Japan and Japanese society that cannot always be learned at school or in reference books: “In lots of manga I read in the shojo [girl] genre, I can see that female empowerment is not really a big thing. I can see that the girls have to make bento [lunch boxes] for the guys. So there are a lot of small things that you notice when you read manga”. The interviewed students also mentioned the importance of the cultural knowledge that is gained from the exchange of knowledge between the community members as a motivational factor for language learning. Another subject that was discussed, and which relates to culture competence, was how the activities on websites dedicated to fan culture can lead people to adopt a more tolerant and un-prejudiced approach to the world. According to the students, coming together through a shared passion and interest for one subject can serve as the basis for discussion of other issues and problems in the world. These communities are transnational and transcultural in character. Automatically, there is opportunity for discussion with members from all over the world, each member bringing his or her subjects and points of view to the discussion.

**Other skills**

According to the interviewed students, skills in information-seeking are gained from these online fan communities. This factor then ties with studies at an academic level, since there students are expected to seek information independently. Sometimes, the search for information in the fan communities serves as a “school”: one student said that “sometimes I do research on my own. If it’s difficult to find, I just write/draw how I think it should be and say that I don’t know if this is correct, e.g., details on a door when I draw”. In addition, several students mention the importance of critiquing and commenting on the texts / drawings / movies, etc. of others in a friendly manner (if you do not critique in a friendly manner, you may not be welcome in the fandom anymore). Students also mentioned how they gained skills in how to interact socially with people from diverse social backgrounds and different countries: “When you meet so many people, you change your mentality and approach to various things […] it can be all sorts of things from racism to civil rights to international collaboration”.

Other students gain more specific practical skills, such as webpage management, web design, digital cultural productions, and community website management that involves ethical and practical questions, skills that directly helped students to find a

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8 Interview 131024
9 Interview 131024
10 Interview 131025.
11 Interview 131115.
job afterwards or that were important in their professional lives. On the question of the link between learning online and learning on campus, the importance of being able to search for relevant and useful information was mentioned as well as the opportunity for collaborative production: for example, composing a text together and learning from each other’s feedback.

Conclusion
From the interviews, it emerged that there are large differences between the various fan communities with regards to such elements as feedback. For example, there seems to be more negative criticism of fan art than of, for example, fan fiction, according to one student, probably because opportunity to comment quickly on a picture or drawing is greater compared with, for example, fan fiction, which requires more time to read. Positive and negative feedback seems also to be the case with communities dedicated to games, but all community websites run the risk of being accessed by internet trolls, and this is something worth investigating and being aware of. However, we have not yet conducted a final analysis of all the interviews and questionnaire data.

As has been seen, students can learn various skills by participating in the mostly online fan communities. The next step in our project is to explore how to apply this mechanism to courses at Dalarna University, in other words, to the formal learning environment. It is an ongoing project, and based on our interview analysis identifying elements that motivate students’ self-learning, some course activities will be designed in an attempt to recreate the relevant mechanism of the informal learning environment.

Bibliography


Designing for mobile learning in higher education

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Abstract
This paper deals with the problem of designing for participation in mobile learning. Particularly it discusses how such participation could be designed into higher educational settings. As society is increasingly dependent on mobile technological solutions, higher education needs to be prepared for changing behaviors in terms of increasingly emerging mobile communication patterns of students and teachers. Such communicative patterns are increasingly supported by technologies such as smartphones and tablets. Moreover, the number of mobile applications and devices ready to be implemented in educational settings are growing. Since the shift of the new millennium the research field of mobile learning has developed. Results from this field identifies that mobile learning is about learning through communicative actions between people and across different contexts. Personal portable and wireless devices support these communicative actions. The research field has discussed such learning in terms of aspects of physical space, technology, conceptual space, social space, and learning as dispersed over time. However, more research is needed from a Nordic perspective and with a focus on design of educational settings. Therefore, projects that explore models of mobile participation in blended higher education settings are needed. The design of such projects is of strategic value for institutions of higher education that need to be up-to-date with the development within the mobile society. In the paper the design of a development project is used as an example of how such design could be implemented in blended higher education settings. This project secured a wide range of learning about mobile learning in higher education settings by building on research reviews and experiences from teachers that informed their planning, and discussions of trials they performed in their own courses. The project includes trials that were conducted in four different first-cycle programs. These trials included an approach to mobile applications and devices that embraced the deployment of university-owned equipment as well as bring-your-own-device scenarios. Cumulative features were included in the design of the project with the purpose of informing the performance of features in later stages of the project. Iteration was included to create loops of different features that could help
participants recycle and share their experiences. The embrace of different approaches to technologies as well as the cumulative and iterative features of the design offered the opportunity to go beyond the traditional classroom in higher education settings.

**Keywords**
Mobile learning, higher education, design

**Short Introduction**
Designing for the use of technologies in educational settings can be traced throughout history (Mitcham, 1994). As Dillenbourg (2008) point out, educational technologies are today part of most educational practices. But as mobile technology, they are becoming more and more invisible and taken for granted. Pachler, Pimmer, and Seipold (2011) claim that “mobile devices have the power to transform the way we learn and work” (p. 4). However, mobile learning, which can be defined as “the processes of coming to know through conversations across multiple contexts amongst people and personal interactive technologies” (Sharples, Taylor, & Vavoula, 2007, p. 225), do not emphasises technology. Mobile learning can therefore be said to be more about how people learn in multiple settings by using different technologies for communication. Projects have “shown how mobile technology can offer new opportunities for learning that extend within and beyond the traditional teacher-led classroom. Yet, the very diversity of the projects makes it difficult to capture the essence of mobile learning” (Sharples, Arnedillo-Sánchez, Milrad, & Vavoula, 2009, p. 233). Though Swedish scholars, including Lundin, Milrad and Spikol (Kurti, Spikol, & Milrad, 2008; Lundin & Magnusson, 2003; Milrad et al., 2013), have had an international impact in the field of mobile learning, few Swedish studies have focused on the development of mobile learning in higher education.

This short paper concerns the design of mobile learning in blended higher education settings involving teachers from different subjects as co-designers of participation.

**Specific setting – E-learning as a University Strategy**
In 2011, Mid Sweden University formulated an overall university strategy within five areas concerning education. Of two prioritized areas e-learning were one, and the university formulated the vision for 2015 to be recognized as successful in e-learning, both among students and staff, in comparison with other universities in Sweden (and in the world). E-learning was described as an approach for education not only for the distance educational part but for campus education as well. This implies that Mid Sweden University was to be active and leading in the development of forms of e-learning for higher education.

A policy and action plan for e-learning was formulated with the intention to build on the quality criteria for e-learning presented by The Swedish Higher Education Agency in 2008 (SNAHE, 2008). In the action plan the resources needed for e-learning in the form of teacher time and competencies, requirements for technical and educational support as well as other aspects of infrastructure was highlighted.
It was also intended that different academic subjects and departments was to start projects of a model character, in which different approaches to education that might be placed under the umbrella term e-learning was to be tested, evaluated, and in the end implemented on a whole university scale. Model projects include for instance approaches such as blended learning, and in this case Mobile Learning.

Mobile learning as a model project – designing for mobile participation

In 2012 the project Mid Sweden University and Mobile Learning (MUML) was initiated. It concerned two departments at the university, one from the faculty of Human Science and one from the faculty of Science, Technology and Media. From these departments four three-year first cycle programs were selected to be part of the project. This project secured a wide range of learning about mobile learning in higher education settings by building on research reviews and experiences from teachers that informed their planning, and discussions of trials they performed in their own courses. From the department of Education there were three programs included, the bachelor program in behavior science, the teaching program in early years education, and the primary school teacher program. From the department of Information and communication systems the program for mobile applications and network services for android was included. The project included trials that were conducted in all four first-cycle programs. These trials included an approach to mobile applications and devices that embraced the deployment of university-owned equipment as well as bring-your-own-device scenarios. At one department the whole class of students had access tablets. At one department, the whole class of students had access to smart phones.

Cumulative features were included in the design of the project with the purpose of informing the performance of features in later stages of the project. Iteration was included to create loops of different features that could help participants recycle and share their experiences. The embracement of different approaches to technologies as well as the cumulative and iterative features of the design offered the opportunity to go beyond the traditional classroom in higher education settings.

Mobile learning designs – a few examples

From these programs we can provide a few very short accounts of how this project as a design for mobile learning has been enacted. These are only glimpses from the ongoing process of following the project.

In one of the courses students were given an assignment where they should learn about the composition of an image. In the performance of this task students meet in a workshop at campus. Students were offered the opportunity to use their own devices (BYOD) or borrow tablets owned by the university. These devices were used to capture and compose images through photo-application built into these portable devices. Through the deployment of tablets these photo-applications afforded students to immediately experiment with different compositional effects and later check the compositional effects on the captured im-
ages. The possibility to participate in a dialogue with other students also was afforded. These dialogues could include analysis of digital images and discussions of various theories of composition.

In the design of the educational setting in two of the courses teachers linked mobile applications to clinical training. One of these courses, a course in the preschool teacher program, students were assigned a task were they should analyze and discuss the use of digital technologies in preschool settings. In the performance of this task students were supposed to document and sample empirical data with the help of a BYOD-approach. Therefore, students used their own devices to take pictures of pedagogical activities that deployed digital technologies. Moreover, through these devices they also captured empirical data from interviews with preschool teachers. Together with a literature review this empirical data were later used to compile a report that included an analysis and discussion of the use of digital technologies in preschool settings. The other course-design linked to clinical training included students from the teacher program for leisure-time centers. As in the other course, a BYOD-approach was applied. Students were assigned to capture their experiences from their participation in clinical training. During their clinical training they should share and discuss ideas they had discovered or things they had learned during their training. These ideas were shared through tweets on Twitter and included a short written comment as well as the possibility to attach an image or a movie. Students were encouraged to discuss each other’s tweets. The purpose of this sharing was to use the Twitter-assignment as a possibility to strengthen the link between clinical training and the theoretical activities performed at campus. Therefore, the tweets were included in a campus-based follow up of the clinical training.

In a course in the sociology of education teachers deployed a portfolio-design including weekly written assignments. In the design the setting were adapted to mobile submission of these assignments. This meant that students had the opportunity to utilize cloud-technology by submitting the assignments as links to a shared PDF-document. Students that tried this possibility could therefore submit their assignments from a smartphone or a tablet. This design removed limitations due to limitations within the Learning Management System.

**Concluding remarks**
The preliminary results of the project indicate that it is possible to design for mobile participation in higher educational settings. In the project teachers designed settings that included students deployment of mobile devices in their clinical training as well as in more theoretically emphasised courses. These trials included features of mobility in teaching as well as in assessment of students learning. Nevertheless, being early in the evaluation of the project, these trials seem to be promising for future implementation of mobile learning within higher educational settings.

**References**


Challenges and lessons learned concerning learning in a social context in web-based education

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Abstract
This paper presents five identified challenges concerning learning in a social context in web-based education and discusses lessons learned on how to reduce these challenges in higher education. The study is primarily based on the authors’ own experiences in conducting web-based education as well as on theories and research on learning and e-learning.

Keywords
Web-based education; learning in a social context; e-learning; online learning; higher education.

Introduction
The development of new communication and IT tools (ICT) in today’s globalized society has led to new opportunities to communicate across time and space, which in the long run has impact on teaching and learning in higher education. The Economist Intelligence Unit (Glenn, 2008), for example, argues that the question is not whether or not higher education will be conducted in digital format, but in what ways technology will affect teaching and learning.

There exists a great diversity of different concepts for education conducted via ICT, to mention but a few, open learning, distributed learning, online learning, blended learning, flexible learning or web-based education (see, e.g., Hrastinski, 2009; Mattsson, 2008; Sundgren, 2012). These concepts are usually attributed various meanings in different contexts, but there is not enough space available for detailed discussions about the different concepts here. Our purpose is to briefly demonstrate the diversity of concepts in the field of education via ICT, and hereafter we will use the concept web-based education as a more general term which refers to higher education that occurs over time and space, between teachers and students, and with the support of ICT. However, we explicitly avoid the concept distance learning, based on arguments put forward by, e.g., Hrastinski (2009) and Mattson (2008). They argue that the concept distance learning is often associated with a more tradi-
tional information transfer perspective on education (the acquiring of concepts), following the *acquisition metaphor* (Sfard, 1998), which runs the risk of not utilizing the available technical possibilities to connect students, but primarily focuses on the, more or less, isolated interaction between teacher and student. Instead, we adhere to the constructivist perspective on learning, following the *participating metaphor* (Sfard, 1998), which puts attention on the shared social and cultural aspects of the learning process. More specifically, our view of learning as both a phenomenon and a process has its origins in the interactionist approach, mainly inspired by Bron and Wilhelmsson’s book *Learning in Higher Education* (Eds./2007). This means, learning is a reciprocal process that is shared between student and teacher, and as presented in Chapter 7, on page 101: "The responsibility for the realization of learning in adult education is shared. It is shared between the learner and the educator. The outcome of the students’ or others’ learning success, depends on the students themselves, the teacher, and the interaction between them". This quote really captures the heart of the matter when it comes to learning as a phenomena based on our values. But then we have to address the question of responsibilities, and we quote from Chapter 5, on page 70, the following: "The learner is responsible for his own task to learn. The teacher is responsible for creating a good learning environment".

However, it should be pointed out that we are not major opponents of the *acquisition metaphor*, since the combination of both metaphors is common in higher education, and both metaphors have their pros and cons. The *participating metaphor* has sometimes (wrongly) been considered as fuzzy and babbling, lacking coherence and structure. In order to reflect, think critically and synthesize different perspectives, students must have constructed a thorough understanding of central concepts in the current subject area of study (cf. Feisel-Schmitz taxonomy of learning, 1986). Generally speaking, as a teacher you have to be aware of the different metaphors and apply them accurately in the course design so that the students will be able to reach the intended learning outcomes through proper course alignment (Biggs, 1996).

As a result of the development of ICT, different digital learning platforms have been developed that enable various forms of social interaction and communication between teachers and students. In addition to the new opportunities that learning platforms and their available tools provide for flexible web-based education, there are also some challenges concerning how to develop social interaction between students as well as between teachers and students in web-based education. According to the scientific literature, there are several implications that social interaction is more difficult to develop in online courses than in campus courses, due to the fact that humans are social beings and that many aspects present in face-to-face (f2f) interaction is actually missing, to various degrees, in web-based education.

However, creating and maintaining efficient, effective and creative learning communities is easier said than done in practice. There is a lot of research that addresses several crucial aspects in order to create
and enhance well-functioning learning communities, but typically the focus is on group work. We will address the issue of social learning communities from a more individual perspective, but still the learning is considered to occur in a social context. Based on our experience, group work is a demanding activity in higher education in general, and especially in web-based education. We have encountered different kinds of problem situations and have tested different ways to overcome or, at least, limit the identified problems. The major goal has been to improve the students’ learning environment and learning outcome, but the cost has sometimes been more administrative work as well as increased workload for the teachers (e.g. more assignments to examine). However, we have discussed the pros and cons of our way of working and concluded that the “traditional” way of group work also resulted in an increased workload for teachers, and increased drop-out rates for students. Altogether, the additional communication with students and administration regarding problems related to group assessments resulted in alternative ways of working in a social context in web-based education. It should be pointed out that the majority of our students are enrolled on freestanding and first-cycle courses. Another central issue is the legal aspect. According to the University’s local Degree Ordinance, each student has to be examined on his/her own performance and not on group performance.

The aim of this paper is to present five identified challenges concerning learning in a social context in web-based education, and discuss lessons learned on how to reduce these challenges in higher education in general, and online courses in particular. The remainder of this paper is structured as follows. The following section provides some conceptual background on different aspects of learning in a social context in web-based education that will be useful in motivating and framing the work discussed in this paper. The subsequent section presents the method and performance of the study. The next section presents the five identified challenges concerning learning in a social context in web-based education and discusses lessons learned on how to reduce these challenges in higher education. The paper ends with a summary and discussion of the work presented here, as well as addressing some future work, ending with conclusions.

**Background: Learning in a social context in web-based education**

The advent of ICT has resulted in a huge body of research over the years regarding different aspects of social learning in web-based education. It is not possible to review all the relevant research here, so we focus our attention on some underlying approaches, theories and concepts that address major characteristics of social interaction and communities of learners.

Web-based education is complex and provides a lot of pedagogical, administrative and technical challenges in general, and the social interaction between students and teachers in particular. Based on our adherence to a constructivist perspective on learning, following the *participating metaphor* (Sfard, 1998), we put attention on the shared social and cultural aspects of the
learning process. For example, research has shown that students who interact with their peers and teachers often receive higher grades, have reduced dropout rates, experience that they have learned more, are more satisfied with their education and more inclined to finish their education (Fredericksen et al., 2000; Hiltz et al., 2000, in Hrastinski, 2009).

Within the interdisciplinary field of Computer Supported Cooperative Learning (CSCL) the main concern is to explain, study and design learning environments which take place via social interaction using different kinds of interactive technology (cf., e.g., Stahl, Koschmann & Suthers, 2006). CSCL is characterized by the sharing and construction of knowledge among participants using technology as their primary communication tool. The role and relevance of technology as a supporting and mediating artefact is central in CSCL, which dates back to the socio-cultural work by the Russian scholar Lev Vygotsky. Moreover, CSCL’s emphasis on students’ learning in social groups has influenced pedagogics and learning sciences, and the combination of technology and education is considered a fruitful combination in order to enhance learning in a social context, from both individual and group perspectives (Mattson, 2008). Roughly speaking, there is compelling support for the role and relevance of social interaction for learning.

However, research on social psychology applied to group work in computer-supported collaborative work (CSCW) reveals that the intended positive outcomes with group work suffer from some drawbacks in the form of poorer performance (Kraut, 2003). Examples of drawbacks are process loss and social loafing. Process loss occurs when group members work less efficient in teams than individually, and it is often the result of coordination and motivational problems. Social loafing is another identified issue that degrades individual motivation in groups, and it refers to the fact that individuals will engage less in a group activity if they suspect a poor outcome, it the task is not personally satisfying or engaging. In other words, social loafers do not contribute to the outcome of the group task as a whole, and instead try to sneak with minor effort.

A fundamental issue in web-based education is the distribution over space and time, and consequently the distribution has impact on the social interaction, the teaching and the course design. The design of web-based courses differs significantly from campus-based education, and consequently it radically changes the teachers’ role and pedagogics (Hrastinski, 2009). Pedagogical digital competence, for example, is a central issue in web-based education that we address in more detail elsewhere (cf. e.g. Lindblom, Alklind Taylor, Rambusch & Svensson, 2011).

Moreover, the way learning is affected by synchronous or asynchronous interaction is of particular interest, given the fact that the majority of online students, seldom or never, come together in real life (IRL). The use of internet offers a tentative solution to enabling social interaction when located at different places geographically. As a consequence, some efforts have been made in order to create some kind of “virtual learn-
ing communities”, as a substitute to meet IRL on campus (Mattsson, 2008). How is (social) learning affected by synchronous or asynchronous communication through interactive technology?

Computer-supported communication provides several possibilities and media channels (such as text, video, audio etc) to social interaction in web-based education, which in the long run might establish “communities of learning” (Lave & Wenger, 1991). Hrastinski (2009) disentangles different pros and cons with synchronous and asynchronous communication in web-based education. Much emphasis in research has been on asynchronous communication given its flexible nature. It has been argued that the characteristics of asynchronous communication provide several possibilities for learning; independence from time and place, allowing students’ to decide by themselves when to communicate with other students and teachers. This offers students the possibility not to answer questions immediately, and then having more time for formulating and reflecting on their answers. This also has implications for course design, allowing assignments to be made during longer time-frames, flexibility and explicit social interaction among students. The flexibility in time and space allows other than ordinary student groups to participate in web-based education; students that live far away from campus, are working part-time, or are raising a family. They can then participate according to their own schedule; study on weekends, at nights or during shorter time-spans at daytime. On the other hand, the pros with asynchronous communication can also be considered cons. For example, students might be afraid of posting questions and texts in fora visible to others, since they might suffer from performance anxiety, fear of making a fool of themselves by asking “stupid” questions or having misinterpreted an assignment task in front of their classmates (Hrastinski, 2009). Synchronous communication requires students to participate in real-time, but not being at the same place. Pros with real-time interaction are the possibilities of direct feedback on questions, to get immediate replies on follow-up questions, and the possibility of social “chatting” with other students beyond the course content, providing a foundation for a “virtual learning community”. The major con with synchronous communication is the inflexible nature of punctuality in time, since many online students are busy with other tasks besides their studies. It is easier, however, to use synchronous communication in smaller groups, in students’ own planning and in supervision of group work (Hrastinski, 2009). Generally speaking, asynchronous and synchronous communication complements each other, by providing different means for communication among students and teachers in web-based education.

Concurrently with the technological development, and the considered advantages of social interaction among students for learning, different aspects of “collaboration” and “participation” have gained increased attention. For example, encouraging student participation and collaboration is considered as the teacher’s most important characteristic in order to succeed in web-based education (Hrastinski, 2009; 2011; Mattson, 2008). There exist a lot of rele-
vant concepts concerning learning in a social context, for example, “collaboration”, “cooperation”, “participation”, “community of practice” and “virtual learning community”. Taken together, without disentangling their similarities and differences, and philosophical underpinnings, these concepts stress, to various degrees, the significance of participating and sharing ideas and thoughts about both the course content as well as the subjective socially experience of being part of a group with shared interests in web-based education.

**Method and performance**

In order to identify the challenges and lessons learned concerning learning in a social context in web-based education, a case study was conducted (Patton, 2002). The chosen approach was inspired by action research (Argyris, Putnam & McLain Smith, 1982). Action research involves the process of actively participating in change situations while conducting research, in order to solve identified and upcoming problems through a reflective developmental process, by individuals working together with others as part of a “community of practice” (Lave & Wenger, 1991) to improve the ways they encounter various concerns and disentangle problems. The action research approach was motivated to gain access to the authors’ own knowledge and experiences in conducting web-based education, as well as the involved teams of teachers. By this approach, we were able to reflect on our own ways of conducting web-based education while we practically ran the courses. Thus, we could modify the course design between every time a particular course was given, and then continuously evaluate the impact of our changes between different occasions, based on students' and colleagues' commentaries and criticisms. The students' comments were collected through course evaluations, e-mails and posts in different fora on various course sites on the learning platforms (they differed during the years). Colleagues' views were collected continuously during the courses and especially at the completion of course evaluations. The time-period for the data collection was 2008 - 2013 and the amount of courses was about 10-15 each year in the subject areas of e.g., cognitive science, human-computer interaction, philosophy, cognitive neuroscience and web design. Most students participated in freestanding courses but some were programme students.

**Five challenges and lessons learned**

Based on the action research approach, we have identified the following challenges. We provide our experience and lessons learned for each challenge concerning learning in a social context in web-based education:

- Students' expectations that they participate in education as individuals, and not as learners in a social context
- Students’ individual interpretations of the study pace and the role of deadlines for examinations for the progress of learning in a social context

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12 We performed this study as course coordinators, examiners, educational coach and quality representative for undergraduate education in cognitive science.
• Students’ different ambitions and approaches of workload planning and the amount of social interactions with other students in performing course assignments
• The allocation of time and cooperation of learning activities together with other students
• Develop quality controlled examination for each student in a socially interactive learning context

Students' expectations that they participate in education as individuals, and not as learners in a social context

The students often have particular expectations on a course and we inform them of our view on learning in the “study guide” to prepare the students for our expectations and our view on learning (see the quotes in the Introduction). Some students view themselves as lone sailors, arguing that on a “distance course” one should not have to interact with other students, and therefore they are not supposed to interact with others, e.g., they are often proponents of the acquisition metaphor (Sfard, 1998). They present arguments such as it will be meaningless to interact with other students since only the teachers will provide necessary knowledge to them. Moreover, they often put forward the time issue, they are not interested in ‘wasting’ (spending) time in student interactions, they have limited time available for their studies due to personal reasons. We also inform the students about our view of what it means to be enrolled in higher education, and what this responsibility means more concretely is clarified in the following: From the student’s perspective, we want to emphasize that the students must be aware that an academic education is an active choice, which periodically is more or less demanding, requiring hard work and some challenges that one may not directly grasp the benefit of. If students are ready to take up the gauntlet to develop, will we as teachers provide a creative and knowledge-intense environment for students’ to progress in, through our competence, a scientific perspective and our commitment to the subject.

It is important to develop a good learning environment, to be distinct regarding course structure and to clarify what the demands are in workload and time spent on a course. One successful way to be present early on is to write concise messages to the students on the course's digital bulletin board, which leads to fewer questions and more satisfaction among the students, and has resulted in an increased quality of the courses. We continue with these messages usually every Monday throughout the whole course, addressing the planned work of the week and offer some pieces of advice in reading the literature, upcoming assignments, and provide general feedback on prior assignments. This way of working has been appreciated by most students. In addition, we have different fora at the courses’ site on the learning platform, where students can post questions on course content and about the assignments. As teachers, we encourage students to help each other, and we are keen to answer their questions very quickly. In the beginning of a course, we respond to their questions several times every day, as a way to create a sense of social presence, in order to develop towards a “virtual learning community”. We always answer the students’ questions in a positive manner, e.g., thanks them for posting their question as a way of
working with the course material or getting to know the learning platform. We hope that our positive tone of voice encourage other students to post their questions on the available fora. If we receive course related questions in form of emails, we kindly reply that we will answer the question when it is posted on the course’s fora, since the question and the answer might be useful to the other students too. This is another way to further promote social interaction with others.

**Students’ individual interpretations of the study pace and the role of deadlines for examinations for the progress of learning in a social context**

Social presence needs to be initiated in the course introduction and “rules” that provide confidence in communication. Early social interactions create conditions for a good virtual learning community. Our experience is that a large percentage of students taking an online education view it as something they will carry out all on their own and the assignments that are included should be assessed shortly after they are submitted. It is important at an early stage to provide students with all the course material and also inform them of when they can expect feedback. There is sometimes an expectation to be able to have control over the time they have available to conduct the course. The supposed idea that online studies are more flexible than campus courses are usually experienced as very positive. However, many students unfortunately misinterpret this into believing that you can do things whenever you want. Some students interpret web-based education as just reading the textbook and then making a final individual assignment on the whole course material when they feel it would be appropriate. However, we do not consider this approach as favorable. Firstly, our experience indicates that many students have a tendency to procrastinate their study start, and therefore we have minor assignments early on, e.g., basic concepts in the subject area, in order to encourage their reading of the course literature and to start to discuss these concepts with each other on the course forum. Secondly, some students have applied for study allowances and the rules for obtaining this economical support are very strict in regard to study outcome during a certain time period. Thirdly, we have strict deadlines so the students can interact on certain issues and assignments simultaneously and then both supporting and assisting each other on individual tasks as well as discuss and comment on each other’s assignments. Some students view the other students as competitors rather than resources for their own learning. Finally, we have experienced that it is fundamental to encourage and initiate social interaction among the students already in the beginning of a course, otherwise it is much harder to accomplish this “social learning climate” later on, or sometimes nearly impossible. Many students enrolled in a web-based education, do it aside of their own work or during parental leave and when they have allotted some time so study, so they presume that all information and answers are easily accessible. The timing is often important and there are no or very small margins in the time allocated for the course in their lives. It is therefore essential that teachers and other staff members are available and provide fast answers, especially in the beginning. It is necessary to inform clearly and early on what the quickest way to get re-
responses is. There is a large profit referring students’ questions to a course forum because many students struggle with similar issues and can then help each other on the course. If more individuals read the response to the posed question, the potential for rapid response increases. It's a win for both students and teachers and should be encouraged.

Learning with other students is often not included as an integral part of the student's life; it is a need to be structured within the layout of the course design. It is important to note that as students take their own responsibility regarding the study process. Students are required to read the literature and make reflections, for example, on the current theme for an upcoming assignment. The examined assignments should as far as possible be returned to the students using the same tools as for the submission, and the assessment criteria should be available before the assignment’s deadline. It should be clearly stated for the students when they can expect feedback, when their credits are reported, and when the re-examination will occur.

**Students’ different ambitions and approaches of workload planning and the amount of social interactions with other students in performing course assignments** Virtual learning communities in form of e.g. webinars, provide a changed role of the teacher since the teacher may act as a moderator or coach, instead of the classical role of a lecturer. Some webinars (we denote our online seminars as webinars) begin rather early in the courses, in order to initiate activity and interaction before an examination via a quiz on basic concepts (only individual examination) takes place. Our goal is to foster students to learn from each other, develop their writing skills and provide them with new perspectives on the actual issue. Before the course’s first webinar starts, we post an example of a relevant written text, as a kind of inspiration as well as a rough template. By so doing, a lot of questions about how to write the text for the webinars are answered as well as students’ expectations of how to write and in what kind of style is illustrated in the example. Initially we were against the idea of providing an example, but we changed our minds when we experienced the positive results of posting an example in advance. Fewer questions about how to write an adequate and relevant text, fewer students that begged the teachers to pre-assess the text before posting (something that we do not do), fewer emails from students who were anxious that they would not succeed in writing a proper text, and the handling of academic referencing was significantly improved in the posted texts. When the webinar starts, only students that have posted their text the day before (absolute deadline) are allowed to participate. We nowadays usually have Mondays as **the** day to post the text for the upcoming week’s webinar (the webinars usually start on a Tuesday and end on a Monday morning), instead of on a Sunday that we had earlier, since we can now assist and help students to post their texts on the fora when we are in the office/at work. The design of webinars often relies on students to publish a response to a question(s) before a specific date. The day after the deadline (usually on Tuesdays), we publish a list on what text each student primary should comment. They do not comment on each other’s texts in pairs, since each stu-
dent comments on student X, and receives responses from student Y. By this way of working, students get involved in several social interactions. We encourage them to comment on more than the allotted students' texts. According to the instructions, the comment must be relevant to the task and content of the assignments. They should also respond to the comments they receive, demonstrating that they have read and carefully considered the comments. In our view, this is a kind of social learning process, following the participating metaphor (Sfard, 1998). We have recognized that this way of working has resulted in an increased student activity, better quality of texts and comments, and more satisfied students. Students spend more time interacting with each other in dialogue around concepts and course content providing more knowledge in the field and new angles that add value to the actual subject. They also share their own perspectives and experiences with each other that subsequently results in a kind of dialogue among the students, which, in the long run, hopefully increases learning. It is of major importance that teachers are actively involved during the actual webinar, commenting on student texts and also posing questions. There are always some student texts that will not pass the criteria for the assignment in its initial version, but an active teacher/moderator can pose adequate follow-up questions so that the student can improve the text, by adding clarifications or references in (a) complementary comment(s), and then pass the criteria during the webinar although the initial text did not pass. This also has a positive outcome on student comments to each other, seeing how the moderator formulates the questions as a kind of ‘role model’. We have noticed as students develop their texts, we usually experience the positive trends that students undergo during webinars, even in between different webinars we witness a positive development. One identified advantage compared to campus seminars is that everyone gets to “speak”, silence can take place when it is needed, more focus on the text content than on the writer (more egalitarian) of the text, and comments and postings are more thought out and well-formulated. The quality of the subject content increased compared to campus seminars, which has resulted in webinars on campus courses as well, instead of regular seminars.

The allocation of time and cooperation of learning activities together with other students

Presentations of group assignments are of importance and if students find them meaningful they engage themselves in these. Group work is frequently occurring and enriching the campus based education (though not without problems either), but leads to larger and more complex communication problems in web-based education. It can be viewed from different perspectives; we notice many benefits of student interaction, and try to create conditions for continuous student interaction through our structuring of the of the course syllabus in order to continually have different forms of student activity and interactions.

One major experience is the importance of providing clarity and reflecting upon what students need to know and how to design the course site on the learning platform. To navigate through a lot of information often leads to frustration and irritation among the
students. As course coordinator, one has to consider what kind of information is required for the course and what it is intended to be used for. Many times "less is more", and often it is preferable with as few avenues of information as possible. Some assignments are structured as group work and much effort has been put on making group work to run well. The grouping of the students is in itself a challenge. Firstly, to let the students themselves form the groups has resulted in a negative outcome. They do not begin in time and many are then left without any group involvement, resulting in extra workload for the teachers in order to solve the issue. Secondly, to form random groups based on officially enrolled students on a course is problematic. Many enrolled students are non-active participants in the course, causing frustration and problems for the other active group members. For example, they do not cooperate or respond to questions, and sometimes single student groups arise. Mandatory study contracts in the allotted groups did not solve the problems. As a result, there will be frustration from students and additional administrative work for the course coordinators. Some of the high-performing students dropped out because of the problems within the group. Based on the above issues we did some re-thinking about grouping that resulted in the following:

1) Grouping by location - good idea—but it turned out that several students were on other addresses than they had declared - so it did not match and sometimes there were not enough students geographically close to form a group.

2) Grouping by activity - active students were matched with active students, and stragglers were matched with stragglers. It sorted out pretty good but did not cover the whole picture of the problem.

3) Grouping by “mini quiz” based on ambition, residence, preferred study time (weekends, workweeks), programme or freestanding students, and then the students were divided into groups based on their preferences.

Although the problems were reduced significantly, the "basic criticism" to group assignments remained and the quality of the final reports was often poor and this way of working was not satisfying enough. The reports were usually written by the different group members independently of each other’s writing style etc., and did not end up in a uniformed final report layout or content. Often it was the result of a “copy and paste” exercise of the individual members’ texts in the group. Many students were upset when the report as a whole did not pass the assessment criteria, and consequently all the group members did not pass the examination. They criticized our way of working with failed assignments since their own “text parts” had passed, and therefore these students argued that they should pass the group assignment on an individual basis. It was obvious that under these circumstances the students neither cooperated nor collaborated on the group assignment (although it was clearly stated in the description of the assignment), ending up in no overall responsibility and time-consuming discussion about who was responsible for the different parts.
We then decided that the assignment should be carried out individually but to be presented and discussed in minor groups so that the will provide feedback and reflect on each other's work. The former group assignment was usually situated towards the end of the course, where students should analyze short movie clips (we had prepared 3-5 movie clips in different situations, approx. 2-3 minutes long) that we as teachers had created. Generally speaking, the students had to find three to six specific scientific concepts from the course subject in the film clips, define them theoretically, identify empirical examples of these concepts from the allotted film clips, and then describe and motivate the connection between “theory and practice”. The assignment task as such was not criticized; instead it was the performance as group work that caused problems. After the shift from group work to individual work, the process was carried out in the following way:

Students performed the assignment individually according to the instruction. Their individual reports were submitted via the learning platform at the latest at deadline, and then we randomly grouped 4-5 students into specific fora, where both all the film clips as well as the students’ reports (in pdf format) were available. Then they had to comment on each other's work and answer the responses received during a period of a week. In this way, we still have the individual work for the student (avoiding group related problems), increased quality control in examinations, more freedom and the opportunity to interact with other students and reflect on others' perspectives and analyses on the same film clips. Taken together, the students became more responsible for their own work process and put more effort on the task since it was not only the teacher who would see their reports, the discussions on the fora were of high quality and the students were very engaged in the topics addressed. The students’ satisfaction with the assignment as such increased, the interactions with the other students were highlighted as very positive in course evaluations, and also the report quality increased.

**Develop quality controlled examination for each student in a socially interactive learning context**

We use continuous examination in trying to achieve higher learning outcomes, better workload for the students, and higher throughput. Social interactions via different kinds of webinars and fora on the learning platform are ways to broaden student perspectives and increase the activity level, as components of a participatory learning process in a social context. In order to encourage student activity, resulting in higher throughput and learning in the long run, we focus on clearly stated assignment descriptions and assignment criteria for pass or fail. In both cases it is clearly stated if social interaction with other students is required and in what forms. It should not be a surprise for the student that they have to comment on other students’ text and write relevant responses to posted comments. Students fail on the marked examination if they ignore to comment or respond on texts (they are offered a second chance at the re-examination). All texts, comments, and responses are posted on the learning platform and the students have to log on to the platform via their unique user accounts at the university. As a consequence, all posts are visible and traceable.
digitally to each and every student on the actual course, serving as a basis for examination for both students and examiners. By this way of working, students can themselves view what material they have posted and when, not being insecure if the material has reached the examiner in time. Lengthier student reports are handled through digital aids in plagiarism control that automatically verify student texts against material on the internet, archives etc., reporting any similarities and provide feedback to the examiner in form of source track-back that then can be analysed further.

When it comes to group work, we see similarities with the identified major factors of process loss and social loafing (Kraut, 2003) in CSCW in our web-based education. Consequently, the challenges for quality controlled examination increase since group related conflicts might occur that have legal consequences. Students can, for example, be excluded from the final report by other group members on uncertain premises. The other way around, students that have not participated are included in the final report. We have used mandatory “study group contracts” to reduce these drawbacks of group work, provided special fora for each group to work within on the course site to minimize coordination problems, and tried a wiki tool on the learning platform in which one digitally can trace the contributions of every group member in accomplishing the final report. The use of the wiki tool was a good idea in theory, but it turned out that the usability and learnability was too low for the average students, and we received a lot of complains from students regarding the difficulty to use it properly in practice.

To summarize, the trade-off that we now have reach with more individual work that is complemented with social interaction with other students is a viable approach. The examiners and students have access to all the material and the student complains regarding group work have decreased, they are more content with the assignments, highly appreciate the interaction with the other students, and the throughput has increased. We have much more control when doing examination given that the students are correctly graded on behalf of their individual performance, without viewing learning as an isolated interaction between teacher and student.

Discussion and conclusions
This paper has presented different challenges regarding learning in a social context in web-based education; resulting in some lessons learned to decrease, or to some degree, overcome these challenges based on our experience as teachers, course coordinators, examiners, quality representative for undergraduate education, and educational coach at our university.

This paper contributes to extending the understanding of different aspect of learning in web-based education in a social context, and our ambition is that colleagues should be inspired and find our lessons learned useful and effective in their daily work. However, the proposed challenges and lessons learned are still work in progress, and need further elaboration. Firstly, the identified challenges need to be developed further, since there is a need to incor-
porate relevant work from research in CSCL, pedagogics and related areas. Secondly, the lessons learned should be closer connected to current research, in order to the current gap between practice and theory regarding different kinds of social interaction. Thirdly, there is a need to incorporate our experience as students in various web-based courses that we have participated in. On the one hand, we wanted some inspiration for our different roles as educational coach and teachers. On the other hand, we have so far not revealed that we actually were no “typical” students and have participated in various group works to gain a first-hand experience from the student’s perspective. Finally, there is a need to relate our work to a more general and unifying framework that integrates the different perspectives that we have addressed on a higher level. A tentative approach is to take a closer look at Garrison and Anderson’s (2003), Garrison’s (2008), and Anderson’s (2008) framework for research and practice which addresses social, cognitive and teaching presence in a community of learners, and investigate if our respectively work can complement and develop each other.

To conclude, we stress that a prominent teacher is someone who can enhance students’ learning in a social context. In this way, teachers motivate their students to learn through discussions with other students and student groups, which, to some degree, correspond to the learning outcomes laid down in the Swedish Higher Education Act. It is highly probable that higher education will continue to be conducted in digital format, and in what ways technology will affect teaching and learning is of major importance, and therefore it is necessary to pay attention to learning in a social context as part of our digitized and global society.

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References


Improving Intercultural Competence for the Distance Students in Sweden through Online Joint-Seminars in Japanese with University Students from the United States

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Abstract
There have been quite a few studies (Helm 2009, Chun 2011, Schenker 2012, Kitade 2012, etc.) regarding the development of intercultural competence through online exchanges. Most of these exchanges, however, are between native speakers and learners of that language. The benefit of such exchanges can be maximized if both parties are learning each other’s language and they both have the opportunity to utilize the languages they are learning during the exchange, but often times, this is not the case. Byram (1997) suggests that intercultural competence can be assessed using the following components: knowledge, skills, attitudes, and critical awareness. If ‘intercultural competence’ means not just learning about the target culture, but also about becoming aware of one’s own culture (Liaw 2006), connecting students from different countries who are studying the same target language and culture would be an ideal setting in order for the students to evaluate both their own and target cultures critically. Having learners of a target language from different countries in a virtual classroom also helps create an environment which mimics the language classroom in the target country enabling them to experience studying abroad without leaving their home countries.

It is often said to be difficult or almost impossible for students in distance courses to develop intercultural competence because of the lack of opportunity to study abroad or the lack of an international atmosphere in the classroom (Tyberg 2009). Thus, the goal of this study is to provide opportunities for all students, regardless of their circumstances, to develop intercultural competence. In this study, a group of intermediate/advanced level Japanese students from a university in Sweden (all distance students) and a group from a university in the U.S. were brought together in a virtual classroom using an online video conferencing system. Through their interactions and post-seminar reflections, I examined how
the students developed intercultural competence.

The results from this study show that through interactions with university students from other countries who study Japanese at the same level, the students can gain not only Japanese skills, but expand their horizons and deepen their understanding of another culture as well as of the topics discussed during the meetings thus satisfying each of the criteria in Byram's model. Not everyone has the opportunity to study abroad, but today's technology allows every student to be a part of the internationalization process, develop his/her cultural-literacy and reflect on his/her identity.

**Keywords**
Intercultural competence, E-learning, Online video conferencing, Japanese, Internationalization at home

**Introduction**
Internationalization has been one of the important focuses in higher education in Sweden over the last few decades as mentioned in Stier (2007), Tyberg (2009), and HSV (2008) among others. “Twenty years ago, internationalization was, for most observers, almost, if not fully, identical with the mobility of students (and to a lesser extent, faculty) across country borders” (Wächter 2008, p.1). Even today, the most frequently-cited examples of internationalization concern physical mobility across country borders just as the Bologna declaration (1999) promotes. In the 21st century, the concept of ‘internationalization’ was expanded to include such issues as the recognition of degrees and other qualifications across country borders, incorporating international elements in to the content and delivery of the university studies, as well as policy making regarding internationalization (Aida Niendorf 2013).

Though definitions of ‘internationalization’ seem to have many faces and seem to change over time, Knight (2003) defines it as:

The process of integrating an international, intercultural, or global dimension into the purpose, functions and delivery of postsecondary education.

In the past, study abroad and international exchange opportunities were limited to only a few students with the will, time and financial capacity to participate. Students with a job, family or other limitations could not take part in such exchanges. Tyberg (2009) also mentions that it is almost impossible for students in distance courses or evening courses to be a part of the university’s internationalization (p.230). Based on Knight’s definition above, true internationalization should affect every student and staff member in higher education. In order to accomplish internationalization for all, the notion of “Internationalization at home (internationalisering på hemmaplan)” has been introduced in Swedish universities and has been promoted vigorously in recent years. However, definitions of ‘Internationalization at home’ are somewhat vague and concrete goals are missing (HSV 2008, p.64).

One can clearly see the differences in the understanding of the concept by taking a look at ‘internationalization at home’ on various university websites.

“Purposes of internationalization at home are to give suggestions to various opera-
tions in order for all students and staff members within the university during their study/work to have opportunities to gain their international and intercultural competence.” [Malmö Högskola] (Trulsson & Ullberb 2003)

“(‘Internationalization at home’ is) a strategy to take advantage of those students and teachers who have travelled abroad and bring back their experiences and new perspectives back to the university/ the mix of international guest lecturers, researchers, and students as well as returnee students with different national and cultural background broadens perspectives within the courses offered at the university/course literature in English and courses taught in English.” [Södertörns Högskolan]

"By offering a Master’s program via the internet, campus students can gain good experiences. Students with different background as far away as 10,000km and 9 time zones, some with English as a mother tongue and some as English as second language, take part in the same course.” [Uppsala universitet] (Pärt-Enander 2006)

“International elements are incorporated at the home institution by using course literature from another country or using course literature that deal with international topics, having foreign teachers or teachers who have taught abroad, meeting foreign students in class” [Linneuniversitetet]

It is often suggested that teaching courses in English opens up participation of international students to ordinarily Swedish-only classrooms, creating an international atmosphere in a classroom and exposing students to different points of view. And teachers from other countries are said to have similar effects on the students. As for the Japanese department at Dalarna University (Högskolan Dalarna), these two points, namely teaching in English/Japanese and having Japanese nationals as teachers, have already been implemented. What more can we do for the internationalization at home in the Japanese department at Dalarna University where all courses are offered via distance? Can we somehow take advantage of our real-time on-line class format for internationalization at home?

In an attempt to make “internationalization” as originally prescribed, i.e., the international exchange of students and teachers (as well as IT-support staff), available to ‘all’ students (and staff) regardless of their job, family, or distance situation; I decided to conduct a study experimenting with online joint seminars with American students during the spring and autumn terms 2012. The seminars were held in the form of online video conferences using Adobe® Connect™.

The main focus of this study was to examine any positive effects in terms of learning that can occur in the virtual classroom with foreign students. Ultimately, I hope to find and create an ideal on-line environment to mimic the study abroad situation without students and/or teachers having to travel to another country.

In order to create an ideal virtual classroom environment, I decided to focus on answering the following two questions:

1) What processes does it take to create an ideal international classroom in distance education?
2) What do distance students gain through such exchanges?

Methodology
During the spring term 2012 and the autumn term 2012, a group of students from Gettysburg College in the United States and from Dalarna University in Sweden were brought together to take part in joint seminars using online conferencing system.

In the first seminar series which took place during the spring term, 7 fourth level (intermediate to advanced level) Japanese students from Gettysburg College joined the project as part of the required class activity and 3 students in the 4th level Japanese Linguistics course from Dalarna University took part in the project voluntarily.

In this Project, the Gettysburg students had individual blogs where they posted their compositions regarding the topics surrounding the issues of “identity.” The Dalarna students wrote comments and questions on their blogs and exchanged opinions prior to the first face-to-face online meeting. The topic “identity” was selected since both parties can discuss the issue from different perspectives such as ‘Foreigners in Japan,’ ‘Foreigners in the U.S./Sweden,’ ‘Japanese people living in the U.S./Sweden,’ and also the student’s ‘own identity.’

There were two on-line meetings using Adobe® Connect™. Each meeting lasted for about 90 minutes. As it was the first time the Gettysburg students used this system, it took some time for them to get used to it which delayed the start of the meeting. The first meeting was intended for them to get to know each other. Saito (2011) states that creating a safe and comfortable environment is essential in order to elicit interactions among students. Though they had already been acquainted with each other through the blogs, it was important that they got to see and hear each other as well as to determine the Japanese language levels of the other students. In this meeting, the students introduced themselves and talked about their interests. They also discussed what sort of things relating to Japanese are popular in their countries. They also had a chance to freely talk in smaller groups using breakout rooms.
The second on-line meeting was more structured. Students were provided with specific topics to discuss. Prior to this meeting, The Dalarna students read the Gettysburg students’ short final research articles regarding the ‘identity’ issues and did some preparation in advance to discuss the articles. As a warm-up activity, the teacher initiated a discussion regarding identity in a larger context. After that, students from each country had a chance to discuss in one-on-one discussion sessions the specific topics that the Gettysburg students had written about in their blogs. After each on-line meeting, a survey was conducted.

In the autumn term, two separate joint seminar projects were carried out: the ‘Japanese Language Project’ (in Japanese) and the ‘Japanese Culture Project’ (in English).

2 students taking Intermediate Japanese from Gettysburg College and 2 volunteer students from various Japanese courses (beginner/advanced) at Dalarna University participated in the Japanese Language Project where they interacted through individual blogs (entries and comments) and 3 joint online seminars that lasted 90 minutes each. After each online seminar, a survey and an interview were conducted with every student.

In the Japanese Culture Project, all 10 students taking ‘Contemporary Japanese Culture and Society’ at Gettysburg College and 9 volunteer students from Dalarna University participated in 3 joint seminars (60 minutes each).

Unlike the spring term, when only the American students kept blog entries, all participants from both countries kept blogs to share their views and opinions with each other.

Post-seminar surveys were conducted after each joint seminar. The students’ blog entries and comments as well as their performances during the seminars were analysed continuously and the seminar format was adjusted in search of the best way to conduct online exchanges.

**Results and Discussion**

The student surveys showed that the students from both Sweden and the United States found the project to be fun, interesting and a new and positive experience.

Below is a summary of the students’ survey and interviews:

Because students from both countries are studying the same thing (Japanese and/or Japanese culture), they share a common interest to begin with and could have meaningful conversations regarding various aspects of the Japanese language and culture. This was especially true when they were divided into smaller groups or in pairs as well as when the longer sessions allowed them to discuss more deeply.

Not only did the blog activities provide materials to discuss, but also helped students to get to know each other better. One American student also mentioned that the blog allowed him to meet the Swedish students in a purely intellectual capacity. One of the students thought that the best part of the project was taking the discussion from the blogs and continuing with the topics via the video conference system. In that
way, they were able to try different ways to communicate the same topic.

The participating students pointed out that the strengths of the project were the ability to improve their spoken Japanese skills, share points of view, thoughts, and experiences. They thought that explaining these things using Japanese was very exciting and a lot of fun.

All the students expressed that they prefer talking to Japanese learners whose level is above or the same as their own. Although they would also talk to someone with a lower level, that would be out of kindness and not for their own sake. Some also felt that it would be less nerve-wracking to speak to a learner from another country than to Japanese natives.

The chat function in Connect turned out to be a positive tool. Students thought that the chat was a continuous conversation since the audio part was more or less one person at a time. It allowed students (and teachers) to voice opinions and questions without distracting the speaker. Some students also found typing in Japanese to be a fun activity. There was also a shy person who said that she preferred typing in the chat to speaking. It was also a great tool in that students could stay active in the conversation throughout the meeting.

Technical problems, such as the unfamiliarity of the Connect system for the Gettysburg students, which had improved the second time around, and some lagging and sound-malfunctions for the students from both sides were troublesome to some students. A Connect training session for the American students prior to the joint-seminar improved the situation in the autumn term.

Most of the students agreed that the most interesting part of the project happened during the second meeting when they went deeper into the subject and came up with more ideas and thoughts about issues discussed in the blogs. They stated that it was easier to discuss things in real-time, as opposed to through comments posted to a blog.

Students suggested that longer and more frequent sessions, more focused/defined goals would make the project more intriguing for their study. One of the Swedish students said that he would gladly join more of these events integrated into the normal lessons. One American student suggested scheduling one-on-one meetings or small group discussion or even doing homework with the partner students would be also beneficial.

After the meetings, the participants discovered that they do and like the same things and felt a strong connection. When people study Japanese or are interested in Japanese culture, they can speak about it forever regardless of differences in age, gender and nationality.

Over all, the students enjoyed the concept of talking with students across the world in a class setting. One of the American students applauded this project for providing an opportunity to discuss topics involving 'Sweden vs. Japan,' as that is not something she could have learned easily anywhere else without doing extensive research.

Another American student commented that she didn't gain anything since she didn't learn any new grammar and the teachers were not correcting the students' errors.
One student summed up the comments from the majority of the participants—“We were actively discussing identity with students raised in another culture in a class setting, which lends an air of understanding and interest to the discussion.”

Based on the student survey, interviews, analysis of students’ conversation and behaviour during the on-line seminars, as well as chats and blog activities, the questions posed earlier can be answered as below:

1) What processes does it take to create an ideal international classroom in distance education?

First of all, one must find a partner institution/teacher and communicate closely and openly with them. Building a good relationship among teachers can be crucial for a successful exchange.

Secondly, the level of the student needs to be matched. The teachers must also decide whether it would be better to make the students’ participation voluntary or make it mandatory. When deciding, problems with time difference, family/work situation, and different academic terms in different parts of the world need to be considered. It is also important for the teacher to know the participating students’ ability and personality well.

Next, the system to be used also needs to be considered. Should one use readily available systems such as Google+, Skype, Skydrive, Dropbox, Facebook, etc? Is synchronous communication (online video conferencing, online chat) more suitable than asynchronous communication (email, blog, etc.) in specific cases? Or should both types be combined? These are the things that need to be examined carefully.

In planning, the period/length, frequency, class size, topic(s), activity types should be considered. Finding the right balance between students’ autonomous learning and the level of support from the teacher(s) is also an important task.

Two of my 2013 projects indicated, provided that students from both countries are at a similar academic level and share the same interests, that the communication would be carried out smoothly regardless of their nationality, age or gender. Acquiring some information about each other before the initial meeting also helps students feel more comfortable. There were no awkward silent moments during the seminars as the students were eager to exchange thoughts and experiences in a limited time. The interaction was more active when the students were broken into smaller groups (2-3 people).

The post seminar survey responses by some of the participating students showed that it is important for the teachers to clarify the goal of the seminar. During the first project in the spring term, one student was disappointed and thought she didn’t learn anything during the seminar as she was hoping to improve her Japanese grammar and pronunciation through these seminars, while the focus was actually on sharing views and experiences using Japanese as a tool. She was upset that students were speaking incorrectly and teachers did not correct their grammatical errors.

Breaking students into smaller groups and giving them a longer period for discussion would help students to get to know each
other better and feel more comfortable talking. Timid students tend not to speak up in a large group especially in a foreign language with students from another country whom they have never met, but in a small group, everyone is given an opportunity to say something without fear of embarrassment. Matching up students with similar level of language ability is another important point in making students feel safe and comfortable in class. Thus, teachers from both countries should discuss each student’s ability and personality prior to the seminar.

What is unique to the distance students such as the ‘chat’ function helped improve communication between students from both countries during the seminars. Not only was ‘chat’ useful when having an audio-malfunction, it also helped students take part in the side discussion, especially in a larger group where only one person could talk at a time. Instead of passively participating, or waiting for his/her turn to talk, one could voice opinions and thoughts immediately when the student wanted to without interrupting the speaker. This is something that is not possible in the traditional classroom setting. Some students also stated that they feel more comfortable writing in chat than speaking in Japanese. Those students were also given an opportunity to participate in the discussion by writing. Simultaneous or parallel multimedia communication may be a new way of communicating in today’s computer based world.

2) What do distance students gain through such exchanges?

In ordinary distance education, students often lack opportunities to study abroad or meet with international students in classes thus missing a chance to develop intercultural competence as suggested by Byram (1997).

What was observed through these projects were obvious changes in the students’ attitudes and perspectives regarding self-identity and others’ identities. Those who initially believed in stereotypes came to the realization that identity is something that is not fixed but it’s various, multiple and has a fluid nature. Students also began to focus more on similarities rather than differences, as well as learning to accept differences. By discussing various topics, especially on identity issues, they also recognized the strong connection between language and society. Another remarkable development was that they thought about the given topics critically as different views were presented by students from different backgrounds. More than a few participants stated that learning must continue throughout their lives even after they leave university.

Although these projects seem to have been successful in fulfilling Byram’s IC model, there were some problems in its use. Matsuo (2012) suggests that Byram’s IC model is too theoretical from the practicing language teacher’s point of view; it is difficult to know exactly how to actually implement it in the classroom. The notion of what is ‘culture’ is also troublesome as Byram equates culture roughly as national culture (partially due to his original purpose of creating this model for the Common European Framework of Languages or CEFR). Finally, as Matsuo (2012) also warns, components of this model have hardly anything to do with language and also ignore the nature of communication itself such as
the relational, interactional and developmental aspects.

Thus, some kind of practical guidelines need to be laid out on how we, as foreign language teachers, can contribute to the students' (as well as teachers') development of inter-cultural competence through dialogic discourse with students rather than the usual monologue by a teacher informing the students of merely the facts about 'national culture', which often leads to stereotypes.

Conclusion

Through interactions with university students from other countries who study Japanese at the same level, we believe that the students can gain not only Japanese skills, but also expand their horizons and deepen their understanding of another culture as well as of the topics discussed during the meetings (in this case ‘identity’ issues). This truly is the learning style of the next generation. Not everyone has the opportunity to study abroad, but today's technology allows every student to be a part of internationalization.

The effectiveness of this type of intercommunication is on the way to being proven, and it can easily be expanded and applied to languages other than Japanese. The success of these projects implies that there is much more potential in applying the same method to other subjects and fields of study contributing to ‘internationalization at home’.

References


Addressing Democratic and Didactic Implications of Different Technological Offerings in Compulsory School Teaching Practices

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Abstract
This paper draws from a multidisciplinary research study that aims to identify and analyse democratic and didactic implications of different technological offerings in compulsory school teaching practices. The research study also aims to develop strategies to promote learning through open knowledge processes in Swedish educational contexts. The overarching goal of our research is to contribute to systematic and in-depth knowledge of specific, education-related challenges in one of today’s most important ongoing changes in schools, the implementation of IT. In this paper we report on the current state of practice concerning the use of technological offerings in school and its democratic and didactic implications to the aim of elaborating on pedagogical and technological challenges in the context of compulsory school.

Keywords
School, didactics, democracy, IT, open source, open standards

Introduction
It is widely acknowledged that there are complex relationships between pedagogic needs and technological offerings and use of IT in teaching contexts at compulsory schools. In this paper we report on initial results related to the current state of practice concerning use of technological offerings in school and its didactic implications. In so doing, we elaborate on pedagogical and technological challenges in the context of teaching practices at compulsory schools. Our research is conducted in the context of a broader study aiming to identify and analyse democratic and didactic implications of different technological offerings in compulsory school teaching practices.
The notion that the pace of Swedish schools’ acquisition of IT, and in particular to the teachers’ knowledge of ICT in their teaching, is essential for development in this area is something that has long been consensus on (Erixon, 2010; Gustavsson, 2011; Kroksmark, 2011). What has received less attention, something which current research has identified as needed (Balanskat et al., 2006) are two things: a profound knowledge of how schools’ acquired IT is actually being used by teachers and students in the teaching practice, and the democratic and knowledge-related implications that can be distinguished in this use.

These two aspects raise concerns as regards which IT is provided in schools. In turn, this raises questions concerning the use of open standards and open source software in teaching practices at compulsory schools. Despite identified benefits from the use of open standards and open source software in the Swedish context (SOU, 2009; Konkurrensverket, 2013; Kammarkollegiet, 2014) it is apparent that current practice in educational contexts is far from national ambitions for a transparent and open society, which in turn are fundamental pillars for democracy. With the adoption of open standards in schools, students are empowered and able to use different proprietary and open source licensed software in teaching contexts. Further, with the adoption of open source software in schools, students are encouraged to become engaged in open knowledge processes and thereby offered the opportunity to become active participants in an open democratic educational ecosystem.

The rest of this paper is organised as follows. First we present an overview of the context for addressing democratic and didactic implications of different technological offerings in teaching practices. Thereafter we present initial results concerning current state of practice for the relation between IT and school as a public institution, and initial results concerning current state of practice for learning and teaching with a special focus on communication and learning through use of information technologies. Finally, we discuss pedagogical and technological challenges and conclude with future outlook.

Addressing democratic and didactic implications of different technological offerings

How can we understand the importance of open standards and open source in relation to the issue of school’s democratic and knowledge-related dimensions in school? Schools’ provision of open standards and open source software in teaching can, according to Livingstone (2012) be viewed as a materialisation of a democratic society’s ambitions to create openness, freedom and autonomy. It is “strongly relevant to democracy to the extent that they affect the conditions under which citizens engage in the democratic process” (DeNardis & Tam, 2007). This means that it is important, from a democratic perspective that the students are offered the opportunity to be part of learning processes in and through open IT solutions provided in school. That is, solutions that are not tied to any particular provider of proprietary software or file formats that imposes restrictions on use and risks for
different types of lock-in, which is not consistent with a democratic society.

The importance of open standards and open source software used in teaching becomes even clearer if we look at compulsory school’s assignment, laid down by law, to provide for democratic citizens (Skolverket, 2011a). This task is in two parts and consists of fostering students a) about citizenship, through school subjects (formal and facts emphasised knowledge of democracy and rule by the people), and b) through school’s assumedly democratic forms and organisation, which means that students should be given opportunities to gain experience of openness, influence and autonomy in teaching by the way in which teaching is organised, the school is led and organised, and in the implementation of school tasks and the choice of working methods etc. (Lundahl & Olson, 2013; Öhrn, Lundahl & Beach, 2011).

In relation to our study, this means that the technological offerings involving proprietary licensed software to students in education contributes to learning processes that are tied to specific software and file formats, which in turn is linked to certain brands, such as Microsoft. One consequence of this in the long term is that school’s democratic mission tends to take shape as a matter of fostering future citizens whose knowledge production depends on the use of certain software (Lundell & Gamalielsson, 2013). Students will thus pilot into a civic role in the consumer landscape of this particular proprietary licensed software, which implies that students are encouraged to develop product specific knowledge instead of being promoted to develop more general IT skills. Taking on a didactic perspective, the software provided in schools is an integral part of students’ learning processes. Software is, in a socio-cultural perspective on learning and development, a tool, a mediating resource (Wertsch, 1998) that becomes an integral part of their knowledge production.

Knowledge is, according to this view, not only localised in the students’ minds, but also in the tools and cultural products that they use when they use their knowledge (there is a dialectical relationship). In other words, there are skills that we cannot disclose without access to our tools. The process of knowledge is, so to speak, both in ourselves and in the tools and become visible only in the use of tools (software), one example being “apps” in smartphones. Hence, use of IT and software is important in our study, something which is likely to have an even more significant role in the future. Results from an analysis of municipalities’ adoption and procurement of software for schools (Lundell & Gamalielsson, 2013) raise the need for deepened knowledge about these processes. Thereby, there are reasons to believe that students’ democratic and didactic space today is circumscribed in important respects. Technological offerings to students in teaching are in many cases promoting proprietary licensed software. Above all, this becomes clear when it comes to different types of writing processes in schools’ subject teaching. Such technological lock-in risks creating poor democratic and didactic preconditions for both democracy as for its knowledge processes.
On the relationship between IT and school as public institution

Our research relates to a research field in which the relationship between IT and school takes shape as a public, legal and democratic relationship. In this research field market-related, technological and political-democratic aspects of this relationship are gathered. Questions about schools’ acquisition and implementation of IT and specific software in school is often highlighted in terms of the formative impact this has for social and working life in the long term. Discussions often stem from a technological perspective (Balanskat et al., 2006; IES, 2009; Livingstone, 2012). Research is also highlighting different kinds of experiences of teaching and learning in relation to the use of open source software at university level (German, 2005; Kilamo, 2010; Lundell et al., 2007) and in some cases high school (Lin & Zini, 2008). This demonstrates that the problem is far from limited to schools in the Swedish context, but rather can be seen as a general international trend that includes the entire education system. There is a lack of research conducted in the context of compulsory school, especially such which addresses democratic and didactic perspectives on provision of certain software.

Much of this research highlights the complexity and risks associated with the use of proprietary software in schools, such as different types of lock-in (Egyedi, 2007; Ghosh, 2005; Lundell, 2012). The risks are highlighted frequently in market terms, but also indirectly and directly in terms of democracy, and shows some negative effects in relation to poor procurement practices in schools and in other public sector organisa-
tions and in the development of IT practices in schools (Kirk, 2008; Lundell, 2011). A more development-oriented research agenda relates to the question of how to strengthen democracy in and through the application of certain adopted guidelines that promote the use of open standards, where compatibility and interoperability (Ghosh, 2005) is a vital constructive element “to the extent they affect the conditions under which citizens engage in the democratic process” (DeNardis & Tam, 2007). Taken together, this research provides a balanced view of the risks as well as opportunities for strategic development available in the relationship between IT and school’s societal and democratic responsibility, which makes this research relevant to our study.

Another perspective in this field of research of relevance to the study problematises school’s democratic civic educational assignment as a matter of meaning making at education policy level (Englund, 2004; Olson, 2008, 2012a, 2012b). This curriculum-theoretical and language-oriented research shows how this meaning making is expressed in negotiations on what concepts such as democracy and citizenship really mean, and what school’s role should be in relation to them. Curricula and subject curricula are seen as expressions of how meaning making has taken shape in different historical periods in school and education. Juxtaposed with our study this research highlights the way in which meaning making and knowledge production takes form at education policy level. But this level is also an integral part of the practice that we examine in the study, the teaching practice. In this way, school’s teaching and learning goals, against which students’ conduction of tasks are assessed
and graded, are expressions of a political and over time changing knowledge production that continues in parallel with the teaching situation. The establishment of these political-didactic meaning makings over time results in different types of selection of school content that students should conquer. This constitutes an important knowledge base for the analyses of the learning processes and democratic-didactic dimensions that are expressed in the studied teaching practices.

Further, our research shows that many "schools seem unaware of the potential with Open Standards and Open Source software as enablers for innovative use of IT that does not discriminate any student" (Lundell, 2012). In particular, the study finds that "many students are expected to use proprietary software provided from a single vendor" (Lundell, 2012). Taking on the creation of knowledge as something contextual, social and situational, what comes out of our initial findings of pedagogical challenges is that there tends to be quite poor conditions that schools are to tackle by the provision of technological offerings.

**On learning and teaching through use of information technologies**

The second research field of relevance to our study focuses on learning and teaching in relation to IT. This research is extensive and theoretically multi-faceted, but is characterised by emphasising the complexity of the relationship between students and technological offerings in school in terms of learning and knowledge production. It also shows the intricate interplay between what is possible, economically, technologically and organisationally in teaching and students’ freedom of action in relation to their school tasks and duties. For example, there are recent studies of students’ discussions about tasks, about what is expected of them in different tasks of teaching. Such a meta-discussion is a vital part of the task itself and its implementation or solution (Lilja, 2012). When it comes to software as a tool, as a mediating resource (Wertsch, 1998), this software – in socio-cultural research – constitutes a technological offering of meaning. That is, a resource that is not ‘only’ provided as a material offer or resource, but something that becomes one with the knowledge process and knowledge itself – a necessity for learning in itself and also for the communication of knowledge (Säljö, 2010).

The concept of mediation is central in this context. Somewhat simplified, the concept of mediation can be explained focusing the learning processes such as the interaction between mediating resources, our thinking and our actions. From such a perspective, for example, it is not enough to talk about learning or knowledge transfer as these terms essentially describe learning as something that happens “outside-in” and give the impression that knowledge is only something that is within us (Jakobsson et al., 2009; Mäkitalo et al., 2009). In a socio-cultural perspective learning is rather perceived as an extension of students’ ability to use cultural products in an increasingly sophisticated and developed way. Säljö (2010) argues further that we do not experience the world “directly” without thinking “in a roundabout way” by using our cultural tools. In this perspective, we can perceive learning as a development of our ability to use and consider language, concepts and theories, which thus become the tools to analyse, understand and solve
problems in our environment. This socio-cultural perspective on learning can be seen in relation to a wider context of meaning, where the teaching culture largely determines how those provisions are actually used, and thus the knowledge processes made possible in and through technology offerings (Chaib & Tebelius, 2004).

Related to our study this field of research reveals how knowledge about and in teaching practices is constantly faced with new conditions as technology develops (Cox & Marshall, 2007; Cox, 2013; LeBaron et al., 2009). This of importance for the goal of our study, namely to develop strategies in order to enable open knowledge processes in school. Studies in this field of research (Condie & Munro, 2007) show that there is a lack of in-depth and longitudinal studies that may enable such a development, which motivates the approach of our study.

On pedagogical and technological challenges

Out of the contextual conditions and the state of the art, we here address vital pedagogical and technological challenges. The pedagogical challenges can be addressed in relation to two different dimensions. On the one hand they relate to a political education policy dimension, on the other hand they relate to everyday teaching practices in school. As concerns the first dimension, education policy, we argue that a vital pedagogical challenge is to work actively toward a widened meaning of democracy in the policy making processes and the policy documents. What is at stake, we argue, is that the schools’ commissioned task to provide for a democratic citizenry tends to be poorly depicted in educational policy making. This means that it is not made clear in the policy documents what the concept and practice of democracy means – and should mean – in relation to the fact that school is mandatory and public. This lack in concretion in education policy is problematic in more than one way, and in relation to our study is particularly problematic in the sense that when schools acquire closed source software it does not, and cannot, fulfil its assignment to see to democracy learning in its full.

Students in compulsory school have the right – as in any other public institution in society – not only to know and to learn about what it means to be a member of a democratic society, i.e. facts about how to vote, that they have the right to voice their opinion and belief freely in society and so on. They also have the right to democracy learning through democracy in school. That is, their democracy learning involves experiencing that school is a public and democratic institution in society by the ways in which the teaching practices are organised, the tasks are being distributed and instructed by the teacher. This democracy learning also links with the technological offerings to the students in school in that they have the right – and the school has a commissioned task to see to – that the technological provision is acquired in a democratic way. That is, that it offers multiple ways of learning, and that it is clearly marked out that experiencing this multiplicity is of utmost value for the students’ learning and knowledge production. These experiences are not only of value for didactical reasons, but also a necessary part of schools’ democratic assignment as a mandatory and public institution.

Regarding the latter dimension, schools’
teaching practices, the pedagogical challenge that is addressed is to increase the critical consciousness of teachers and students about the ways in which the technological conditions for teaching and learning in school are intimately linked to conditions for knowledge production and civic action taking. Taking on a sociocultural perspective of learning and meaning making, such critical consciousness is of vital importance as it pays attention to the ways in which teachers and students interact with certain technological provision in school, as well as with each other about this interaction. This interaction does only create specific conditions for learning, but is part of the production of knowledge in itself. If we want to see to schools’ assignment to provide for a democratic citizenry, the materialisation of democracy in the classroom by the provision of technological offerings, this provision must be taken into account as such materialisation rather than, for example, some technical circumstances that are set apart from the problem in question (lack of openness and further of democracy). Only by taking this provision seriously it will be possible for teachers, students and entire schools to avoid different types of lock-in in educational contexts. In a situation where knowledge production takes place without an established educational ecosystem, knowledge production instead relies on didactic actions and communication conditioned by use of proprietary licensed software.

Concerning the technological challenges, two vital aspects stand out. To promote a transition from perceiving students as passive consumers of IT to active contributors to IT in compulsory school contexts, there is a need to establish open educational ecosystems involving teachers, students and other stakeholders (both inside and outside the specific school or teaching context) interested in the evolution of such ecosystems. Use of open standards and open source software in these educational contexts promotes learning and knowledge processes that go beyond traditional classroom teaching. Consequently, this allows for didactic interaction between teachers and students and among students on school tasks that do not necessarily take place in a shared physical space.

Further, use of open standards for documents (and other digital assets maintained in open file formats) allows students to use software (both proprietary and open source licensed) from different providers when they collaboratively write reports and essays. Important activities in open educational ecosystems for teachers and students include collaborative creation, sharing, use, and further refinement of learning objects that are provided under open licensing conditions. Learning objects can, for example, comprise: teacher or text instructions, examples, and projects involving the use of open source licensed software in teaching contexts both in the classroom and outside school. Therefore, for democratic reasons it is particularly important that learning objects are maintained in open file formats. Hence, open standards and open source software with their associated work practices constitute a foundation for establishment and maintenance of open learning objects in open educational ecosystems. This, in turn, promotes transparency and collaboration, which is fundamental in schools’ assignment to provide for a
democracy learning that involves the critical promotion of students’ comprehension of democratic principles in society.

The importance of transparency and openness in educational contexts has been stressed by a Swedish minister in a public speech addressing the provision of IT in schools: “With openness and transparency, we can strengthen democracy, promote innovation and new jobs.” (Hatt, 2012). However, our results show (Lundell & Gamalielsson, 2013) that the current practice is far from a transparent and open educational ecosystem as the vast majority of schools promote use of proprietary licensed software and closed formats. As an example, the Swedish National Agency for Education has adopted a practice of publishing information in closed file formats on their website (Skolverket, 2011b), which does not promote efforts to meet the need for open educational ecosystems or the other aforementioned challenges. In addition, it is evident that in the vast majority of cases open standards and open source software are not even considered in any analysis undertaken prior to adoption and procurement of IT in Swedish compulsory schools (Lundell & Gamalielsson, 2013). Such lack of consideration is troublesome, especially in light of the fundamental importance of utilising open standards and open source software for establishing and maintaining open educational ecosystems.

**Conclusion and future outlook**

In the paper we have presented initial results from our ongoing study of the present situation of the technological provision in compulsory school teaching practices. Specifically, we have addressed important pedagogical and technological challenges in our ongoing study. Out of our initial findings, it is evident that the present situation in the field entails conditions that are problematic from a democratic and didactic perspective.

This stresses the need to promote and conduct research that contributes to deepened insights in the complex relationship between IT and school as a public institution in society. Our study contributes to this need by applying a multidisciplinary and longitudinal approach, thereby contributing new insights regarding the inherent complexity in the relationship. Applying a multidisciplinary approach is particularly relevant since it has the potential to transcend the tendency to handle problems and issues raised as either a pedagogical or a technological concern in school concerning the provision and use of IT in a different way. Such an approach opens up for a more comprehensive understanding of the relationship between IT and school. This is necessary in relation to both democratic and didactic matters involved, which is highlighted in the challenges that are being addressed in this paper. Overall, our study investigates the educational implications of today’s most important ongoing changes in youth school – the implementation of IT.

In addition, a multidisciplinary approach necessitates a longitudinal dimension. There is a need to conduct observations and interviews of teachers and students in classrooms in both their use of and interaction with other stakeholders in the educational ecosystem. This data collection involves the technological artifacts provided by the school and collaborative
activities on school tasks in which students interact with each other during a longer period of time. From this, it is possible to gain insights into democratic and didactic aspects present in schools and classrooms studied. This is important as technological processes are constantly faced with new conditions as technology evolves. A longitudinal study enables analysis of important technological changes and circumstances, as well as the responses to these changes in schools’ teaching practices.

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Abstract
Learning is not a solitary task and neither is teaching. We need to keep our knowledge and skills updated and are dependent on knowing where to find the latest news and ideas in our subject area. Teachers have always networked with colleagues in the same department or institution, but seldom on a national or international scale, this is on the other side very natural for researchers, to work internationally and collaborative. Today’s social networking tools make networking on a global scale an invaluable resource for all teachers. Building a Personal Learning Network (PLN) with a wide range of contacts from all over the world, provides a source of news, support, inspiration and discussion that is an invaluable and integral part of professional development.

The workshop at NGL14 aimed to introduce the concepts of PLN and community of practice (CoP) to teachers who have not yet developed an extensive professional net-based network. During the workshop participants worked collaboratively in groups to discover relevant tools and networks to join and benefit from. The medium of the workshop was net-based collaborative workspaces where links and notes from the session can be shared and which are available for all participants long after the workshop is over. The workshop allowed participants to examine a representative selection of the numerous online tools available for networking, sharing and collaboration.

Keywords
Collaboration, community of practice, FDOL, PLN, personal learning networks, social media

Introduction and scope of the workshop
The workshop at NGL2014, inspired by Benson and Khan (2013), aimed to introduce the concepts of PLN and community of practice (CoP). We believe that these concepts are important to consider when it comes to teachers’ development of a scholarship of teaching and learning.

Personal Learning Network
A personal learning network (PLN) is an informal learning network that consists of the people a learner interacts with and de-
rives knowledge from in a personal learning environment (figure 1). In a PLN, a person makes a connection with another person with the specific intent that some type of learning will occur because of that connection (Benson & Khan 2013). Within a PLN one develops community learning from each other and with each other, knowledge is created through collaboration.

The workshop introduced the concept of PLN, and the participants were asked to describe/draw a map of their current Personal Learning Network (PLN), they were also asked to reflect on how they wanted to expand their PLN, or make it more efficient? Questions like Why PLN? were also asked to be reflected on.

Why networking
Probably one of the most important issues to reflect on considering PLN is how I can find material/ideas/strategies and support through my PLN. In addition, one can find a lot of inspiration. But, probably most important is to find out and to discover you are not alone in raising this kind of questions or interest.

Siemens (2005) one of the advocates for connectivism argues that learning is more critical than knowing, and furthermore, that the network is the learning and that know-how supplemented by know-where and know-who are crucial for connective learning.

Networking and to be prosumers (consumers and producers) is the key to learning and education today, which involves both students and academics. As information, through the web is more or less overwhelming, competences like to filter, to curate and to collaborate are becoming more and more crucial. Today we can use special tools for this. Some of those tools were tried out, used and discussed during the workshop. Some examples of tools to Filter are; _Netvibes_, _Freedly_, and some tools to Curate are for example; _ScoopIT_, _Pinterest_, _Educlipper_, and some tools to Collaborate are for example; Padlet, Conceptboard.

Some Free cloud tools can also be mentioned like Google drive, _FaceBook_ , _Twitter_ , and Blog tools (Kjellberg 2010) like _Wordpress_ and _Blogger_ , just to mention some. During the workshop Padlet was used as an example of a collaborative tool and working areas Figure 2.
Participants were encouraged to experience some of the tools mentioned above, but even other kind of social media of their interest.

The FDOL141 (FDOL2 014) course was used as an example of collaborative, open and online learning using PBL (problem-based learning) and a variety of social and digital media tools. Figure 3 shows how networking can be developed as it was done during the FDOL 141 course.

The workshop
Target group for the workshop were teachers, librarians and other educational professionals interested in expanding their contact networks and learning horizons.

Workshop outline:

- Introduction. The value of networking, networking as learning (5 minutes).
- My PLN today (group discussion). Who do I network with and how do we communicate? How do I find news, articles, tools for my work? Draw a map of your present network and discuss (15 minutes).
- Input - what is PLN/COP and why is it essential for teachers and students today? Networked learning, connectivism, informal and formal networks.
- Examples of PLN tools to explore. (10 minutes).
- Group work. Divide into small groups of 2-4. All have access to a collaborative area in the web tool Padlet where a selection of collaborative networking and curation tools are available. Groups choose at least one tool to explore and have questions to consider as they explore (50 minutes).
- Conclusions. All work during the session will be available on Padlet and will remain after the workshop so that participants can continue to test and share ideas (10 minutes).

Take aways from the workshop
- Start small
- Find some friends to work with
- Find what works for you?
- What do you want from your network?
- ...and furthermore
- I want to learn more about…
- I want to talk to people who…
- I want feedback/advice on…
- I want to be able to…
See an example in Figure 4.

Hibberson (2013) argues for five steps to build one’s own PLN and to get started:
“1) Share your presentations, handouts and ideas for engaging learners using services like Slideshare, Tumblr, Edublogs, etc.

2) Crowdsourced ideas for new ways of working by drawing on the experiences of your peers. Twitter in particular is a great way of finding out the latest information on any given subject and it’s easy to tap into the knowledge and experiences of a global audience by following hashtags on topics of interest.

3) Microblogging sites, such as Twitter, are great for their immediacy, but if you want to explore a subject in more depth or want to reflect on your own practice then it’s worth looking at blogs. It’s good practice to use a range of information sources in your research, and a key advantage of blogs over more formal printed texts is the currency of the information.

4) Developing an active and responsive PLN is all about getting the conversation going: ask questions, comment on blogs, share best practice, whether it’s through Linked-In groups, Facebook pages, or Google Plus hangouts – don’t be bashful.

5) Organize and signpost the most useful and authoritative sources of information to your peers by using social bookmarking. Sites such as Delicious, Diigo and Pinterest all allow you to tag and share links across your PLN.”

**Conclusions of the workshop**

Learners have the potential to take part in discussion threads on a wide range of social media sites today, get tips on new resources and links from peers on Twitter, or follow leading persons in their chosen subject via websites and blogs and receive the latest updates via RSS. However, this is just the tip of the iceberg. How do we ensure learners know how to use these networking tools appropriately to support learning? A key component and essential element in digital literacy is to encourage today’s learners to establish good networking skills and the ability to collaborate effectively online. To start building one’s own PLNs already as a student will place learners in good stead for the future.

To start with the five steps argued by Henderson (2013) would be fruitful. Keep it simple and frequent:

- Follow at least one useful blog
- Join a Facebook group
- Join Twitter and follow some people or hashtags
- Lurk at some #. If you like it, join in this time or next time . . .

…and stay connected and cultivate your PLN.

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Abstract
During 2012/2013 a network with representatives from nine universities in Sweden developed a project on OER- open opportunities for learning funded by The Internet Infrastructure Foundation (.SE). One of the aims was to promote general awareness of the use of OER and open sharing cultures. For participating institutions, the aim was also to develop collaboration for more effective support, and to foster an open dialogue on the Internet. The project built on a previous project; OER resources for learning, funded by the Royal Library. The project presented in this paper conducted a dozen open webinars and thirty shorter virtual networking meetings for planning and monitoring. The webinars were preferably about what OER is, how digital materials may be reused, but also about the digital library, metadata, and standards. Two webinars were held in English with invited international guests; Open education - global challenges and OER - a question of quality. Each webinar followed a structure that subsequently has been revised and refined.

The conducted webinars, which were recorded, gathered nearly 1,200 people and they have been reviewed by over 4000 people. The project website has had around 8000 visitors who came in contact with the project through over 200 linkages from other sources.

The project's form has contributed to improving the quality and efficiency of interaction in the webinars. This has been demonstrated in areas such as:

- Assessment of the content of the webinars
- Recruitment of speakers and participants
- Marketing in different networks
- Implementing of the webinars
- Monitoring and evaluation of the webinars

Keywords
Creative Commons, OER, OERSverige, Webinar

Introduction
Open Educational Resources (OERs) are any type of educational materials that are in the public domain or introduced with an open license. The nature of these open materials means that anyone can legally and freely copy, use, adapt and re-share them. OERs range from textbooks to curricula, syllabi, lecture notes, assignments, tests, projects, audio, video and animation.
(Plotkin 2010, UNESCO 2014). COL-UNESCO defines OER as: “The phenomenon of OER is an empowerment process, facilitated by technology in which various types of stakeholders are able to interact, collaborate, create, and use materials and pedagogic practices, that are freely available, for enhancing access, reducing costs, and improving the quality of education and learning at all levels.” (Kanwar, Balasubramanian & Umar 2010).

Internationally, the OER movement is very strong. In 2012 UNESCO launched the Paris OER declaration, Figure 1.

![Fig 1 The OER Paris Declaration](image)

Usually OERs are licenced with Creative Commons. Creative Commons licenses are free of charge to the public. The concept is based on four symbols, within six combinations, Figure 2. These licenses allow creators to communicate which rights they reserve, and which rights they waive for the benefit of recipients or other creators. Creative Commons licenses do not replace copyright, but are based upon it.

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In Europe, the European Commission launched the initiative on Opening Up Education to boost innovation and digital skills in schools and universities (EC, 2013). They emphasize that opening up, means that any learner should have access to high quality learning resources, even from prestige universities at anytime, anywhere, everywhere, from anyone and on any device. In summary, they argue that European educational institutions have to:

- review their organisational strategies
- exploit the potential of Massive Open Online Courses (MOOCs)
- stimulate innovative learning practices, such as blended learning
- equip teachers with high digital skills and competences
- equip learners with digital skills and competences
- think about how to validate and recognise learner’s achievements in online education
- make high quality Open Education Resources (OER) visible and accessible

Obviously, not just UNESCO, OECD and COL, but now even the EC stresses the use, reuse and access to OER. In Sweden,
open access for research articles is common or more or less a demand to get research funding, but the trend towards open publication and sharing of learning resources moves forward quite silently and slowly. Thus, there is a need to make OER visible and to build awareness to meet requirements from institutions and teaching staff. Teaching staff in the educational sector asks now more frequently for assistance, advice and support for working pedagogically and qualitatively with OER. To exploit the potential of the use of OER for students learning, it is not enough to pick out a little OER here and there, without seeing to the entire learning situation and context. Valuable teacher time demands to be used more contextual, and not only to satisfy the question of content. Content is accessible from everywhere nowadays, just some click away. Thus, it is no value that everyone has to reinvent the wheel all the time, concerning content delivery, but instead collaborate, share, use, reuse or adapt existing resources.

The aim of the presented project is to show how to innovate learning and teaching and to work more sustainable and smart.

The project OER- open opportunities for learning
A network of nine Swedish universities, coordinated by Karlstad and Lund University, collaborated on a project where the use and production of OERs were focused. Open webinars were conducted with Adobe Connect, which is provided as a national infrastructure service for e-meetings to all higher education institutions in Sweden by SUNET, the Swedish NREN.

Goals and objectives: The goal of the project was to foster an open dialogue on the Internet about cooperation on infrastructural issues related to the open exchange of knowledge on the net. Special focus on these issues was created for teachers, teacher educators and policy makers.

The objectives of the project were to:

- increase national collaboration between universities and other educational organizations around the use and production of OER.
- make support more efficient for teachers and students, regarding quality, technical and search ability for OER.
- increase awareness of webinars as a tool for open learning online.
- increase national collaboration on support, resources; ICT and pedagogy
- increase cooperation between higher education institutions support functions and national resources through the basis of modern library and IT educational units
- contribute to institutional common labeling, distribution and storage of OER
- develop a webpage www.OERSverige.se

Agreed deliverables were:

Participation: Eight webinars with a total of 800 participants.

Distribution: 4000, the number of unique visitors to the website and recordings.

Impact: 30 interconnections from portals/websites

Documentation: 3 articles, including the final report

Dissemination: presentation in webinars, conferences and journals.
Target groups were academics, teachers, pedagogical developers, and managers.

**Results**

The virtual platform Adobe Connect was used for joint promotion and dissemination of the webinars. Adobe Connect was even used for project meetings and managing of the project.

The domain [www.oersverige.se](http://www.oersverige.se) was developed, Figure 2. Approximately 7800 unique visitors from 230 sources viewed the webpage. In total, the number of unique visitors to the site and the number of people who saw the recordings were more than 12,000.

![Fig 2 Screen shot from the Webpage](http://www.oersverige.se)

Some examples of themes for the conducted webinars:

- Digital competence in higher education as a prerequisite for OER
- What is OER and how-to
- Collaboration between UR (the Swedish educational broadcasting channel) and universities
- Quality in e-learning
- The digital library
- International trends in OER
- Metadata and Standards
- A final webinar was on how to hold attractive and efficient webinars

Three articles (Ossiannilsson & Schneider 2012a, 2012b, Ossiannilsson & Schneider, draft); besides the Final report (Schneider & Ossiannilsson 2013b) has been published. The project was disseminated at two conferences, the OER13 (April 2013, Nottingham, UK) and at the NGL14 (Dalarna University, Falun, SE, March 2014).

Statistics on participation were recorded through SUNETS Adobe Connect administrative interface. From the same source figures were gathered on the number of views of recorded webinars which was one part of the scattering measurement. The second part of the scattering measurement, the number of unique visitors of the website, was taken from Google analytics for the webpage oersverige.se. To measure impact, Google analytics references were used.

The majority of the references come from the .SE domain, which was the intended geographic target audience for the project. However, it was interesting, that the project received international recognition, although it was not directly addressed to foreign audiences.

Closer inspection of the traffic showed that the majority of visitors who came to the project web site had gone directly through the site, Google or through social media like Facebook, LinkedIn, Twitter and project participants' own blogs. Just 52% of the reported visitors indicated that they belonged to a college / university. The other halves were recruited from undergraduate and high school, other educational organizations, businesses and governments. Almost half of the visitors were teachers, educators or librarians. Approximately two percent reported that they had some sort of
management position. These details were taken from the notification forms.

**Evaluation and analyses**

In terms of measurable objectives as participation, dissemination, impact documentation and dissemination, the project has achieved its purpose. Mainly, these targets the substantive purpose of reaching out to a large number of people within the intended target groups of the respective arrangements with conversation and discussion about open opportunities for learning. Open webinars thereby may be considered to be an effective networked communication channel.

It has also been found of interest that organizing and implementing webinars across university boundaries is a sustainable form of collaboration. In the original project plan eight webinars were planned, but they have become nine. Even though the project is finalized, webinars on related OER themes still continue.

Improved quality and efficiency related to the webinars was seen primarily in the following areas:

- Assessment of webinar content
- Recruitment of speakers and participants
- Marketing in a larger number of different networks
- Roles in implementing webinars
- Monitoring and evaluation of the webinars.

**Evaluation of results**

The project has stimulated and contributed to continuity and flexibility in implementation of webinars. The approach even supported sustainable development of conducting webinars.

It is likely that the number of unique visitors of the website were overlapped with the people who saw the recordings. It has not been possible to adjust this as data came from different sources. The scattering measurement saw filming will not show unique visitors so the statistic itself is probably slightly overestimated. The probability that the visitor saw the same recording several times was judged to be slight. However, overall the scattering measurement was clearly higher than expected. The total number of looked recording also grew with time but obviously at a decreasing rate. This means that most visitors saw the recording in close proximity to the webinar.

The number of references should also be seen as a gross figure when no cleanup occurred. More interesting is probably that the visits frequently came from social media. It seems to be more important to market information in social media as Facebook and Twitter, than having a link to the project site on the participating institution's websites.

Analyses of registered entries show that about two-thirds are unique individuals, while a third has been registered for more than one webinar. This applies only for notifications and cannot be confirmed for participants, as login to the webinar was not linked to the registration form.

The webinars seems to have reached the intended target groups. We assume that the distribution of occupation / employment among entries do not differ appreciable from the corresponding distribution for
participants and for those who saw the replay.

It is gratifying that the project becomes visible and also had a consulting role in a government project about webinars as a new form of communication. Although the project focused on Swedish participants some webinars were held in English, and then attracted international participants distributed internationally. As the development of OER and open education is a global phenomenon, we believe there has been a desirable side effect.

The project experience can be described in four areas. These are virtual project organization, implementation of webinars, continuous evaluation and improvement as well as technical aspects. In the project report this is explicit elaborated.

**Implementation of open webinars**

Some best practice will be shared in the following, such as advertising, registration, information for participants, preparatory of the presenter and how the webinar was prepared. The various elements have been:

- contact with the presenter and the recording related to content and structure of the webinar, moderator roles around the webinar interface, the chat moderator role etc.
- advertisement text on the website with information on date/time, presenter, issues, target audience, organizers and technical information about participation and how to register
- flyer prepared for the web and for mailing
- registration forms in Google forms
- advertising to different networks, mailing lists, Facebook groups, Twitter, newsletters, local websites
- technical preparatory meeting and detailed schedules with presenters, uploading of materials for presentation and downloads
- welcoming letters and link to the webinar to registered participants one day before the webinar
- reminder about the webinar the same morning of the actual day
- adjust permissions for presenters
- last minute communication check with presenters and moderators
- implementation of the webinar
- short assessment after the webinar
- control of the recording
- sending the link to the recording / updating and advertising of upcoming webinars
- control of the number of participants, views, linkages etc. to monthly reporting
- evaluation for the next regular project status meeting

Suggestions for improvements are mainly to increase participants' involvement and to emphasize on more interactivity with participants. What is to be found meaningful depends, of course, both on the content and purpose of each webinar.

**Conclusions**

The network is now established as a community of practice (CoP) both nationally and internationally, after the two projects OER - resources for learning and OER - open opportunities for learning the intent is to continue to cooperate in the field of open education in higher education. The recommendations of the EC agenda men-
tioned above will be followed as both Open Educational Practice (OEP) OPAL 20as well as open education as such, including MOOCs (Massive Open Online Courses) are embraced in the EC missions.

The web domain and site www.oersverige.se continue thus to be one of the portals for OER in Sweden where the dialogue on openness and online learning and educational knowledge will be scaffold. The main characteristics with interactive webinars with current and relevant topics will still be open to all who are interested in the field of OER/OEP. Open webinars as those carried out during the project are an important part of open education. Implementing webinars with quality requires solid knowledge of those who organize and portray the webinar as well as content relevant to the target audience.

With the project experiences, opportunities are seen for continued work in supporting other groups/projects with implementation of open webinars, and develop its interactive possibilities.

The development, use, and reuse of OERs as well as MOOCs require a critical mass to influence and to win the attention of decision makers. As we have reached quite a large number of participants, some hundred at each webinar, it can be said that a critical mass has been reached.

Cooperation with several and new groups that pursue similar goals is a reasonable way to go. Of special interest would be to network with other educational sectors and organizations to highlight practical examples about open education through webinars. A MOOCOER could be a conceivable new collaborative project.

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