Þuríður Jóhannsdóttir [Thurídur Jóhannsdóttir]

'What we wanted to do was to change the situation'
Distance teacher education as stimulation for school development in Iceland

► About the author   ► Key words

The article describes the origin of a distance programme for teachers first offered at the Iceland University of Education in 1993 in response to a lack of qualified teachers in rural Iceland. Student teachers were teaching in their home districts while enrolled in the programme, which was organized as a combination of campus-based sessions and home study, communicating with university lecturers via the Internet. The purpose of the article is to enhance understanding of the inception of the programme and shed light on the way in which student teachers' participation in the distance programme enabled them to stimulate school development. Document analysis reveals the importance of the interaction of different factors in Icelandic society when the distance programme was taking shape. A description of the first steps in the development of the new teacher education model from the perspective of student teachers is based on data generated from interviews with three former distance students during visits to rural schools. Expansive learning theory (Engeström, 1987; Engeström & Sannino, 2010) was used as a theoretical framework for analysis and interpretation. The distance programme is looked at as an innovation in teacher education responding to a persistent lack of qualified teachers in rural regions. The findings suggest that an important factor in facilitating the inception of the programme was the collective responsibility of agents at different points within the school system in the rural districts collaborating with the Iceland University of Education. From the student teachers' perspective, lack of contact with lecturers was a challenge they learned to overcome by forming networks to collaborate, share knowledge and experience and support one another. This development was increasingly mediated by use of the Internet and is suggested to have been an important contribution to the emerging new model of distance teacher education. It is claimed that the school-based distance students brought new knowledge from the programme into their schools, thereby contributing to school development.

**„Það sem við vildum gera var að breyta ástandinu":
Fjarkennsla í kennaramenntun sem hvati skólaþróunar**

► **Um höfund** ► **Efnisorð**

Í greininni er lýst upphafi heildstæðs kennaranáms í fjarnámi sem fyrst bauðst í Kennaraháskóla Íslands árið 1993. Þörf fyrir fjarnám spratt af skorti á kennurum með réttindi, einkum á landsbyggðinni. Kennaranemar unnu flestir sem kennarar heima í héraði á meðan þeir stunduðu námið. Það var skipulagt í nokkrum staðbundnum lotum á ári en þess á milli stunduðu nemar námið heima og áttu samskipti við kennarana í gegnum Internetið. Tilgangur greinarinnar er að auka skilning á tilurð fjarnámsins og varpa ljósi á hvernig þátttaka kennaranema í fjarnáminu styrkti þá í að efla skólaþróun í heimaskólum sínum. Gögnin sem rannsóknin byggir á eru skráðar heimildir og ýmis skjöl sem varpa ljósi á samspil ýmissa þátta í íslensku samfélagi sem urðu til þess að fjarnáminu var komið á fót. Þá var farið í heimsókn í nokkra skóla á landsbyggðinni og tekin viðtöl við nokkra þeirra fjarnema sem voru í fyrsta hópnum og þessi viðtöl eru notuð til að lýsa þróun fjarnámsins á fyrstu árunum frá sjónarhóli fjarnemanna sjálfra. Kenningin um víkkað nám (Engeström, 1987, Engeström og Sannino, 2010) var notuð sem fræðilegur rammi við greiningu gagnanna. Litið er svo á að fjarnámið sé nýjung í kennaramenntun sem komi fram sem svar við viðvarandi svæðisbundnum kennaraskorti. Niðurstöður benda til að mikilvægur þáttur í að greiða fyrir því að koma fjarnáminu á fót hafi verið samábyrgð aðila á ýmsum stigum innan skólakerfisins á landsbyggðinni og samvinna þeirra við Kennaraháskólann. Frá sjónarhóli fjarnemanna var lítið samband við kennarana vandamál sem þeir lærðu að takast á við með því að mynda hópa til að styðja hver annan, deila þekkingu og reynslu og vinna saman að verkefnum. Því er haldið fram að þessi þróun, sem var í vaxandi mæli studd af þróun í samskiptum á netinu, hafi verið mikilvægur liður í að móta þetta nýja form sem fjarnám kennara var. Því er ennfremur haldið fram að fjarnemar sem unnu við kennslu í skólum hafi fært með sér nýja þekkingu úr kennaranáminu inn í skólana og með því stuðlað að skólaþróun í sinni heimabyggð.

Introduction

When visiting compulsory schools in a coastal district in rural Iceland in the years 2003 and 2004, I came to realize that in some of the schools several employees were always enrolled as distance student teachers, and this had been the case ever since teacher education was first offered at a distance in 1993. In one of the small schools I visited, all teachers but one had received their initial teacher education in the distance programme. Many of these pioneers continued their studies in the graduate programme of the Iceland University of Education, and have been key persons in professional development in their schools. The meaning and importance of distance education for the schools as institutions, as well as for the professional and personal development of teachers, awoke my interest. This kind of link over a period of time is also important for the university to better understand the affordances of the distance programme for both student teachers' learning and school development.

In the article I explore the origin of the distance programme and describe the experience of several student teachers from the first cohort ten years after they started. I begin by exploring why the programme was launched in 1993, describing its main features and how it was realised. Then I describe the development of the programme from the perspectives of the student teachers, based on interviews with three students enrolled in the first cohort. Their stories generate empirical data on which the analysis and interpretation is based. The situation of teachers without formal qualifications in the local schools is described, as are their perspectives on how the distance programme supported their professional development and in turn their schools' development. The purpose of the article

is to enhance the understanding of the inception of the programme and shed light on the way in which student teachers' participation in the distance programme contributed to the programme's development, as well as to the schools' development.

The research questions are:

1. How did the interaction of different factors in Icelandic society contribute to the inception of the distance programme for school-based teachers?

2. How did the student teachers learn to function as school-based distance student teachers and contribute to development in their local schools as well as development of the programme?

Theoretical framework

The research approach is based on cultural-historical activity theory. Most important is the theoretical view on the interplay of individual development and the development of activities in which individuals participate (Engeström, 1999). Engeström's theory of expansive learning (Engeström, 1987) explains how individuals learn and activity systems develop when responding to changes that enter the systems, e.g. new tools or changed objects of activity. (In activity theory the object of activity is used for something at which an action is directed (Russian predmet) (Leontiev, 1959/1981). In dealing with disturbances caused by these changes, people may find themselves in a double bind situation (Engeström, 2007b), which means that they know that they have to change their practices for solving the tensions but are unable to do so. In that case, the support of external tools – material or conceptual or the interplay of both – might be necessary to break away from the double bind situation and develop the practice. Vygotsky explored this phenomenon, and his method, which was meant to enhance people's agency in breaking away from difficult situations, is called second or double stimulation (Vygotsky, 1978).

Activity systems are constantly dealing with outside influences that have to be appropriated and modified to internal factors in the relevant activity systems (CRADLE – Center for research on activity development and learning, 2011). This process of appropriation causes imbalance and disturbances in the systems. The imbalance has to be dealt with and that is what keeps the systems going and in constant development. In this way historically new forms of social activity emerge when activity systems deal with resolving tensions and disturbances by finding out a new and qualitatively better way of functioning (Engeström, 2007a). Engeström explains how the role of the interplay of tools on different levels can serve as double stimulation for breaking away from challenging situations. He has addressed the importance of interplay between tools and how new material tools have to be followed by new concepts and visions and vice versa.

Boundary crossing has become an interesting focus for the study of transfer and learning (Tuomi-Gröhn, Engeström, & Young, 2003), focusing on how practitioners may function as change agents by moving between systems, bringing new ideas, tools and practices, e.g. between schools and workplaces. The situation of student teachers in moving between the activity system of their local schools and the university programme make them boundary crossers and as such they may become brokers or change agents (Wenger, 1998) bringing ideas and practices from one system to the other. It is suggested here that participation in two system practices makes it possible to use an experience gained in one system as a double stimulation when dealing with tensions in the other. Thus new ideas, tools and concepts afforded in one system can be used to break away from the constraints in another and develop practices.
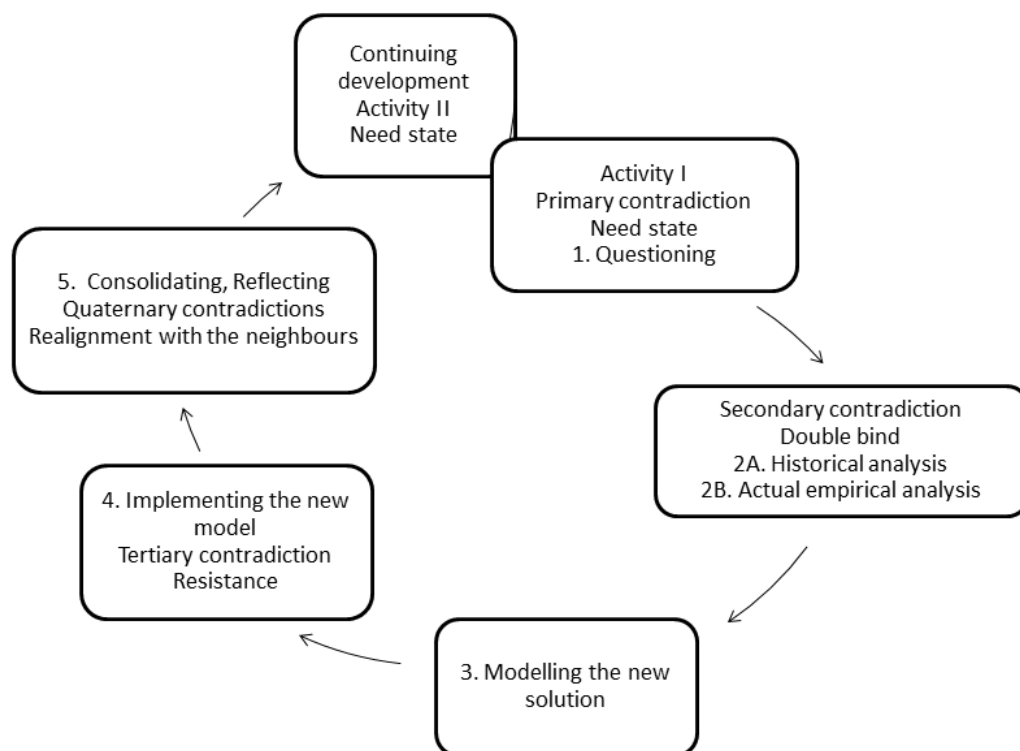
**Figure 1 – The expansive learning cycle
(adapted from Engeström, 2001)**

Expansive learning theory (Engeström, 1987; Engeström, 1999; Engeström & Sannino, 2010) is used as a comprehensive framework for analysis and interpretation in this study. Guided by the expansive learning cycle (*Figure 1*), I looked at the distance programme as an innovation in teacher education responding to a need in Icelandic society at the time and have striven to explain how a need in the schools called for formulation and launching of the programme in 1993. I describe its main features and what made its realization possible.

Data and Methods

Data for analysing the inception of the programme were written documents, published as well as unpublished, accessed in the university's archives, which provided information on its preparation and early development. Another valuable resource on the first years of the programme was an evaluative research project on the first cohort enrolled from 1993–1996 (J. Jónasson, 2001). By using cultural-historical activity theory for analysis of this data, my aim was to understand the interaction of different factors at play in Icelandic society when the distance programme was taking shape.

The activity theory scholar Davydov suggests that the task of researchers is twofold, first to formulate narratives from ethnographic fieldwork to generate empirical data and then use that data for analysis, interpretation and generalizations. In this way empirical knowledge is developed through the narratives and theoretical knowledge developed in the analysis (Davydov, 1977, as cited in Nilsson, 2003, p. 79). In this case, data were generated by interviews with pioneers enrolled in the first cohort. I became acquainted with them during field visits to several compulsory schools in a coastal district in a sparsely populated region of Iceland in April 2003 and in February and May 2004. They were at that time teaching in the same schools in which they had been situated while enrolled in the programme ten years before. The schools were located in fishing villages or towns

ranging from around 200 to 3,000 inhabitants. My first visit to the district in 2003 provided an insight into the situation of the schools and an interest in the affordances the distance education might have had for school development. After being informed of the context of the study and their rights as participants, three of the former distance students who had been enrolled in the first cohort agreed to participate. Each of them was interviewed and asked to recollect their memories of the experience of being pioneers in the programme. Their narratives were used to generate empirical data on the first steps in the development of the programme from the perspective of student teachers. The narratives were then analysed by using Engeström's expansive learning cycle, which is appropriate for analysing the interaction of individual and systemic development. This approach to the analysis reveals challenges met by agents in activity systems and the way in which they overcome problems. Here it is used to explain how the student teachers learned to function as school-based distance student teachers and contribute to develop their local schools as well as the programme.

Research findings within the framework of expansive learning methodology are supposed to be presented in the form of new concepts, models and hypotheses, and their generalizability is a 'question of practical relevance for other activity systems facing similar contradictions in similar developmental phases' (Mäkitalo, 2005, p. 105). In accordance with this approach, the conclusion is put forward in the form of concepts that emerge from the analysis suggesting that they would be important for supporting future development in teacher education in interaction with school practice.

Context: teacher education in Iceland

The Iceland University of Education in Reykjavík traces its history back to the Icelandic Teacher Training College (Kennaraskóli Íslands), founded in 1908, which was upgraded to university level in 1971 when it became The University College of Education (Kennaraháskóli Íslands). Until 1993 it was the only institution in Iceland that educated compulsory school teachers. Most of the time it served teacher education for compulsory schools, grades 1 to 10, while the Department of Education at the University of Iceland from 1951 served the lower and upper secondary schools and offered teacher certification programmes for students who completed university studies (now equivalent to 30 or 60 ECTS). From 1974 the University College of Education offered comparable certification programmes for students with art studies or masters in different trades. Those programmes were planned as part time studies in flexible form according to the needs of the relevant student groups (Kaaber & Kristjánsdóttir, 2008). Over time the certification programmes became open to all students irrespective of their undergraduate education and are now offered as distance education programmes, with face-to-face sessions included (blended mode). Since 2000, Reykjavík University, which is a private institution, and the Iceland Academy of the Arts have also offered certification programmes for prospective teachers in secondary schools.

In 1998 the University College of Education merged with three colleges, together educating teachers, preschool teachers, sports teachers and developmental therapists, and the education was upgraded to university level. The new organisation was known as Kennaraháskóli Íslands or the Iceland University of Education. In 2008 after celebrating its one hundred year anniversary it merged with University of Iceland and is now the School of Education within the university.

Since 1993, the University of Akureyri has offered teacher education programmes at both undergraduate and graduate levels as well as certification programmes for compulsory and preschool teachers. Distance programmes for preschool teacher students have been offered since 1999 and for compulsory school teachers from 2003.

Throughout its history, the Iceland University of Education and its forerunners served the need for educating teachers in and for sparsely populated districts. In order to meet this need, the university has offered non-traditional types of teacher education, such as the certification programmes formerly mentioned. In 1979, it offered off-campus opportunities for people who had been teaching in primary schools without formal education. The reason was the introduction of stricter legislation on the professional rights of those holding teacher positions, as well as the fact that up to 25% of teachers in primary schools were without formal teacher education (Kristjánsdóttir, 1992). Teachers with reasonable experience could complete formal teacher education in a flexible program, which was organized so that they could fulfil their teaching obligations at the same time. Student teachers met their university teachers for a maximum of eight weeks a year, and in between they studied at home using mail correspondence to interact with the teachers. It took students two to four years (or more) to complete the study depending on their former education. The programme was considered a one-time opportunity for people who had served mainly in rural schools, though when the first group had finished the problem of teacher shortages in rural communities was still pressing. The institution responded to the continued demand for flexible teacher education with a second group in 1988.

Self-study played a crucial role in this form of teacher education, although gatherings of students and teachers were also considered important, as these activities enhanced the students' learning communities. The fact that the student teachers were at the same time participants in the working culture of the school was clearly interpreted as a strength. An informal survey conducted in 1990 on the 1979 group of participants showed that up to 90% were still teaching, and most of them were still in rural communities (Kristjánsdóttir, 1992). The experience of a different more flexible form of teacher education had been positive and teacher educators, as well as the community, recognized the potential of this form of education.

Launching a full B.Ed. teacher education programme

The lack of teachers and the lifelong learning movement

Despite the success of the flexible programmes mentioned above, a shortage of teachers continued to be a problem in sparsely populated districts. The problem was greatest in the coastal region where the fieldwork of this study was carried out and where, in 1992–1993, 50% of teachers were without formal qualifications (Stefánsdóttir & Mýrdal, 1993). The schools had a poor reputation, and results from standardised national examinations confirmed that pupils' achievement was amongst the lowest in the country, which the community felt was unacceptable. The problem also existed in other districts, and the heads of regional educational offices, in cooperation with school principals and teachers without qualifications, called for a different form of teacher education, since many teachers were not in a position to move to Reykjavík for the regular, on-site programme.

In the years preceding the 1990s, lifelong learning and continuing education for the workforce in general were being put on the agenda internationally. Society's need for enhancing the knowledge and qualifications of citizens, in order to serve the emerging new era of the information or knowledge society, was to be addressed through lifelong learning. Distance learning was seen as a promising means to that end all over the world, and the success of the Open University in the United Kingdom was an important model (J. T. Jónasson, 1987). It had been 'founded [in the 1960s] on the belief that communications technology could bring high quality degree-level learning to people who had not had the opportunity to attend campus universities' (The Open University, 2009). New technologies presented possibilities for putting these ideas into practice. Without question, this inter-

national wave affected how the Iceland University of Education, as well as the Icelandic authorities, responded to the need for qualified teachers in the rural areas.

In 1986, the Icelandic Ministry of Education established an Executive Committee for Distance Teaching (Icelandic: Framkvæmdanefnd um fjarkennslu), charged with the task of exploring the feasibility of initiating distance education in Iceland and evaluating which subjects should be prioritized (J. T. Jónasson, 1987). The terms of reference mentions teacher education along with the Icelandic language, knowledge and skills about computers for the general public and education concerning fish products. The committee proposed a teacher education distance programme for in-service teachers as feasible, as well as shorter teacher certification programmes. The experience of the Iceland University of Education in offering flexible programmes to serve the need for teacher education was mentioned and the importance of supporting that initiative was highlighted.

The organisation of the B.Ed. programme

In 1989 the Iceland University of Education (IUE) responded to the call for an alternative form of teacher education by forming a working group on decentralized and flexible teacher education. The idea was to build on the experience the IUE had of enabling people living in the countryside to pursue studies through unconventional routes (Stefánsdóttir & Mýrdal, 1993). In late 1989, the group proposed that the IUE would offer a full Bachelor of Education (B.Ed.) degree via distance education. Sigurjón Mýrdal, the first coordinator of the distance education programme, explained why this was the view of the group:

> An important objective of our project is to eventually eliminate the number of unqualified teachers in our basic schools, by offering teacher education to a pool of fairly educated people living in the rural communities. This was the primary reason for the propelling of this relatively large distance education programme and maybe explains why it was given priority over some other smaller or less complicated courses, for example in further education or in-service education of teachers. (Mýrdal, 1994b)

In January 1993 the programme was launched with the same entrance requirements as for the traditional programme. To begin with, applicants from rural areas with a teacher shortage had priority, although it was not a formal rule for admission. Maintaining similar standards to the traditional programme was stressed to avoid speculation that the distance programme was of poorer quality (Mýrdal, 1994b). It was organized as a part-time programme over three and a half years, with three semesters each year, equivalent to three years of full time studies. The first cohort started in January 1993, with graduation planned for summer 1996.

There was a two-week session on campus in the beginning of January each year and 3-6 weeks during four summers (Stefánsdóttir & Mýrdal, 1993). Otherwise the programme was planned as independent study, where the Internet was supposed to be the main medium of communication between teachers and students. Since the technology was new to both teachers and students, it was assumed that ordinary mail and telephone would be used alongside e-mail.

The face-to-face sessions were considered necessary to present an overview of the learning material and explain learning tasks to the students, as well as for lectures and sometimes for taking exams. Experience showed that the time on campus was also used for student collaboration and social fellowship, and both students and teacher educators came to appreciate the face-to-face sessions for that purpose (J. Jónasson, 1997; Kristinsdóttir, 1995).

The distance programme followed the same curriculum as the on-campus programme, although electives were somewhat fewer. The majority of the student teachers worked as teachers alongside their studies. When that was not the case, the IUE and the district services collaborated in arranging home schools for students where they did their practice teaching and other practical assignments related to their studies (Stefánsdóttir & Mýrdal, 1993). The distance programme, like the on-campus programme, allotted 14 weeks for practice teaching. Even though the school-based student teachers generally took the practice teaching in their home schools, programme staff strongly encouraged them to complete at least one period in another school. However, it depended on the circumstances, both in the schools and of the student teachers. For the majority of students the programme was in effect a school-based apprenticeship model for teacher education based on a kind of partnership between schools and the IUE. The local schools and regional education offices took on the responsibility of supporting their employees while they were studying.

The Internet as a mediating tool

The development of new information and communication technology played an important role in the realization of the programme. The promises and possibilities of the Internet actuated the vision of enhancing access to education for marginalized groups of people, such as those living in the countryside. In Iceland a grassroots movement of small schools in sparsely populated districts had started to build up Internet connections. This movement grew fast and in 1992 it became formalized in a nationwide network – the Icelandic Educational Network (Icelandic: Ísmennt). This network became an important supporter as well as promoter of distance learning for enhancing education, especially in the countryside (J. Jónasson, 2001). These Internet pioneers were interested in the possibilities inherent in the new information and communication technology for enhancing collaboration by connecting schools and widening access to educational institutions. The interplay of new technology and the emerging ideas on social justice and lifelong learning facilitated the launch of the distance programme, although the primary motive was the need for teachers with appropriate education in compulsory schools (Mýrdal, 1994b).

It is evident that Ísmennt, as a movement of teachers, also played an important role as a responsible supporter of the distance programme. Ísmennt had become a movement arousing general interest, and in the spring of 1993 80% of all schools in the country had been linked to the Internet through the network (Stefánsdóttir & Mýrdal, 1993). The enthuseasm of the innovators ensured that the distance programme could rely on their support, and they took responsibility for ensuring that distance student teachers had access to the network, either from the schools where they worked or from their homes. Ísmennt also offered the students courses on using the Internet before they started. Most of the network's staff members were teachers, which ensured a better understanding of teachers' needs and circumstances. This was a crucial matter in creating a supportive community around the new technology (Stefánsdóttir & Mýrdal, 1993).

The IUE and school district offices also reached agreements stipulating that the offices would, as a rule, support student access to necessary computer devices in the respective home schools (Kristinsdóttir, 1995). The offices were also important promoters of this educational opportunity for rural schools. The offices and local schools took on the responsibility for assisting in planning practice teaching and providing venues for examinations. In this manner the schools, the district offices, and Ísmennt, in combination, provided pedagogical support for distance student teachers.

The first cohort

In the first cohort that started in the spring term of 1993, there were 83 students: 75 women and 8 men. They had been chosen from 194 applicants. Most of them started in January (65) but several students (18) were admitted in April, since there was political pressure to take in more, and additional funding made it possible (Stefánsdóttir & Mýrdal, 1993). The prerequisite was having sufficient preparatory education, but applicants with experience as school teachers where there was a lack of certified teachers were prioritised. In this first cohort there were student teachers from all over the country, although most of them came from regions where there had been teacher shortages, and very few were from Reykjavík and the surrounding area. Around 80%, or 67 students, had some teaching experience, 10 of them having a decade or more of experience, while 15 had no teaching experience at admission (J. Jónasson, 2001, p. 76). Age was higher and the age range more widely distributed, than in the on-campus programme, with the oldest born in 1934 (59 years old when she started) and the youngest born in 1970 (23 years old when she started) (J. Jónasson, 2001, p. 73). Around 70% of the group, 54 students, all women, graduated in June 1996.

Admission guidelines for the distance programme were based on a societal need for qualified teachers, especially in the rural areas. This resulted in the community of distance students being relatively homogenous; it was made up of females from the countryside, mostly between 30 and 40 years of age, with teaching experience and a formal education equivalent to a matriculation examination or more. Some had a university education in the school subjects they had been teaching. It can be assumed that they were enthusiastic and ready to sacrifice a lot to get an education, because at the time there were no funds or resources to pay for travel and board in Reykjavík at least six weeks per year. Most of them had a full-time job and family commitments, although the advice of the programme committee was that enrolled student teachers should have maximum 50% job obligations (J. Jónasson, 2001).

The experience of student teachers enrolled in the first cohort

Three teachers who were enrolled in the first cohort in 1993–1996 were asked in open interviews to recall their experience of being one of the pioneer distance students. They were asked to reflect on why they wished to participate in the programme, what they learned, how they used what they learned to enhance their professional practices, and how it may have eventually affected school practices in general. Below the narratives generated from the interviews are presented; pseudonyms are used for both schools and people.

Three student teachers in the first cohort and the situation in their schools

When Helen started in the distance programme she had been teaching in Marwick School situated in a small fishing village. At that time there were five teachers and approximately 30-40 pupils in the school, and the principal was the only one who had teacher certification. When the opportunity arose to get initial teacher education via distance learning the principal encouraged the teachers to apply. Helen and one of her colleagues started in the first cohort in 1993. The other two followed their example and within a few years all the teachers in this small school had received their qualifications through the distance programme. When interviewed in 2004, Helen held the post of principal in the school and planned to enrol in the Educational Administration graduate programme at the IUE, offered via distance learning.

Elisabeth had been teaching for several years in Waterside School, with more than 500 pupils and about forty teachers, located in the district's main town. She had graduated from the University of Iceland with a B.A. degree in two subjects, which she taught at the lower secondary level, but did not have teacher certification. Several other women teaching in the school were in similar situations, had various educational backgrounds at university level but were without teacher certification. Elisabeth explained that at the time the school had a poor reputation in the community. Results in standardised national examinations, where pupils were repeatedly below average, were linked to the high percentage of teachers without certification. Elisabeth and her colleagues thought the situation was unacceptable and started to search for ways to improve their status as professionals, thereby hoping to change the situation in the school. They were not able to enrol in the on-campus teacher education programme because '… we all had our families here… could not or did not have the courage to move to Reykjavík at that time.' Elisabeth was in 2004 a vice principal in Waterside School, where a number of teachers had been enrolled in the teacher education distance programme, as well as in graduate programmes in recent years. She had been taking courses in the Educational Administration graduate programme and was near completion.

When Jenny started in the distance programme she was a teacher in Coastline, a small fishing industry town whose school had approximately 150 pupils and 20 teachers. She had studied at the University of Iceland for one year when she got the opportunity to become a lighthouse warden for a year, together with her fiancé. After that they settled in their hometown and she got a job as a teacher in the school. When the opportunity came to continue her studies in the teacher education programme via distance learning she seized it. She described it as an inner need to continue to learn even though the circumstances were difficult. When interviewed in 2004 she was head of teaching at the upper primary level, ages 10-12, as well as being enrolled in graduate-level courses in general didactics and information and communication technology education through distance learning.

The reasons for participating in the distance teacher education programme

The overview of the three women and their situations illustrate that both personal circumstances and the shortage of qualified teachers in the schools created the need for a non-traditional form of teacher education. Elisabeth explained why she and her colleagues took the initiative to call for an opportunity to access the teacher education programme and get formal teacher certification:

> We simply wanted to enhance professional discussion in the school, and yes, to be able to title ourselves as teachers. We were women who were really interested in teaching, and we had been reading articles and books, etc. So we talked to Peter, who at that time was the head of the school district office, had many meetings with him and he fought for this and made it possible.
>
> (Interview, May 2004)

Elisabeth and her colleagues in similar situations at Waterside School had been questioning practices in their school before commencing studies. Elisabeth narrated how it was their intention to change the school and that they saw the teacher education programme as a supporting element in that endeavour:

> What we wanted to do was to change the situation, change the image of the school in the community. We wanted to increase respect for the school in the community, and get rid of some negative aspects that had created an unpleas-

> ant atmosphere in the school; … make the school better, the pupils happier
> and that we could look at the group leaving the 10th grade standing here
> outside the school and look proudly into the future. (Interview, May 2004)

It is apparent that the women had visions for their schools and enough self-confidence to believe that they were able to change them. They saw that a precondition would be to be accredited as qualified teachers. In Waterside community as well as in the region as a whole there was general agreement on the need to improve the schools. On this, both the school authorities and the unqualified teachers agreed and were willing to do something about it. From the interviewees' perspectives there was no question that the support and initiative from the school district office, along with the encouragement of its director, Peter, was crucial. Helen recalled:

> He really encouraged everybody, phoned the schools asking if we weren't
> ready to do it, to try to get into the distance programme to get a teacher
> education, which would make it possible for us to continue living in our home
> towns and to keep our work as teachers. (Interview, February 2004)

Helen emphasised that the principal in Marwick, where she was teaching, encouraged the teachers to apply, gave them her recommendation and contacted the programme administrators at the IUE to push for their admission. The principals and Peter at the school district office seem to have formed an effective pressure group and as a result about 23% admitted in the first cohort came from the district (Mýrdal, 1994a), a fact that showed the difficult situation there.

Support for student teachers' participation in the programme

Like most of the student teachers in the first cohort, Helen, Jenny and Elisabeth were all teaching in their schools alongside their studies – generally a full-time job – besides having family obligations with young children at home. To understand the relationship between learning and their personal circumstances, it is important to consider what supported them in participating in the programme, what was challenging, and how they managed to overcome the challenges and continue. Support from within the programme and from the home district will be examined.

The technology

The programme was planned as an independent study where students worked on their studies from home, supported by mail correspondence with lecturers as well as on-campus sessions twice a year. Connecting schools to the Internet was crucial to the success of the distance education programme and all distance students were secured access to an Internet-connected computer, either in the school where they worked or in a nearby school if they were not teaching. However, as Elisabeth recalled:

> There was a sort of a tension linked to it; something was always going wrong.
> We had only this one computer at the school which we could use; we didn't
> have one at home. (Interview, May 2004)

But the technology and access developed quickly. Already in the third year of the programme many had got themselves a personal computer and Internet connection in their homes.

Although the Internet was supposed to be the main medium of communication between teachers and students, ordinary mail and telephone were also used. In the beginning, email was mainly used for students to receive assignments and submit solutions to teachers, although larger essays, where the page layout mattered, were sent by ordinary

mail. This was before attachments became an option in email software. The women all stated that it was primarily independent study, except for the on-campus sessions. It mattered a great deal, however, how the lecturers handled their teaching tasks. The technology was new to students and teacher educators alike. This caused tensions when teacher educators were not using it effectively, as Jenny mentioned:

> The email was very primitive and something we were not familiar with. And not all the teachers were capable of using email. From some of them you never heard a word.   (Interview, February 2004)

The teacher educators

The pioneer distance students all agreed that it mattered a lot how the teacher educators handled computer communication. In some cases they had little to no contact between face-to-face sessions. They remember the feeling of being ignored, that some teachers had forgotten them or did not have time for them; but other teachers were always prepared to help. Helen explained the importance of good contact with the lecturers in general terms:

> It doesn't matter how old you are. If you have a task and someone is the manager, you have to be in contact with that person. You have to get some feeling… not only through the computer. And some of them [the teacher educators] gave us great access to them, saying like: Just send me questions any time, or you just phone me, etc., while others had a scheduled time for such questions. Most of them, though, were easy to access.
>
> (Interview, February 2004).

Collaboration and peer support

The students reacted to tensions caused by a lack of contact with some teacher educators by sticking together and collaborating. In Waterside, the six women who were part of the programme would meet to collaborate and support each other in reading and doing assignments. Elisabeth describes how they 'made strong personal connections and helped each other a lot, met and pulled each other ashore and battled' (Interview, May 2004).

Lack of contact with some of the teachers at the IUE led to tensions, which made the distance students feel isolated and frustrated. Elisabeth reflected:

> If I had been alone with so little connection to the teachers, I would have just given up with such a disaster (referring to an incident when assignments had got lost in computer communication).   (Interview, May 2004)

In the latter part of the programme, new collaboration groups were formed and students learned to collaborate with their schoolmates no matter where they were living. By then they had gotten to know students from other places, and were in groups based on subject specialization. Elisabeth recalled:

> When we started to separate we helped, got phone calls, one of us chose English and collaborated with a student in the East.   (Interview, May 2004)

Helen also talked about how they learned from meeting people from other rural regions, in similar situations, and started to collaborate with people in the programme, independent of their location. The collaboration was not only around the studies; since most of them were teaching they started to support each other in their teaching jobs. Helen explained:

> … if you just said, look, it is really working out well with me in mathematics if I teach it this and that way. Then someone would come and say: Oh my God, can you help, I heard you were teaching this class, the 3rd grade. It is really going badly. What is it you are doing? And then you told them what you were doing, something like that and then that person went home strengthened …. And then maybe you were sending them material and all kinds of things after-wards.
> (Interview, February 2004)

Such conversations could happen in face-to-face sessions, or by contacting each other from their homes. Helen recalled using the phone even more than email. However, email was used to exchange texts, whether it was study assignments or for the exchange of school assignments used in their own teaching.

The face-to-face sessions in Reykjavík were of crucial importance for making personal contacts, both with student peers and lecturers, as well as for learning to work together. Helen illustrated this well:

> When we met in Reykjavík we stayed together as a group a lot, met a lot out-side school and things like that, eating together in the canteen, collaborating on assignments in the library. Things like inviting the teachers to dinner with us. I still keep in touch with many of them. It was often really fun. It was interesting to hear what all the others were doing. This opened up so many things, opened up so much, you see, because they were all teachers. Because more or less they were teachers in small schools, so you could ask them what they were doing. You could get a lot of information, share a lot. […] And then you return home, not only with the knowledge from the teacher programme, but also what the others were doing, and in that way you were adding to your knowledge all the time.
> (Interview, February 2004)

This is a good example of how the distance students explained how they were learning not only from the formal learning tasks they were supposed to perform as part of their studies, but also from their schoolmates being in similar situations, teaching in local schools in the rural areas.

Support in the home district

An agreement had been made that the school district offices would support the distance students, and all of them mentioned the support of the head of the district office, Peter, and how important it was, and thanked him, both for making the programme a reality and for continuing encouragement. Initially his intention was to provide books that the dis-tance students would need and they could come to the office to read and discuss them. In reality it was more like being invited for coffee and cakes, for he was always willing to listen and provide support when needed, and that was appreciated.

All three mentioned the important support they got from colleagues in the schools where they were teaching while studying. Elisabeth thought that the experience of teaching, to-gether with the support she had in her home school, were the preconditions for her being able to succeed in the programme. Helen indicated the importance of having a supportive principal, who had herself recently graduated from the on-campus programme, and who encouraged her to try out things she was learning with the pupils. This possibility was an important advantage of working as a teacher at the same time as learning to become a professional. Helen explained how this functioned for her:

> You would always adapt to your own situation. Look, this was your world, the school, where you were teaching and you applied all the material you got. You

were always trying to apply, asking: How can I use this in my teaching? And immediately when we had learned how to make a teaching plan and things like that; integrate – make social studies by integrating geography, history, home economics and things like that, then you could organize a tourist bureau here with the pupils. And everything worked out well and you went back happy [to the programme]. […] And then we shared, you always shared with the others right away.   (Interview, February 2004)

In Marwick, Helen, and her fellow student and colleague used their newly acquired knowledge in their practice, thus bringing new ideas and practices from the programme to their school. Their changed practices in turn affected school development, as well as motivating the rest of the unqualified teachers to apply for the distance programme. In this case the importance of the culture of the school being receptive to new ideas arising from the activity of the programme is crucial.

In the beginning it was the principal who was supportive and encouraged the student teachers to bring knowledge from the programme into their school practices. They were given agency and space to try out ideas from the programme, by both teachers and schoolmates. Later, the pioneer distance student teachers supported those who followed in their footsteps. They then understood the situation and what they were going through and could help and provide support.

Ellen [a colleague and distance student] maybe phoned me and said: Helen, I need to talk to you, I really do. And then we'd chat and I would come up with a suggestion like: You could for example write about this or that […]. And then she had got some catch phrases which made her see the light at the other end of the tunnel you know. […] And then, the next morning she would show up saying: 'Look I just sat up all night and everything worked out well, so I just finished it, it was just great!' […] Sometimes it is enough just to pat someone on the shoulder saying: 'Oh, I know what you are talking about'. Often that's quite enough, you know.   (Interview, February 2004)

The example shows an atmosphere being cultivated in the school that was supportive of the distance student teachers.

How participation in the programme supported school development

It is of interest to learn, when looking back, how the former distance students experienced the programme as supporting them in their professional development as school teachers. How did the academic studies in the university programme work as relevant resources for them in developing their practice in the schools and how did their participation in the programme influence school development? Helen recalled that developmental psychology was useful, while mathematics was difficult, and that students did not find the cultural history of Romans especially relevant to their work as teachers. Elisabeth analysed how the programme affected their self-confidence and gave them strength to pursue change:

The teacher education we got at that time made us more secure and enhanced our position as teachers. We began to come forward, the teachers without professional teacher education, just finishing a course in didactics of social studies and knew perfectly that we were talking about something that made sense, knew how we wanted to do this and said that we were not satisfied with how things were done now, and we wanted it this way.   (Interview, May 2004)

Elisabeth continued and described how the atmosphere in Waterside School gradually changed:

> I think that when these six women started their studies then the other teachers began to talk together more than before… there was a kind of renewal. There was a group of qualified teachers here but when the rate of the unqualified is so high, a professional discussion doesn't thrive. We are quite sure that this [enrolling in the programme] totally changed the school. The school ethos and the attitude of the community towards the school have changed.
>
> (Interview, May 2004)

She realized that there may be many interrelated factors affecting school development and explained that the advent of a new principal was believed by many to have made the difference, but:

> … the situation had begun to improve before he came. […] We were maybe not thanked for that, but we want to say that it is because we got that opportunity (referring to enrolling in the distance programme).
>
> (Interview, May 2004)

In her estimation, the school was moving towards a more professional mode of fulfilling its role. She mentioned, for example, how discussion in the staff room changed, how they started talking about pupils as children and individuals and taking professional responsibility for their education, wellbeing and future.

> We stopped talking about how tedious and difficult Jacob could be, 'just like his grandmother used to be.' Instead we began talk about what we could do to make Jacob feel better, and how we could organize our teaching so that the slower pupils could manage their learning tasks somehow.
>
> (Interview, May 2004)

Development of the distance programme for teachers

Now the inception of the distance programme and the first phases in its development as experienced by the three pioneers will be analysed with reference to expansive learning theory. The expansive learning cycle (*Figure 1*) explains development in terms of how the object of an activity is expanded and a new model developed when individual subjects or collectives start questioning existing practice and calling for change, which is termed the need state. When the object of activity is changed it calls for developing new kinds of practices, new mediating tools, and a different division of labour. In other words, a changed object initiates secondary contradictions that manifest themselves in disturbances, problems and tensions in the activity, which participants need to overcome to keep the system functioning. Secondary contradictions are also initiated when new elements such as new mediating tools are presented for use in an activity system (Engeström, 1987; Engeström & Sannino, 2010). The expansive learning theory is based on Vygotsky's method of second stimulation (Vygotsky, 1978). In analysing developmental processes, the affordances that subjects were able to draw on as second stimulations are identified as what supports people in overcoming troubles and developing practice. Here the first phases in the emerging new model for teacher education in Iceland will be examined in terms of the expansive learning cycle (*Figure 2*).

Activity II
Compulsory schools in rural Iceland and teacher education in 2003-2005.

The actual state of affairs 10 years later.

The research is conducted to reveal the situation at that time.

Activity I
Compulsory schools in rural Iceland and teacher eduation in 1990
1. Need state
Low percentage of qualified teachers and pupils' results from standardised national exams unsatisfactory.
Teacher education placed in Reykjavík and short-term resorts had not sufficed.
Stakeholders who had a shared interest in improving the situation managed to cooperate to launch the programme.

School authorities and teachers without certification calling for unconventional teacher education to support school development.

The new online technology interplaying with new ideas on life-long learning supported the idea of a school-based distance programme.

4. Ongoing development with tensions and frustrations challenging lecturers and student teachers as collectives to overcome resistance in developing new practice.

3. Emerging new model of teacher education.Close ties between the practical and the theoretical in teacher education; student teachers boundary crossing between schools and university .
Students collaboration
Lecturer student communication developing in direction of better contact and access to lecturers.

2. Secondary contradiction
Between changed group of student teachers and conventional practice in teacher education. Called for changed model for teaching and learning.

Isolation of students frustrating. Lack of contact with lecturers. Technical problems, lecturers' lack of technical knowhow.

Student teachers enhanced self-confidence and mutuality in the community of distance learners.

Developing relational agency among distance students.

Face-to-face sessions.
Personal connections among distance students.
Support at home: head of school office and colleagues in schools.
Collaboration and mutuality;
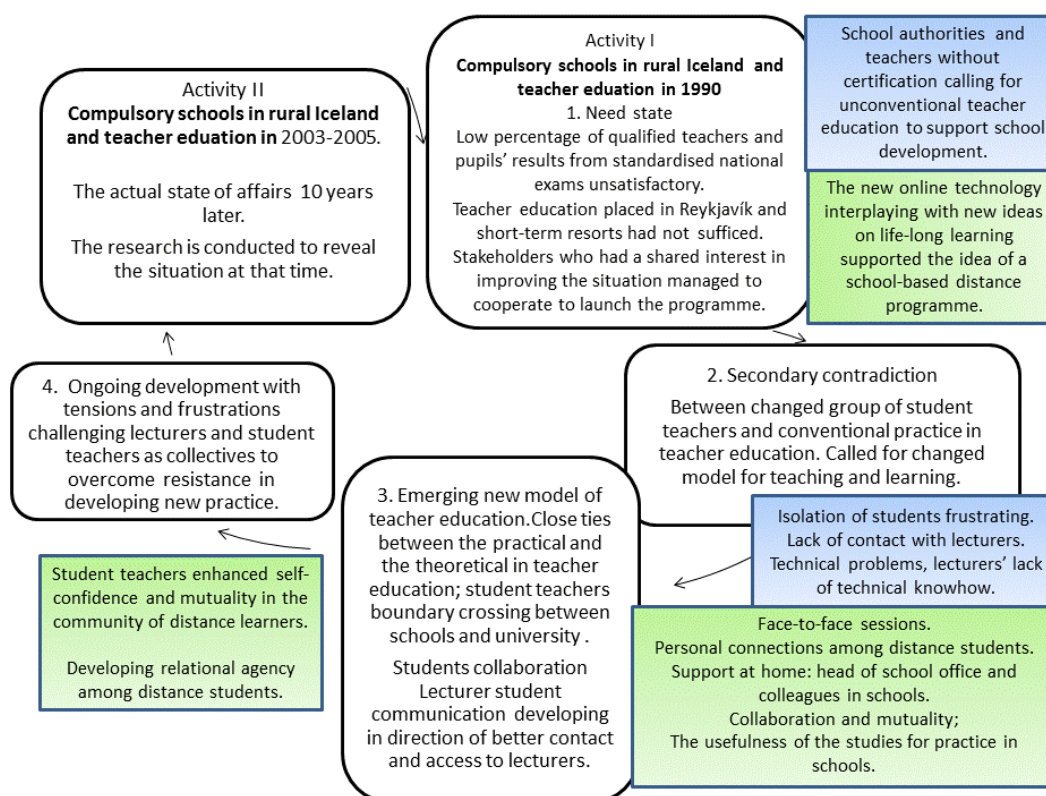The usefulness of the studies for practice in schools.

Figure 2 – Early development of the distance programme in relation to the expansive learning cycle. The numbered boxes refer to the steps in the cycle. The blue boxes describe challenges calling for reactions. The green boxes describe what supported development.

The need for qualified teachers

The distance education programme was launched in response to a persistent lack of qualified teachers in compulsory schools in rural Iceland, especially in certain sparsely populated regions. Unsatisfactory results from the standardised national exams of pupils leaving compulsory school put pressure on school authorities to recognise the problem. The teacher education was based in Reykjavík and short-term efforts offered for uncerti-fied teachers in rural schools had not sufficed. Responding to this situation, regional school authorities, principals in schools suffering from a lack of qualified teachers and the uncertified teachers themselves put pressure on national school authorities and the Ice-land University of Education to offer different forms of teacher education to meet the needs of both the schools and individuals without moving to Reykjavík. Their collective effort is argued to have been important and may be taken as a symptom of collective responsibility of people at different levels of the school system for improving the situation in the schools. They needed second stimulation to support the development of practice in the schools and called upon the teacher education institution to support them and offer a new model for teacher education.

The new online technology

The interplay of new information and communication technology and ideas on lifelong learning and social equity in access to learning had opened up new possibilities for organising distance learning. The enthusiasm of Ísmennt as a grassroots movement of teachers in small rural schools and a general belief in the possibilities of the technology were important in launching the programme. Thus the Internet, with possibilities for online communication along with future visions of its role in education, was the instrument that made the idea of distance teacher education feasible. Engeström (2007a) has addressed

the importance of understanding the interplay between conceptual and material tools and claims that there has been a tendency to introduce new digital tools in ready-made form without taking into account that there is more to them. He argues for the need to better analyse their qualities and potentials as mediating instruments. In this case, even if the technology was a supportive tool, it also brought new problems. In the new distance programme two important factors had changed from conventional teacher education. The student teachers were different from conventional pre-service student teachers since most of them worked as teachers in schools, and the Internet was a new mediating tool for teaching and learning.

Both lecturers and the student teachers needed to learn to use the new technology, which in the beginning was primitive, and technical problems were causing tensions. A lack of lecturers' know-how in communicating on the Internet could be frustrating and the student teachers complained of isolation and lack of contact with some of the lecturers. Both student teachers and lecturers encountered tensions caused by contradictions while learning to function in the new model that had begun when the distance programme was launched.

Several factors supported the student teachers in overcoming such tensions, which may be interpreted as second stimulation afforded in their situation. The face-to-face sessions on campus in Reykjavík were of critical importance. There the student teachers and the lecturers got to know each other and formed a community where they learned to collaborate and share solutions. The atmosphere of mutuality supported the distance students when dealing with frustration and feelings of isolation during the online sessions where the fast evolving communication possibilities and better access to the Internet served as an important tool. The support that the distance students got at home, both from colleagues in the schools and district school authorities, was also important for not giving up when things got frustrating. In the description above it is also apparent that the usefulness of the studies for their practice in the schools was an important stimulation encouraging students to keep on going despite some frustrating experiences.

An emerging new model of teacher education

In the form of teacher education that was being developed from 1993 onwards the ties between the theoretical and the practical were closer than in conventional teacher education since the student teachers were school-based while enrolled in the university programme. The narratives of the pioneer student teachers give a vivid picture of how they tried out in practice right away methods and ideas they had been learning about in the programme. This relates to Vygotsky's theory of the relation between scientific and everyday concepts (Vygotsky, 1986) and extended by his followers who concluded that in order to enhance learning, scientific concepts need to be supported by procedural knowledge (Karpov, 2003). According to the theory, simultaneously participating in the schools and the university was an affordance for the distance student teachers. The boundary crossing enabled them to link the theoretical to the procedural and vice versa.

From the descriptions of the pioneers it may be seen that student networking and collaboration were becoming important characteristics of the emerging new model. Not only were the distance student teachers forming networks supporting each other in their studies, they were also supporting each other in developing their teaching. Edwards (2005) has suggested the concept *relational agency* to describe how people learn to work collectively when dealing with expanded objects by recognising and accessing the resources of each other: 'Relational agency involves a capacity to offer support and to ask for support from others' (ibid, p. 168). According to the narratives of the first distance students, this kind of capacity emerged in the first cohort when they were dealing with

transforming the practice of teaching and learning in the new distance model. This apparent development of relational agency among these teachers would be interesting to explore further.

Lack of contact with some of the university lecturers was a problem during the first years. In emphasising the importance of good contacts between teachers and students, the ideal form was described as lecturer-student communication based on a feeling of good contact and easy access. Lecturers that were developing their teaching practice in this direction helped the distance students to overcome frustrations and feelings of isolation and functioned as second stimulation for students.

Contribution to school development

Not only did the placement of the distance student teachers in the schools facilitate the linking of theoretical and procedural knowledge, but they brought new knowledge from the programme into the school on a regular basis. Their enhanced practice might be a contribution to school development, as reflected in the teacher narratives, where they describe how they were able to use ideas and knowledge they brought from their participation in the programme to initiate school development in their home schools. This is in accordance with theories of boundary-crossing that argue that the situations of individuals who participate in and move between systems open up possibilities for them to become brokers or change agents (Engeström, 2009; Jóhannsdóttir, 2010a; Wenger, 1998). However, the way in which knowledge moves from one system to another is not likely to be in the form of direct application or transfer. Engeström (2009) has explained how boundary crossing provides material for double stimulation, requiring agency of subjects who need to re-arrange and negotiate what they bring from one system in order to stimulate practice in the other (ibid, p. 314).

Here the development Elisabeth described in Waterside School may be taken as an example of expansive learning. In her opinion the possibilities that opened up with the distance programme were crucial in initiating the change, which in her description follows the expansive learning cycle (Figure 3). The school practice had been questioned in the community because of unacceptable results in national exams. However, when the group of teachers to which Elisabeth belonged started to question the school practice it was related to the role of the schools in upbringing, pupil happiness and wellbeing. The student teachers were expanding their understanding of the role of schools by including upbringing in their work and developing a responsibility for the role of teachers and schools in the future and the general wellbeing of children. In Elisabeth's words they wanted to change the school to make 'the pupils happier, and that we could look at the group leaving the 10th grade standing here outside the school and look proudly into the future' (Interview, May 2004). It is suggested that what supported them in taking actions and asking for teacher education that suited their situation was that they were mothers that had their families in the town and they had ambitions for themselves as educated women. The school was an option for them to get a professional job. Being a group of several women in a similar situation enhanced their development of collective responsibility and agency for taking actions.

A changed understanding of the role of the school for pupils called for changed school practice, and Elisabeth described how their enrolment in the distance programme helped them work for change. She explained how participation in the programme enhanced their self-confidence as well as their professional authority when reasoning with others about the way in which they would like to change practice. The new model the student teachers worked towards during their enrolment in the programme required changed teaching methods to meet the needs of all pupils, changed discourse emphasising more profess-

Activity II
Waterside school in 2003-2005.
Collective responsibilty idnetified in the discourse of teachers.
The school management encouraged collective responsibility in the school community.
The school as an institution responsible for education of all children in town directed by a future vision.
The school ethos and the attitude of the community towards the school had changed.

Waterside school in 1992
1. A need for change.

Primary contradiction in the object of school activity.
Instruction vs. upbringing.
A group of teachers reconsidered the object of school activity by recognising the role of the school in pupils' future.
Press for a new form of teacher education in a distance programme.

A group of teachers questioning the practice.
Bad school reputation.
A need to meet the need of all pupils, also the slower.

Being mothers as well as teachers enhanced concern for childrens wellfare.
Collective responsibility supported their agency.

4. Developing practice
Resistance - Tertiary contradiction.
No data to describe this phase.

2. Secondary contradiction
Between changed understanding of pupils and old mode of school practice including teather talk.
Called for changed mode of communication and teaching and learning methods to serve all pupils.

Empowered teachers using their agency to develop the school practice.
School authorities recognising the need for change and supporting changed practice.

3. New model for school practice
Changed teaching methods to meet the need of all pupils.
Changed dialogue, more professional talk.
Collective responsibilty of teachers acting with awareness of the role of school for pupils' future.

The distance education enhanced self-confidence and authority.
Responsibility for pupils' future.
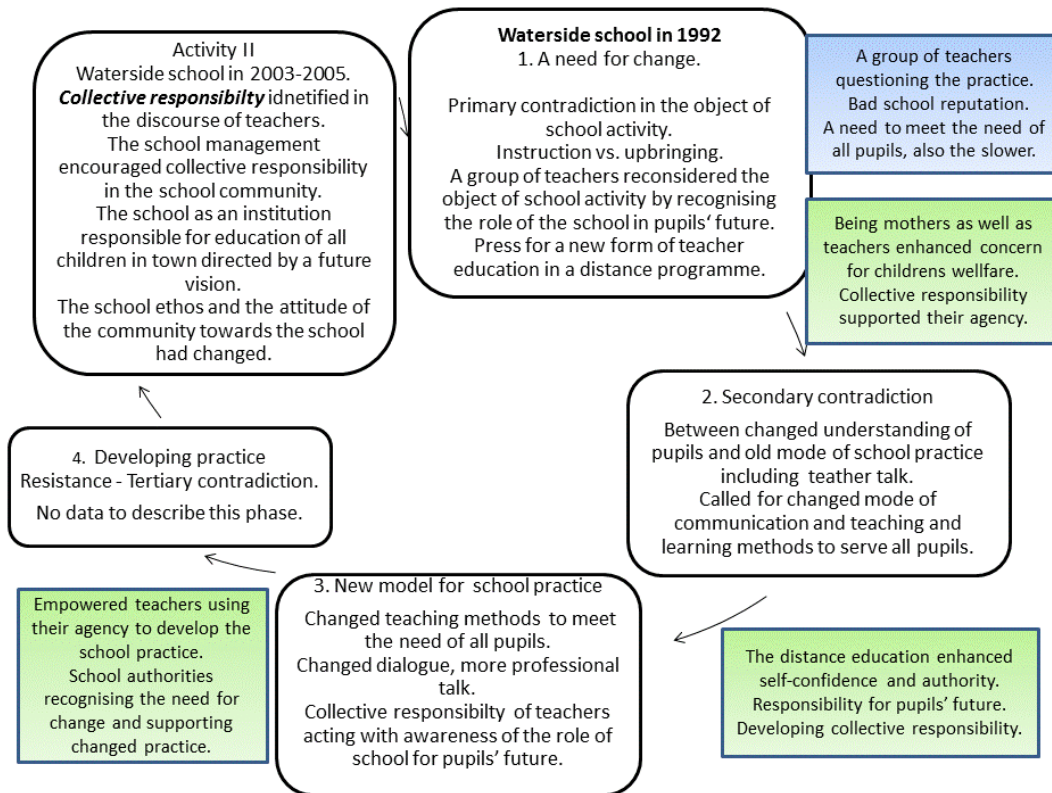Developing collective responsibility.

Figure 3 – Development of Waterside School in relation to the expansive learning cycle. The numbered boxes refer to the steps in the cycle. The blue boxes describe challenges calling for reactions. The green boxes describe what supported development.

sional talk and a new focus on what the teachers could do for pupils instead of referring to hopeless families that were unable to learn. From Elisabeth's account, a collective responsibility of teachers acting with awareness of the role of the school for the pupils' future was being developed in the school. She felt that the collective agency of the six student teachers empowered by enrolment in teacher education had made the difference. Furthermore, school authorities had recognised the need for change and supported changed practice.

This analysis of the expansive learning in Waterside School is based on an interview with only one former distance student and no other empirical data is available for describing how the new model was accepted by teachers in general and applied at the system level. However, ten years later when the school practice in Waterside School was analysed as a part of my doctoral research, characteristics of the model being developed at the initiative of the first distance students were evident (Jóhannsdóttir, 2010b). At that time school management involved teamwork among three leaders. One of them was Elisabeth, who encouraged collective agency and collective responsibility in the school community. The practice of the school as an institution was characterised by responsibility for education of all children, which was identified in the discourse of teachers in general and in interviews with principals and school-based student teachers. It was generally accepted that the school ethos and the attitude of the community towards the school had changed. When interviewing a distance student teacher based in Waterside School in 2003-2006, it was noteworthy that she emphasised the role of teachers and schools in children's wellbeing and referred to having responsibility for their future.

Summary and conclusion

The framework of expansive learning methodology presumes that generalisation of research results is presented in the form of new concepts relevant for other activity systems facing similar contradictions in similar developmental phases (Mäkitalo, 2005). Accordingly the summary and conclusion are presented here in the form of concepts that have emerged from the analysis that are important for supporting future development in teacher education in interaction with school practice.

Collective responsibility and collective agency

The most important factor in facilitating the inception of the distance programme was the collective responsibility of agents at different points within the school system in the rural districts. Their shared responsibility motivated them to take action in response to the need for a new form of teacher education to improve the schools. The collective agency was important for forming a relationship and commitment among the student teachers, the local schools and the teacher education institution. In addition, the school district offices responsible for running the schools and the professional teaching support via Ísmennt made this first distance programme unusual. The problematic situation in the rural schools was acknowledged. Those stakeholders who had a shared interest in improving the situation managed to cooperate to the extent needed to launch the programme. Furthermore, in developing school practice in Waterside School collective responsibility and collective agency were important for facilitating school development.

Networking and collaboration

When the new programme had been launched the distance students were confronted with challenges where lack of contact with lecturers was a central problem. It is argued that in overcoming that problem they learned to form networks of fellow students where they supported each other, shared knowledge and experience and collaborated with each other. This new practice was important to the new model emerging in the first years.

Agency of practitioners

The example of the expansive development in Waterside School may be used as a reminder of the importance of taking agency of practitioners into account when thinking about the usefulness of educational programmes. By considering teacher education as double stimulation in school development requires that the agency of subjects is assumed: that people need to re-arrange and negotiate what they bring from one system to be able to use it for stimulating practice in the other.

Shared responsibility and partnership

The new model involved elements of a partnership model, where responsibilities for educating teachers were shared among university, compulsory schools and the teaching profession. Partnership models in teacher education are now being discussed and promoted widely as a preferable form for teacher education (Darling-Hammond, 2005; Edwards & Mutton, 2007; Furlong, et al., 2000).

The findings of this research do not reveal development towards an increased partnership. Unfortunately the promises in the first years of the distance programme have not been cultivated in the direction of shared responsibility of schools and the School of Education. I am convinced however that this example of the origin of the distance education programme can be used to support development in teacher education that brings together the responsibility of the different people and institutions that care about the future of children and their schools.

References

CRADLE – Center for research on activity development and learning. (2011). The activity system. Retrieved from http://www.helsinki.fi/cradle/activitysystem.htm

Darling-Hammond, L. (Ed.). (2005). Professional development schools: Schools for developing a profession (2nd ed.). New York: Teachers College Press.

Edwards, A. (2005). Let's get beyond community and practice: The many meanings of learning by participating. *Curriculum Journal, 16*(1), 49–65.

Edwards, A., & Mutton, T. (2007). Looking forward: rethinking professional learning through partnership arrangements in Initial Teacher Education. Oxford Review of Education, 33(4), 503–519.

Engeström, Y. (1987). *Learning by expanding: An activity-theoretical approach to developmental research.* Helsinki: Orienta-Konsultit.

Engeström, Y. (1999). Innovative learning in work teams: Analyzing cycles of knowledge creation in practice. In Y. Engeström, R. Miettinen, & R.-L. Punamäki (Eds.), *Perspectives on activity theory* (pp. 377–404). Cambridge: Cambridge University Press.

Engeström, Y. (2007a). Enriching the theory of expansive learning: Lessons from journeys toward coconfiguration. *Mind, Culture & Activity, 14*(1/2), 23–39.

Engeström, Y. (2007b). Putting Vygotsky to work: The change laboratory as an application of double stimulation. In H. Daniels, M. Cole, & J. V. Wertsch (Eds.), *The Cambridge companion to Vygotsky* (pp. 363–382). Cambridge, England: Cambridge University Press.

Engeström, Y. (2009). The future of activity theory: A rough draft. In A. Sannino, H. Daniels, & K. D. Gutiérrez (Eds.), *Learning and expanding with activity theory* (pp. 303–328). Cambridge, England: Cambridge University Press.

Engeström, Y., & Sannino, A. (2010). Studies of expansive learning: Foundations, findings and future challenges. *Educational Research Review, 5*(1), 1–24.

Furlong, J., Barton, L., Miles, S., Whiting, C., & Whitty, G. (2000). Teacher education in transition: Reforming professionalism. Buckingham: Open University Press.

Jóhannsdóttir, T. (2010a). Deviations from the conventional: Contradictions as sources of change in teacher education. In V. Ellis, A. Edwards, & P. Smagorinsky (Eds.), *Cultural-historical perspectives on teacher education and development* (pp. 163–279). London, England: Routledge.

Jóhannsdóttir, T. (2010b). *Teacher education and school-based distance learning: Individual and systemic development in schools and a teacher education programme* (PhD Doctoral dissertation, University of Iceland). Retrieved from http://hdl.handle.net/1946/7119

Jónasson, J. (1997). The Internet – the educational media of today. *Education Media International, 34*(2), 88–93.

Jónasson, J. (2001). *On-line distance education – a feasible choice in teacher education in Iceland?* (Master's thesis, University of Strathclyde, Scotland). Retrieved from http://starfsfolk.khi.is/jonj/skrif/mphil/

Jónasson, J. T. (1987). Skýrsla Fjarkennslunefndar menntamálaráðuneytisins [Report from the committee for distance teaching]. Reykjavík, Iceland: Menntamálaráðuneytið [Ministry of Education].

Kaaber, S., & Kristjánsdóttir, H. (Eds.). (2008). *Aldarspegill: Kennaraskóli Íslands/ Kennaraháskóli Íslands [Story of one century: The Icelandic teacher training college/ Iceland University of Education]*. Reykjavík, Iceland: Kennaraháskóli Íslands.

Karpov, Y. V. (2003). Vygotsky's doctrine of scientific concepts. In A. Kozulin, B. Gindis, V. S. Ageyev, & S. M. Miller (Eds.), *Vygotsky's educational theory in cultural context* (pp. 65–82). Cambridge, England: Cambridge University Press.

Kristinsdóttir, T. (1995). Fjarnám í Kennaraháskóla Íslands: Bylting í háskólanámi. Hvernig er að vera nemandi í fjarnámi? [Distance learning in The Icelandic University College of Education: A revolution in university studies. What is it like to be a student in distance learning?]. *Ný menntamál, 13*(1), 11–13.

Kristjánsdóttir, T. J. (1992). Embættisgengi og réttindanám [Professional qualifications and teacher certification programme]. *Uppeldi og menntun, 1*(1), 314–324.

Leontiev, A. N. (1981). *Problems of the development of the mind*. Moscow, Russia: Progress (Original work published 1959).

Mäkitalo, J. (2005). *Work-related well-being in the transformation of nursing home work* (Doctoral dissertation, University of Oulu, Finland). Retrieved from http://herkules.oulu.fi/ isbn9514277678/isbn9514277678.pdf

Mýrdal, S. (1994a). *Nokkrar tölur um almennt kennaranám í fjarskóla KHÍ.* [Some figures about general teacher education in IUC distance school]. Memorandum. Kennaraháskóli Íslands [Icelandic University College of Education]. Reykjavík.

Mýrdal, S. (1994b). Teacher education on-line: What gets lost in electronic communication? *Education Media International, 31*(1), 46–52.

Nilsson, M. (2003). *Transformation through integration. An activity theoretical analysis of school development as integration of child care institutions and the elementary school* (Doctoral dissertation). Blekinge Institute of Technology, Karlskrona, Sweden.

Stefánsdóttir, L., & Mýrdal, S. (1993). Fjarkennsla um tölvunet [Distance teaching via computer network]. *Uppeldi og menntun, 2*, 121–130.

The Open University. (2009). History of the OU. Retrieved from http://www.open.ac.uk/ about/ou/p3.shtml

Tuomi-Gröhn, T., Engeström, Y., & Young, M. (2003). From transfer to boundary-crossing between school and sork as a tool for developing vocational education: An introduction. In T. Tuomi-Gröhn & Y. Engeström (Eds.), *Between school and work: New perspectives on transfer and boundary-crossing* (pp. 1–15). Amsterdam, Netherlands: Pergamon.

Vygotsky, L. S. (1978). *Mind in society: The development of higher psychological processes*. Cambridge, MA: Harvard University Press.

Vygotsky, L. S. (1986). *Thought and language* (A. Kozulin, Trans. Alex Kozulin ed.). Cambridge, England: The MIT Press.

Wenger, E. (1998). *Communities of practice: Learning, meaning and identity.* Cambridge, England: Cambridge University Press.

About the author
Thurídur Jóhannsdóttir (thuridur@hi.is) is Associate Professor in Educational Studies at the School of Education, University of Iceland. She obtained a Ph.D. from University of Icleand in 2010. Her research focus has been on distance or blended learning especially in teacher education and the relationship between teacher education programmes in higher education and school development. She has specialised in Cultural-Historical Activity Theory and used it to shed light on interconnections between professional development of teachers as individuals and collectives and systemic development in schools and teacher education programmes.

Key words
*school-based teacher education – Internet in teacher education
– school development – collective responsibility – collaboration*

Um höfund
Þuríður Jóhannsdóttir (thuridur@hi.is) er dósent við Menntavísindasvið Háskóla Íslands. Hún lauk doktorsprófi í uppeldis- og menntunarfræðum frá háskóla Íslands árið 2010. Rannsóknir hennar hafa einkum beinst að fjarnámi eða blöndu af stað og netnámi einkum í kennaramenntun og tengslum kennaramenntunar í háskóla og skólaþróunar á vettvangi skólanna. Hún hefur sérhæft sig í beitingu menningarsögulegrar starfssemiskenningar til að varpa ljósi á tengsl starfsþróunar kennara sem einstaklinga og hópa og kerfisþróunar í skólum og kennaramenntunarstofnunum.

Efnisorð
*kennaranám með starfi í skóla – Internet í kennaranámi – skólaþróun
– samábyrgð – samvinna*