On-line distance education

a feasible choice in teacher education in Iceland?

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Preface

The Basics of Life

A man needs warmth,
the warmth of fire
and of the shining sun.
A healthy man
is a happy man
who's neither ill nor injured.
(Hávamál, 1995:82)

Education can be looked upon as a bridge between the past and the future. The task of the educator is to keep the continuity, to deliver the knowledge and wisdom of the past to the learners and to encourage them to build new knowledge upon that. Young people often do not want to know anything about the past because they see the future as theirs. They want to move on, discover something new regardless of the past. In the strain between these two forces a moderate development can occur.

I decided to flavour this thesis with an old text from the poem Hávamál. Each chapter starts with a verse from the English translation of Hávamál "The Sayings of the Vikings". In the introduction chapter the translator Björn Jónasson says:

> *Hávamál is one of the most famous and certainly one of the most popular of the so-called Eddaic poems. The part of Hávamál which is published here is unique among the Eddaic poems in its being neither heroic nor mythological, but rather a poem of didactic nature. (Hávamál, 1995:9)*

It is believed that Hávamál was composed around the years 700-900.

> *Scholars do not agree on where the Hávamál was written, nor when; some argue it originated in Norway, some hold it was composed in Iceland, others still in the British Isles. (Hávamál, 1995:9)*

The use of Hávamál as a flavour in the thesis should also be looked upon as symbolic for the cycle of education. How new is built upon old traditions and old values.

Abstract

Kennaraháskóli Íslands (Iceland University of Education) launched its first B.Ed. distance course in January 1993. For many years, there has been a shortage of qualified teachers in Icelandic schools. One of the main reasons for offering this B.Ed. distance course was to meet the need for qualified teachers. It was decided to use the Internet as the main means of communication on the course. This thesis describes an evaluation research that was carried out during the period of the first group finishing the course 1993 to 1996. The data was collected with interviews, questionnaires, diaries, by counting and measuring the students' logons to the Internet and by collecting the discussions on the course's post-lists. Although many difficulties were faced running this first B.Ed. distance course it proved to be successful in most aspects. About 88% of the students that graduated from the distance course were teaching the year after. On the traditional face-to-face course about 70% of the ones who graduate each year, begin teaching. One of the interesting spin-offs from the DE-course was that many of the lecturers adapted techniques from their distance teaching and began using them in their traditional settings. In the last questionnaire administered a few months after the students' graduation 98% of them said that they would choose the same kind of study again. Distance education is a feasible choice in teacher education in Iceland.

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Acknowledgement

I want to thank my supervisors Ms. Moira Laing and Professor Douglas Weir for their support and encouragement. It was sometimes hard not to be a native English speaking person during my study but all the encouragement and support that they gave me kept me moving on. At the beginning, I was wondering if I should write the thesis in Icelandic and have it translated into English. I am thankful to them for advising me strongly to write it in English and by that means improve my skills in the language. In a positive and encouraging professional manner, they guided me on this stony way to finishing the M.Phil. degree.

I also want to thank Sigurjón Mýrdal, the first director of the B.Ed. distance course, first of all for giving me the idea for this study and also for all his help and support at the later stage. The rector of KHÍ, Þórir Ólafsson for help and support while doing the research. Also the staff of the Institute of Educational Research, especially the director Þórólfur Þórlindsson, for support and help.

Last but not least I want to thank the students and lecturers of the distance programme for being so positive and willing to provide the research data by interviews, questionnaires etc.

1 Background information

Courtesy

A guest needs
giving water
fine towels and friendliness.
A cheerful word
a chance to speak
kindness and concern.
(Hávamál, 1995:21)

This chapter consists of brief background information about Iceland, which is relevant to this thesis for setting the scene. In the first section, there is some general information about the country and the nation. There are sections containing information on the educational system with emphasis on teacher education. The last section is about the Icelandic Educational Network, which has played a big role in the rapid development of building up the Internet infrastructure for educational purposes in Iceland.

1.1 Iceland

Iceland is an island in the North Atlantic Ocean covering 103,000 sq. km. Its total population (1998) is approximately 275,000 of which more than half live in the capital Reykjavík and its suburbs. Iceland is a republic with a parliamentary democracy. Its parliament, Alþingi, has 63 members who are elected for a four-year term.

The language is Icelandic, which is a Germanic language, strongly related to Old Norse. About 90% of the population belong to the Evangelical Lutheran Church.

> *In 1996, the principal employment sectors were: agriculture, 4.5% of work force; fishing and fishing industry, 10.9%; industry other than fishing, 11.1%; construction, 6.5%; commerce and repair services, 13.7%; hotel and restaurant, 3.1%; transport and communications, 7.1%; banking and insurance, 3.2%; public administration, 4.2%; real estate and business services, 6.2%; education, 6.7%; health services and social work, 14.7%; others, 8.1%. (http://brunnur.stjr.is/interpro/mrn/mrn-eng.nsf/Files/skolakerfi_enska/$file/skolakerfi_enska.pdf [19.06.1999])*

As it is relevant to this thesis, the transport system in Iceland will be described in a few words. Most of the country is rural but usually inhabited areas are not isolated. In Iceland, there are no trains and the main means of passenger transport are by private cars, buses and aeroplanes. Roads connect all areas where people live in Iceland but the roads to the most rural and less densely populated areas can be closed because of snow for some time during the winter.

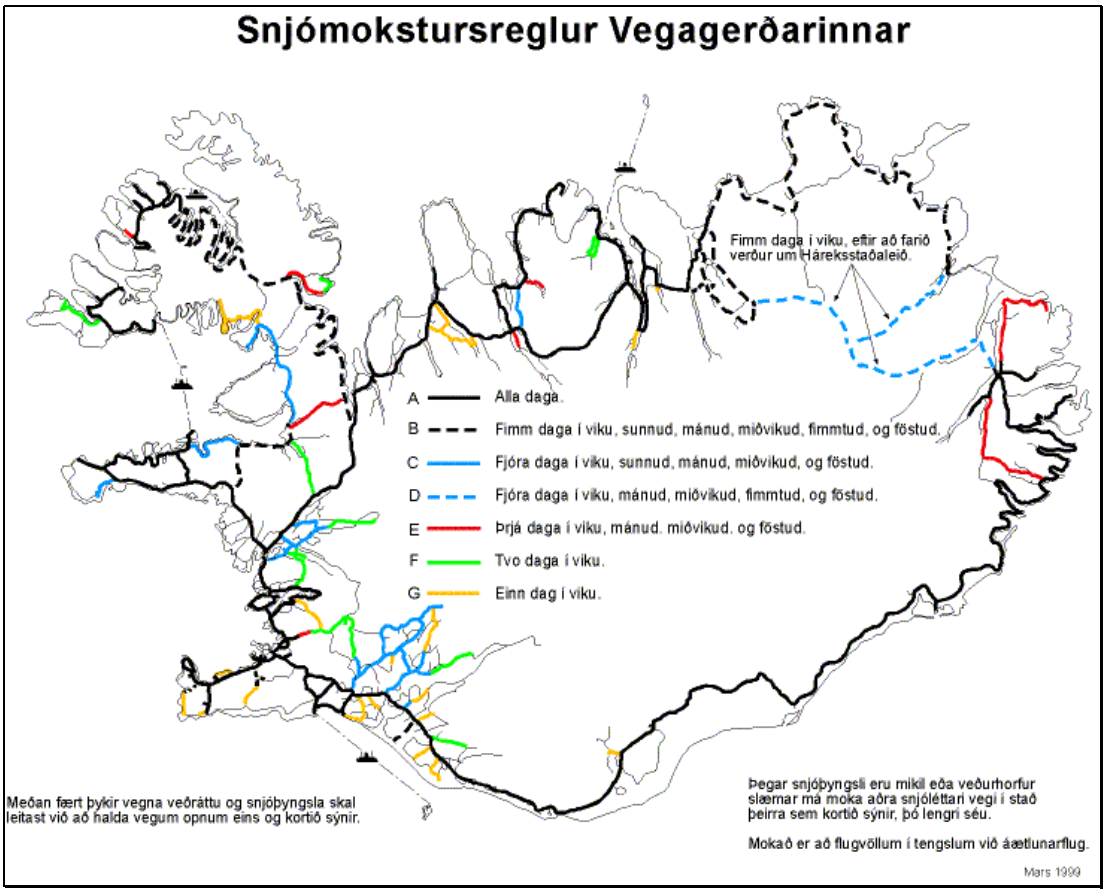

Figure 1.1-1

(http://www.vegag.is/faerd/snjomokstur.gif [06.08.1999])

Figure 1.1-1, which indicates the rules for snow clearance in Iceland, shows that all the main roads are cleared of snow at least once a week. A, the black whole line, is for the roads cleared every day. B, the black dotted line, is for roads cleared five days a week. Both the blue lines C and D are for roads cleared four days a week, just different weekdays. E, the red line is for roads cleared three days a week. F, the green line is for roads cleared twice a week. G, the yellow line is for roads cleared once a week. It of course depends on the weather conditions each year how many days these rules have to

be followed. Occasionally it also can be impossible to follow these rules because of bad weather.

The main road around the island is about 1400 km. That does not include Vestfirðir.

Figure 1.1-2

Figure 1.1-2 is a map of Iceland showing, amongst other landmarks, the main towns and villages of the country. The towns and villages in Table 1 are underlined in blue on the map.

Table 1

Distances between Reykjavík and:	*Road distance in km*	*Approximate flying time in minutes*
Borgarnes	116	No flight
Ísafjörður	399	45
Sauðárkrókur	361	40
Akureyri	431	45
Vopnafjörður	664	No flight
Egilsstaðir	696	60
Höfn	459	45
Selfoss	57	No flight
Vestmannaeyjar	(An island)	25
Keflavík	48	No flight

Table 1 shows some examples of distances between Reykjavik and several towns and villages around the country both by land in km and approximate flying times. Estimated flying times are only given if there is a direct flight. There is no flight available to the places nearest to Reykjavík.

1.2 The educational system

The Icelandic educational system can be divided into four levels. First level is pre-school, primary and lower secondary the second level, the third level is upper secondary and the fourth consists of colleges and universities.

Pre-school education is the first level of the Icelandic school system for babies or children from six months to six years of age. It is not compulsory but about 75% of children, aged three to six attend it and about 15% of those aged two years or younger.

In Iceland, there is one school, basic school, from 6 to 16, which is equivalent to primary and lower secondary school in the UK. This covers the compulsory education, which is from 6 to 16. There is no division between primary and lower secondary schools in Iceland and most of the schools cover the entire age span from 6 to 16. The number of pupils is about 40,000 in little more than 200 schools. The size of these schools varies very much from the smallest in rural areas with less than 10 pupils to big urban schools with more than 1,000 pupils.

The third level is the upper secondary. It is not compulsory but approximately 85% of the pupils who complete primary and lower secondary enter it. Pupils there are usually of the ages 16 to 20. The size of the upper secondary schools ranges from about 50 up to 1,500 pupils and they number 28.

The fourth and last level is colleges and universities. There are three universities in Iceland. The University of Iceland is the oldest and largest with nine faculties. The youngest and smallest is the University of Akureyri with four departments. Iceland University of Education offers B.Ed. degrees mainly for pre-school, primary and lower secondary teachers. It also offers M.Ed. degrees for educators.

Colleges in Iceland offer technical and vocational education as well as in arts. Although most of them formally belong to the upper secondary level, some operate courses on university level.

1.3 Educational regions

Until 1995, Iceland was divided into eight educational regions: Reykjavík, Vesturland, Vestfirðir, Norðurland vestra, Norðurland eystra, Austurland, Suðurland and Reykjanes. On Figure 1.3-1, these educational regions are indicated in different colours. The black dots show roughly the distribution of primary and lower secondary schools in each region. This applies to all regions except Reykjavik, which is so small in geographical terms that it is just indicated as one black dot on the map.

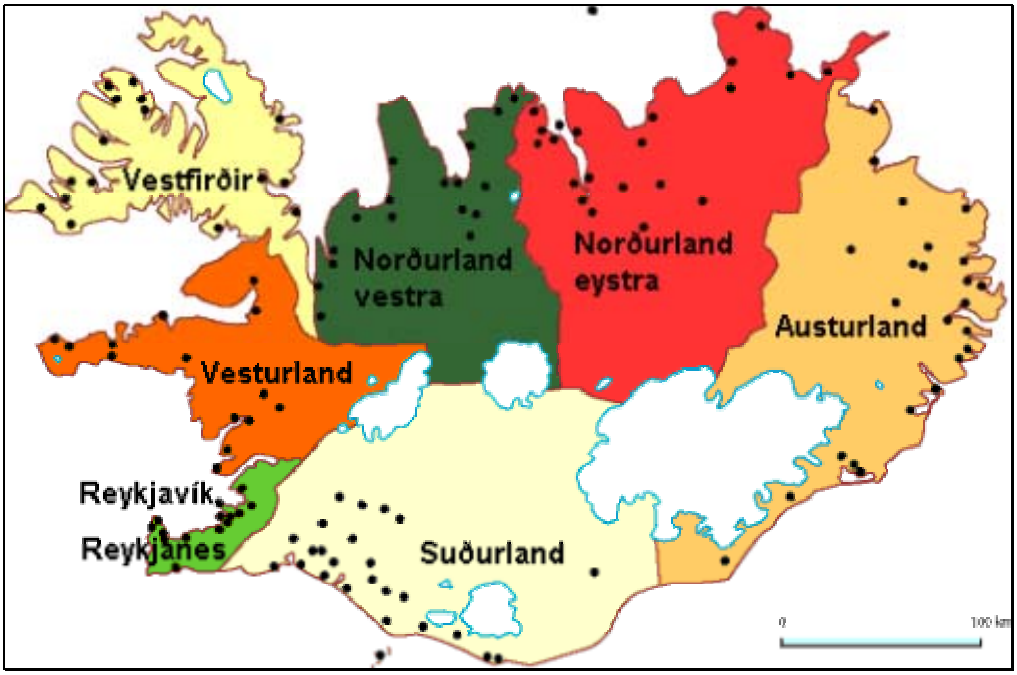

Figure 1.3-1

By new legislation in 1995, the running of the primary and lower secondary schools became the full responsibility of the municipalities. Prior to that, the schools had been partly run by the government and partly by the municipalities. In each region there was a regional educational office run by the Ministry of Education, Science and Culture. Although this new legislation is from 1995, it was introduced over a few years.

Table 2

Regions	*Number of schools*	*Number of pupils*	
Reykjavík	29	13,395	33%
Reykjanes	29	11,397	28%
Vesturland	15	2,622	6%
Vestfirðir	21	1,703	4%
Norðurland vestra	19	1,841	4%
Norðurland eystra	30	4,405	11%
Austurland	28	2,179	5%
Suðurland	30	3,572	9%
	201	**41,114**	

Table 2, which is based on figures from 1993/1994, shows the number of primary and lower secondary schools in each educational region. It also shows the number of pupils in each region.

1.4 Teacher education in Iceland

Kennaraskóli Íslands (KÍ), the Icelandic Teacher Training College, was established by law in 1908. Before that and from the year 1892 there had been short courses in Flensborgarskóli in Hafnarfjörður for people who wanted to become teachers. (Björnsson, 1981). In 1971, the college programme was transferred to university level and the college became Kennaraháskóli Íslands (KHÍ), the University College of Education. From the beginning, first as a college and then a university, KHÍ has been the centre for teacher education in Iceland. In January 1998, the University College of Education and three small Colleges merged. The new institution has the same name in Icelandic but the English translation was changed to Iceland University of Education. Today KHÍ's role is educating teachers for pre-school, primary and secondary schools, physical education and developmental therapists. It also provides postgraduate courses in education and is a centre for research. KHÍ also offers in-service or continuing education for practising teachers and others. KHÍ is influential in shaping educational policy for the country as a whole.

The B.Ed. programme, for primary and lower secondary teachers, in KHÍ comprises 90 course units, or three years of full time study. Twenty years after the establishment of KHÍ in 1991, it was decided to extend the B.Ed. programme from 90 to 120 course units and four years full time study. However, the Minister of Education has twice postponed the implementation of this law.

Today the programme is divided into these three categories:

Educational theory *which deals with the developmental science and education in terms of relevant theories and disciplines.*

Curriculum studies *which introduce students to education at all levels of the primary and lower secondary schools and acquaints them with the teaching methods and techniques essential to teaching in the classroom.*

Subject specialization *where students can give a more detailed understanding of the problems and methods in one or two teaching subjects. Students can choose from several fields in seven main categories:*

Icelandic, Mathematics, Modern languages, Arts and crafts, Natural science, Health and nutrition, Social studies (Proppé 1994:6)

The University of Akureyri, founded in 1987, has run a B.Ed. programme based on the same legislation as KHÍ since 1993. The University of Iceland also offers teacher education but mostly for those who wish to become teachers at the upper secondary level.

1.5 The shortage of qualified teachers in Icelandic schools

For many years, there has been a shortage of qualified teachers in Icelandic schools. The reason for this is not that insufficient people are educated for teaching but that many of the qualified teachers have chosen other jobs. The shortage has been a cause of concern to the educational authorities, teachers, parents and others who are involved in schools. It has particularly bad effects on certain schools. Because of the shortage of teachers, each autumn, a few weeks or even days before the start of term, one can see advertisements from schools in rural areas seeking qualified teachers. In some cases, they are offering free housing, electricity and heating and higher salaries. Still, in many cases, the head teachers have to hire people who have no qualification for teaching. In order to change this situation KHÍ, and prior to that KÍ, have at intervals since 1973, offered a shorter course for unqualified teachers who have been teaching for years. These courses have been run mostly during the summer. Between the courses, teachers have been required to complete an independent study or a correspondence study. However, this still has not met the need for qualified teachers in all areas.

Table 3

Regions	*Number of schools*	*Qualified teachers*		*Unqualified teachers*	
Reykjavík	29	975	98%	23	2%
Reykjanes	29	744	94%	49	6%
Vesturland	15	191	82%	49	6%
Vestfirðir	21	94	54%	79	46%
Norðurland vestra	19	130	68%	61	32%
Norðurland eystra	30	324	83%	68	17%
Austurland	28	185	78%	52	22%
Suðurland	30	296	85%	52	15%
Total	**201**	**2,939**	**87%**	**433**	**13%**

As can be seen on Table 3, which is based on figures from 1993/1994, the shortage of qualified teachers is severe in some regions. This is not equally distributed between regions. In some of the most rural regions, little more than half of the teachers are qualified whereas in Reykjavik almost 100% of the teachers are qualified. Offering distance courses where there is a shortage of teachers is known in other countries as stated in Perraton (1993:4): "Where countries face most severe shortages of teachers, they have sometimes developed distance-education programs for new recruits to the teaching force, providing initial training, often to recent school leavers."

1.6 The Icelandic Educational Network - Ísmennt

In 1985, Pétur Þorsteinsson, a head teacher in the primary school of Kópasker, took a great interest in computer communication based on the Internet. Kópasker is a small fishing village, at the Northeast coast, with a population of several hundred people. Pétur began using the workstations at the University of Iceland in Reykjavík via modem. He soon found out that this was too expensive, both the subscription and the long distance telephone cost. Therefore, he bought himself a UNIX workstation, which he based at his home, and began to build up a computer communication service for Icelandic schools. In 1990, the first primary school was formally connected to his computer centre. Other schools showed such an interest that very soon the workstation was too small and the

work was far too much for one man in his spare time. In 1992, Pétur established the Icelandic Educational Network (Ísmennt), which was based on the following principles:

1. The centre must be UNIX-based and linked to the Internet.
2. The schools must be able to use the hardware they already have. All computer types in the schools must get the same service.
3. User interface should be user friendly and the users should not have to know a single UNIX command to use it.
4. A supervisor from Ísmennt must visit every single school that connects to the network, to help people to start and make sure that the equipment and connections are functioning.
5. The users must be allowed to call the supervisor for help, at almost any time around the clock.
6. The cost must be low and independent of use and connection time.
7. An atmosphere of co-operation and mutual aid must prevail within the user group.

Ísmennt began with three workstations linked by dedicated high-speed lines. One of them was situated in Kópasker, another in the regional education office in Akureyri and the third in the premises of KHÍ in Reykjavík. Most of Ísmennt's staff had a teaching background to ensure a better understanding of teachers' circumstances. Ísmennt's staff visited every school and institution connected to Ísmennt and gave a short course in using the network.

The interest in this new media for schools and other educational institutions grew so fast that by the end of 1995 between 85-90% of all schools and other educational institutions in Iceland were linked up to the network. Ísmennt offered a new way of communication for the schools both at national and international level. It also gave the users access to a great number of databases and libraries all over the world. Until 1997, almost all distance education in Iceland based on the Internet used Ísmennt as a backbone. In 1996, Ísmennt's infrastructure was used for running courses by KHÍ, the University of Iceland, the Pre-school College of Iceland, the vocational upper secondary school in Akureyri and by Ísmennt itself.

Before the B.Ed. distance programme started in January 1993 KHÍ and Ísmennt accordingly made an agreement for all of the students on the programme to get access to

the network via modem. Ísmennt also gave them a course in the use of the network when the course started in January 1993.

2 Distance education

Wisdom

Better weight
than wisdom
a traveller cannot carry.
The poor man's strength
in a strange place,
worth more than wealth.
(Hávamál, 1995:27)

This chapter gives an overview of the history of distance education. The first section is about distance education world wide, the next section is a chronicle of distance education. The last section is about distance education in Iceland.

2.1 Distance education world wide

"Can anything be done for the education of my two boys?" wrote a settler, who lived far from any school in Beech Forest in Australia, to the Victorian Educational Department in May 1914 (Holmberg, 1986:12). The need for education in rural and isolated areas has been the force to start many distance education courses all over the world. Many distance education programs that are run today have started because of a desperate need for education. Two leading countries in the development of distance education, Canada and Australia both have rural and isolated areas. There are also other reasons for the growth of distance education such as politics. For example in the Soviet Union distance education was on offer by law (Johnsen, 1990). It is also obvious that some major changes in our society have started a wave of distance or correspondence education programs. The movement towards urbanisation seems to have started correspondence programs. In the industrial revolution and during the First World War there was a wave of distance or correspondence programs. The discovery and evolution of new media, first the radio and then television, started many distance education programs all over the world (Garrison, 1989:52). Last, but not least, computer communication has brought a new dimension to distance education. These three last mentioned elements, radio, television and computers, are the strongest cornerstones for distance education today.

Where did it all begin?

Correspondence education in instructional form between a teacher and a learner has been known for ages. This can be seen in the Bible where the Epistles had the aim of instructing the early Christian congregations. Generally, this is not recognised as distance education because of the lack of two-way communication. The exact date or year of the first distance education provision is in dispute. This is both because of lack of evidence and different definitions of distance education. In 'The Boston Gazette' on March 20th, 1728, there was an advertisement for shorthand lessons by mail. This is the earliest mention so far known that could be distance education (Holmberg 1986:6). However, because there is no sign of two-way communication many argue that this is not a genuine distance education (Verduin 1991:15). More than one hundred years later, another advertisement is to be found, but now in a newspaper in Sweden. In 'Lunds Weckoblad No 30', 1833 a study in 'Composition through the medium of the Post' is on offer. As in the earlier mentioned example, there is no sign of two-way communication. In 1840, Isaac Pitman begins teaching shorthand by correspondence in Bath in England. Pitman sent postcards to students, who were instructed to transcribe passages of the Bible into shorthand and send the transcription back to him for correction. "Isaac Pitman is generally recognized to be the first modern distance educator. By profession a phonographer, he began teaching shorthand by correspondence in Bath, England, in 1840." (Verduin 1991:15).

Today, the demand for distance education is not entirely the same as before. Travelling is easy nowadays and therefore the isolation is decreasing everywhere. Yet, the demand for 'in-service education', 'continuing education' or 'lifelong learning' is growing and will keep on growing. Distance education will no doubt be more widely used in that field. It is much more easy to take a distance course where one can choose the time and place to study than to go on a course at prefixed times and place.

> *As has been noted previously, one feature of contemporary societies is the increased demand for education and training on the part of employers. Degrees are now becoming - formally or informally - the basic entry qualification for many public and private sector organizations, and for those already within such organizations, a degree is often seen as a necessary - although not usually sufficient - qualification for promotion. The pressure is thus applied to employed people to enter into the 'qualifications chase' and what better way to do it than through open or distance education?! (Evans 1994:87)*

For example, there are likely to be clearer relationships between studying and career paths, less clashes between work and study schedules and commitments, and better support for learning - both in the form of workplace tuition or mentoring, and in the form of financial provision towards course costs. (Evans 1994:94)

In a sense the relationship between education and work is being reversed. In the industrialized world, education, especially schooling, has been an important precursor to work. Education and work have long been involved together in the 'sandwich'-course sense of people sequentially being in work and attending educational institutions (apprenticeships are a good example). Now we are seeing work becoming increasingly a place for education. Not necessarily in the sense that all the education physically takes place at the worksite, but rather, as has been shown briefly here, education taking place in the context of work for the learner/employee. (Evans 1994:95)

In our rapidly changing society, there is a demand from both the employers and the employees to keep up with changes and development. The employers see it as an advantage to have their staff in phase with the most recent changes and developments in their fields. The individual employee sees it as an advantage to keep up with innovations and be in a better position to keep his or her job or get a better job. By keeping up with innovations, one has also the opportunity to take part in shaping and developing his or her job.

2.2 Distance Education Chronicle

This section contains a chronicle of distance education indicating some major milestones on a time scale. It starts in the year 1728 although the two first mentioned activities are not generally considered to be distance education (see section 2.1 and chapter 3). The last activity listed in this chronicle is the launching of the B.Ed. distance course at KHÍ in the year 1993.

1728 An advertisement in ‘The Boston Gazette’ a newspaper in Boston, USA. ‘Caleb Philips, Teacher of the New Method of Short Hand’ advertises that any ‘Person in the Country desirous to Learn this Art, may by having the several Lessons sent Weekly to them, be as perfectly as those that live in Boston’. This lacks a

two-way communication (see section 3.2) to be considered modern distance education. (Holmberg, 1986:6; Verduin, 1991:15).

1833 An advertisement in 'Lunds Weckoblad' weekly-published newspaper in the old Swedish University City of Lund, offered 'Ladies and Gentlemen' an opportunity to study 'Composition through the media of the Post'. Here is no sign of two-way communication. (Holmberg, 1986:6; Verduin, 1991:15).

1840 Isaac Pitman, in Bath, England reduced the main principles of his shorthand system to fit into postcards. He sent the postcards to students, who were instructed to transcribe passages of the Bible into shorthand and send the transcription back to him for correction. This was the same year as the uniform penny postage was introduced in the UK. Pitman is generally recognised to be the first modern distance educator. (Holmberg, 1986:7; Verduin, 1991:15; Rowntree, 1992:8).

1856 The Frenchman Charles Toussaint and the German Gustav Langencheidt formed and organised a modern language correspondence school in Berlin, Germany. (Holmberg, 1986:7; Verduin, 1991:16; Rowntree, 1992:8).

1873 Anna Eliot Ticknor, who has often been called the 'mother of American correspondence study' founded and ran from her home in Boston, Massachusetts, USA the 'Society to Encourage Study at Home'. Ticknor's Society enrolled over 7000 women in its university-level correspondence courses over a period of 24 years, discontinuing its operation in 1897 following Anna Ticknor's death. The courses were primarily liberal arts subjects but included controversial science courses based on laboratory methods. Although the Society was not affiliated with a university college, its curriculum was of equal quality and represented a full range of typical college courses. (Holmberg, 1986:7; Verduin, 1991:16; Sherow, 1990:8).

1874 Wesleyan University in Illinois, USA started a distance program, where both graduate and undergraduate degree could be pursued in absentia. This is the first distance university study in America. The program was discontinued in 1906. (Verduin, 1991:16; Garrison, 1990:12; Pittman, 1990:70).

1878 Skerry's College, Edinburgh founded. It prepared candidates for Civil Service Examinations (Holmberg, 1986:8; Verduin, 1991:16).

1881 Dr. William Rainey Harper often referred to as 'the father of American correspondence study' initiated the Correspondence School of Hebrew in the USA. (Garrison, 1989:51; Holmberg, 1986:9).

1881 Chautauqua Correspondence College made its definite announcements, and began systematically a work, which, for a year or two, had been done in a less formal fashion. (Holmberg, 1986:9). "Moore (1989) calls Chautauqua 'the first significant distance education effort in America' (p. 223)" (Verduin, 1991:16).

1883 The Correspondence University founded in Ithaca, New York, USA by 32 university professors representing different colleges and universities, including Harvard, John Hopkins and University of Wisconsin. Their common aim was to supplement college instruction with correspondence study. (Verduin, 1991:16; Garrison, 1990:12; Pittman, 1990:70).

1884 Foulks Lynch Correspondence Tuition Service, London, specialising in accountancy. (Holmberg, 1986:8).

1887 University Correspondence College, Cambridge was founded. It prepared students for University of London external degrees. (Holmberg, 1986:8).

1889 Queen's University began a credit correspondence course in the faculty of Arts and Science. (Rothe, 1986:6).

1889 The University of Wisconsin, USA first proposed correspondence study in its 1889-1890 catalogue as a function of university extension. The catalogue compared the English extension movement with its American version, defining the major difference to be an English cultural curriculum approach as opposed to the Wisconsin vocational and industrial course emphasis. (Garrison, 1990:13).

1891 In USA a Pennsylvania newspaper editor, Thomas J. Foster, began teaching mining methods and safety by correspondence. As he added more courses, the International Correspondence School of Scranton, Pennsylvania was born. (Verduin, 1991:17).

1892 The University of Chicago, USA began its work, and from the outset correspondence instruction was an organic part of the teaching methods of the institution. (Holmberg, 1986:9; Garrison, 1989:51; Garrison, 1990:11; Pittman, 1990:67, 74; Verduin, 1991:17).

1892 The term distance education appeared in the 1892 catalogue of the University of Wisconsin. This is probably the first time the term is used. (Verduin, 1991:8).

1894 The Rustinches Fernlehrinstitut, which helped prepare students for university entrance examinations, was established in Berlin, Germany. (Verduin, 1991:16).

1894 Diploma Correspondence College, now called Wolsey Hall, Oxford, was founded preparing students for university qualifications but also offering a wide range of other subjects (Holmberg, 1986:8).

1898 In Sweden Hans S. Hermod founded, his namesake institution, Hermods and started his distance-teaching activities as a result of an idea about how to help an individual student and allegedly without any influence from American correspondence education. (Holmberg, 1986:10; Verduin, 1991:16).

1906 Charles Van Hise, the president of the University of Wisconsin announced the re-emergence of correspondence instruction. Van Hise realised the success of commercial correspondence schools and encouraged Wisconsin citizens to invest in their own system, which would include languages, literature, political economy, political science, history, sociology, mathematics, pure science and applied science. (Garrison, 1990:13).

1906 American elementary schooling by correspondence began with the enrolment of the first students by the Calvert School of Baltimore, Maryland, USA. (Verduin, 1991:17).

1906 One of the pre-eminent American distance teaching units, the University of Wisconsin-Extension, was founded. (Verduin, 1991:17).

1907 University of Saskatchewan provided off-campus learning opportunities such as ‘Better Farming’ demonstration training, the ‘Homemaker’ short course and ‘Canadian Youth Vocational Training Workshop’ (Rothe, 1986:6).

1910 The Victorian scheme began in Australia (Holmberg, 1986:11).

1911 University of Queensland, Australia entered the field of distance education (Holmberg, 1986:10).

1914 Ernst G. Mortensen established NKS (Norsk Korrespondanseskole) as the first distance education institution in Norway. His work was influenced by visits to the USA and to Hermods in Sweden. (Paulsen, 1992:).

1919 Professors at the University of Wisconsin started an amateur wireless station that three years later became WHA (Verduin, 1991:17).

1922 In addition to his duties as Director of Correspondence Instruction, Lighty pioneered educational radio with the establishment of the first university radio station, WHA, the "School of the Air". (Garrison, 1990:16).

1926 The National Home Study Council (NHSC) was created in USA as an accrediting body intended to address the problems of assuring quality and ethical business practices. (Verduin, 1991:17).

1932-37 The University of Iowa, USA (W9XK) started educational television broadcasting. (Verduin, 1991:17).

1935 The Canadian Broadcasting Corporation, the Canadian Federation of Agriculture and the Canadian Association of Adult Education initiated the Antigonish Movement (Rothe, 1986:6).

1940 Bréfaskóli SÍS, the first correspondence school in Iceland established exactly one century after Pitman started in England. (Ólafsson, 1966:4).

1959 The 'Continental Classroom' was broadcast by the University of California supplemented by correspondence study. Physics and chemistry courses were instructed through television broadcasts aided by course syllabi, which were sold to persons interested in studying the course for credit. (Garrison, 1990:18).

1962 Formal correspondence education at a higher education stage was implemented, for the first time, in India. (Panda, 1992:309)

1963 National Extension College (NEC) (UK) was set up by Michael Young as a self-financing non-profit trust. Its purpose was to give home-based adults a 'second chance' at academic or vocational studies, using specially written correspondence materials, broadcast television and support from local tutors. (Rowntree, 1992:10).

1970s The 'Tübingen Group' Dohmen, Graff, Peters, Rebel and Delling did remarkable work in research on distance education. By the early 1970s, the

group had published at least sixty research studies in a number of series, of which the most important were Tübingen Beiträger zum Fernstudium and Studien und Berichte zum Fernstudium im Midienverbund. (Keegan, 1990:7).

1971 The British Open University (OU) was the world's first university to teach only at a distance. Indicative of the importance of using new media, the British Open University originally was to be called the University of the Air. The emphasis at the Open University was on reducing isolation with an imaginative use of new teaching techniques. (Bosworth, 1991:13; Rowntree, 1992:11; Holmberg, 1985:138; Garrison, 1989:57).

1975 Tanzania's distance-teaching programme, teacher training at a distance (TTD) started. (Chale, 1993:21).

1975 The German FernUniversität began its work. (Holmberg, 1985:139; Laaser, 1993:283).

1977 The Distance University in Costa Rica was established. (Thompson, 1993:165).

1981 The Zimbabwe Integrated Teacher Education Course (ZINTEC) started. (Chivore, 1993:43).

1983 Open Tech Programme was not an institution but an initiative. The then Manpower Services Commission put a lot of money into 140 projects intended to develop, deliver and support open learning in vocational training. The programme was discontinued in 1987. (Rowntree, 1992:11).

1985 The foundation of the Dutch Open University in the Netherlands. (Kelen, 1992:292).

1986 Open College of the Arts in UK is, like NEC, a creation of Michael Young. The college offers practical courses in such areas as painting, sculpture, textiles, photography, and creative writing. Its students work at home from specially prepared course books backed up by correspondence tuition and/or occasional class sessions in local centres. (Rowntree, 1992:11).

1987 Open College in UK was set up by the government to carry on where Open Tech left off. It was meant to transform vocational education and training much as the OU has transformed higher education. (Rowntree, 1992:11).

1988 The consortium of open higher education, in Belgium, was founded with the Study Centre for Open Higher Education (Studiecentrum Open Hoger Onderwijs) (STOHO) as the co-ordinating body. (Kelen, 1992:292).

1988 Open Learning Foundation (formerly Open Polytechnic) in UK. This is a consortium of more than twenty institutions in higher education who have agreed to invest in producing open learning packages which all can use. (Rowntree, 1992:12).

1989 Open School in UK is yet another Michael Young initiative like NEC and Open College of Arts. It aims to bring open learning to the aid of learners whose needs might not otherwise be met e.g. children in hospitals or in schools with no special teachers of certain subjects. (Rowntree, 1992:12).

1990 Pétur Þorsteinsson a head teacher in a small school in Kópasker, Iceland, established Imba the communication network for schools. He ran it on his own with financial support from the Teachers Union and The Ministry of Education and Culture. Imba became The Icelandic Educational Network in 1992. (Þorsteinsson, 1990:12).

1992 The Icelandic Educational Network (Ísmennt) was established by Pétur Þorsteinsson. (Jónasson, 1994).

1993 The Icelandic University College of Education launched a four-year distance education program, leading towards a B.Ed. degree and teachers' certificate. (Mýrdal, 1993).

2.3 Distance education in Iceland

2.3.1 Bréfaskóli SÍS

Exactly 100 years after Isaac Pitman began his correspondence teaching in England (see section 2.2) the first correspondence school in Iceland Bréfaskóli SÍS started. Bréfaskóli SÍS was founded and run by SÍS the Icelandic co-op. The main purpose in the beginning was to teach about the co-operative society and social affairs. At the annual general meeting of SÍS in the spring of 1940, its director at that time, Einar Árnason, announced that the board of directors had decided to establish a correspondence school. The school should give those, young and old people who were eager to learn, the opportunity to learn

in their spare time. The school started on October 1st 1940. The first director of Bréfaskóli SÍS was Ragnar Ólafsson cand. jur., who was also SÍS's lawyer. He had worked on the preparation and organising of the school which was primarily based on a Swedish model. At the beginning, the school offered these four subjects:

1. The organisation and working methods of the co-op organisation.
2. Rules for meetings and chairing a meeting.
3. Bookkeeping for beginners.
4. English for beginners.

In the first year, Bréfaskólinn enrolled 280 students. The number of students and number of subjects increased as the years went on and in 1950 when the school was 10 years old, the subjects were 15 and 1,110 new students enrolled that year. In 1965 when the school was 25 years old, it had enrolled 15,080 students and 1,814 of them had successfully graduated. (Bjarnason 1966)

In 1965, Alþýðusamband Íslands joined SÍS in running Bréfaskólinn and later Bréfaskólinn became a private institution. The media used at Bréfaskólinn were mainly written material (books and letters), but also audio and videotapes, telephone, fax and computer communication. In 1996, Bréfaskólinn closed down because of financial difficulties.

Bréfaskólinn offered many subjects divided into the following categories:

a) General education.
b) Secondary education.
c) Primary education.
d) In-service education.
e) Social affairs and literature.
f) Foreign languages.
g) Icelandic for foreigners.

2.3.2 Fósturskóli Íslands (College of pre-school education)

For several years, Fósturskólinn used distance education in combination with traditional methods for educating pre-school teachers. In this instance, education was mostly based on attendance at short courses and assigned work by students in between the courses. In the work between, they had access to teachers for support and feedback. In the autumn of 1994, Fósturskóli Íslands began to use computer communication in its education. As

mentioned in section 1.4 Fósturskólinn merged with the University College of Education and two other Colleges in January 1998, forming Iceland University of Education.

2.3.3 Framkvæmdanefnd um fjarkennslu (executive committee for distance education)

In 1986, the Minister of Education formed a distance education committee. The aim of the committee was to find out if it was economical to start distance education programmes in Iceland and, if so, then how. In its report of February 1987 the committee suggested that Framkvæmdanefnd um fjarkennslu (executive committee for distance education) should be formed both to encourage educational institutions to use distance education and have an overview of what was going on in distance education in Iceland. The committee should:

- Start distance education projects in co-operation with the ministries concerned, schools and other educational institutions. The committee itself should not run any projects.
- Give advice and support to those interested in distance education.
- See that the equipment and the expertise that exists are used and new expertise is gained.
- Take the initiative in co-operation between institutions that want to use distance education.
- Support and encourage the running of technical courses for distance education.
- Make annual plans for budgets for the committee. (Fjarkennslunefnd, 1987)

2.3.4 Distance education in teacher education

In March 1989 the University board of KHÍ agreed to form a working group for decentralised and flexible teacher education “starfshópur um dreifða og sveigjanlega kennaramenntun” to consider the possibility of providing a flexible distance education B.Ed.-course with several locations around the country. The group gave its report in December of the same year and recommended that a B.Ed. distance education course should be run by KHÍ. There were no target dates in that report on when to start the programme but a detailed description of the course was provided.

The programme should be based on the law from 1991 and should be counted of 120 course units like the traditional one. It should be comparable to the traditional course in every way except it should be a part-time course taking a longer period of time, say 5 to 7 years instead of 4. It also should be more open and flexible than the traditional face-to-face course.

The entrance requirement should be the same, that is higher grade passes from the upper secondary school, but applicants from the rural areas, where the lack of qualified teachers is severe, should have priority.

The course should be a mixture of a distance and a face-to-face course with the distance element increasing as the course continued.

Because of the speciality of this course, it should have its own director to administer, introduce the programme, give the students support, direct the making of teaching material and look after teaching equipment.

It should be divided into:

a) On-campus tutoring in some boarding schools lasting for 8 weeks during the summer.
b) Weekend courses, delivered for smaller groups locally.
c) Correspondence tutoring between the on campus courses.
d) Some assignments in the form of essays to combine theory and practice.

Most important, in terms of the pedagogy of the course and the nature and location of the students the director of the course and the lecturers should tutor the students through visiting, telephones, fax and computer communication.

This proposal was based on the new law for KHÍ where the traditional course was expanded from 90 points to 120 and therefore from three to four years. However, the Minister of Education postponed the implementation of this new law as mentioned in section 1.4. This meant that the planning and delivering of the distance education course had to be changed accordingly to 90 points over only four years (Johnsen, Dec 1993).

In January 1993, KHÍ launched the full B.Ed. degree distance-learning course. After the director of the course had introduced it at 15 meetings around the country in April 1992, KHÍ received 194 applications from 170 women and 24 men. Both the distance course and the traditional face-to-face course had the same entrance requirements and the application forms were identical. The balance between male and female was almost the same as on the traditional course. The applicants on the traditional course were not

interviewed and neither were the ones on the distance course. The only difference in the entrance procedure was that applications from outside Reykjavík had priority.

> *We had started out with modest plans for running the course with 25 students. During the selection process the pressure to accept more students became very intense. In an economic recession where cuts in the state budget is a rule, the Parliament constantly extended funds to the program, to eventually increase the number of students to 83 (75 women, 8 men); recruited from all over the island. This number of students means that the financial and professional capacities of the University College are pushed close to, or even beyond, limits. (Mýrdal, Sept 1993)*

As mentioned in section 1.5 the main reason for offering this course was the lack of qualified teachers especially in the rural districts. There was also another factor, the rapid evolution in computer communication and other sorts of media.

The decision to start this particular distance educational program has a complicated history, but in the last instance, two main reasons can be highlighted.

a) Teacher shortages, mainly in the rural areas and
b) New exciting possibilities in information technology that can make communication and correspondence fast and flexible, even in the most remote areas. (Mýrdal, Sept. 1993).

The description of the course had changed a little mainly because of the postponement of the new law. In the distance education program the three main features were highlighted:

1. Its scope: this is a four year B.Ed. programme, which includes the equivalent of three years of full time studies.
2. Its target: it is primarily aimed at people in rural areas.
3. The method: it is based on diverse usage of computer networks, primarily email, but not exclusively.

This programme is supposed to be completely comparable to the traditional 90 weeks (3 years) B.Ed.-course at the University College, i.e. to have the same entrance requirements, comparable syllabus, same overall workload, same mode of evaluation and examinations, etc. In short, this is an academic enterprise. The imitation of the existing program was considered crucial to avoid speculation on the possibility of this new distance course being of lesser quality compared to the traditional face-to-face program at the University College. (Mýrdal, Sept. 1993).

Although the course was supposed to be comparable in content and requirement there were two differences. It was mainly a distance course and considered a part-time study. Applicants were advised not to work more than 50% of the time in paid employment. It is necessary here to draw attention to the fact that in Iceland it is common for teachers and others to work more than full time. A normal primary and lower secondary teacher has to teach 29 lessons per week. Many of them teach more than that and get paid extra for it.

When running a distance course like this the question about standards is always prominent. Many fear that distance education is not as good education as the traditional face-to-face method.

> *There is a growing recognition of the worth of distance education as the knowledge base expands and is communicated to the larger educational community. Perhaps the primary reason is the recognition that distance education is, in the final analysis, education. The only real difference is that the majority of communication between teacher and student is mediated. However, this does not necessitate a diminution of the quality of the educational transaction or a reconceptualization of the educational process itself. With the emergence of a variety of affordable communications technologies those in conventional education find fewer philosophical and practical concerns with delivering education at a distance.*
>
> *The debate around distance education has often been reduced to the issues of access and quality. From a practical perspective they are concerns that must be addressed and balanced when designing education to be delivered at a distance. On the other hand, they often reflect two philosophically divergent assumptions regarding the purpose and viability of distance education. One view assumes that distance education is an approach that is primarily defined in terms of access issues. The other view essentially assumes that in terms of quality standards distance education cannot simulate or approach conventional face-to-face education. Fortunately, it is becoming apparent that both these extreme views are not viable as the theoretical foundation and practical understanding of distance education develops. (Garrison, 1993:9)*

3 Definitions and theories

Agility

Rise early
attend to work
if there's no helping hand.
The morning sleeper
has much undone.
The quick will catch the prize.
(Hávamál, 1995:74)

This chapter is divided into two sections. The first one is about definitions of several concepts used about open and distance education and the later one is about distance education theories.

3.1 Definitions

The use of words and concepts in describing education that does not take place in the traditional circumstances in a classroom with a teacher and students is chaotic. Here is a list of some of these concepts: *distance education, distance teaching, distance learning, open education, open teaching, open learning, flexible education, flexible teaching, flexible learning, correspondence education, correspondence teaching, correspondence learning, instructional teaching, independent study, home study, external study, self study*. It is not the intention to write about all of them but only those that are most appropriate to this thesis. Authors who write about these topics do not always agree on definitions. These are the definitions used in this thesis.

Distance education is the kind of education that takes place when, for most of the time, the teacher and student are separated in place. There has to be a two-way educational communication between the teacher and student using technology of some kind (Garrison and Shale 1987). With the new Information and Communication Technology, distance education can be divided into two; synchronous distance education and asynchronous distance education. The synchronous distance education takes place when technical equipment is used to bridge the gap between the educator and the student as the educator gives a lesson. This kind of distance education is bound in time but not in place. In asynchronous distance education the connections between the educator and the learner is bounded neither in time nor in place. Some argue that distance education is a misnomer

like Perraton (1993:3) for example: “The term ‘distance education’, however, is a misnomer: most effective programmes include an element of face-to-face teaching as well as using correspondence and mass media.” In this thesis, the concept ‘distance education’ is used for educational programmes that are mainly distance although they have a face-to-face component.

Correspondence education is the kind of education that mostly relies on the ordinary post service in the communication between the participants and the educator. This was at the beginning the only form of distance education used. One of the characteristics of correspondence education is the production of special learning material suitable almost for self-study. Learning material used can be printed material, audiotapes and videotapes.

Flexible learning means that the student has freedom in selecting the time and place to learn. Flexible learning does not have anything more to do with distance education than the traditional face-to-face education. Therefore face-to-face education can be equally or more flexible than distance education. Brande (1993:2) describes flexible learning in this way. “Flexible learning is enabling learners to learn when they want (frequency, timing, duration), how they want (modes of learning), and what they want (that is learners can define what constitutes learning to them).”

Open education is widely used and in my opinion wrongly when used for distance education. The term open education is much too open and therefore very hard to handle. Education can be open in many ways. Traditional face-to-face education can be more open than distance education.

> *‘Open learning is an imprecise phrase to which a range of meanings can be, and is, attached. It eludes definition. But as an inscription to be carried in process on a banner, gathering adherents and enthusiasms, it has great potential. For its very imprecision enables it to accommodate many different ideas and aims.’ [(McKenzie et al. 1975:21)]*
>
> *'Open' learning, therefore, is a term that is not to be used in administrative context; its context is, rather, theoretical and describes, for instance, colleges with 'open' administration policies or a special spirit. Open learning can, in fact, be carried on under both face-to-face and distance conditions. (Keegan 1990:24)*

Self-study is a kind of study where the individual is learning on her/his own without any attention from educational institution or tutor. Formal self-study packages can be bought

in (book)shops. Examples of that are do-it-yourself books and the Linguaphone, which are pre-prepared for the learner. An informal self-study is for example if someone wants to learn about Marry Queen of Scots and gathers information from books etc. Because of the arrival of the Web, self-study has and will increase in the near future. Whether that will raise the standard of education is questionable, although the one who has studied by her/him-self can in some cases, ask to be evaluated by an educational institution and get a degree.

3.2 Distance education theories

One of the primary purposes of distance education was originally to provide access to education for those with limited access to it particularly for geographical reasons. Therefore, the distance aspect has been one of the major characteristics of distance education through the years. Garrison and Shale (1990:25) argue that there has been overemphasis on the 'distance' aspect of distance education. Instead, it "should be about 'education' with morphological constraints arising from distance being simply a physical and therefore methodological constraint". Another key issue in distance education is interaction or two-way communication. Garrison and Shale (1990:128) argue that: "improving the quality of the educational process through increasing two-way communication is likely to have the most significant impact upon the effectiveness of learning and in turn is likely to raise completion rates in distance education". Other theorists like Keegan and Bates have also stressed the importance of interaction. "Education is a process most simply characterized as an interaction between teacher and student for the purpose of identifying, understanding, and confirming worthwhile knowledge" (Keegan 1993:13). "Interactivity – the ability for the learner to respond in some way to the teaching material and obtain comment or feedback on the response – considerably increases learning effectiveness" (Bates 1993:229).

> *Effective learning, however, requires both knowledge of learner styles and advance preparation on the part of the teacher or site facilitator. Teachers and site facilitators are better able to make curriculum decisions to suit the preferences of their students, such as grouping certain students productively for project work, or assigning particular students to individual research projects, if they can determine the prevalent learning modes within their own classrooms. Site facilitators have the advantage of eye-to-eye contact and personal contact with students in their classrooms, whereas studio teachers must often rely on televised images, telephone conversations, or electronic messaging for feedback on student preferences.*
>
> *If a teacher recognizes the existence of these alternate learning styles, and if he attempts to make a match between these modes and the content to be learned, then he can develop a local instructional theory. As with most distance learning situations, a localized theory has a greater prospect of success than a general instructional theory intended to function satisfactorily in variety of settings, with a variety of practitioners [(Owens & Straton, 1980, p. 160)]. (Sherry, 1996)*

Here the focus is on the learner and the different learning styles and different needs that each individual has. Amundsen highlights the distance and separation of the learner and the educator.

> *One trend noted here is the decreased emphasis which more recent theoretical proposals have placed on the notion of distance or separation. The view presented here is that the notion of distance must remain central, but that its meaning or importance is in direct relationship to the type of learning desired. In other words, distance education, as a field of inquiry, must focus on the meaning of distance to learning and on the resulting implications for the teaching role, instructional methods and learner expectations. The proposed framework provides a reference point for building new understandings of teaching and learning within the context of distance education. (Amundsen 1993:61)*

The different angles from which theorists look at distance education tell us how complex it is. Distance education is an education that takes place when the learner and educator are separated for most of the time. Therefore, it is not surprisingly that the focus is put on the learner rather than the teacher. Learning styles and different needs of the students must be

taken into account. Using ICT (Information and Communication Technology) in distance education needs new way of thinking. It is not likely to give good results to take traditional teaching styles and use them in distance settings. In the near future, it is likely that the focus will be much more on learning styles than teaching styles. The learner and the learners' needs will be in focus. Distance education shall be looked upon as one model of education.

In a few years time we will probably no longer distinguish between distance education and face-to-face education. The ICT will without doubt wipe out the distinction, as both the traditional and distance education will use it more widely. This will lead to the merging of the two, as educators will use the advantages of both set-ups.

4 Methodology

Seeking Knowledge

The cautious guest
who comes to the table
speaking sparingly.
Listens with ears
learns with eyes.
Such is the seeker of knowledge.
(Hávamál, 1995:24)

In this chapter, the methodology of the research is described. It is divided into four sections: the first describing the experiment, the second listing the research questions, the third describing the source of data and the fourth and last one is about the processing of the data.

As it is relevant for this chapter, I will describe in a few words my circumstances during this research. When I started the research, I was living and working in Akureyri, the main town in the North of Iceland. The data gathering took place face-to-face, by ordinary mail and on the Internet. The entire data gathering on face-to-face basis took place in Reykjavík. Because this research was the main part of my M.Phil. study at the University of Strathclyde in Glasgow I also spent some time there. For convenience reasons I decided to place most of the data on the Internet to be able to access it freely from where ever I had Internet access. As can be seen later in this chapter almost all the data gathered in this research, if not collected as computer data, was transferred to computers. Having a good Internet access in all the three locations in Akureyri, in Reykjavík and in Glasgow saved a lot of time because the data did not need to be copied and transferred between computers or discs. I had access to SPSS both on the Unix server at the University of Strathclyde and on a Unix server at the University of Iceland. At a later stage when the data gathering was over and I had moved to Reykjavík, I transferred the data on to a PC where I used SPSS for final analyses. This was done mainly because the PC version offered better graphic.

4.1 The experiment

The research described in this thesis was carried out during the first Internet based distance education B.Ed. course offered by KHÍ. The purpose of the research was to

evaluate the course. The duration of the research was from January 1993 until October 1996. The course itself ended in June 1996 but some data were collected after the students' graduation. This was both to get information about the proportion of the graduates going into teaching and to get their evaluation of the programme some time after they finished. This is not a comparison study of the traditional face-to-face course and the distance course. Data were only gathered about the distance course. With very few exceptions, there are no references to the face-to-face course in this thesis.

In the beginning, the research plan was introduced to the University Board as the research started in January 1993. At later stages, progress reports were given to the University Board. The main findings of the research were also introduced to the faculty of KHÍ at a seminar. It was also presented to the educational committee of the Icelandic Parliament on its visit to KHÍ.

4.1.1 The course structure

The B.Ed. distance course could be divided into face-to-face and distance components. At the beginning of each term in January and June, the students attended a face-to-face component of the courses in KHÍ for two or three weeks each time. There the students got an introduction to the following term's modules. Some of the lecturers handed out all the learning material at the beginning but others sent it by mail or E-mail as the term went on. The rest of each term was totally distance based where the students depended mostly on computer communication. The course was comparable to the traditional one in every way except it would take a longer period. The same books were used but most of the lecturers made some learning material available mainly in the form of short reading guides with key questions on the books.

4.2 Research questions

In the literature, evaluation is sometimes distinguished from research and sometimes not. Terms like 'evaluation', 'evaluation study' and 'evaluation research' are to be found in different literature. Isaac and Michael (1995) distinguish between research and evaluation and sometimes use the term 'evaluation studies'.

> *Research, having its origin in science is oriented toward the development of theories and its most familiar paradigm is the experimental method, in which hypotheses are logically derived from theory and put to a test under control conditions. Evaluation on the other hand, has come the way of technology rather than science. Its accent is not theory building but on product delivery or mission accomplishment. Its essence to provide feedback leading to successful outcome defined in particular, concrete terms. (Isaac & Michael 1995:8)*

Hessler, on the other hand, talks about 'educational research' and distinguishes it from other research by its judgement aspect.

> *A clue to the definition of evaluation research is the value, the root of the word evaluation. A value is something of worth or merit. To evaluate is to consider or to pass judgement on the worth or merit of something. Thus in the broadest sense, evaluation research is research that passes judgement on the value of something. Because of this judgement aspect, evaluation research is very different from other forms of research…(Hessler 1992:292)*

Although this difference can be found Hessler and Isaac & Michael agree on the core of the matter that 'evaluation study' or 'evaluation research' has more to do with judgment and improvement than proving or discovering new knowledge. Isaac & Michael (1995, p 8) quote Stufflebeam "In distinguishing evaluation from research, Stufflebeam has said, 'The purpose of evaluation is to improve, not prove'". Hessler (1992 p. 296) says that "Evaluation research is done to satisfy the demand for public accountability, for legitimacy. Evaluation research is not done to discover new knowledge, although that frequently happens in the course of evaluation". This thesis describes a research that was carried out to evaluate a certain programme and ends with a judgement and recommendations for improvements both in present and in looking to the future.

In this thesis, Thorpe's (1988:5) definition of evaluation is used. "Evaluation is the collection, analysis and interpretation of information about any aspect of a programme of education and training, as part of a recognised process or judging its effectiveness, its efficiency and any other outcomes it may have."

This evaluation is more formative than summative in the sense that it has been and will be used in future planning of the DE-course and hopefully various distance education activities at the University. In order to ensure more reliability in this evaluation,

triangulation (Walker 1985:82) has been used. This has been done by using different methods on the same object of study that is *methodological triangulation.* (Cohen and Manion 1994:236). The methods used for collecting data were: interviews, questionnaires, diaries, the collecting of discussions on post-lists and counting and measuring students' logons to the Internet. This various ways of collecting data were also chosen to gain experience in different data gathering. More detailed description of the instruments used how and why they were used and lessons learnt from it are to be found in section 4.4. All the data was transformed on to computer as the research went on which made it more accessible and easier to analyse.

My role as an observer and evaluator was in some ways mixed. As the population of Iceland is only around 270,000, I know many people in the educational sector. In this case I knew to some extent almost everyone lecturing on the course and some quite well. Although I was not as familiar with the students, I knew some of them and one of them was an old friend of mine. I had been working for KHÍ by giving in-service courses and seminars for some time. I did not teach anything on the course so my role was as an external evaluator. I started working for Ísmennt in the autumn 1994 which connected me to the course a little bit. In mid summer 1996 Ísmennt was sold to the Ministry of Education and placed in the charge of the KHÍ. Then I become an employee of KHÍ and did not finish my data collection until in October that year. It is not easy for me to judge the advantages and disadvantages of these changes in my position during the research period. The advantages are that I was in closer contact with people working on the course and in several cases was able to give some advice both personal and also by introducing the results of my evaluation on short seminars. As KHÍ was now my institution and my workplace it may have changed my attitude and made it more positive towards the course. I have always been aware of this possibility and tried not to be biased.

The research was divided into three categories, the preparation and administration of the course, the teaching and lecturing on the course and the learning on the course. This was done in order to be able to research and evaluate the course from three different angles and therefore get more reliable data to analyse and base recommendations on.

4.2.1 The preparation and administration of the programme

This category should cover the overall planning and running of the DE programme in which the key-questions were:

- How were the lecturers prepared for this new task?

- Are the entrance requirements for the students different in any way from that on the traditional course?
- What is the administrative situation of the course within KHÍ's structure?
- Will the educational aims of the course be achieved?
- What kind of distance education techniques will be used on the course?
- What kind of support and consultation do the students get from non-teaching staff of KHÍ?

4.2.2 The teaching and lecturing on the course

In this category, the main task was to examine the lecturers' performance and how they coped with this new task. The key questions were:

- How did the lecturers prepare on top of what was provided by KHÍ?
- What form of distance teaching do the lecturers use?
- How do the lecturers communicate with the students?
- Do the lecturers produce any learning material?
- How are the individual modules/subjects suitable for distance teaching?
- How do the lecturers use the computer communication and how effective is it?
- What effects do the non face-to-face communications have?
- What do the lecturers see as advantages and disadvantages of distance teaching compared to the traditional teaching?

4.2.3 The learning on the course

In this category the key questions were about the students' views of the course and to find out about their learning, geographical and in some ways social circumstances:

- Why did the students choose this way of learning?
- Whom does distance education suit best and why?
- What effects do the non face-to-face communications have?
- Do the students on the DE-course differ from the ones on the traditional course?

- How do the DE-students cope with the freedom in selecting time to study?
- How do the librarians and other non-teaching staff serve the needs of the students?
- What do the students see as advantages and disadvantages of this form of learning?
- How do the students use the computer communication and how effective is it?
- Is there a significant difference in the students' grades compared to the ones on the traditional course?
- Is there a difference in the proportion going into teaching after graduation from the DE-course and the traditional course?
- How high are the dropout rates and why do the students leave the course?

4.3 The population

The population in the research were the students on the first distance education course and the lecturers who taught on the course. The number of students as the course started was 75 female and 8 male or 83 in total. Not all of them started in January, some started in April, as there was a pressure to take more students. This was a much higher number than planned in the beginning (see section 2.3.4). The number decreased as some of them dropped out and 54 of them, all women, graduated in June 1996. Their age was higher than on the traditional face-to-face course and the age distribution was wider. The oldest was born in 1940 and the youngest in 1970 (see section 5.3.4). They came from all regions of the country although most of them came from Vestfirðir, Austfirðir and Suðurland but very few from around Reykjavík.

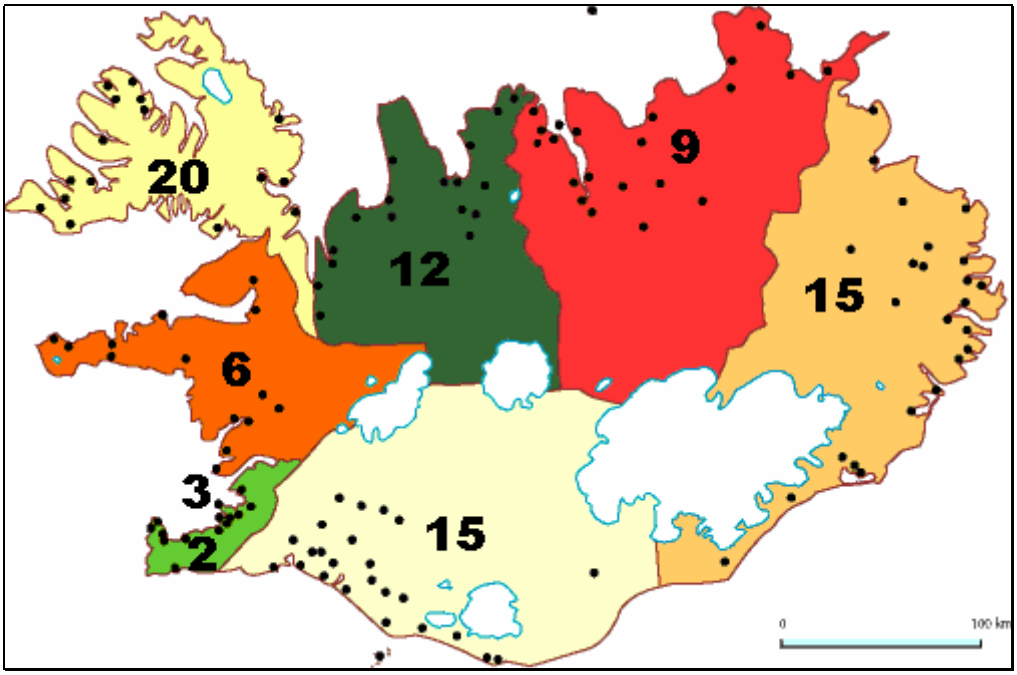

Figure 4.3-1

Figure 4.3-1 shows how the distance students were distributed around the country. The black dots represent the primary and lower secondary schools. As can be seen a high proportion comes both from Vestfirðir and Austfirðir although only 4% of primary and lower secondary pupils are in Vestfirðir and 5% in Austfirðir (see Table 2). On the other hand, the teacher shortage was severe in these two regions as can be seen on Table 4.

Table 4

Regions	*Unqualified teachers*		*Face-to-face students*		*Distance students*	
Reykjavík	23	2%	63	50%	3	4%
Reykjanes	49	6%	33	26%	2	2%
Vesturland	49	6%	8	6%	6	7%
Vestfirðir	79	46%	3	2%	20	24%
Norðurland vestra	61	32%	3	2%	12	15%
Norðurland eystra	68	17%	6	5%	9	11%
Austurland	52	22%	5	4%	15	18%
Suðurland	52	15%	6	5%	15	18%
	433		**127**		**82**	

Table 4 shows the distribution of students at KHÍ in 1993 both on the traditional face-to-face course and on the distance course. It also shows the number of unqualified teachers.

4.4 The source of data

The data was collected by interviews, questionnaires, diaries, by counting and measuring the students' logons to the Internet and by collecting all the discussions on the course's post-lists.

Table 5 is a kind of timeline for the research where all the data collected is put in its proper place according to the month when it took place.

Table 5

Year	Month	Interviews	Questionn-aires	Diaries	Inter-net	Post-lists
	January	4 lecturers *(tr),* 1 librarian *(tr),* 1 con-	78 students.		A	A
	February	sultant *(tr),* director of the course *(tr)*	61 returns.		l	l
	March				l	l
	April					
1	May				t	d
9	**June**	12 sampled students *(tr)*		On	h	i
9	July			student	e	s
3	August			kept		c
	September			diary	s	u
	October			June/	t	s
	November			Jan	u	s
___	December				d	i
	January	9 of sampled stud. *(tr),* de-students' board		Two stu-	e	o
	February	chairperson *(tr),* 3 dropout students *(ph),*		dents	n	n
	March	6 lecturers *(tr)*		kept	t	s
	April	3 dropout students *(ph),* 3 directors of	71 students.	diaries	s	
1	May	education *(ph)*	57 returns.	Jan/		o
9	June			June	l	n
9	July				o	
4	August				g	t
	September				o	h
	October				n	e
	November				s	
___	December					
	January		62 students.		w	p
	February		46 returns.		e	o
	March				r	s
	April				e	t
1	May					l
9	June				c	i
9	**July**	Director of the DE-course *(nt)*			o	s
5	August				u	t
	September				n	s
	October				t	
	November				e	w
___	December				d	e
	January	New director of the DE-course *(nt),*		One		r
	February	Director of students teaching *(nt)*		student	a	e
	March			kept	n	
	April		42 lecturers.	diary	d	c
1	May		29 returns.	Jan/		o
9	June			June	t	l
9	July				i	l
6	August				m	e
	September		54 students.		e	c
	October		48 returns		d	t
	November		*(ph)*			e
___	December					d
		(tr) tape-recorded				
		(ph) by phone				
		(nt) notes taken				

4.4.1 The questionnaires

Five questionnaires were administered in this research, four of them long and detailed but one short and administered over the telephone. After designing the first one, which proved to have several bad faults in it these guidelines were followed:

- the questions should be relevant;
- the questionnaire should look attractive;
- each question should be easy to understand;
- each question should stand on its own;
- there should be no routes through questions;
- leading questions should be avoided;
- all the population should answer all the questions;
- each question should be brief;
- most questions should have multiple choice responses;
- only one choice should be allowed in multiple choice questions;
- all the questionnaires should be confidential;
- all the questions should be answerable without the need for the respondents to gather information.

These guidelines are based mainly on Munn and Drever (1990) but also Walker (1985), Thorpe (1988), Judd, Smith and Kidder (1991), Hessler (1992), Þórólfur Þórlindsson director of the Icelandic Institute for Educational Research and my supervisors Ms. Moira Laing and Professor Douglas Weir.

Although I base these guidelines partly on Munn and Drever, I do not fully agree with them. For example, there is a paradox in "begin with open questions" and "begin with questions which are straightforward and easy to answer" (Munn and Drever 1990:25). In my opinion, the open questions are often the hardest to answer so I think open questions should be somewhere in the middle or at the end rather than at the beginning.

All the questionnaires in this research were administered to all of the population. The return rates in all of them were reasonably high which indicates positive attitudes towards this research. The design of the questionnaires might also have helped because although

they had many questions they were all brief, almost entirely multiple choices and could be answered in a straightforward fashion.

4.4.1.1 Students' questionnaire

The first questionnaire administered to the students was designed to gather some basic information about the students and their experience and knowledge of computer communication. In addition, it was designed to get a picture of their learning environment, local support, why they choose the DE-course and their prediction of the outcome of the course. Therefore, it was administered at the first face-to-face course in January 1993 before the students went home to start their actual distance learning.

The size of this questionnaire was 30 questions mostly multiple choices and the number of variables was 93. Respondents disclosed their name when they answered it.

This questionnaire is without doubt the poorest of them all. Its layout was not as good as it could have been. Its preparation time was too short and it had some major faults in it. Although most of the questions were brief, clear and easy to understand some of them had faults in the options in the closed questions. In question number 6 for example the students are asked about how they felt about being in the first B.Ed. distance group and they were given three options:

1. It is exciting to take part in this groundbreaking project.
2. I fear that there will be some problems from the administration of the programme.
3. Other, what?

It would have been much better to break this question down and have the students rate each one of them by 'much', 'some', 'little', 'none'. By not doing so the question gave 11 ambiguous answers. Although the questionnaire is long according to Munn and Drever (1990:19), the response rate was slightly over 80% of the total population, which was at that time 78. This should ensure that the overall estimates would not be badly biased (Judd, Smith and Kidder 1991:216).

The second questionnaire, which was sent to all the students by mail in April 1994, had some of the same or related questions as in the first questionnaire. This was to see if there had been any change in the students' skills and attitudes. Also to see how accurate their predictions about the course and themselves on the course turned out to be. This questionnaire was anonymous and therefore not suitable for detecting changes in

individual student's skills and attitudes, only on the group as a whole. The number of questions was 94, mostly multiple choices and the number of variables was 98. In most aspects, this questionnaire was better designed than the first one both because of longer preparation time and because of experience gained from the first one. Its layout was also much better and it did not have the same faults in the multiple-choice questions. This questionnaire was, as earlier stated, anonymous and sent by mail to all the students. In order to increase the return rates a stamped, addressed return-envelope was enclosed with it and a letter stressing the importance of the students taking part in the research. Although it had three times more questions than the first one the return rates were almost 80% or nearly as high as in the first one.

The third questionnaire was administered on the face-to-face course in January 1995 and required the students to disclose their names. In it, there were some of the same questions and themes as in the earlier questionnaires that would again give the opportunity to see progress and changes in attitudes and opinions. This questionnaire had 74 questions mainly with multiple choices and the variables counted 84. It was almost identical to the second one. The layout was the same; it was not as long as the second one and the only visible difference was that it had section headings, which the earlier two did not have. The return rate was a little lower than in the other two or at about 75%, which again is very good.

The fourth and last questionnaire was administered to the students by telephone in September and October 1996, several months after they had graduated. It was the shortest of them all containing only 13 questions. It had again some of the same questions as the previous questionnaires. The main purpose of it was to find out whether the newly graduated teachers were teaching, what were their professional plans for the future and get their evaluations of the course after that interval of time. It had a higher proportion of open questions than the others did mainly because it was administered by telephone. The return rates were almost 90% and only limited by the fact that some of the newly graduated teachers had moved and were hard to find.

4.4.1.2 Lecturers' questionnaire

In April 1996, a questionnaire was administered to the lecturers at KHÍ. Its main purpose was to gather information about the lecturers' experience of giving distance courses and have them compare the distance courses to the traditional courses. It also was intended to learn about their attitude to the DE-course and Distance Education in general.

This questionnaire had 110 questions most of them multiple choices and the variables turned out to be 254. In fact there were two questionnaires administered, one to the lecturers who had taught on the course and another to the ones who had not. The only difference was that all the questions about the actual work on the course were left out in the questionnaire for the lecturers not having taught on it. Having the longest preparation time it tended to grow during that time. It probably had the best layout and the structure of it was good. The major fault in this questionnaire was its length. It also had several questions that proved to be useless because of faults in them. Question 11 for example "What I get paid for teaching on the DE-course is fair compared to that on the traditional course" was a multiple choice question with the possible answers; 'strongly agree', 'agree', 'disagree', 'strongly disagree'. What is lacking here is the possibility for the lecturers to indicate if they thought they were paid too much or too little compared with what they got on the traditional course. The question should have been something like; "How do the salaries on the DE-course compare to the traditional course". With the possible answers: 'too much on the DE-course', 'fair', 'too little on the DE-course'. Or with even a wider range of possible answers.

Only four of the questionnaires administered to the lecturers who had not taught on the DE-course were returned and therefore this part of the exercise had no value but 29 from the lecturers who had taught on the DE-course were returned. The return rates were about 70% which has to be considered rather good taking into account its length, but not very satisfactory for reliability purposes.

4.4.1.3 Piloting of the questionnaires

None of the questionnaires was piloted because it was not possible to get a similar population with which to trial them. All of them were read and commented on before they were administered by at least three persons with knowledge of teacher education and research. The director of the Institute of Educational Research in Iceland commented on two of them, the director of the DE-course commented on two, the dean of KHÍ on one of them and also teachers, advisers at regional education offices and researchers at the Institute of Educational Research in Iceland. All of them were read over by at least one person with good knowledge of the Icelandic language to minimise spelling and grammar errors.

4.4.2 The interviews

Many interviews were undertaken during the research period. They can be divided into two types, informal and formal interviews. The informal interviews proved to be of great help in designing both questionnaires and interview schemes. The informal interviews also gave some information that people were not ready to give in a formal tape-recorded interview. These interviews were with lecturers, students, and non-teaching staff at KHÍ, staff of Ísmennt and head-teachers and various educators. The formal interviews were semi-structured (Thorpe 1993:184) with a framework of questions followed up by probe responses. The first ones were more structured than the later ones as advised by Bells (1993:93) "A structured interview can take the form of a questionnaire or checklist that is completed by the interviewer rather than by the respondent, and if you are a first-time interviewer, you may find it easier to use a structured format." Parts of some of the formal interviews with the students were sometimes used to prepare the next questionnaire for example in finding relevant options in multiple-choice questions. The interviews also gave deeper understanding of the students' and lecturers' situations and opinions of the course. Gall et al. (1989:305) adapt from Stewart, C. J. & Cash, W. B., Jr. in their book "Interviewing: Principles and Practices" eight steps involved in using interviews in educational research. The steps are "(1) defining the purpose of the study, (2) selecting a sample, (3) designing the interview format, (4) developing questions, (5) selecting and training interviewers, (6) doing a pilot test of the interview procedures, (7) conducting the interview, and (8) analyzing the interview data." These steps were used as guidelines except steps 5 and 6. All the interviews were conducted by myself so there was no need to train interviewers (step 5) and none of the interviews was piloted (step 6).

4.4.2.1 Students interviewed

In June 1993 on the second face-to-face component and at the beginning of the second term 12 students were interviewed. These students were sampled to reflect the group according to age, gender, where they lived and their educational background. The purpose of these interviews was to get their opinions on their lecturers' performance in the distance circumstances and to learn about their situations at home. All these interviews were tape-recorded and then transcribed. The length of them was from 30 to 40 minutes.

In January 1994 on the third face-to-face component, nine of the students from the sample were interviewed again to see if there were any changes in attitude. These interviews were also tape-recorded and extracts from them were word-processed. They lasted for

about 30 minutes each. In January 1994, three students who had dropped-out were interviewed to find out their reasons for leaving the course. These interviews were by telephone and lasted for 5 to 15 minutes and notes were taken. The chairperson of DE-students board was also interviewed in January 1994 to get a better overview of the students' common concerns. This interview was tape-recorded and lasted for about 50 minutes.

In April 1994, another four dropout students were interviewed to find out their reason for leaving the course. These were telephone interviews lasting for 5 to 15 minutes and notes were taken.

All the students who graduated were interviewed by telephone in September and October 1996. The main purpose of that was to gather information about whether the students were teaching or not, if they were thinking of furthering their education, and their overall views of the course especially the distance teaching element. A structured interview form was designed so that the main part of the interview was more like a questionnaire.

I tried to be on campus during as many of the face-to-face components as I could to meet the students in lunch and coffee breaks for informal discussion about the course. This proved to be of a great help in gaining better understanding of their situations, difficulties and things that were going well.

4.4.2.2 Lecturers interviewed

In January 1993 at the end of the first face-to-face course, four lecturers were interviewed. The sample was randomly selected. This was to get information on their plans for the coming course and to get their views on the preparation of the course. All these interviews were tape-recorded and transcribed later. The duration of each of them was about 40 minutes.

In January 1994 at the beginning of the third term, six lecturers who had taught on the final segment of the DE-course were interviewed. The purpose was to gather information about their experience after their course. These interviews lasted for 30 to 60 minutes and were all tape-recorded and extracts taken from them later.

4.4.2.3 Other interviews

In January 1993, the chief librarian and the counsellor were interviewed to gather information on what kind of help and support they planned for the students. The director

of the course was also interviewed for information on the course's preparation and planning. All these interviews were tape-recorded and lasted for 30 to 60 minutes.

In April 1994, three directors of education in rural regions were interviewed by telephone. This was to get their opinions on the course and how they saw it in connection with the schooling in their regions.

In July 1995, the director of the course was interviewed to get his opinions on how the course was running.

In January 1996, the new director of the course was interviewed. This was to get his opinions on the course and to find out if he planned any changes. Points from this interview were also used in the questionnaire that was administered to the lecturers. In this interview, notes were taken directly on a laptop computer, which proved to save time.

The teaching practice co-ordinator was also interviewed in January 1996. The purpose of this interview was to get information about the students' practice training, find out about any differences in their training from the traditional students and get ideas for questions in the lecturers' questionnaire. In this interview, like in the previous one, notes were taken directly on a laptop computer.

4.4.3 Students diaries

From June 1993 to January 1994, one student kept a diary of activities concerning his/her study. From January 1994 to June 1994, two students kept diaries. One student kept a diary from January to June 1996. The purpose of this was to get information about their daily routines, workloads etc., to confirm former findings and to get ideas for questions in later questionnaires and interviews. It can be seen from this diary that the students took it very seriously: "Well Jón, now I have a problem. What film do you think is on in the TV now? A film about Elvis Presley with Kurt Russell as the 'king'. Should I choose the diary and you or the 'gods'? Well the film will probably be on again and I can listen to the songs while I write the diary."

4.4.4 Post-lists

Many post-lists were used during the course according to the modules the students were attending. The communications on the post-lists were used to get information on the communication during the distance phases of the course. The frequency, content, communication form etc were all important indications of the use made of this

technology. They also gave ideas of questions for the interviews and questionnaires. As a member of all the post lists, I was able to follow the discussions. All the content on the post lists was collected.

4.4.5 Logons

Right from the beginning, the students' logons and logoffs were collected into log-files by a programme that checked once a minute all during the course. From these log-files it can be seen when the students logon and off and therefore the duration of their access to the Internet. Not all students' usage was recorded all during the course. At the beginning, Ísmennt had three main computers in Kópasker, Akureyri and Reykjavík. In the middle of the course, the computer at Kópasker was closed down and all its users were moved onto the computer in Akureyri. Soon after that, Ísmennt set up computers in two new places Ísafjörður and Vestmannaeyjar. The users who were able to phone these computers at local cost were moved. The programs recording the students' usage were not moved instantly to the new computers so a gap resulted in some students' log-files. Therefore, only the full log-files, which numbered 32, were used in the data processing. It was decided not to count and measure the lecturer's logons mainly for two reasons. Some of them had a direct open access to the Internet all the time and therefore used the Internet to some extent for other purposes such as international contacts. Therefore, the logons would not give any idea of their use of the Internet in connection with this course.

4.5 Processing of data

As can be seen in section 4.4.4 and 4.4.5 some of the data was originally computer based. Most of the other data was transformed to computer-based format. All interviews that were tape-recorded were transcribed and all the questionnaires were computed in SPSS. As I was sometimes in Akureyri sometimes in Reykjavik and sometimes in Glasgow during this study, I decided to copy the data onto the Internet to have access to it in all places (see beginning of chapter 4). At first, I used SPSS directly on a Unix machine on the Internet, which was very convenient except it was not as user friendly as on a desktop computer. At a later stage, I used a laptop both for taking notes in some of the interviews and to use on my later travels between Iceland and Scotland.

The interviews were mainly used to gain a deeper understanding of the interviewees' situation and to get a better picture of the course. They were also used in order to decide

what questions to ask in the questionnaires and to get more information on some answers from the questionnaires. The interviews also led the way in identifying the themes.

The diaries were used in a similar way as the interviews. Reading them, I was able to understand better the students' situation and as some of them were sent to me by E-mail I got that student's feelings synchronised to the course.

The post lists were used mainly in the same manner as the diaries and interviews, to gain a better and deeper understanding of the students' situation. As earlier stated I was on all the course's post lists. Some of them were for students and lecturers, some for lecturers only and some for students only. I did not participate in the communications but my existence there was known to everyone.

All the data from the questionnaires was transferred to SPSS. Frequency lists were made for helping making decisions about further analysis. The three attributed questionnaires were merged in SPSS for individualized analyses. The log-files of the Internet usage were transferred to SPSS for analyses.

Questions were selected for crosstabulations (see Table 6 and Table 7) both within questionnaires and between questionnaires. This was done in order to search for similarity groups.

Table 6

Crosstabulation
A table displaying the number of cases falling into each combination of the categories of two or more categorical variables. In addition to counts, the table may display percentages, expected values, and residuals.

(SPSS – Help 1998)

In many cases where it was appropriate, the variables in the questions were recoded in order to give only two answers to sharpen opinions and views.

Table 7

Crosstabs.

The Crosstabs procedure forms two-way and multiway tables and provides a variety of tests and measures of association for two-way tables. The structure of the table and whether categories are ordered determine what test or measure to use.

Crosstabs' statistics and measures of association are computed for two-way tables only. If you specify a row, a column, and a layer factor (control variable), the Crosstabs procedure forms one panel of associated statistics and measures for each value of the layer factor (or a combination of values for two or more control variables). For example, if GENDER is a layer factor for a table of MARRIED (yes, no) against LIFE (is life exciting, routine, or dull), the results for a two-way table for the females are computed separately from those for the males and printed as panels following one another.

Example. Are customers from small companies more likely to be profitable in sales of services (for example, training and consulting) than those from larger companies? From a crosstabulation, you might learn that the majority of small companies (fewer than 500 employees) yield high service profits, while the majority of large companies (more than 2500 employees) yield low service profits.

Statistics and measures of association. Pearson chi-square, likelihood-ratio chi-square, linear-by-linear association test, Fisher's exact test, Yates' corrected chi-square, Pearson's r, Spearman's rho, contingency coefficient, phi, Cramér's V, symmetric and asymmetric lambdas, Goodman and Kruskal's tau, uncertainty coefficient, gamma, Somers' d, Kendall's tau-b, Kendall's tau-c, eta coefficient, Cohen's kappa, relative risk estimate, odds ratio, McNemar test, Cochran's and Mantel-Haenszel.

(SPSS – Help 1998)

Chi-square test, (Gall 1989:755) "A nonparametric test of statistical significance that is used when the research data are in the form of frequency counts for two or more categories" was used for significance (see also Table 8). Search was made for crosstabs with Pearson Chi-square significant value not higher than 0,05.

Table 8

Chi-Square (Crosstabs)

Tests the hypothesis that the row and column variables are independent, without indicating strength or direction of the relationship. Pearson chi-square, likelihood-ratio chi-square, and linear-by-linear association chi-square are displayed. For 2x2 tables, Fisher's exact test is computed when a table that does not result from missing rows or columns in a larger table has a cell with an expected frequency of less than 5. Yates' corrected chi-square is computed for all other 2x2 tables.

(SPSS – Help 1998)

5 Main findings

When and How to Eat

Always rise
to an early meal,
but eat your fill before a feast.
If you're hungry
you have no time
to talk at the table.
(Hávamál, 1995:48)

In this chapter, the main findings of the research are described in words and graphs. The chapter is divided into sections according to the research questions in section 4.2. It is based on findings from the questionnaires, interviews, diaries, post-lists and the log-files from the Internet described in section 4.4. Graphs from each of the questionnaires have different background colours and there is an indication in the bottom right corner of each graph from which questionnaire the information is derived. The students' questionnaire administered in January 1993 has a pink background and is marked S01.93. The students' questionnaire administered in April 1994 has a blue background and is marked S04.94. The students' questionnaire administered in January 1995 has a yellow background and is marked S01.95. The students' questionnaire administered in September/October 1996 has a green background and is marked S09.96. The lecturers' questionnaire administered in April 1996 has a brown background and is labelled L04.96. Other graphs such as graphs combined from more than one questionnaire and graphs from the Internet log-file have a grey background, if any. All crosstabs are shown in white and light blue but marked the same way as the other graphs. Section 5.1 'Preparation and administration of the programme' is in coherence with section 4.2.1. Section 5.2 'Teaching and lecturing on the course' is in coherence with section 4.2.2. Section 5.3 'The learning on the course' is in coherence with section 4.2.3. The last section of this chapter 5.4 'Findings additional to the research questions' contains additional findings to the ones relating specifically to the research questions.

5.1 Preparation and administration of the programme

This section covers the overall planning and running of the DE programme. It is based on the research questions in section 4.2.1. Each research question makes a separate subsection and the research question is worded in italics at the beginning of each subsection.

5.1.1 Preparation of lecturers for this new task

How did KHÍ prepare the lecturers for this new task?

In the preparation phase of the course, lecturers from Jordanhill College of Education in Scotland and lecturers from the UK Open University were invited to run short seminars or courses in KHÍ. In many interviews, lecturers at KHÍ stated that this had been a great help to them in the task ahead but some said it was not enough or as one lecturer said 'It was good what was offered but it was not much'. The seminars were optional for all lecturers at KHÍ but some of those that attended these seminars said that they ought to have been compulsory for all who were about to become distance lecturers.

> *KHÍ offered all the lecturers in-service courses before the DE programme started. At my opinion, these courses ought to have been compulsory. I was very pleased with the course run by the two lecturers from Jordanhill College of Education. It was practical and I used it a lot when I started my distance teaching. (Lecturer 02.1994).*

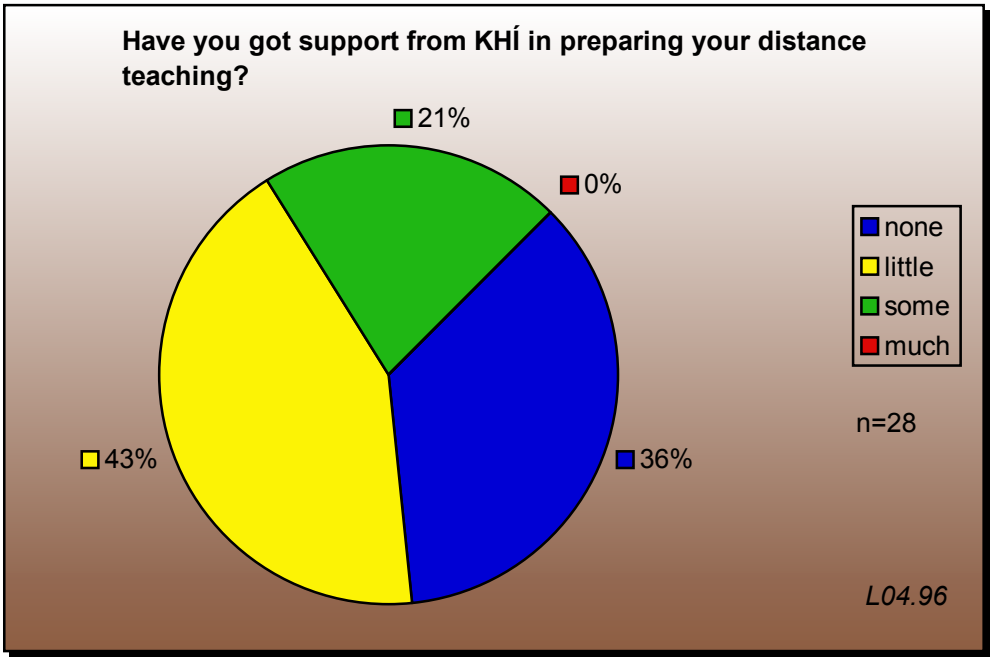

Figure 5.1-1

In the April 1996 questionnaire, the lecturers were asked if they had got any support from KHÍ in preparing their distance teaching. As can be seen on Figure 5.1-1 no one stated to have had much support and 36% none at all.

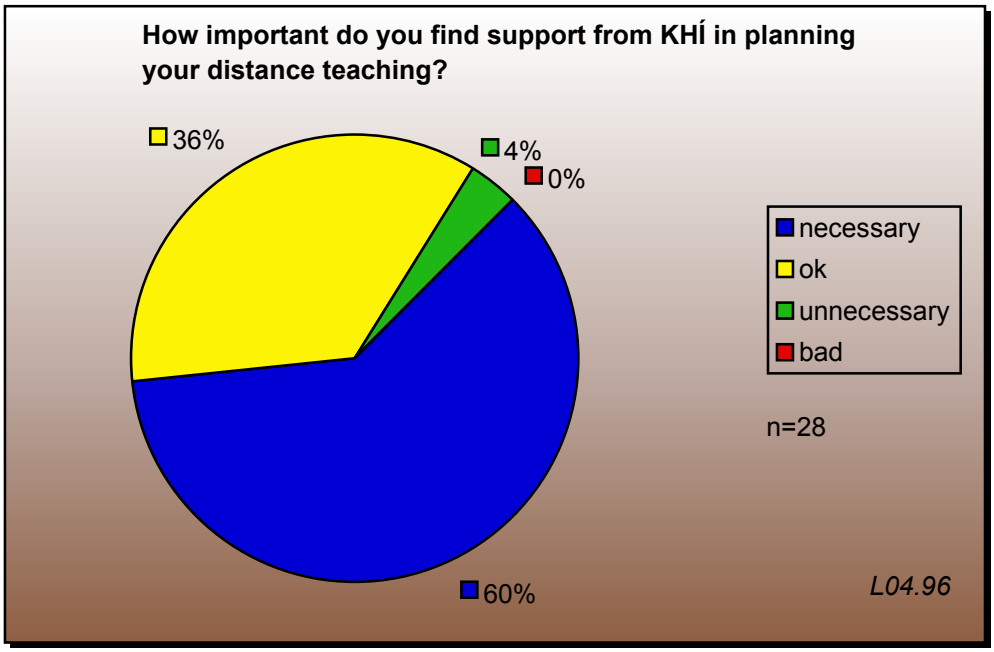

Figure 5.1-2

On Figure 5.1-2 it can be seen that 60% think it's necessary to get some support in planning their distance teaching and only 4% think it is unnecessary.

5.1.2 Entrance requirements

Are the entrance requirements for the students different in any way from that on the traditional course?

As can be seen in section 2.3.4 the entrance requirements for the distance course were the same as for the traditional face-to-face course. The only difference was that people from rural areas should have priority in entering the course. It must be borne in mind that although the entrance requirements were the same the group was different from the one on the traditional face-to-face course. The distance students were older and some of them had long teaching experience as can be seen in section 5.3.4.

5.1.3 The administrative situation of the course within the KHÍ's structure

What is the administrative situation of the course within KHÍ's structure?

Although the DE-course was organised to be comparable to the traditional face-to-face course and had most of the same teaching staff it had its special director. This caused it to be looked upon as a different scheme or project rather than a different way of delivering the B.Ed. programme. In interviews with the course director and others among the KHÍ's staff it was pointed out that this sometimes caused problems but at the same time it had its advantages. In some cases, it was easier to get special budgets for the programme but on the other hand, it sometimes was not considered as an ordinary B.Ed. programme. The name of it – Fjarskóli (School of distance education) – may also have encouraged this to be looked upon as almost an institution within the College. One lecturer said in an interview in February 1994 "The 'school of distance education' has its own director but there are no lecturers on contract there." In an interview taken in January 1993 the director of the course said: "I am the director of the course but that position is nowhere to be found in the administrative structure of KHÍ." In the same interview he said: "What I consider important is to make the administrative structure clearer. That would have made this task easier for me."

5.1.4 Achievement of aims

Will the educational aims of the course be achieved?

As described in section 2.3.4 one of the main reasons for offering this course was the shortage of qualified teachers, mainly in rural areas. This is dealt with in more detail in section 5.3.10. One of the fundamental questions is whether this distance education is as

good an education as the traditional method. It would be possible to compare the grades of the distance students and the ones in the traditional face-to-face course. As the two groups are so different, (see section 5.3.4) this is not likely to give the correct picture.

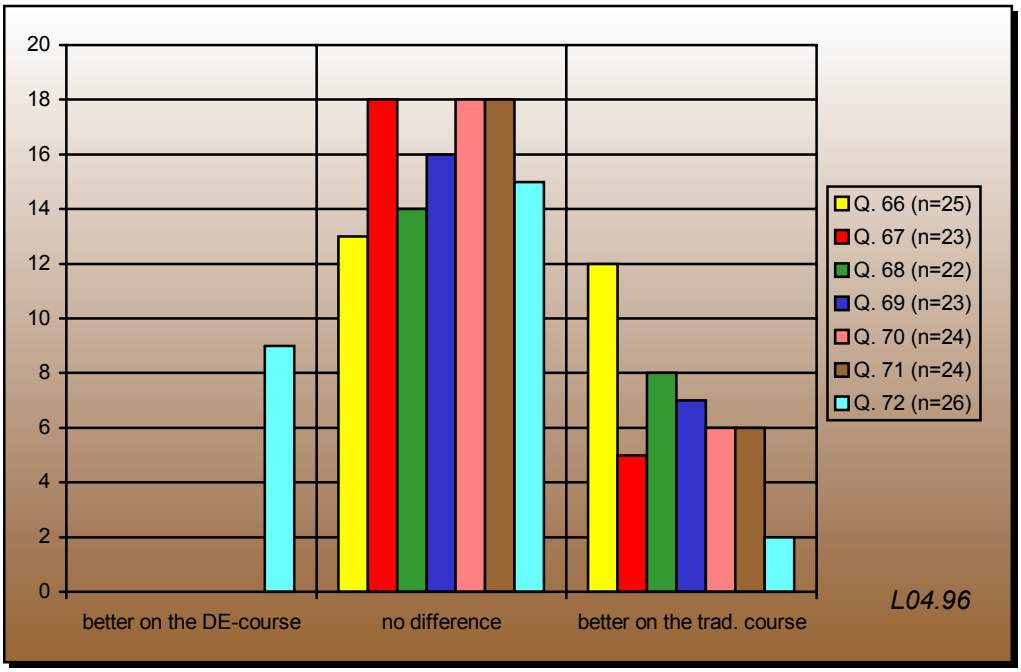

Figure 5.1-3

In the lecturers' questionnaire in April 1996, seven of the aims in the University's curriculum were listed.

The aims that were listed are:

Q. 66. To prepare future teachers to work with children and adolescents aged 6-16 during their formative years.

Q. 67. To introduce teacher trainees to different ideas about individual differences, development and abilities and the relationship between these factors.

Q. 68. To provide teacher trainees with knowledge and skills to undertake teaching from beginners' level up to the level of adolescents.

Q. 69. To prepare trainees for teaching in mixed ability classes.

Q. 70. To provide practice in schools and to introduce teacher trainees to the teaching of children and adolescents, their social life, environment and circumstances.

Q. 71. To provide insight into the characteristics of Icelandic culture.

Q. 72. To enable teacher trainees to establish a link between the school and the pupils' home district, its economy, homes, history, art and institutions.

The lecturers were asked whether they thought these aims were better achieved on the distance B.Ed. course, the traditional course or if they thought that there was no difference. As can be seen on Figure 5.1-3 a majority of the lecturers thought that all of the aims were equally well achieved on both courses. In all except one, the rest thought that the aims were better achieved on the traditional course.

The questions about the aims were crosstabulated with many other questions in the lecturers' questionnaire from April 1996. No significant difference could be found in the lecturers group regarding gender, age or experience in the use of the Internet etc.

5.1.5 Distance education techniques

What kind of distance education techniques will be used on the course?

One of the characteristics of distance education as described in section 3.1 and 3.2 is the use of different techniques for communication. Over the years, various methods have been used in interactive communication in distance programmes. The use of ordinary mail is the oldest communication technique used in modern distance education. Then comes the use of telephone, radio and television. In the B.Ed. DE-course offered by KHÍ, various methods were used for communication. As can be seen in section 2.3.4 the main method to be used for communication on the DE-course was the Internet, mainly E-mail. For that purpose, KHÍ made an agreement with Ísmennt for all of the students on the B.Ed. distance course to get access to the network (see section 1.6).

5.1.6 Support and consultation for the students

What kind of support and consultation do the students get from none teaching staff of KHÍ?

In a distance education programme like this it is very important that all the wheels are geared together both teaching and the other forms of support and help that the students need. On this course, the support and help can be divided into three, the library, the counselling and Ísmennt, the Educational Network. Staff from all these three sectors took part in the preparation of the course. Ísmennt's staff gave a short course on the first face-to-face component at the beginning. KHÍ and Ísmennt had also made an agreement that Ísmennt's staff would visit all the students when they got the Internet connection. The

student counsellor was in charge of a short course at the beginning of the programme introducing learning techniques and introducing the service and help the students could expect from the student counsellor. The librarians also gave a short course at the beginning introducing the role of the library and what service the distant students could expect there.

5.1.6.1 Library

Not only was this distance course a new experience for the teaching staff but also for other staff at KHÍ. The library has always played a big role in Universities and by many considered to be the heart of each University. The librarians at KHÍ tried to cope with this new situation of having a number of students scattered all around the country. This was met by sending the students the books they needed and also by helping them find books in local libraries. In an interview in January 1993 the chief librarian said:

> *The course I was in charge of was about library introduction. This is what we offer all new groups of students starting in the College, undergraduate students, and postgraduate students. They all get an introductory course on the library and its service. We take into account that this group of students can use the library both if they are here on the campus and at a distance. This time I emphasised especially how they can use the library if they live in for example Þórshöfn or Tálknafjörður. First and foremost it was by teaching them to use Gegnir[1]. (Librarian 01.1993)*

In section, 5.3.6.1 there is more to be found about the library service.

5.1.6.2 Student counselling

In distance education, counselling and support is very important. The student counsellor took part in the preparation of the course and in preparing the students for the task of being distant learners. In a January 1993 interview the student counsellor said:

[1] Gegnir is a jointly used online library catalogue of all the main libraries in Iceland.

What I see mainly as my task is to see to that this group gets personal guidance and support. I have seen in literature about distance education that one of the main problems these students face is the isolation. It has been my major concern how to prevent these individuals from facing this isolation that has so often caused students' dropout. This was my main emphasis in the six lesson course I gave at the beginning of the programme. (Student counsellor 01.1993)

There is more to be found on student counselling in section 5.3.6.2.

5.1.6.3 Ísmennt

For most of the duration of the course Ísmennt was the only provider of Internet access for educational use in Iceland outside University campuses. KHÍ and Ísmennt made an agreement before the course started that Ísmennt would provide all the students with dial up access to the Internet. According to that agreement, Ísmennt was going to provide help and support to the students in establishing the Internet connections (see section 1.6). Ísmennt gave the students a course in the use of the network when the course started in January 1993. The lecturers got also support from Ísmennt's staff and in interviews they generally were pleased with the support and help they got there. In January 1993 one lecturer said: "Just by sending E-mail to Ísmennt's staff, they seem to be ready to solve ones problem around-the-clock."

Ísmennt's part in this distance programme is described in more detail in section 5.3.6.3.

5.2 Teaching and lecturing on the course

Each research question from section 4.2.2 makes a separate section here and the research questions are shown in italic at the beginning of each section.

5.2.1 Lecturer's preparation

How did the lecturers prepare on top of what was provided by KHÍ?

It can be seen from interviews with the lecturers that their preparation was different and their former experience of distance education or/and correspondence education was also different if any. Some of them had some experience of correspondence education using ordinary mail and telephone. Others had experience of computer communication but no

experience of distance or correspondence education. In January 1993, one lecturer said “I have been using computer communication since 1985 when I was a postgraduate student abroad”. Another lecturer said also in January 1993 “I have a little bit of experience of distance or correspondence education using ordinary mail and telephone”. In interviews and questionnaires, some stated that they had bought books and magazines about distance education.

Crosstabulation

Count

				Have you read or attended computer conference on distance education last 12 months?		
				not at all	some	Total
How many books on distance education have you read last 12 months?	none	How many articles on distance education have you read last 12 months?	none	3	3	6
			one or more	4	2	6
		Total		7	5	12
	one or more	How many articles on distance education have you read last 12 months?	none	1		1
			one or more	4	10	14
		Total		5	10	15

L04.96

Figure 5.2-1

In the April 1996 questionnaire, the lecturers were asked how many books, how many articles and how many computer conferences about distance education they had read during the previous year. Crosstabulating these three questions (see Figure 5.2-1) shows that 3 say that they had neither read any books, articles nor attended computer conferences. On the other hand, 10 state that they had read one or more books, one or more articles and one or more computer conferences about distance education during the last year. It can be seen from interviews, questionnaires and activity on the post lists that many of the lecturers put great effort into preparing and carrying out this new task.

5.2.2 Forms of distance teaching

What form of distance teaching do the lecturers use?

The form of distance teaching used by the lecturers was different. As described in section 4.1.1 the course was divided into face-to-face and distance components. The face-to-face components lasting for two or three weeks took place at the KHÍ campus in Reykjavík at the beginning of each term. There the students got an introduction to the upcoming term's modules. They got some lectures, handouts, books etc. for the term ahead. Some of the lecturers handed out all the learning material but others sent it by mail or E-mail as the term went on. The rest of each term was totally distance based where the students and lecturers depended mostly on computer communication. As mentioned in section 4.1.1 the same books were used on the distance course as on the traditional face-to-face course. Many of the lecturers made some learning material available in the form of reading guidelines with key questions on the books and recommendations on further reading (see section 5.2.4). As can be seen in section 5.2.3 E-mail was most widely used as a means of communication between lecturers and students. Many of the lecturers were in good E-mail contact with the students during the distance component of the course. Some of them divided the students into working or co-operation groups on the Internet (see section 5.4.1). In that way, they developed interactive communication, which is of great importance in distance education according to Keegan, Garrison and Shale and others (see section 3.2). On the other hand, some of the lecturers hardly used any distance teaching at all. They considered this more as a self-study. In an interview one of the lecturers said:

> *I consider this as self-study. We tried to –the students were here for two weeks– get to know them. In my opinion, the students should take the first step in having contact. My experience, which is very little, is that it is difficult to decide when to have contact with the students. They should choose. I don't want to force them to be in contact. (Lecturer 01.1993)*

There was some difference in understanding of whether this was a distance or self study course or a mixture of both. This lack of mutual understanding caused some problems. Some lecturers put a lot of work and effort in their communication with the students in the distance components at the same time as others looked on this more as a self-study. Some of the students also got very annoyed at not getting any attention from some of the lecturers.

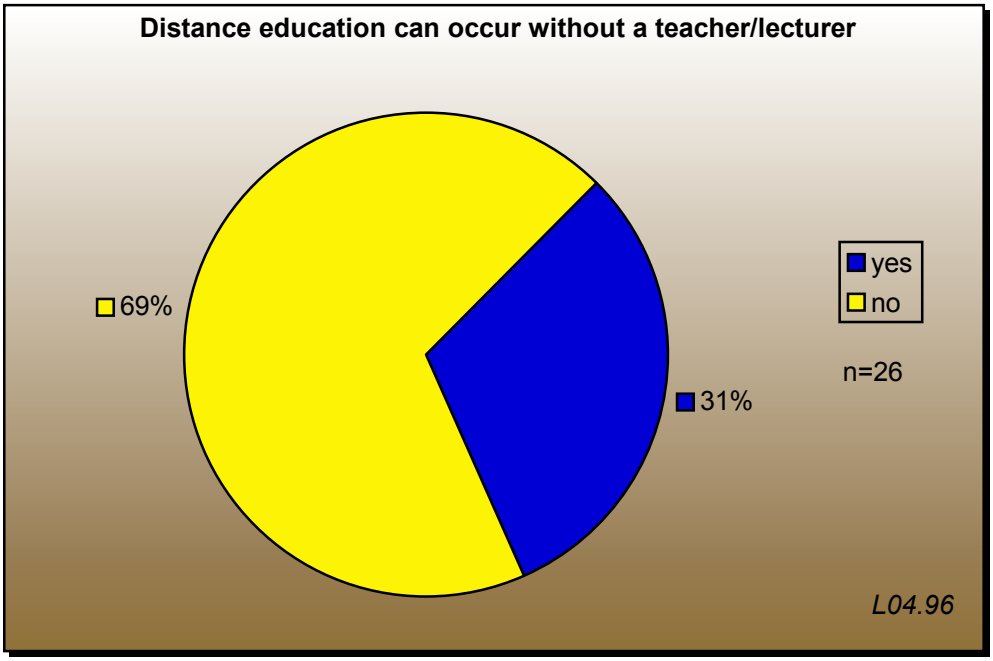

Figure 5.2-2

In the lecturers' questionnaire there were a few questions designed to get a better understanding of how the lecturers defined distance education. As can be seen on Figure 5.2-2 there is not a common understanding about what distance education is when 31% of the lecturers who answered the questionnaire said that distance education could take place without a lecturer or teacher.

When crosstabulating the question on Figure 5.2-2 with other questions in the April 1996 lecturers' questionnaire no significant differences were found.

5.2.3 Communication with the students

How do the lecturers communicate with the students?

In the lecturers' questionnaire in 1996, they were asked to estimate the extent to which they used various ways of communicating with the students: face-to-face, E-mail, telephone, ordinary mail and fax.

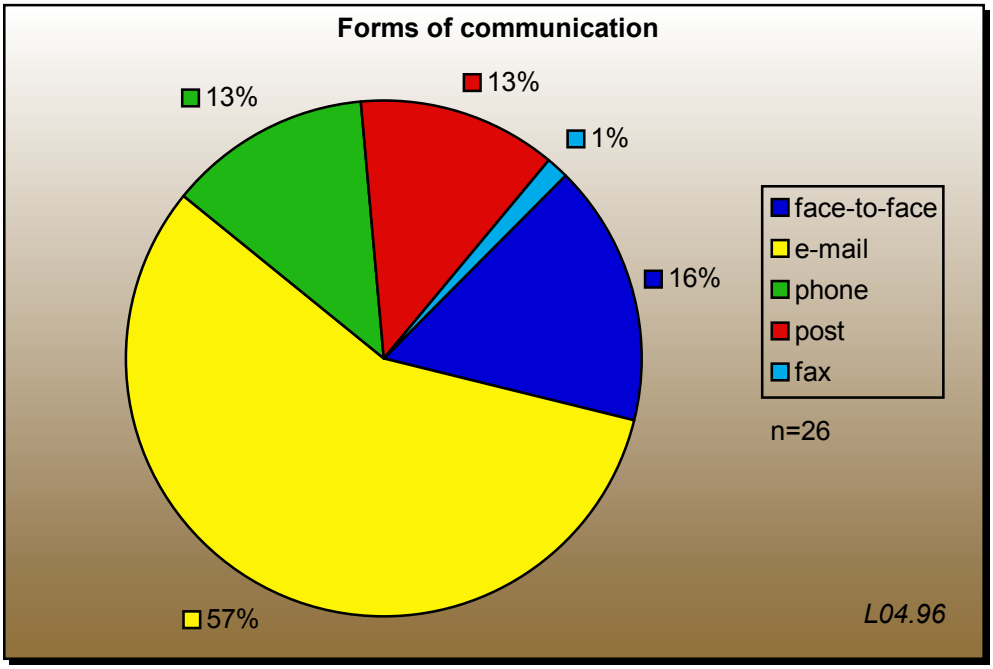

Figure 5.2-3

Figure 5.2-3 shows the cumulative percentages of all the lecturers' answers. There it can be seen that 57% of all communications are by E-mail. If the face-to-face communications, which mostly took place on the face-to-face components, are left out, 68% of the remaining communications are by E-mail.

The students need for communication and dialogue between the face-to-face courses was very strong. This can be seen from questionnaires and interviews with the students as well as from their diaries.

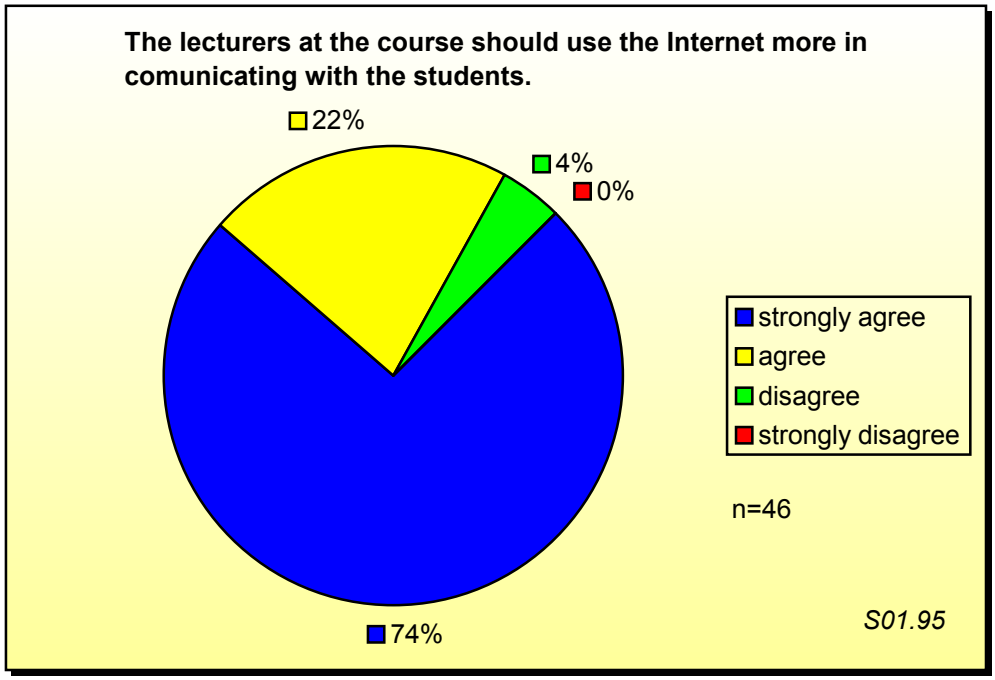

Figure 5.2-4

From students' answers to questionnaires, interviews, post-lists and diaries all during the course it can be seen that they complained about lecturers not responding to them by E-mail fast enough or not at all. In an early interview one of the students said: "It happens too often that the lecturers do not answer E-mails we send them. I for example sent four E-mails to one of them and got only a reply to only one after a week." In the interviews in January 1994 most of the students said that communications with the lecturers were becoming better and more frequent. In January 1994 interview one student said: "The lecturers are using the computer communication more but still not enough". Still in the 1995 questionnaire 74% of the students strongly agreed that lecturers should use the Internet more for communication (see Figure 5.2-4).

There can be several reasons for the students complaining about little communication with the lecturers.

- One could argue that it should be considered normal for students to complain of too little communication with lecturers rather than too much.
- The group of distance students amounted to more than three times the number planned in the beginning (see sections 2.3.4 and 4.3).
- Some of the lecturers looked at this as a self-study rather than distance learning (see section 5.2.2).

- To most of the lecturers this was a new mode of teaching and they were hardly prepared for it.

5.2.4 Production of learning material

Do the lecturers produce any learning material?

The production of extensive new learning material was not evident in connection with the DE-course. The students used all the same books as on the traditional face-to-face course. The main production of learning material was what can be called 'teaching letters' which were reading guidelines, questions and other help regarding the books the students were using and suggestions on further readings. Some of the lecturers put a lot of work into producing these and sent them to the students at intervals as each term went on. In February 1994 one lecturer said: "I have used most of my preparation time to produce reading or study guidelines for the students. They need completely different guidance from the students on the traditional face-to-face course." At a later stage, some lecturers put these guidelines and reading help on the web. At least one video was made in a module about art and craft.

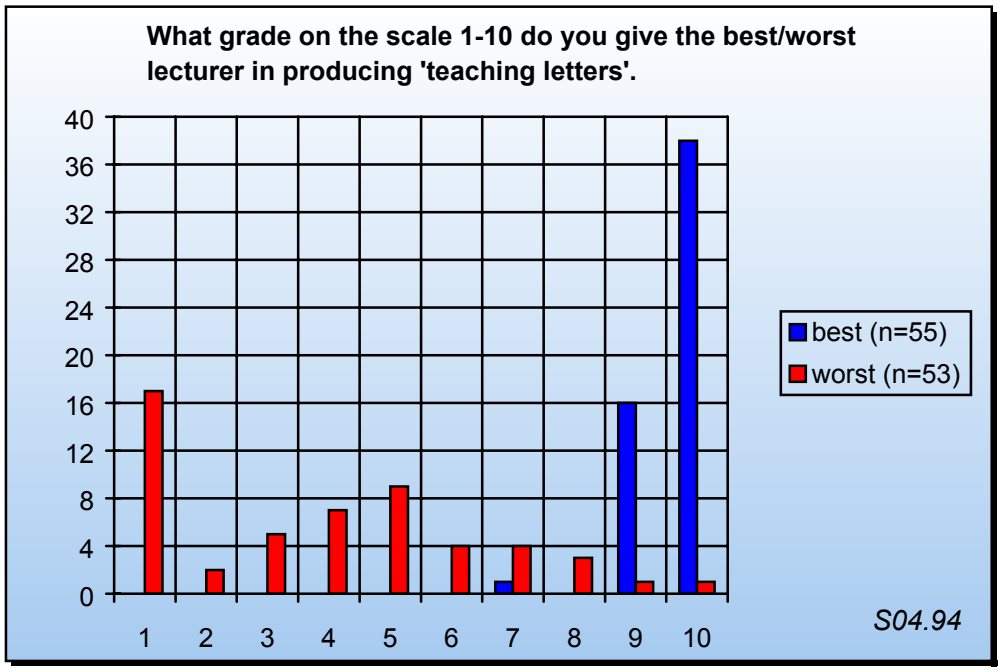

Figure 5.2-5

In the 1994 questionnaire, the students were asked to grade the lecturers who were best and worst in providing the teaching letters. On Figure 5.2-5, which is a combination of these two questions, it can be seen that 38 students gave the lecturer they thought had

made the best teaching letters the grade 10. On the other hand, 17 gave the lecturer they thought had made the worst letter a grade 1.

5.2.5 Suitability of individual modules for distance teaching

How are the individual modules/subjects suitable for distance teaching?

In the April 1996 questionnaire, the lecturers were asked how suitable the modules on the course were for distance teaching.

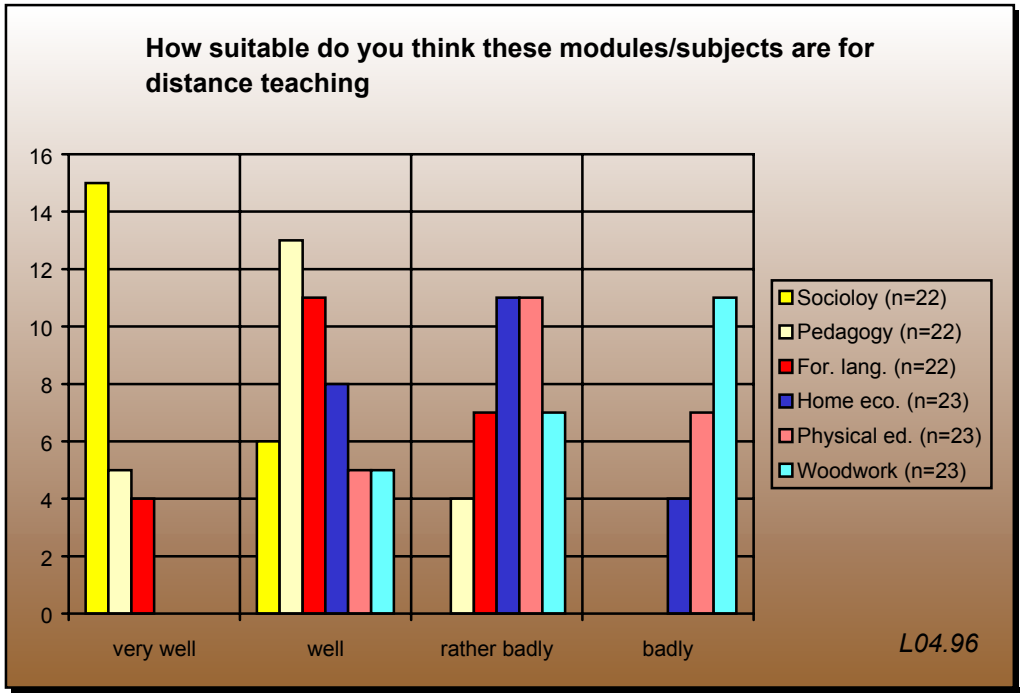

Figure 5.2-6

On Figure 5.2-6, six of the modules or subjects are listed. The trend is that the academic subjects are judged to be better suited to distance teaching than the vocational subjects are. In February 1994 a lecturer in art said: "According to what I know about the technical possibilities there is no problem in teaching my subject over the Internet. The problem is that neither the College nor the students have the technical equipment needed".

5.2.6 Lecturers' use the of computer communication

How do the lecturers use the computer communication and how effective is it?

As mentioned in section 2.3.4 it was decided to use the Internet for the main means of communication between lecturers and students. Neither the students nor the lecturers had

much experience in computer communication when the course started and many of them none at all.

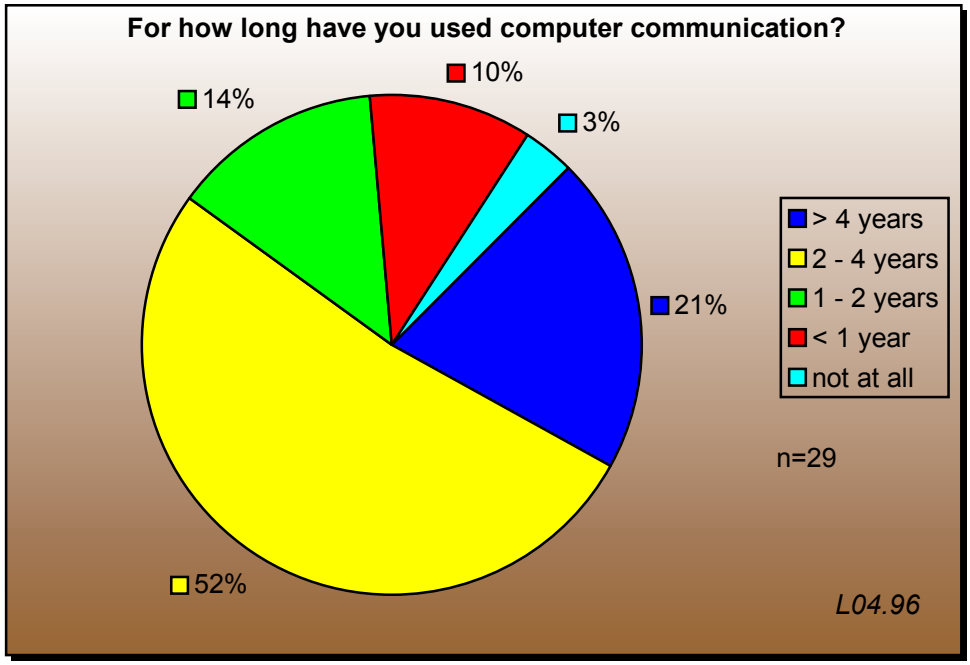

Figure 5.2-7

In the April 1996 questionnaire, (see Figure 5.2-7) it can be seen that 73% of the lecturers who answered the questionnaire said that they had used computer communication for two years or more while 13% of them had used it for less than a year. This shows that many of them had begun using computer communication during the period of the B.Ed. distance course.

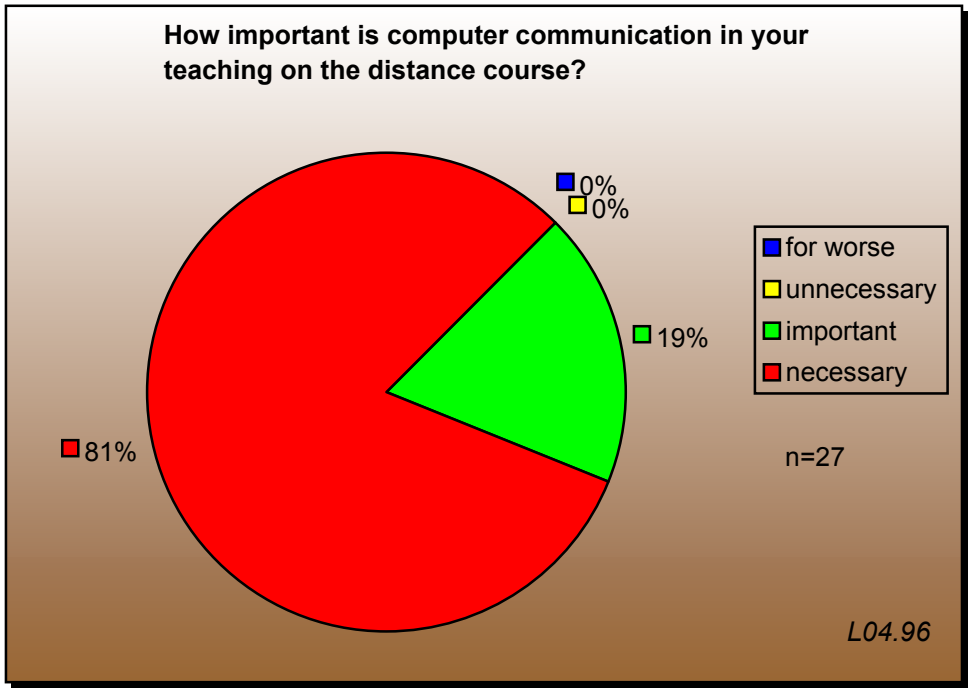

Figure 5.2-8

Figure 5.2-8 from the April 1996 questionnaire shows how important the lecturers see the computer communications. As much as 81% of them see it as 'necessary' for their distance teaching on the course and the rest or 19% say it is 'important'.

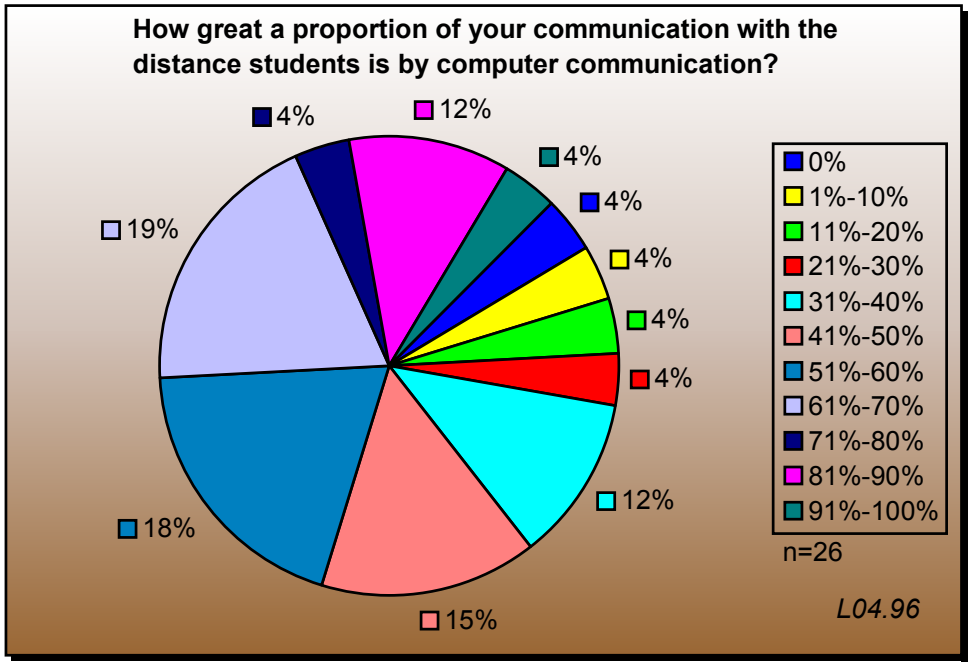

Figure 5.2-9

Figure 5.2-9 shows that little more than half of the lecturers say that 41% - 70% of their communication with the students is by computer communication.

The lecturers were divided into two groups according to the question shown on Figure 5.2-9 and the question was then crosstabulated with other questions in the April 1996 questionnaire.

Crosstabulation

Count

		Gender		
		male	female	Total
How great a proportion of your communication with the distance students is by computer communication?	> 50%	15	3	18
	<= 50%	4	7	11
Total		19	10	29

Pearson Chi-Square value significant at 0.010 **L04.96**

Figure 5.2-10

It can be seen on Figure 5.2-10 that there is a significant gender difference in the lecturers' use of computer communication where the male lecturers seem to be using computer communication more than the female lecturers.

Crosstabulation

Count

		KHI should put more emphasis on distance education in the future.		
		agree	disagree	Total
How great a proportion of your communication with the distance students is by computer communication?	> 50%	16		16
	<= 50%	5	5	10
Total		21	5	26

Pearson Chi-Square value significant at 0.002 **L04.96**

Figure 5.2-11

The ones who use computer communication more think that KHÍ should put more emphasis on distance education in the future (Figure 5.2-11).

Crosstabulation

Count

		How much have you used ordinary mail on the distance course?		
		considerably	little	Total
How great a proportion of your communication with the distance students is by computer communication?	> 50%	4	13	17
	<= 50%	8	3	11
Total		12	16	28

Pearson Chi-Square value significant at 0.010 **L04.96**

Figure 5.2-12

Not surprisingly, the lecturers who use computer communication more tend to use ordinary mail less than the other group as can be seen on Figure 5.2-12.

5.2.7 Effects of non face-to-face communications

What effects do the non face-to-face communications have?

This is one of the things that was not looked much into but can be an exciting study on its own especially with regard to teacher education. As the teaching profession has so much to do with the relationship between individuals, some of the lecturers were concerned about that in terms of distance pedagogy of the course and its effect on these students' ability to make good face-to-face interactions.

> *The main disadvantage with this course is that one is not so much in personal contact with the students. Because of the non face-to-face communication, the students miss an important factor in teacher education. To be at the same place at the same time as the lecturers and other students is in my opinion very important in teacher education and these distance students will miss that. (Lecturer 01.1993).*

See also section 5.3.3.

5.2.8 Advantages and disadvantages of distance teaching

What do the lecturers see as advantages and disadvantages of distance teaching compared to the traditional teaching?

In the interviews and questionnaires, there is a common opinion among students and lecturers on the advantages and disadvantages of distance education. The advantages seem to be more for the student than for the lecturer (see also section 5.3.7). The main advantages for the lecturer seem to be the freedom to choose the working hours, a new perspective on teaching and learning, a restructuring of the course and thinking in a new way. Here are parts of interviews with three lecturers from February 1994.

> *The main disadvantages of distance education are lack of face-to-face communication and also that the process of correcting misunderstanding that can occur is much slower. The main advantages are that the students can stay at home. This is a pure political issue of keeping all the country populated. I do not see many advantages for the lecturer other than we get a new perspective – another view of our job. It is an advantage that our working hours are more flexible. (Lecturer 02.1994)*

> *The advantages of distance teaching are the flexibility of working hours. The disadvantages are the limitation of getting the messages across to the students. The students work more independently and the interaction is less than in the face-to-face teaching. The lecturer does not know if the student has learned or understood. (Lecturer 02.1994)*

> *The disadvantage in distance education is that the lecturer is not able to interfere while the student is learning. There are students out there doing something wrong without the lecturer seeing it. The advantages are that the lecturer needs to make some learning material and provide clear instructions. (Lecturer 02.1994)*

In addition to what was recorded in interviews, this opened new possibilities for KHÍ to get part-time lecturers regardless of their whereabouts and at the same time opened the possibilities for KHÍ's lecturers to be situated in different places. Right from the beginning there were people lecturing on the course living in other places than Reykjavík. At a later stage KHÍ's lecturers started using the advantage of being able to be situated in other places both in Iceland and abroad for shorter or longer periods of time without it

disturbing their lecturing on the course. This was not especially looked into in this research but is an interesting and worthwhile study of its own.

5.3 The learning on the course

Each research question from section 4.2.3 is made a separate section here and the research question is worded in italic at the beginning.

5.3.1 Choice of distance learning

Why did they choose this way of learning?

In the January 1993 questionnaire, the students were asked about the reasons for choosing the distance course rather than the traditional face-to-face one. Exploring the figures below it is necessary to bear in mind that the aims of the course were partly to give people in rural areas the opportunity to get teacher education without moving from home and to give unqualified teaching staff the opportunity to get a teaching qualification (see section 1.5).

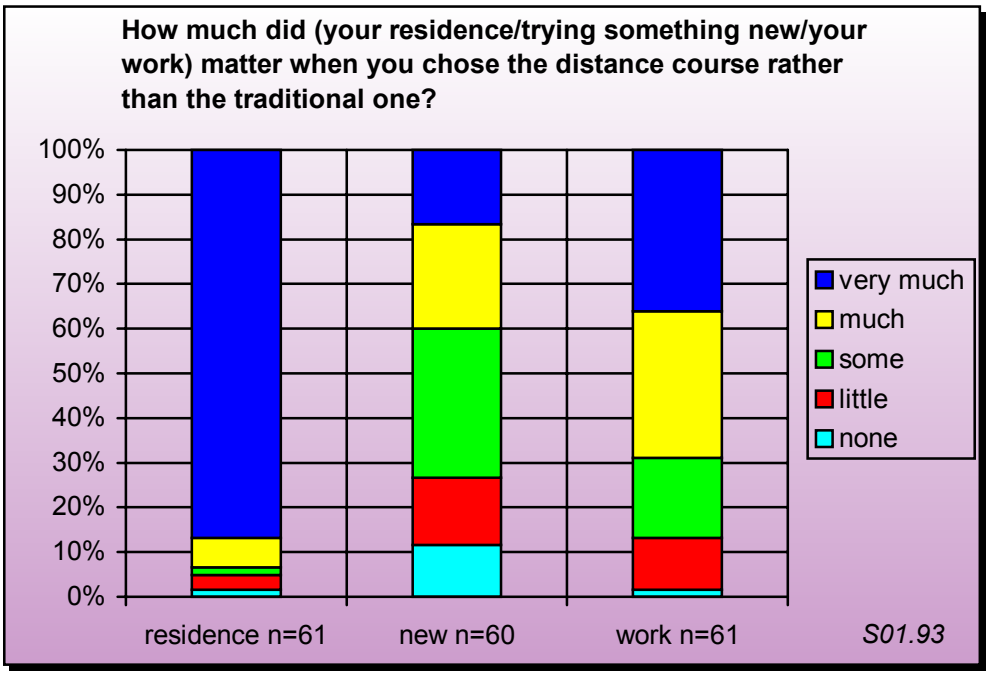

Figure 5.3-1

As can be seen on Figure 5.3-1, which is from the January 1993 questionnaire the main reason for the students' choice of the distance course, is their place of residence. Second

comes the advantage of being able to keep on working and in third place ‘to try something new’.

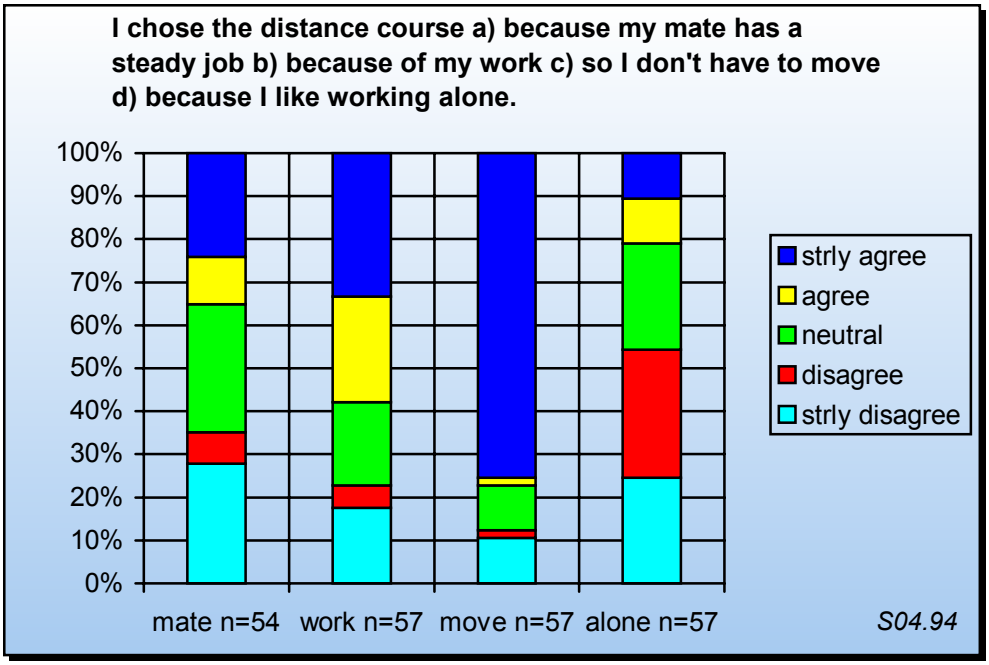

Figure 5.3-2

In the 1994 questionnaire, (see Figure 5.3-2) the students were again asked about their reason for choosing the distance course. Again, what weighed the heaviest was the place of residence or not having to move. As in the 1993 questionnaire the ability to work and study at the same time was in second place. In third place was the fact that their mate had a steady job and this is, in a way, another form of the first mentioned reason, ‘not having to move’. This does not only apply to Iceland as some of the students were living in other countries during the course.

5.3.2 Suitability of distance education

Whom does distance education suit best and why?

This was not specially looked into in this research. Section 5.3.1 deals with it in away but more from the economical aspect. It would have been interesting to see if distance education suits some characters or personalities better than others.

5.3.3 Effects of non face-to-face communications

What effects do the non face-to-face communications have?

As can be seen in section 5.2.7, this question was not looked into thoroughly enough in this research. The fact that the majority of the students were already teaching must be taken into consideration when this is examined. On a daily basis, they were dealing in practice with what they were studying and discussing educational matters with their colleagues. Therefore, much of what was missing in dialogue and communication with the lecturers they got in their schools. As many of them had long teaching experience, they were ahead of the face-to-face students in this aspect.

One of the students said in an interview in January 1994: “It is a little bit difficult to be getting new lecturers so often because it takes time to get to know them.” This is something that is different in face-to-face teaching because then people spend much more time together. On the other hand, distance teachers often get in more personal contact with their students because much of the communication with the students is on a personal one-to-one basis.

5.3.4 Distance and face-to-face students – difference

Are the students on the DE-course different from the ones on the traditional course?

As can be seen in section 4.3 the number of students who started this distance course was 83 and there was a great age range among them. The oldest one was born in 1934 and the youngest in 1970. The age range in the face-to-face group was not as much although it has to be considered a substantial range where the oldest was born in 1945 and the youngest in 1973.

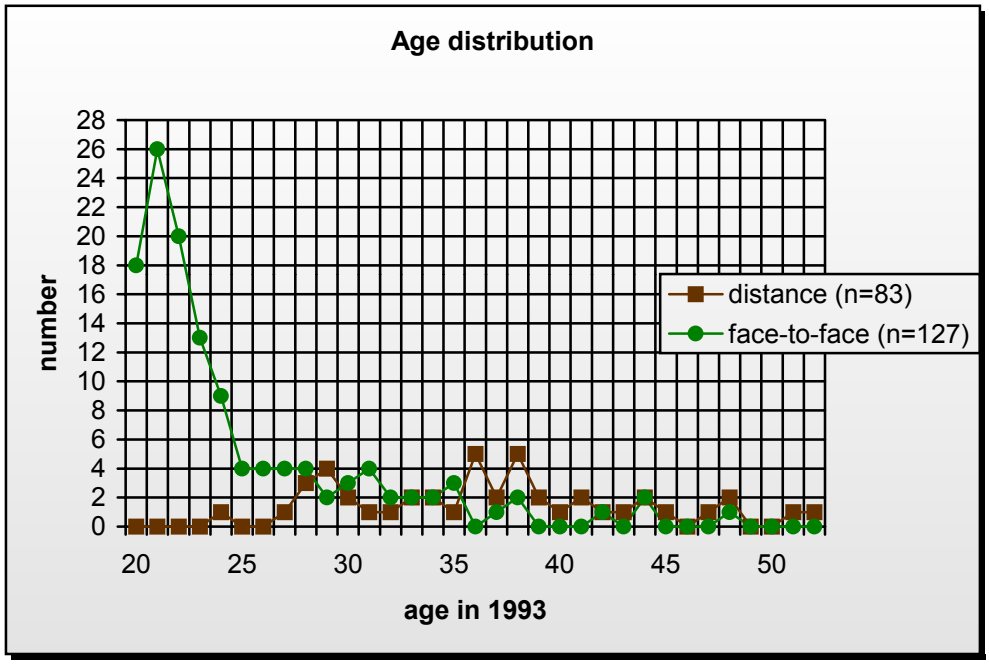

Figure 5.3-3

Figure 5.3-3 shows a diagram of the age distribution in both the face-to-face group and the distance group starting in1993. There is no one in the youngest age groups in the distance group and there is no one in the oldest groups in the face-to-face group. The great majority of the face-to-face students are younger than 25 years. The distribution in the distance group is much more equal across the age span although there is a small top between the age of 35 and 40.

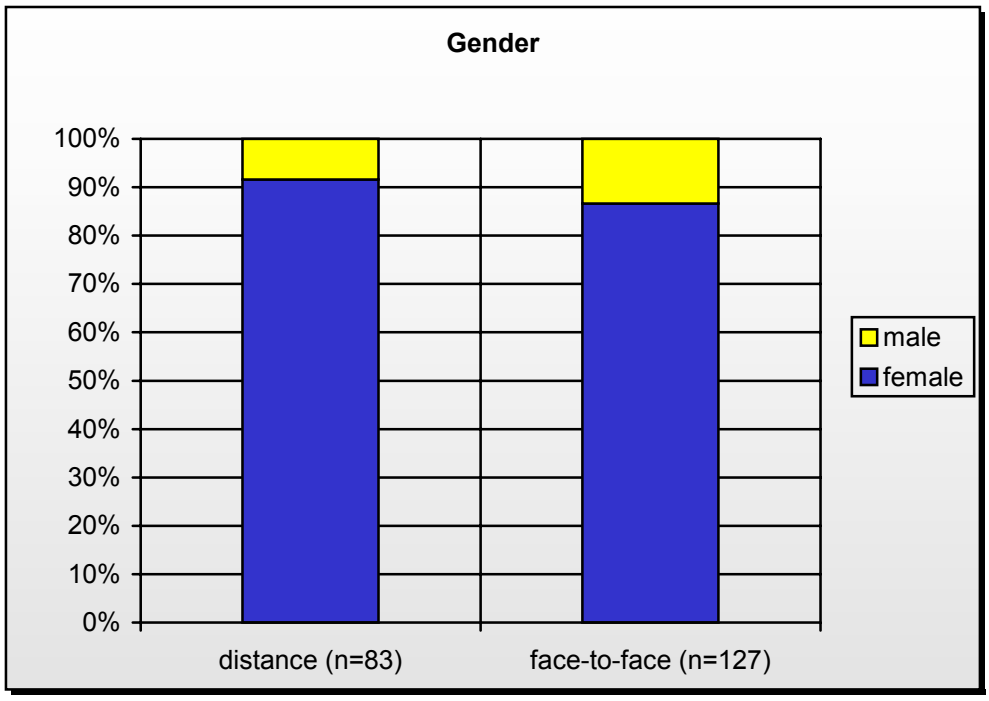

Figure 5.3-4

Regarding gender, there is not so much difference between the two groups. Around 90% of both groups consist of women. The distance group is a little bit above 90% and the face-to-face group a little bit below.

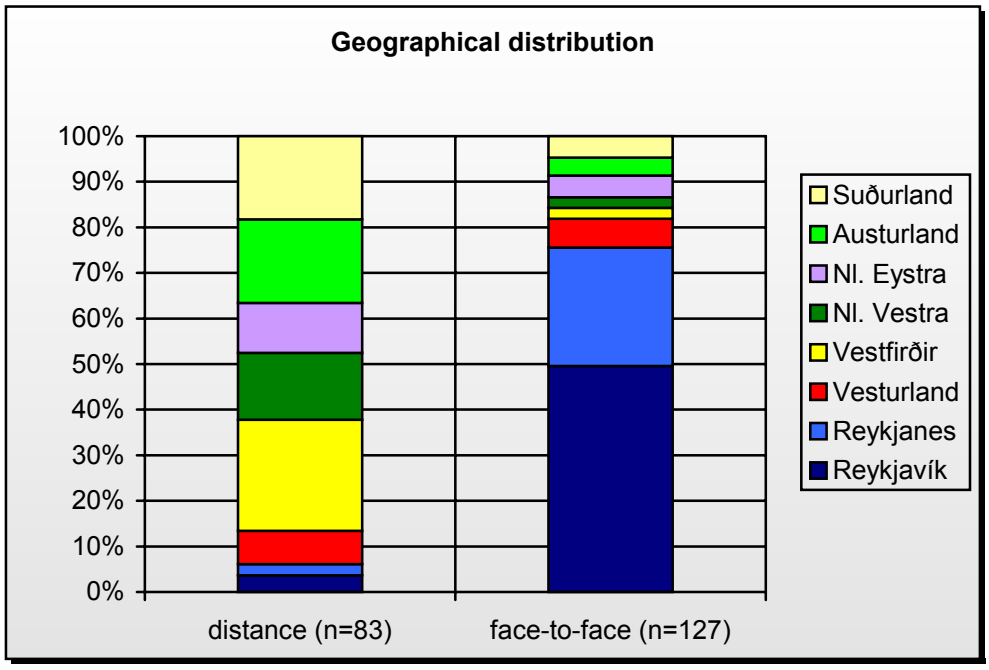

Figure 5.3-5

The difference in geographical distribution between the two groups was very significant as can be seen on Figure 5.3-2. Around 75% of the face-to-face students came from Reykjavík and Reykjanes. As Reykjanes counts as part of urban area of Reykjavik most of these 75% came from Reykjavík and its suburbs. This is clearly related to one of the aims of the course, which is to give applicants from other parts of the country priority at entry over Reykjavík (see section 2.3.4).

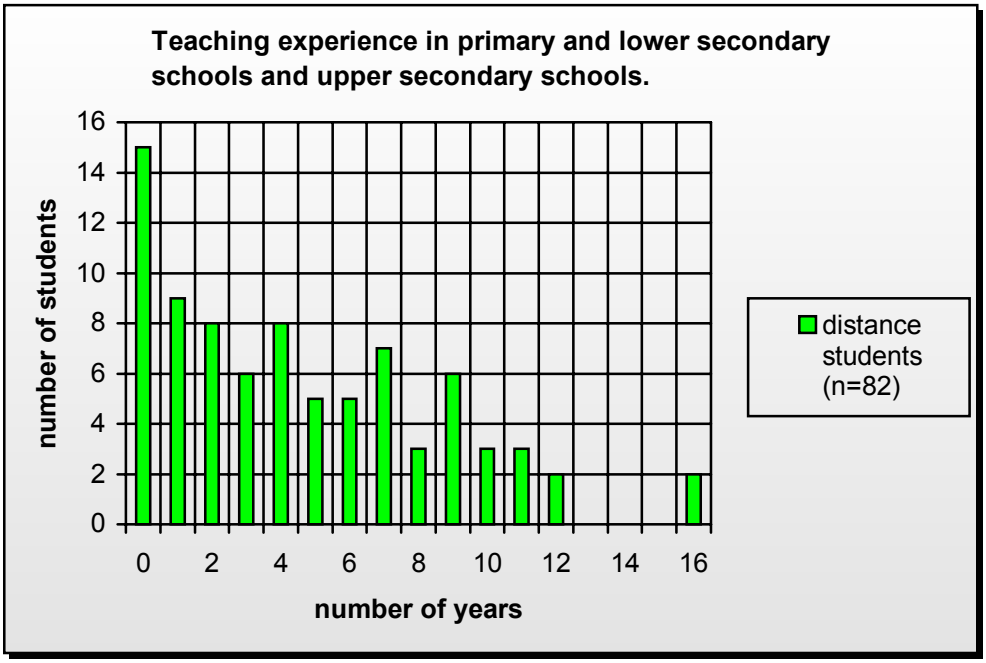

Figure 5.3-6

From Figure 5.3-6, it can be seen that only 15 of the students had no teaching experience in primary and lower secondary and upper secondary schools when the course started. As many as 10 of them had teaching experience of 10 years or more. Many of the ones with no teaching experience had experience in kinder-gardens or other work related to education.

> *This is a group that is much more like experienced teachers. They are much older than the students on the traditional face-to-face course, and therefore have much more life experience. On the traditional course, there are almost entirely people that have no teaching experience at all and therefore think differently about school and education. The distance group knows much more about the situations in schools, are active in discussions about educational matters and have opinions. (Lecturer 01.93)*

As described in this section there were many important differences in the distance group compared to the face-to-face group. The distance students were older and some of them had long working experience. A great number of them had teaching experience and were teaching during the course. For some of the lecturers working with them, the difference did not seem so much:

There is not much difference in the distance and face-to-face groups. The distance students are older and more mature. They are fully equal to the face-to-face students in terms of skills and ability to learn, but they need a little bit longer time for assignments and such. (Lecturers 02.1994)

5.3.5 Coping with the freedom

How do the DE-students cope with the freedom in selecting time to study?

Most of the students were working as well as studying and some of them were working even more than full time during the course (see sections 5.4.4 and 5.4.5). Coping with the freedom in organizing the time for study is of course very different from person to person. One student said in an interview in June 1993: "I like to organize my time for this study. It suits me well". Another student said in an interview also in June 1993: "I have always found it difficult to organize my time". In the questionnaires, the students were asked about how they managed to find time to study. As most of them were women, many of them had also to do most of the housework at home as well.

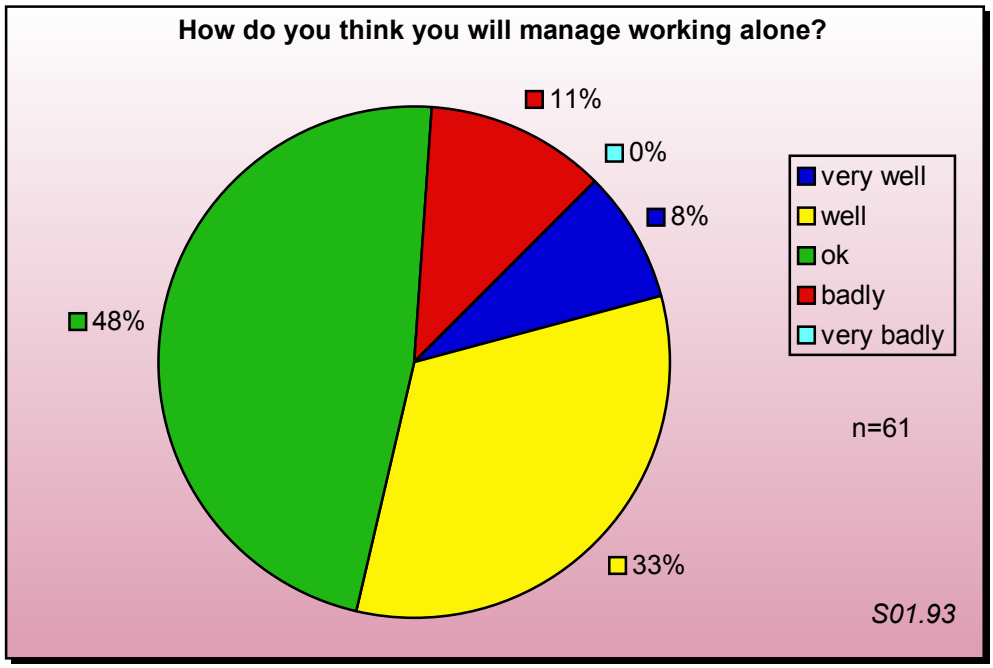

Figure 5.3-7

In the January 1993 questionnaire, the students were asked how they thought that they would manage working alone. Figure 5.3-7 shows that they were not particularly worried by that.

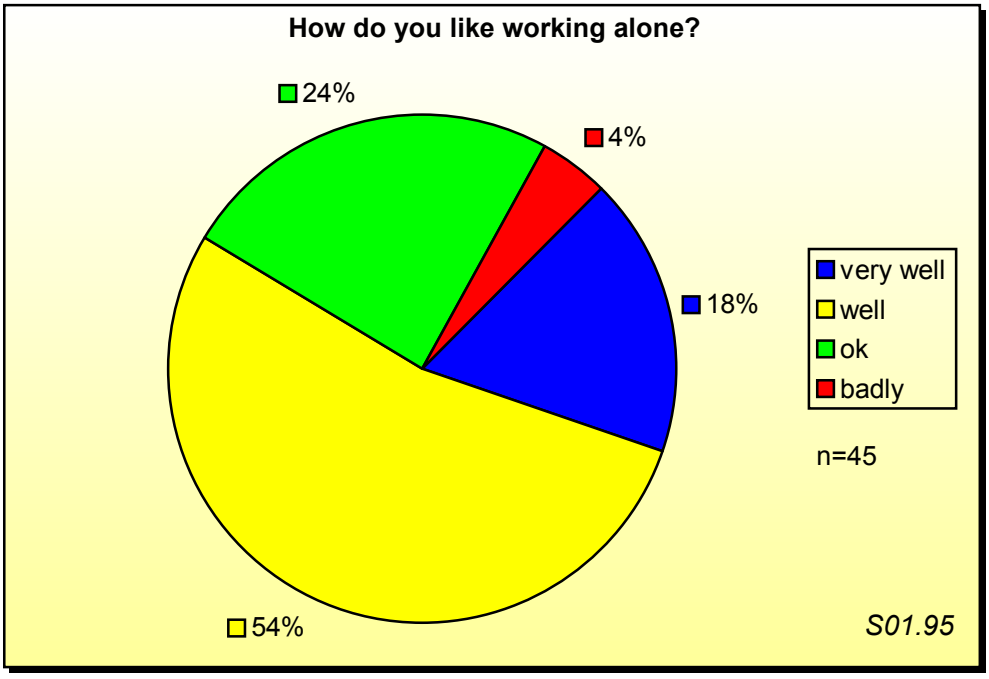

Figure 5.3-8

In the 1995 questionnaire, they were asked how they liked working alone. It turned out that 72% of them answered 'well' or 'very well' (see Figure 5.3-8).

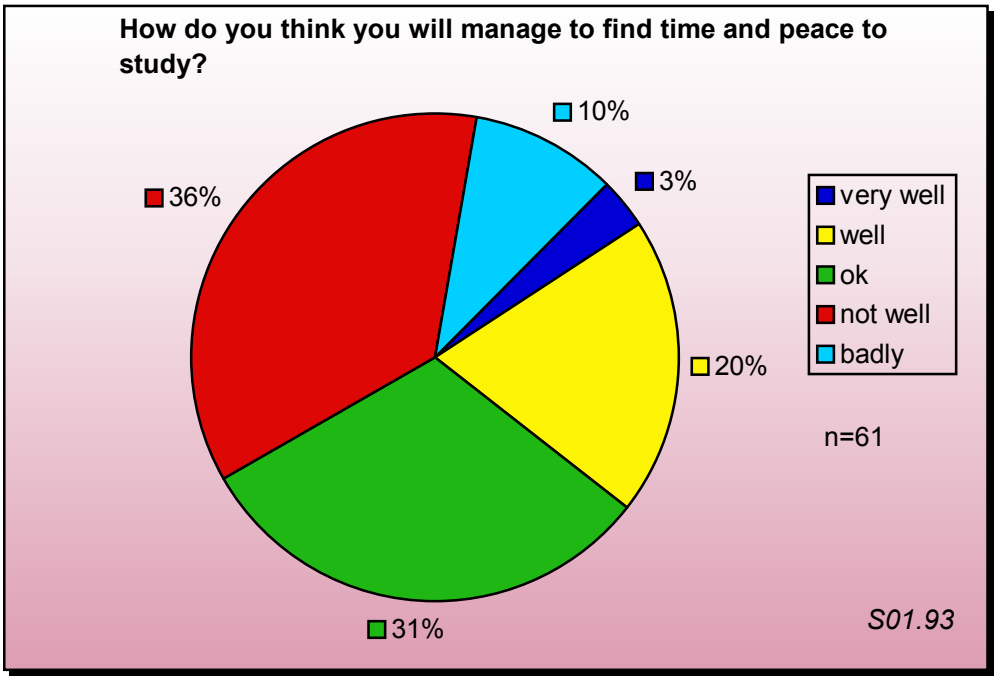

Figure 5.3-9

As the course started, the students were not so optimistic about finding time and peace to study. As can be seen from Figure 5.3-9 from the January 1993 questionnaire, only 23%

of them thought they would manage ‘well’ or ‘very well’. On the other hand, 10% of them thought that they would have difficulties in finding time and peace to study.

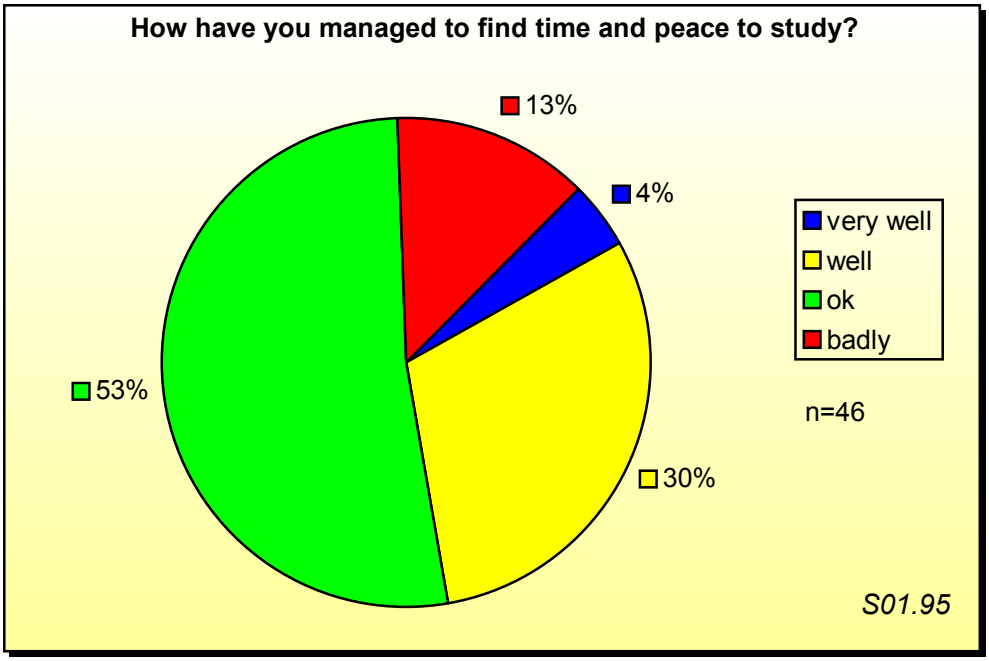

Figure 5.3-10

In the 1995 questionnaire, the students were asked how they had managed to find time and peace to study. As can be seen on Figure 5.3-10 only 4% of them said they had managed ‘very well’ and 13% they had not managed ‘well’ at all.

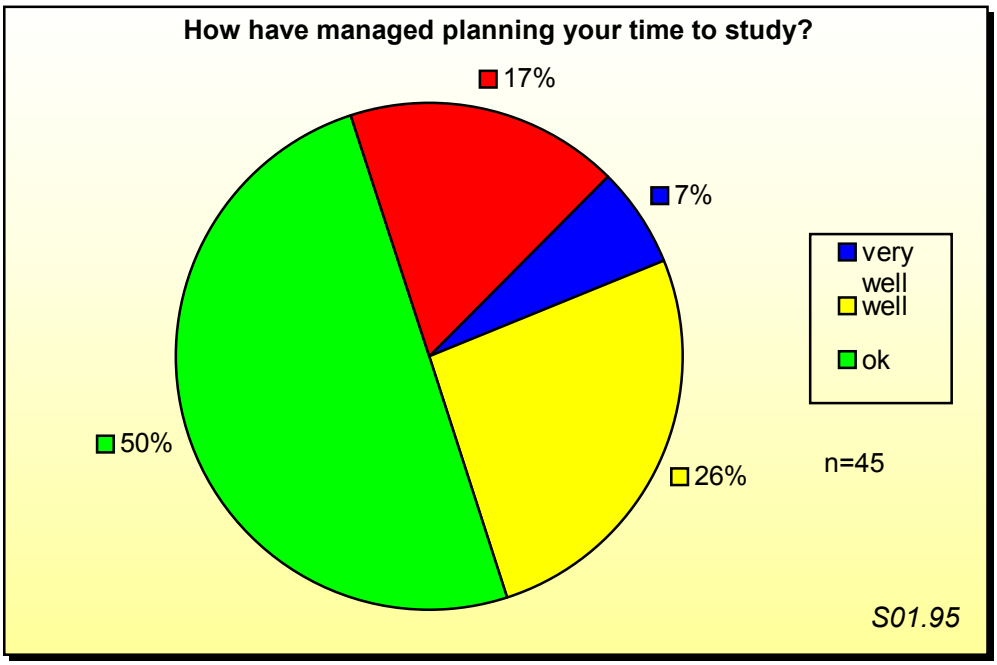

Figure 5.3-11

One third of the students or 33% said in the 1995 questionnaire that they had managed 'well' or 'very well' to plan their time (see Figure 5.3-11). In many of the interviews, the students say that they like to have the freedom to select the time to work but on the other hand, when they are in co-operation with others on the course, this gives them support.

For crosstabulation, the students were divided into two groups according to how they had managed to find time and peace to study (see Figure 5.3-10).

Crosstabulation

Count

		How have you managed to plan your study?		
		very well/well	fairly well/badly	Total
How have you managed to find time and peace to study?	very well/well	12	4	16
	fairly well/badly	3	27	30
Total		15	31	46

Pearson Chi-Square value significant at 0.000 **S01.95**

Figure 5.3-12

As can be seen on Figure 5.3-12 the same students seem to manage well in finding time and peace to study and plan their study while the students who cannot find time and peace also feel that they plan badly. This is not a surprise as these two questions are strongly related.

Crosstabulation

Count

		Lecturers' support between the face-to-face courses has been enough.		
		agree	disagree	Total
How have you managed to find time and peace to study?	very well/well	11	5	16
	fairly well/badly	10	18	28
Total		21	23	44

Pearson Chi-Square value significant at 0.035 **S01.95**

Figure 5.3-13

It is noticeable that there is a significant difference in the two groups when crosstabulating with the question asking if the lecturers' support between the face-to-face

components has been enough' (Figure 5.3-13). This indicates that the students who manage well in finding time and peace to study do not have as strong a need for lecturers' support. When crosstabulating the question about lecturers' support with other questions in the questionnaire no significant difference could be found.

Crosstabulation

Count

		There are many indications that the group is to big for the lecturers to cope with.		
		agree	disagree	Total
How have you managed to find time and peace to study?	very well/well	6	10	16
	fairly well/badly	21	8	29
Total		27	18	45

Pearson Chi-Square value significant at 0.022 **S01.95**

Figure 5.3-14

The same applies here as in the previous graph. The students who are managing well in finding peace and time to study do not in general think that the group of students is too big for the lecturers to cope with while the others who do not manage well think the group is too big. In other words, those others do not get enough support and attention from the lecturers.

Crosstabulation

Count

		Have the lecturers contacted you by thelphone during the last term?		
		yes	no	Total
How have you managed to find time and peace to study?	very well/well	10	6	16
	fairly well/badly	7	23	30
Total		17	29	46

Pearson Chi-Square value significant at 0.009 **S01.95**

Figure 5.3-15

Students who have managed to find time and peace to study seem to have been contacted much more by the lecturers (see Figure 5.3-15). Obviously, they have been easier to reach

or they may have been in contact with the lecturers and established the contact themselves.

From these crosstabulations, it can be speculated that the ones who managed to find time and peace to study looked upon themselves more as students than the other group. One can say that they took the task more seriously, or in some cases, their circumstances for study were better. When following these two groups to the end of the course there is however no significant difference in how high a proportion from each group graduated.

5.3.6 Service of non teaching staff

How do the librarians and other non-teaching staff serve the needs of the students?

This section is divided into four subsections, library, student counselling, Ísmennt and others.

5.3.6.1 Library

As it says in section 5.1.6.1, this was a new experience for the librarians as well as others. In both questionnaires and interviews, the students were asked about the service they got from the library.

> *Yes I have used the library and got very good service. I for example asked for books about certain topics. I was not just asking for a special book or books but I got books about that topic sent two days later, which I found very good. (Student 06.1993).*

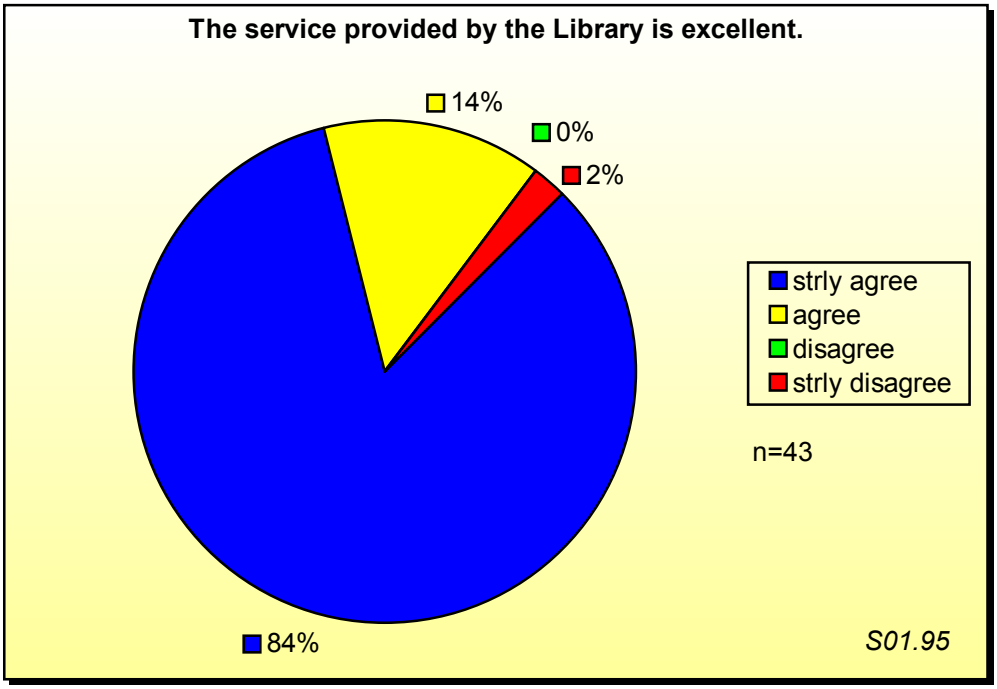

Figure 5.3-16

All in all the distance students were pleased with the quality of the service they got from the library as can be seen on Figure 5.3-16. It was also stated in most interviews how pleased the students were with the service of the library.

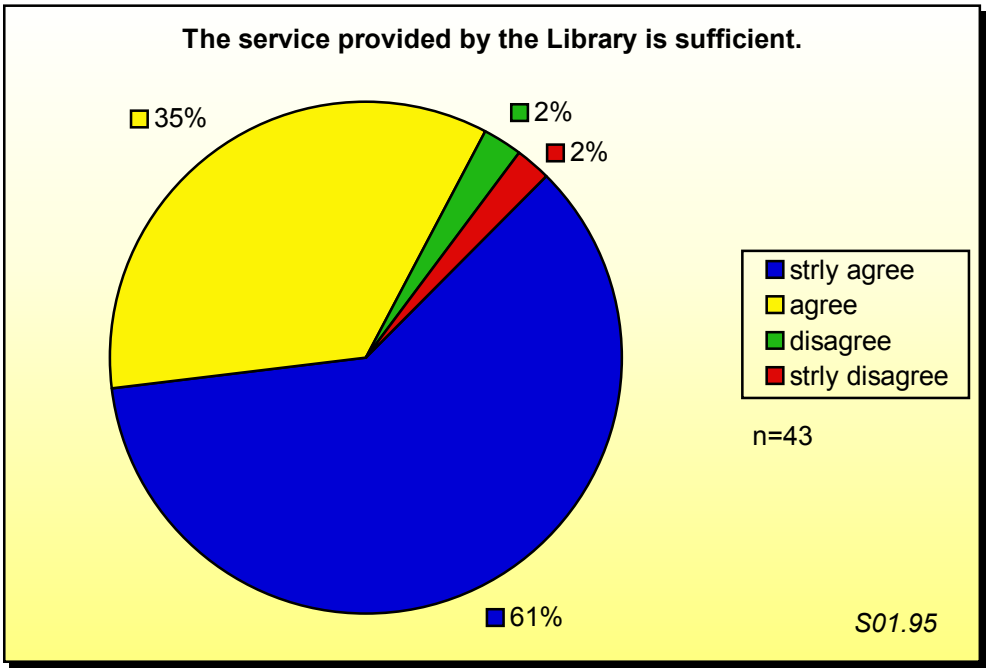

Figure 5.3-17

As can again be seen from Figure 5.3-17 the students were pleased with the quantity of help, support and service they got from KHÍ's Library.

See also section 5.1.6.1.

5.3.6.2 Student counselling

In distance education, counselling and support is very important. The student counsellor took part in the preparation of the course and in preparing the students for the task of being distance learners.

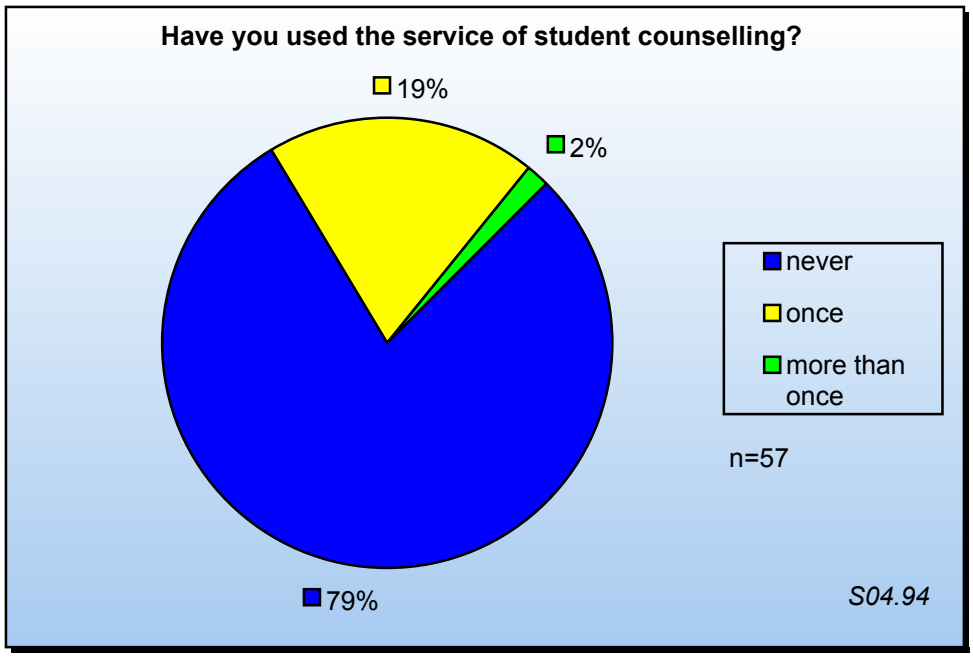

Figure 5.3-18

As can be seen from Figure 5.3-18 not many of the students used the support and service of the student counsellor. The reason for this is mainly that the student counsellor went on pregnancy leave soon after the course started. Her substitute who had not taken part in the preparation of the course was unfamiliar with this course and the students were unknown to her.

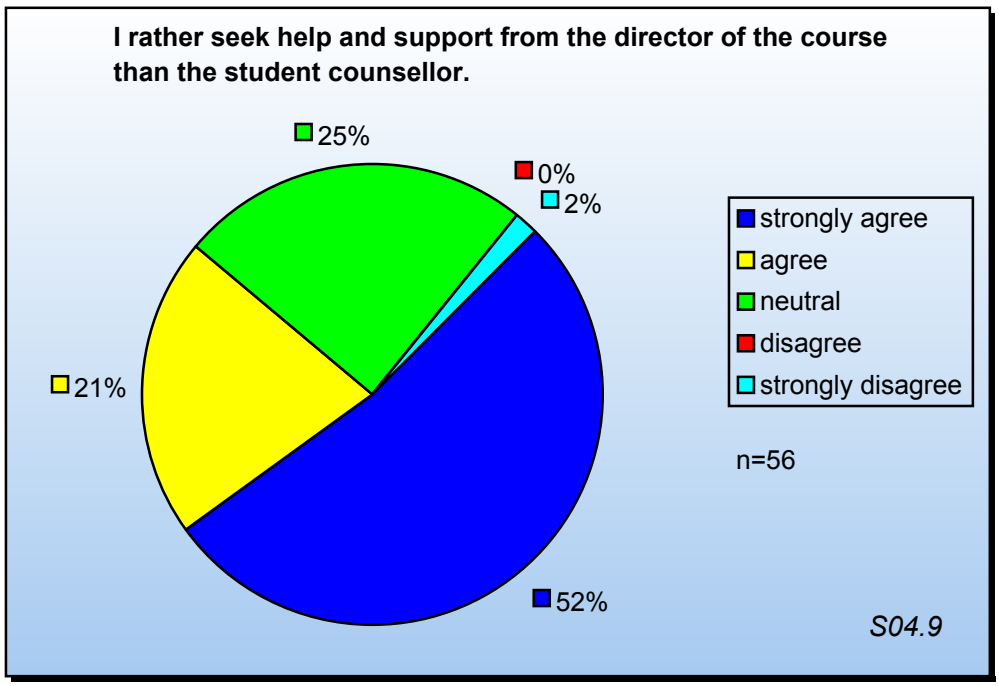

Figure 5.3-19

It turned out that the course director acted as a counsellor to the students as can be seen in Figure 5.3-19. They turned very often to him with their problems. It also has to be taken into account that the students were very pleased with the director of the course in general.

See also section 5.1.6.2.

5.3.6.3 Ísmennt

For most of the duration of the course Ísmennt was the only provider of Internet access for educational use in Iceland outside University campuses. KHÍ and Ísmennt made an agreement before the course started that Ísmennt would provide all the students with dial up access to the Internet and help and support them in establishing the Internet connections. Ísmennt gave the students a course in the use of the network when the course started in January 1993 (see section 1.6).

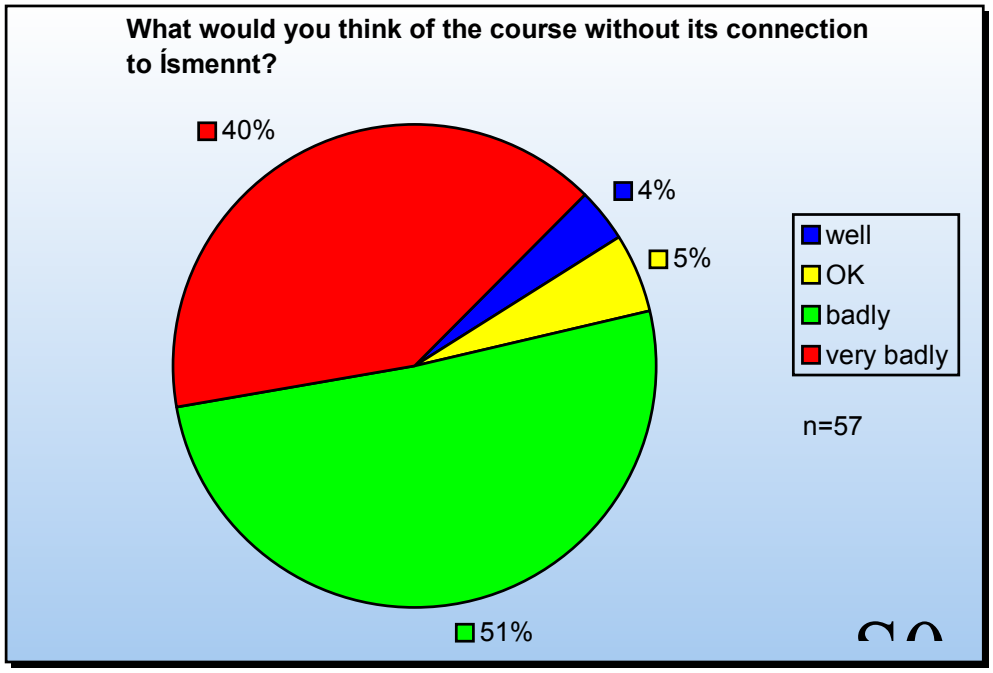

Figure 5.3-20

The students were asked, in the 1994 questionnaire, what they thought the course would be like if there had been no connection with Ísmennt. It can be seen on Figure 5.3-20 from the 1994 questionnaire that 91% of them thought 'badly' or 'very badly' of such a situation.

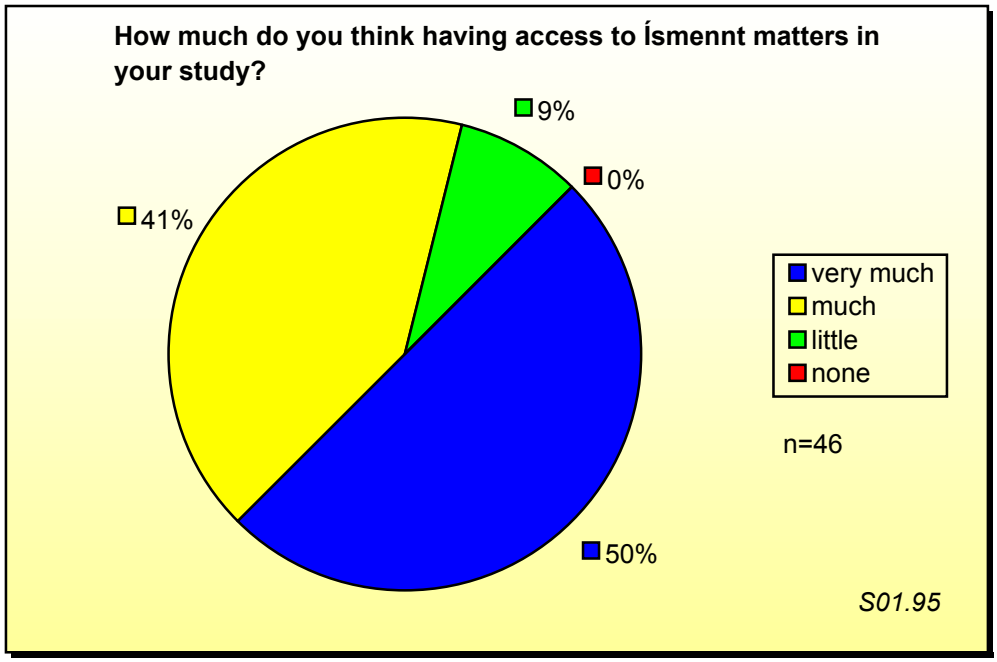

Figure 5.3-21

In the 1995 questionnaire the students were asked to rate how much the access to the network mattered to them in their study. From Figure 5.3-21 it can be seen that 91% of them said it matters 'very much' or 'much'. No one said that it did not matter.

See also section 5.1.6.3.

5.3.6.4 Support from others

As can be seen on Figure 5.3-22 and Figure 5.3-23 from the 1994 questionnaire the students got some support from the local schools and regional education offices. One has to bear in mind that the great majority of them were already teaching, which may explain the support from the schools. The students got various support from the regional education offices especially in the regions where the shortage of qualified teachers was most severe. This positive attitude towards this course can be found in the interviews with directors of education. The directors of education were also very keen on extending the proportion of qualified teachers in their regions.

> *I think this is very important and valuable for the region. We have many unqualified teachers here and this gives them the opportunity to gain qualification. The students can get some learning material here at the office. (Director of education 05.1994)*

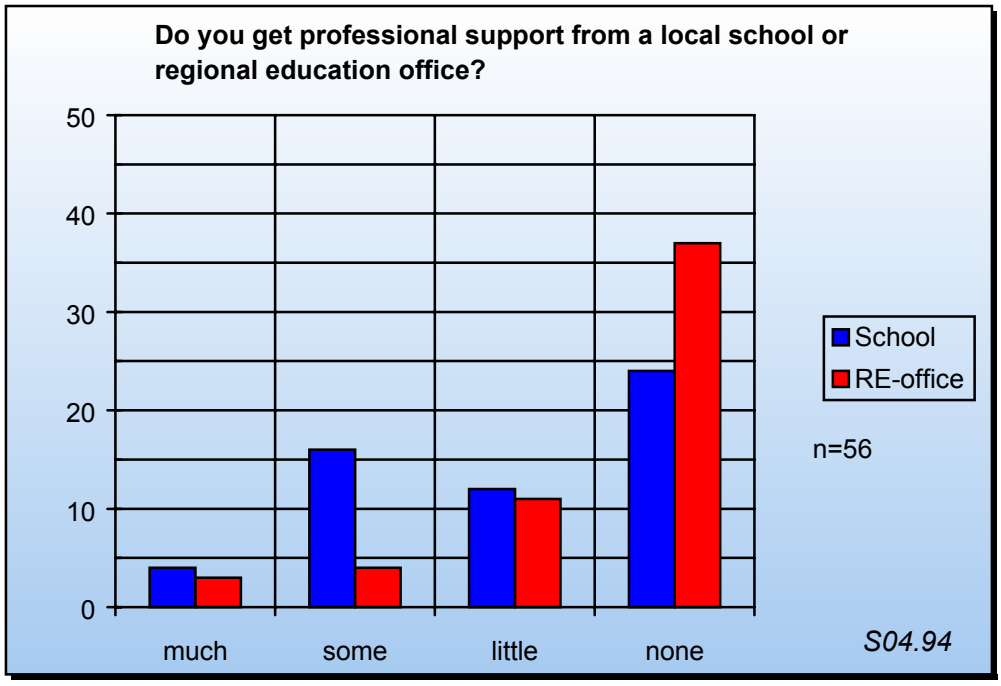

Figure 5.3-22

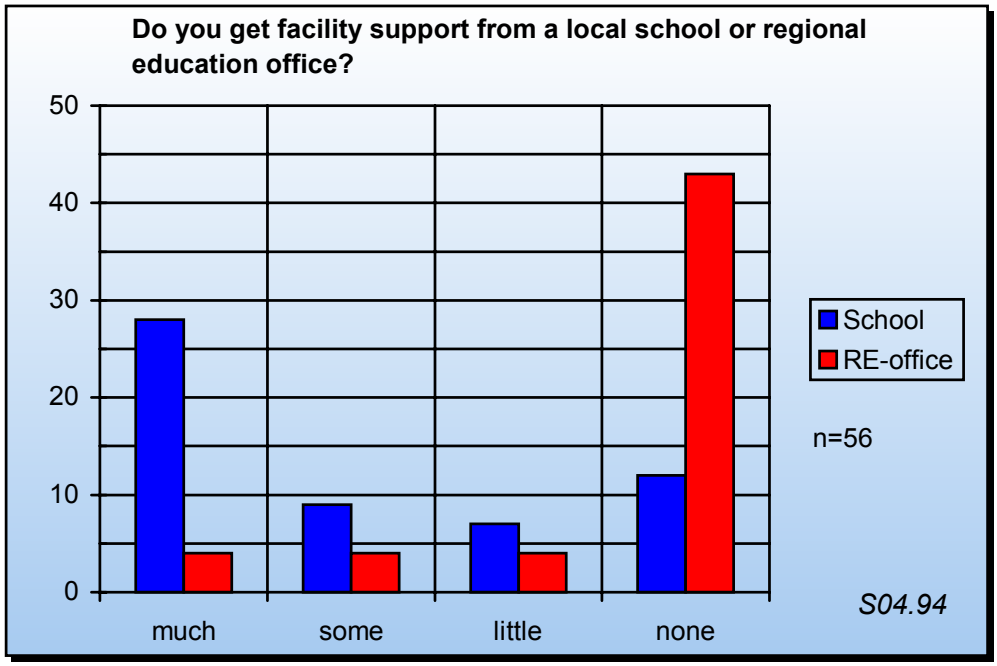

Figure 5.3-23

As can be seen on Figure 5.3-23 some of the regional education offices provided the distance students with facility support.

> *I am very pleased with this initiative. The students in this region have met here and we offer them support and advice if they need it. (Director of education 05.1994)*

5.3.7 Advantages and disadvantages of distance learning

What do the students see as advantages and disadvantages of this form of learning?

Rowntree lists several benefits for the learner in distance education.

> ***Access**. Some learners simply would otherwise not have been able to learn what they wanted to learn.*
> ***Flexibility**. Short, modular packages and 'accreditation of prior learning' may mean that learners don't need to spend time and money on topics they are already familiar with.*
> *Available **any time** – so learners can learn when they wish, rather than to suit someone else's timetable.*
> *Available **any place** – unless fixed equipment is involved, packages may be used in a learning centre, at home, or even while travelling.*
> *Own **pace** – individual learners are not held up or hurried on by other members of a group.*
> ***Private** learning – less danger of 'loss of face' such as might be feared in certain kinds of group learning.*
> *More **choice** as to what they will learn in the programme and how they will assess their own progress through it.*
> *Better **quality** teaching – both in content and treatment than they might get from any local conventional course.*
> *A chance to use **media** that better suit their preferences or seem more motivating.*
> ***Individualised tutoring**. Support staff can respond to each individual's needs and interests, rather than aiming their discourse at what they hope is the 'average' level of a group. (Rowntree 1992:234)*

In interviews and questionnaires the students on the DE-course mentioned most of these benefits.

This section is strongly related to section 5.3.1, which is about the students' choice of distance learning. Here are two quotations from interviews with students on the distance course.

The advantages are of course that I don't have to move to Reykjavík with my family, change job, buy a house etc. To be teaching at the same time is also a great advantage and to be able to put the theory into practice as I learn it. (Student 06.1993)

The disadvantages are that this is a distance course. You are not in the institution offering the course and there is more danger that you lose the connection and drop out. The advantages are of course that you don't have to move and you can continue working. (Student 06.1993)

5.3.8 Students' use of computer communication

How do the students use the computer communication and how effective is it?

Before the course started it was decided to use the Internet for communication between lecturers and students (see section 2.3.4). Neither the students nor the lecturers had much experience in computer communication when the course started. Many of them none at all. In the first questionnaire administered to the students in January 1993 they were asked about their experience both in the use of computers in general (Figure 5.3-24) and in the use of computer communication (Figure 5.3-25). At the time when the course started telnet was the type of Internet connection mostly used and therefore everything on the Internet was entirely text based. At that time, not many had even heard of the World Wide Web. It was in the year 1991 that:

Tim Berners-Lee, working at CERN in Switzerland, posts the first computer code of the World Wide Web in a relatively innocuous newsgroup, 'alt.hypertext.' The ability to combine words, pictures, and sounds on Web pages excites many computer programmers who see the potential for publishing information on the Internet in a way that can be as easy as using a word processor. (Life on the Internet).

The first Ísmennt's Web was opened in December 1994. Because the course started before that, E-mail was mainly used all through the course as well as telnet access to a library catalogue (see section 5.1.6.1) and gopher. Some of the students got familiar with the IRC but that was not used by any lecturer in connection with the course.

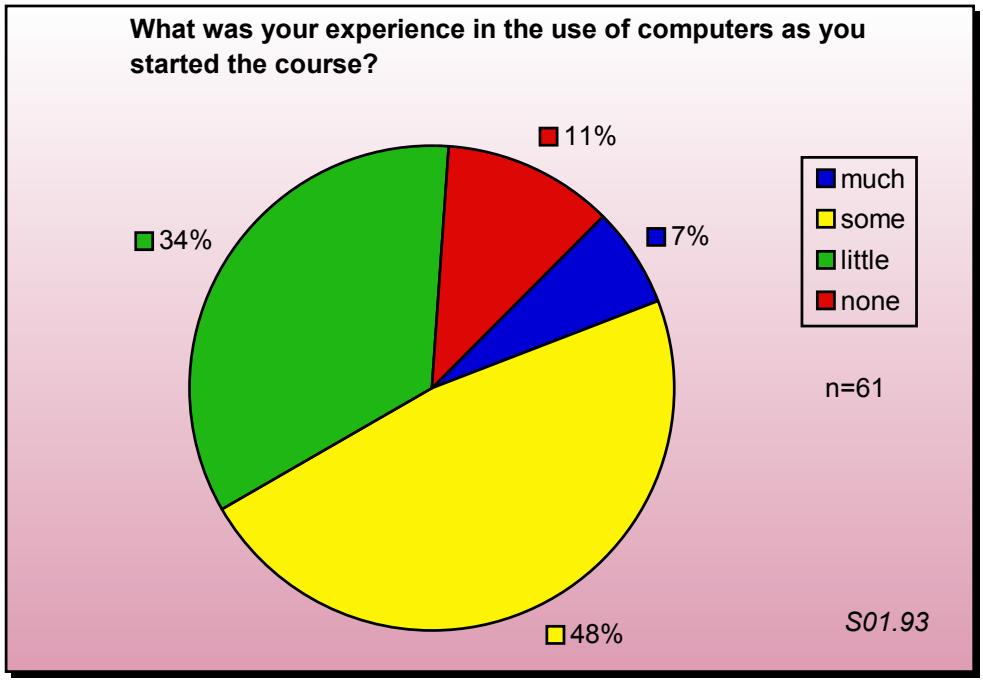

Figure 5.3-24

Figure 5.3-24 shows that 11% of the students who answered the questionnaire had no experience of computer usage. This shows that some of the students started a course that was meant to be computer based without any basic skills. The reasons for this were not especially looked into in this research but the explanation might be that some of them were going to use this as the motivation to begin using computers or that they were so intent on getting a teaching qualification that this did not hinder them.

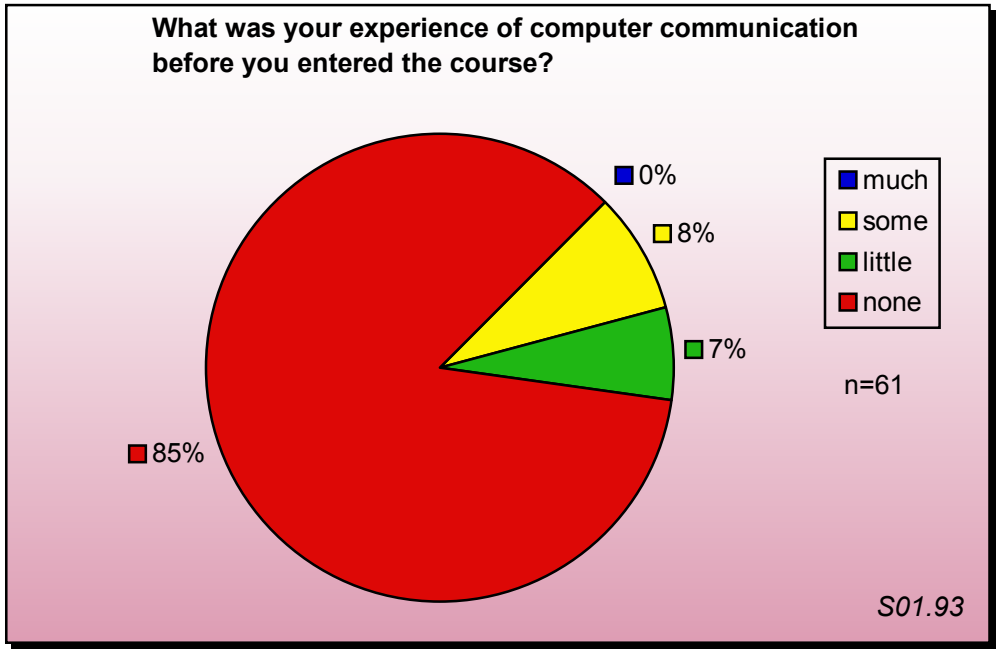

Figure 5.3-25

Not surprisingly, a great majority or 85% (see Figure 5.3-25) of the ones who answered the January 1993 questionnaire had no experience of computer communication at all. Although the Internet had been used in a number of Icelandic schools for several years, (see section 1.6) the usage was limited to only a few teachers in each of the schools.

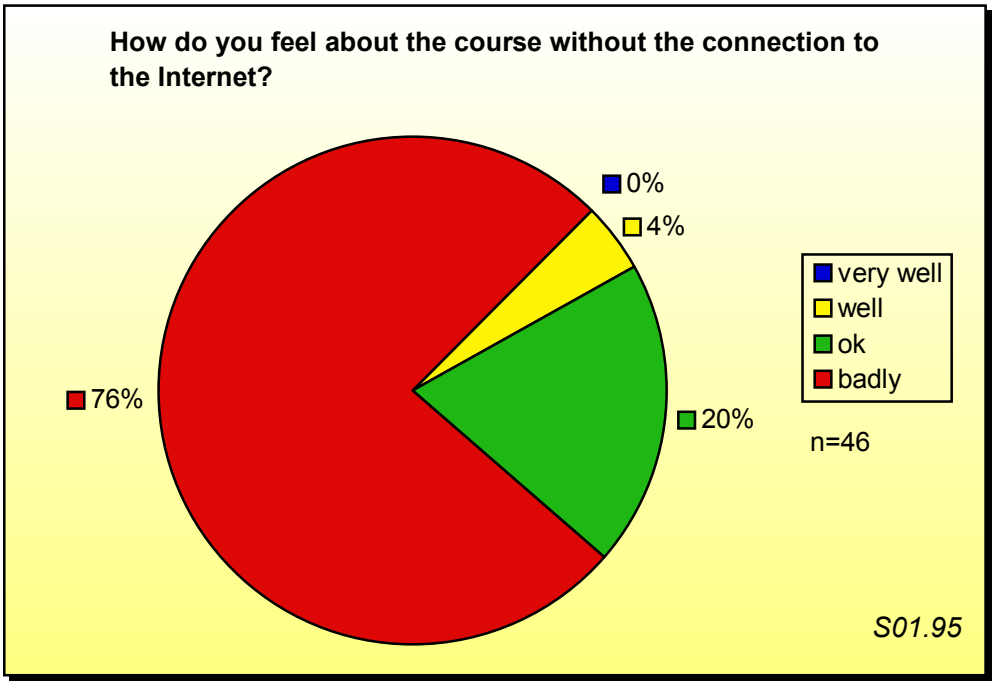

Figure 5.3-26

Very soon after the course started the students became familiar with this new way of communicating and it became a part of their learning environment as can be seen on Figure 5.3-26 which shows references from the January 1995 questionnaire. The students used it both for communicating with their lecturers, among themselves and with others.

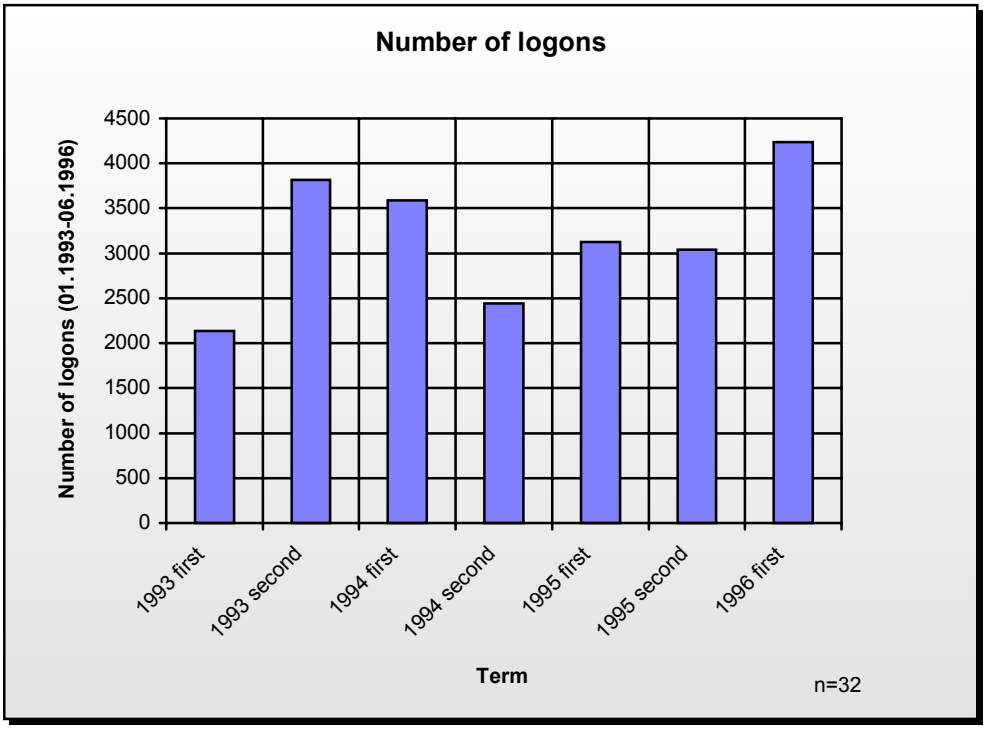

Figure 5.3-27

As described in section 4.4.5 not all the student logons were recorded throughout the whole course. Therefore, Figure 5.3-27 shows only the Internet usage of the 32 students whose logons were counted throughout the course. The usage is divided into seven terms that is from January through June and July through December each year. The average usage of a student during the whole of the course was about 100 logons per term. However, the difference between individuals is extreme from 20 logons up to 480 per term. As the logons were only counted and the duration measured it is impossible to tell how much of this was related to the course. From interviews with the students it was learned that some of them got hooked on the Internet and used the IRC a lot for example just for communicating with others linked to the Internet both in Iceland and also world-wide.

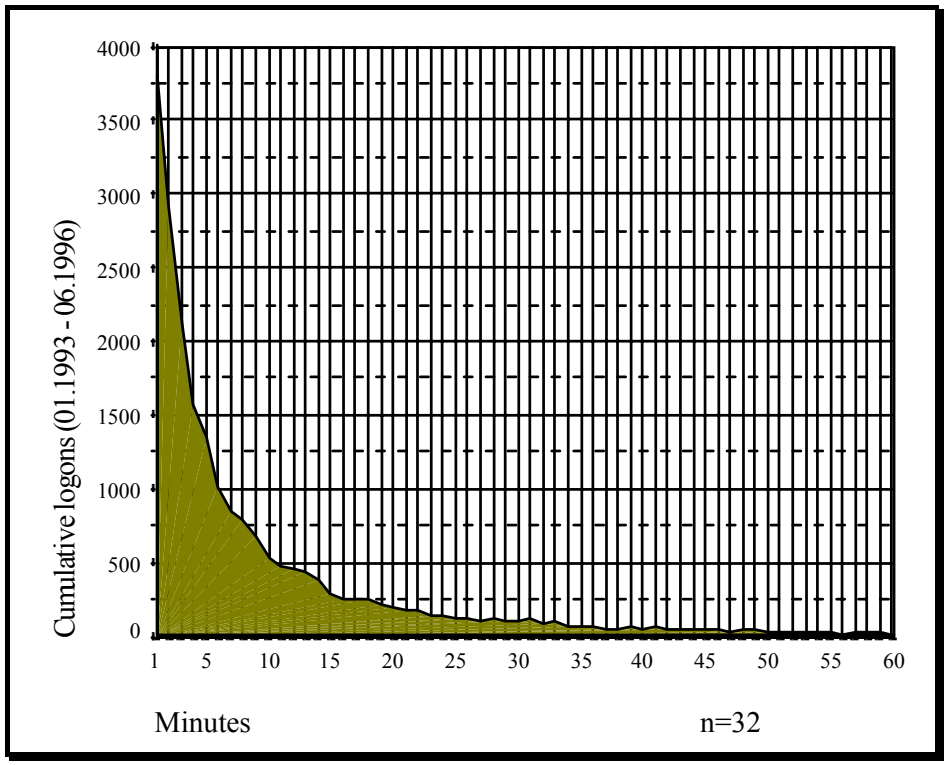

Figure 5.3-28

The lengths of the logons were also different. Most of them were very short, only several minutes or probably just for checking and/or sending E-mail. On Figure 5.3-28 only logons lasting for an hour or less are shown. Some of the logons lasted longer. There were two explanations of the long logons, which emerged from interviews. As mentioned earlier some of the students used the IRC a lot and as that is synchronised communication the user needs to be connected to the Internet while using it. The other explanation is that in some cases the students forgot to logoff, but learned to remember to logoff the hard way when they got their telephone bill.

5.3.9 Difference in grades of distance and face-to-face students

Is there a significant difference in the students' grades compared to the ones on the traditional course?

This was not examined at all in this research.

5.3.10 Difference in proportion going into teaching

Is there a difference in the proportion going into teaching after graduation from the DE-course and the traditional course?

In situations such as in Iceland where there is a lack of qualified teachers, the proportion of newly qualified teachers in teaching is important.

In three questionnaires during the course, the students were asked what they thought they would be doing in 8-10 years time.

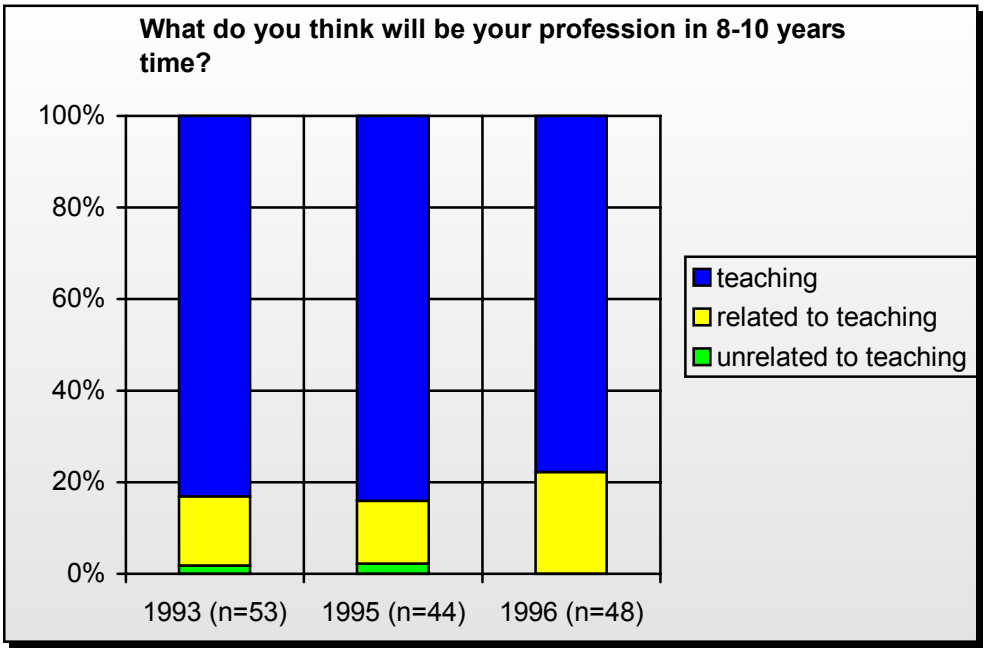

Figure 5.3-29

The great majority, or around 80% in all questionnaires 1993, 1995 and 1996, said that they would be teaching as can be seen on Figure 5.3-29.

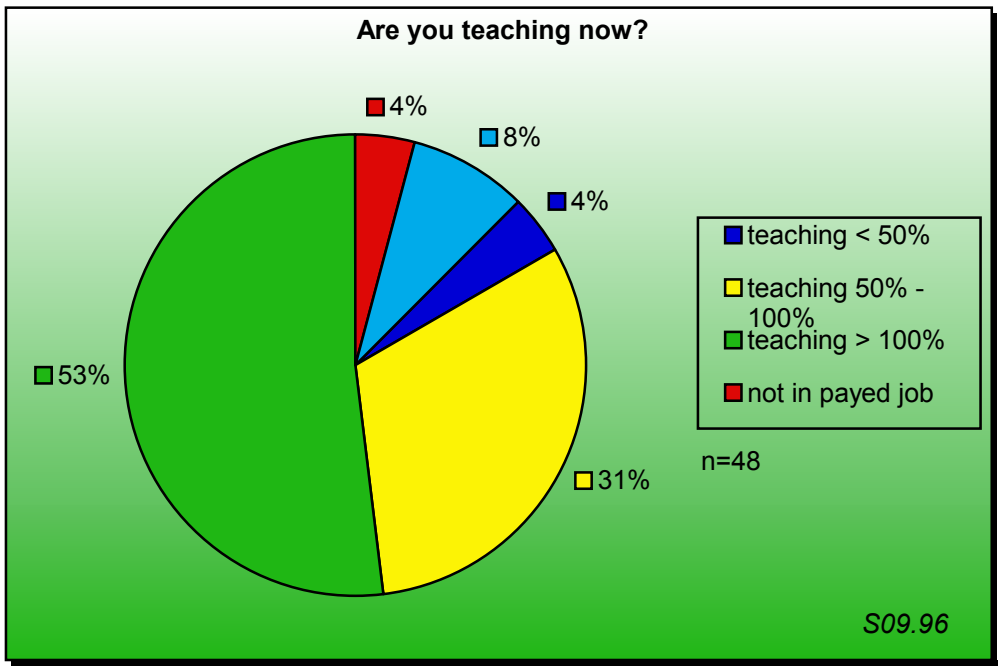

Figure 5.3-30

In the 1996 questionnaire, the new graduates were asked if they were already teaching. As can be seen on Figure 5.3-30 88% of them were teaching. Compared with only about 70% of those who graduate from the traditional face-to-face course and start teaching each year this means that economically it is better to offer the distance course rather than the traditional one.

5.3.11 Dropout

How high are the dropout rates and why do the students leave the course?

From interviews with the students, it can be seen that there are two main reasons for dropout that is, money and support. In many of the interviews with the dropout students, they mentioned that they could not afford to decrease their work in order to be able to spend more time on their study. Others said that qualified teachers' salaries were not high enough to be sufficient motivation to finish the course. "I'm not ready to spend the money and time on this study as the salaries that qualified teachers get today are so low" (Dropout student 05.94). "It's discouraging how low the teachers' salaries are and this effort is not worth it, considering that" (Dropout student 01.94). Some of the dropout students said that they didn't get support from their mate, usually their husbands. The lack of support was also a problem for others as well as the ones that dropped out. This was learned from the interviews with students, lecturers and the director of the course.

For crosstabulation purposes, the group that answered the April 1994 questionnaire was divided into two according to whether or not it had occurred to them to quit.

Crosstabulation

Count

		Do you have somone you can discuss with what you are studying?		
		always, often	somtime, seldom, never	Total
Has it occurred to you to quit?	no	17	4	21
	yes	17	18	35
Total		34	22	56

Pearson Chi-Square value significant at 0.016 **S04.94**

Figure 5.3-31

Figure 5.3-31 shows that there is a significant correlation between the two questions. Not having someone to discuss what the student is studying seems to increase the likelihood of dropout.

Crosstabulation

Count

		How do you like working alone?		
		very well/well	fairly well/not well/badly	Total
Has it occurred to you to quit?	no	16	5	21
	yes	10	25	35
Total		26	30	56

Pearson Chi-Square value significant at 0.001 **S04.94**

Figure 5.3-32

The group who do not like to work alone seems to be much more likely to dropout as can be seen on Figure 5.3-32.

Crosstabulation

Count

		How have you managed to work alone?		
		very well/well	fairly well/not well/badly	Total
Has it occurred to you to quit?	no	18	3	21
	yes	15	20	35
Total		33	23	56

Pearson Chi-Square value significant at 0.002 **S04.94**

Figure 5.3-33

Figure 5.3-33, which is strongly related to Figure 5.3-32 shows that the ones that have not managed well in working alone think more often of quitting.

Crosstabulation

Count

		How do you like the freedom in distance learning?		
		very well/well	fairly well/not well/badly	Total
Has it occurred to you to quit?	no	20	1	21
	yes	22	13	35
Total		42	14	56

Pearson Chi-Square value significant at 0.007 **S04.94**

Figure 5.3-34

The group that likes the freedom of distance learning less seems to be in more danger of dropping out (see Figure 5.3-34).

Crosstabulation

Count

		How have you managed to meet the professional demands from the lecturers?		
		very well/well	fairly well/not well/badly	Total
Has it occurred to you to quit?	no	14	7	21
	yes	11	23	34
Total		25	30	55

Pearson Chi-Square value significant at 0.013 **S04.94**

Figure 5.3-35

The ones that feel that they do not meet the professional demands from the lecturers seem to be much more likely to dropout (see Figure 5.3-35).

Crosstabulation

Count

		If you run into trouble do you first contact the lecturer in question?		
		always/often	occationally/seldom/never	Total
Has it occurred to you to quit?	no	13	8	21
	yes	7	28	35
Total		20	36	56

Pearson Chi-Square value significant at 0.002 **S04.94**

Figure 5.3-36

Crosstabulating the two questions on Figure 5.3-36 almost divides the group into two. The ones that do not think of quitting turn to the lecturer in question when they run into trouble and the ones that have thought of quitting are the ones that are less likely to turn to the lecturer in question when they run into trouble.

Crosstabulation

Count

		The lecturers support during the distance component is enough.		
		agree/neutral	disagree	Total
Has it occurred to you to quit?	no	16	5	21
	yes	13	22	35
Total		29	27	56

Pearson Chi-Square value significant at 0.005 **S04.94**

Figure 5.3-37

From Figure 5.3-37, it can be seen that the ones who think the lecturers' support during the distance component is not enough think more often of quitting.

It is noticeable that in almost all of the questions crosstabulated by the one about quitting what can be called the positive or optimistic group seems to be much more balanced. That is there is not as much difference in whether or not they have thought of quitting. On the other hand, what can be called the negative or pessimistic group dose much more often think of quitting. Unfortunately, the April 1994 questionnaire from which these crosstabulations are taken was anonymous so it is impossible to crosstabulate it with questions from the other questionnaires. Therefore, it is also impossible to see if a higher proportion of the students that had thought of quitting did not finish the course.

In order to search for some different characteristics of the two groups, the ones who graduated in 1996 and the others who did not, data from the three questionnaires that were not anonymous were merged. After merging the three questionnaires from January 1993, January 1995 and September/October 1996, various crosstabulations were run. The only question that gave a significant result was about finding time and peace to study, from the January 1993 questionnaire (see Figure 5.3-38).

Crosstabulation

Count

		How do you think you will manage to find time and peace to study?		
		well	not so well	Total
Graduated in 1996	yes	18	6	24
	no	15	21	36
Total		33	27	60

Pearson Chi-Square value significant at 0.011 **S01.93 & S04.95 & S09.96**

Figure 5.3-38

Data from the April 1994 questionnaire, which unfortunately was anonymous, might have given other and clearer results.

5.4 Findings additional to the research questions

In this section, several findings that cannot be placed directly under any of the research questions are introduced. As these findings are of importance, they make a separate section.

5.4.1 Internal co-operation

Some of the students formed local groups for supporting each other and studying together. The groups met on an irregular basis to study at each other's homes or in other locations such as summerhouses, local educational offices, etc. The students also used telephone, E-mail and the IRC for communication. In that way, they formed groups not geographically but on the Internet where they 'met'. In many of the interviews, the students mentioned this internal co-operation.

> *The two of us from Þórshöfn work a lot together but our co-operation with the ones from Bakkafjörður and Vopnafjörður has decreased. (Student 01.1994).*

> *I usually work alone but I am in connection with the girls in Djúpavogur. We meet very seldom but use telephone and E-mail. (Student 01.1994).*

> *I have started working a lot with one from Patreksfjörður. We meet once a week. It makes a lot of difference being in co-operation with others. (Student 01.1994).*

The two of us from Siglufjörður, one from Hofsós and one from Fljót meet on average once a month. I'm also in telephone contact with one in Akureyri. (Student 01.1994).

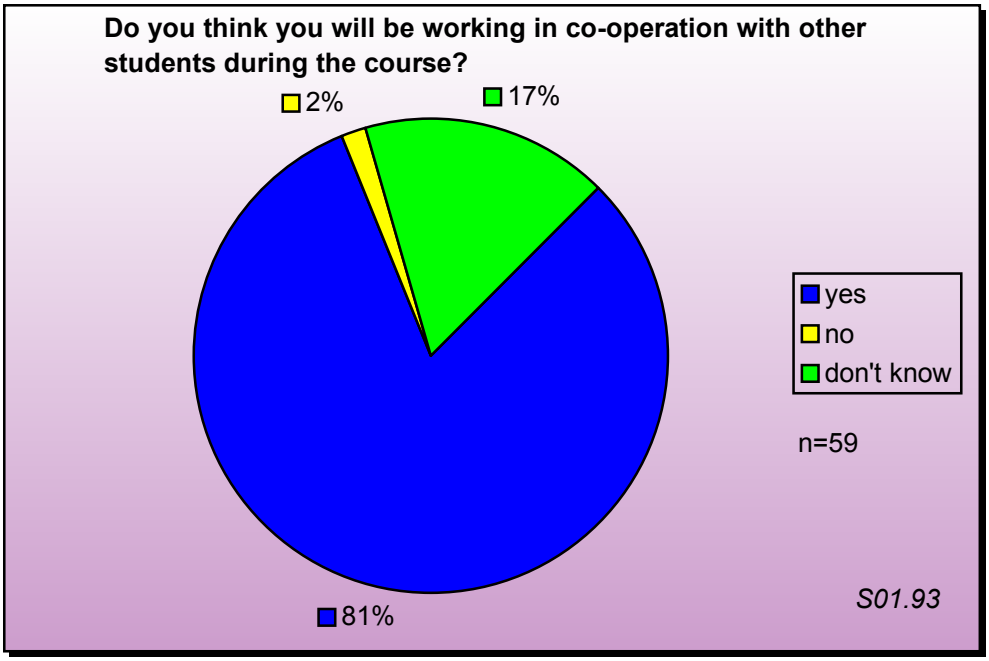

Figure 5.4-1

In the January 1993 questionnaire, the students were asked about their intention of being in co-operation with other students. Figure 5.4-1 shows that it was the intention of the vast majority of the whole group to be in some kind of co-operation with other students on the course.

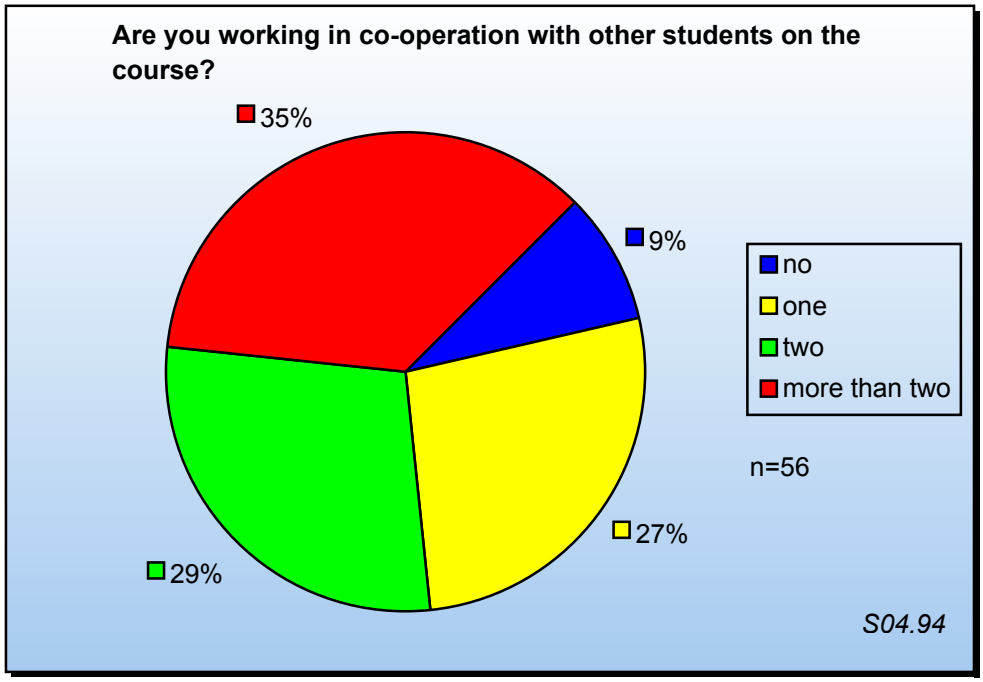

Figure 5.4-2

In the April 1994 questionnaire, the students were asked if they were in co-operation with other students. Figure 5.4-2 shows that only 9% of them were in no co-operation at all with other students on the course.

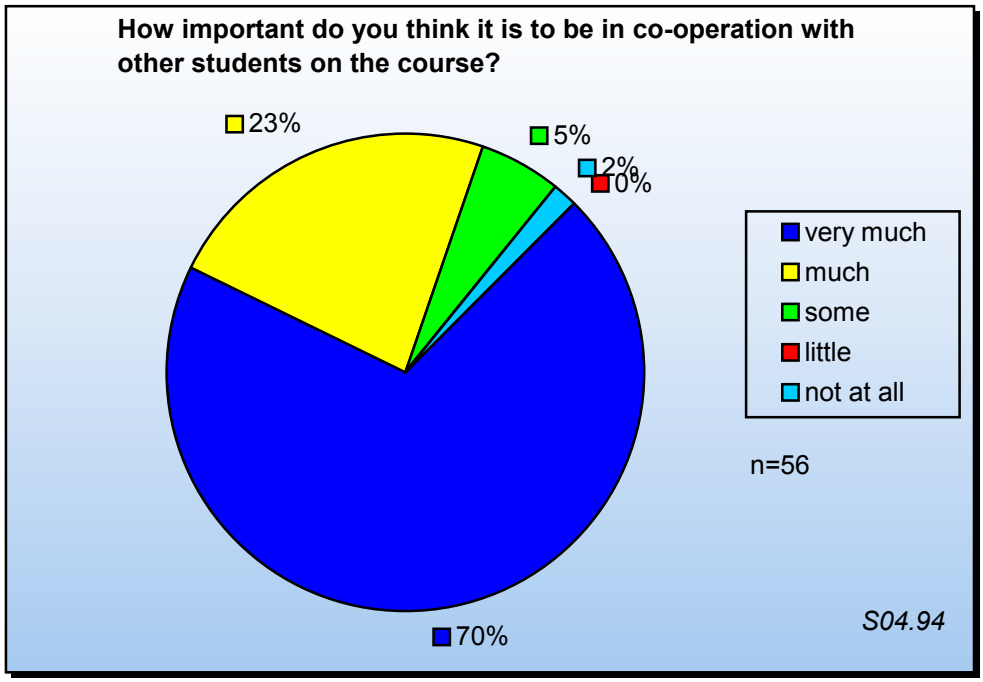

Figure 5.4-3

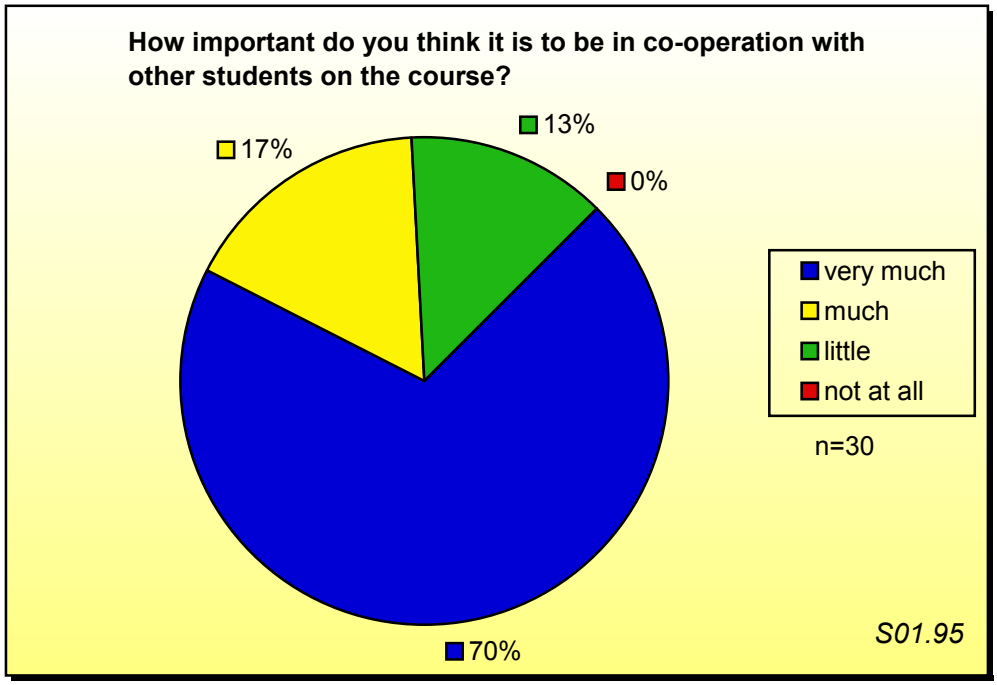

Figure 5.4-4

It can clearly be seen from Figure 5.4-3 and Figure 5.4-4 how important the students think it is to be in co-operation with others on the course.

5.4.2 The face-to-face components of the courses

The students' need for the face-to-face components was strong all during the course. In many of the interviews, the students said that they wanted these face-to-face components in order to meet the other students. They also said that they wanted to meet the lecturers not for getting lectures but more for the personal contact. Some lecturers also mentioned the necessity of these face-to-face components especially as this was a teacher education programme which, by definition, is so much based on personal contact for the quality of its learning.

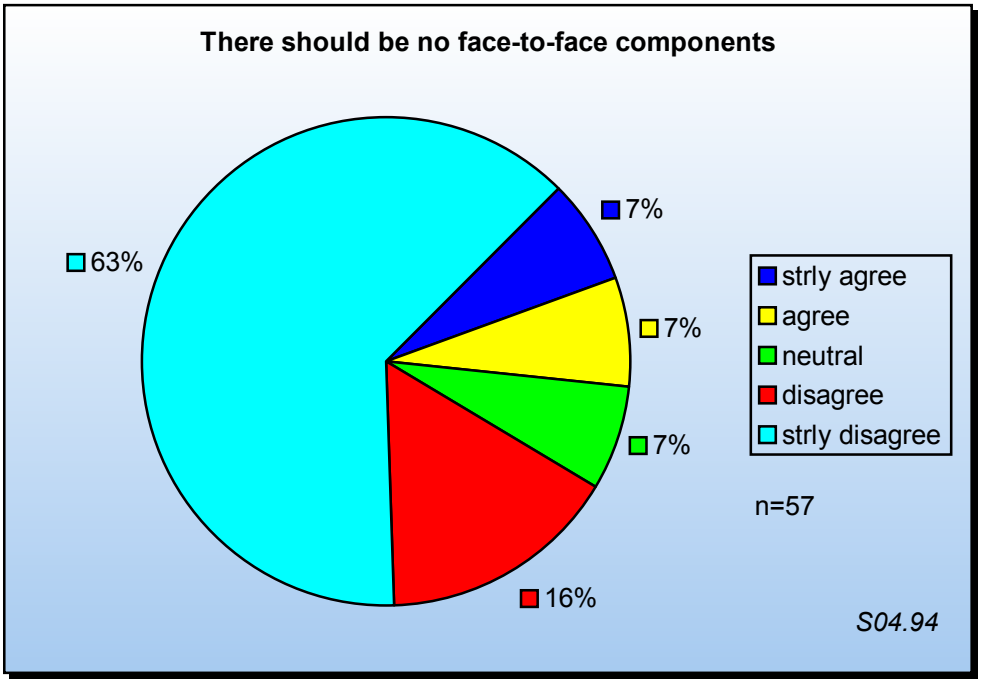

Figure 5.4-5

In the 1994 questionnaire, (see Figure 5.4-5) 79% of the students disagreed or strongly disagreed that there should be no face-to-face components. On the other hand, 14% of them agreed or strongly agreed that there should be no face-to-face components.

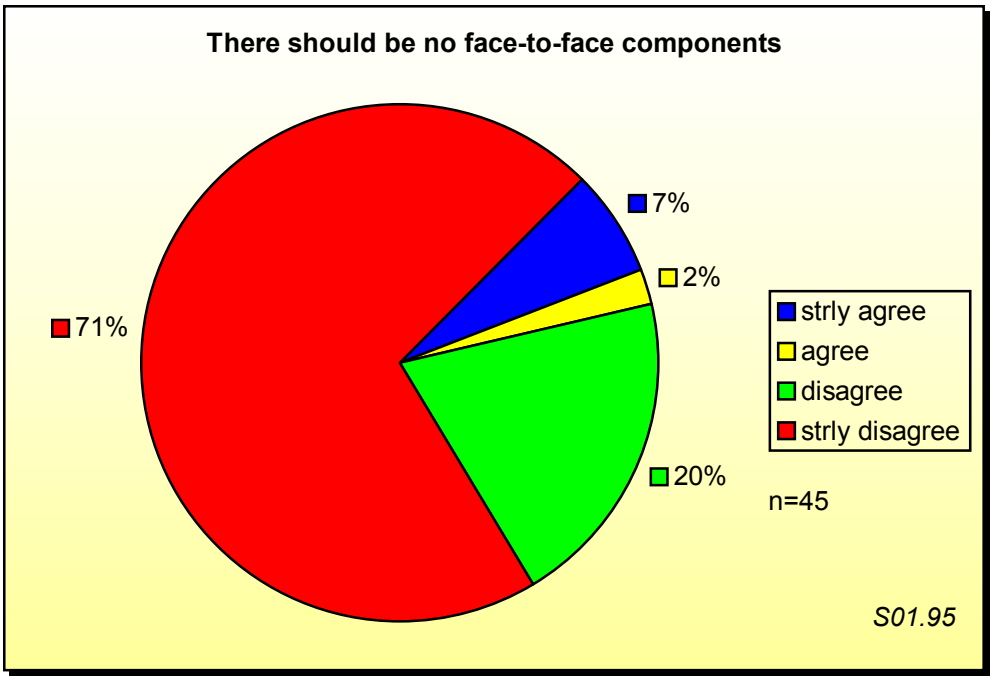

Figure 5.4-6

As can be seen on Figure 5.4-6 from the 1995 questionnaire the need for face-to-face components seemed to get stronger as the course went on. That could partly be explained

by the fact that the students got more acquainted with each other as the course went on and felt a stronger need to see each other more often. There were no indications found that the set-up of the course had changed or any other indication that this difference can be explained by the structure of the course programme. The fact that in the 1995 questionnaire they were given the option of being neutral doesn't seem to explain this difference.

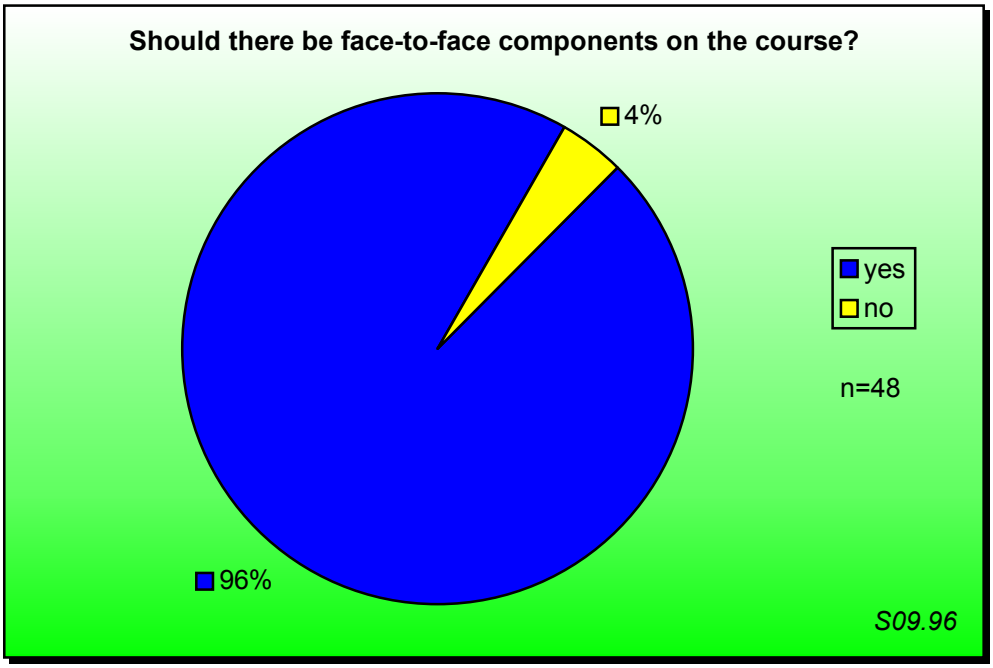

Figure 5.4-7

In the 1996 questionnaire, the students were only given two possible answers 'yes' or 'no' and a further majority, or 96% of them, would not have been without these face-to-face components (see Figure 5.4-7). This doesn't prove that face-to-face components are a necessity. If the course had been organised without the face-to-face components the students might never have missed them.

5.4.3 Attitude to the DE programme

In general, the attitude to the distance course was positive. This can be seen in questionnaires and interviews, both formal and informal. This can for instance be seen in interviews with directors of education in section 5.3.6.4. Not all the lecturers were positive and optimistic about this initiative.

What I find most interesting in my job is the direct contact with my students. But on this course I only have pictures of my students. It will be interesting to see if it will be possible to use these computer communications. I personally do not have the same strong belief in it as many others. I would have preferred to see the money spent on this used for something else, for example strengthening the library. (Lecturer 01.93)

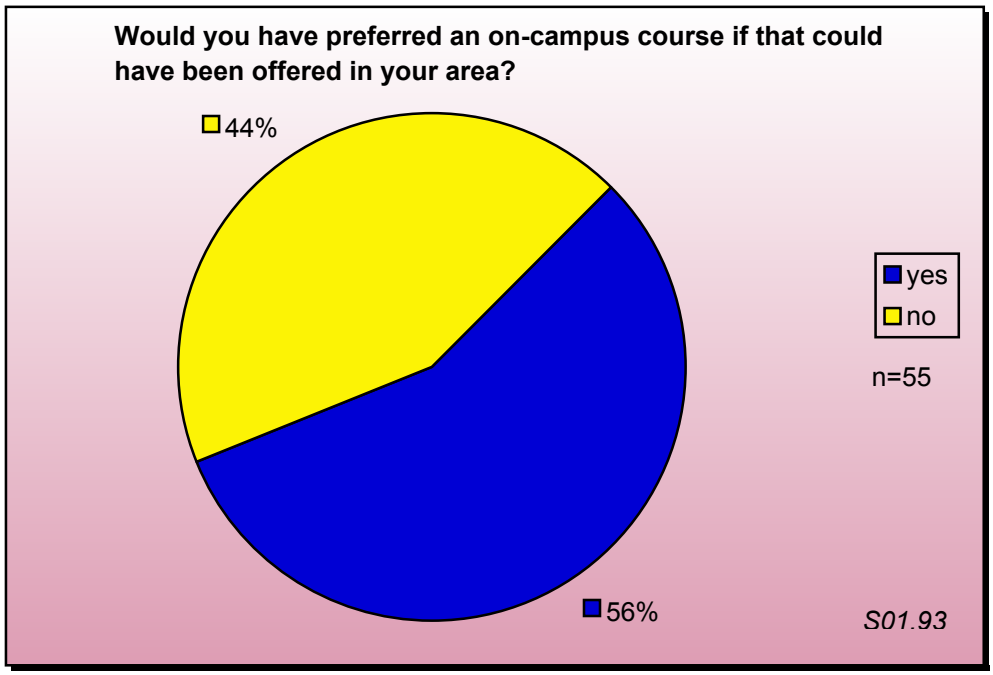

Figure 5.4-8

In the January 1993 questionnaire, the students were asked if they would have preferred a face-to-face course in their home community. As can be seen on Figure 5.4-8 56% of them said that they would have preferred the course in their home community.

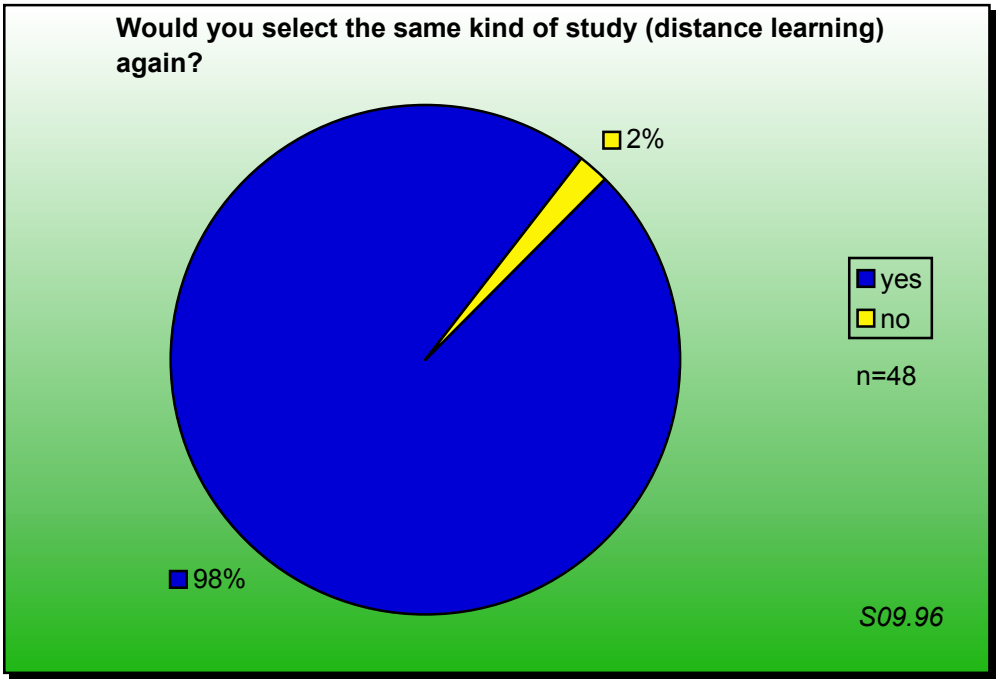

Figure 5.4-9

In the 1996 questionnaire, which was administered through telephone a few months after the course ended the newly graduated teachers were asked if they would select the same kind of study again, that is distance learning. The great majority of them, or 98%, said 'yes' as can be seen on Figure 5.4-9.

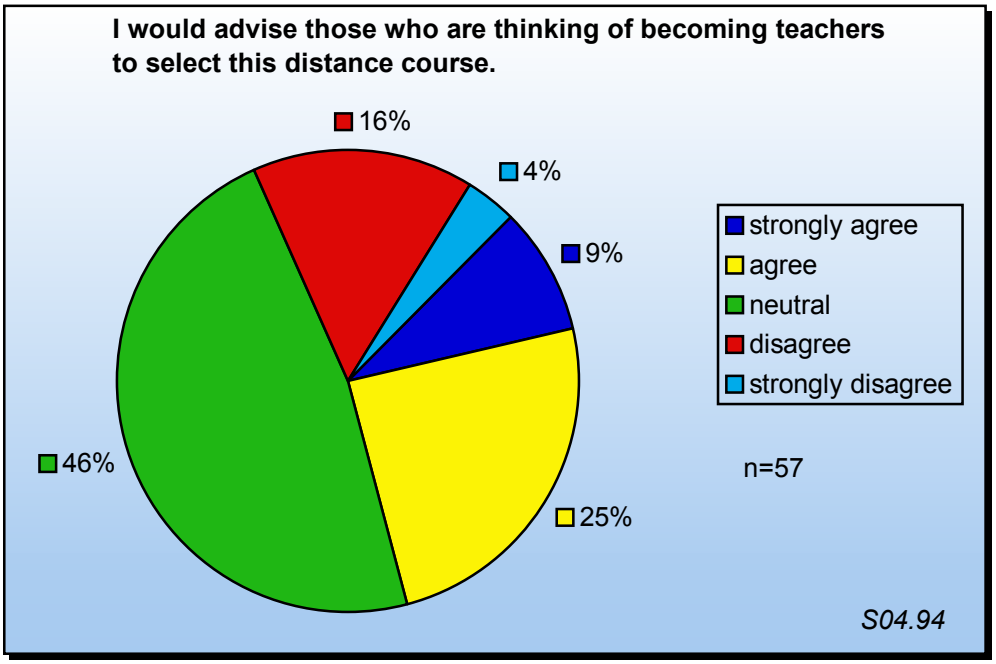

Figure 5.4-10

In the 1994 questionnaire, they were asked if they would advise others to select the distance course. As can be seen from Figure 5.4-10, 4% ‘strongly disagreed’ and 16% ‘disagreed’, 9% ‘strongly agreed’ and 25% ‘agreed’, but 6% were ‘neutral’.

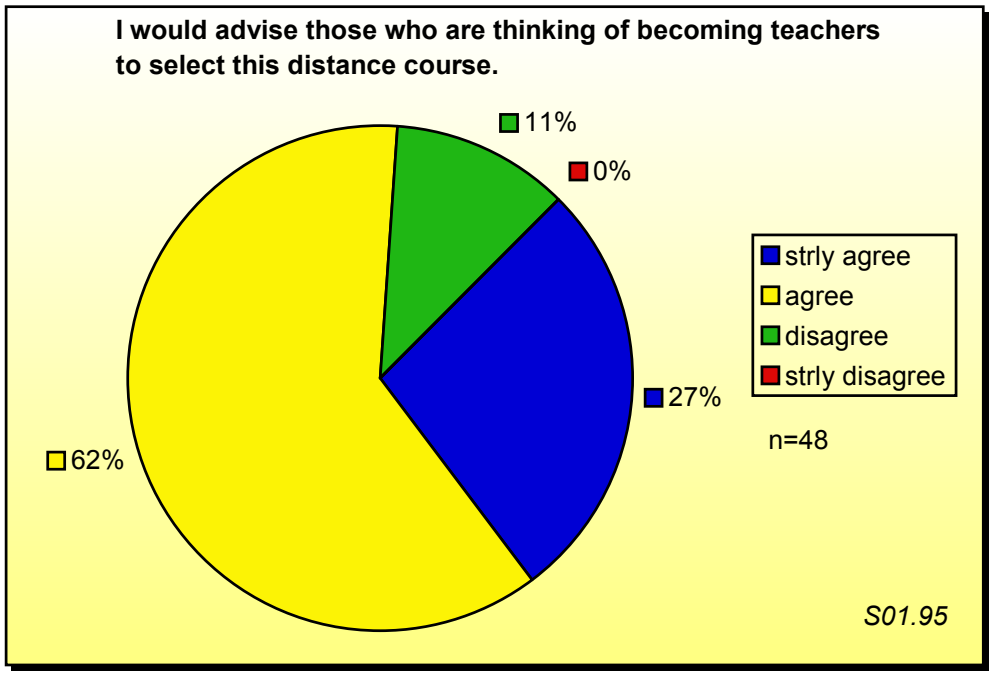

Figure 5.4-11

In the 1995 questionnaire, the students were asked the same question and as can be seen from Figure 5.4-11 no one ‘strongly disagreed’ and 11% ‘disagreed’. It is not possible to compare this because of an error in the questionnaires. In the 1994 questionnaire, there was a ‘neutral’ possibility in the multiple-choice questions, which was not in the 1995 questionnaire.

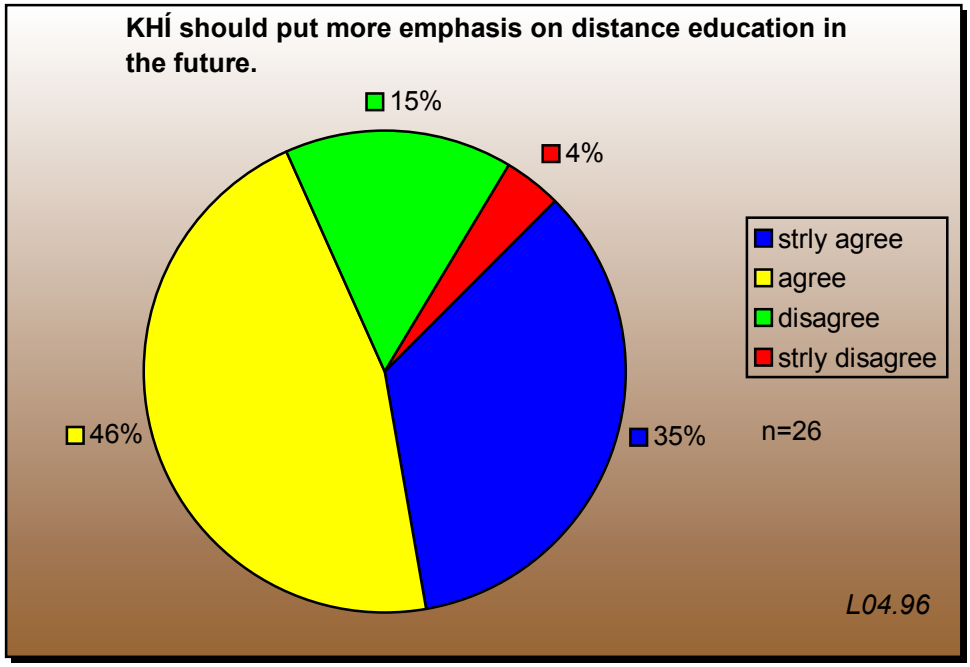

Figure 5.4-12

In the April 1996 questionnaire, the lecturers were asked if KHÍ should put more emphasis on distance education. Figure 5.4-12 shows that 81% 'agree' or 'strongly agree' and only 4% 'strongly disagree'.

5.4.4 Work load on the course

When the course started, students were advised not to work more than 50% of the time in paid employment (see section 2.3.4). It turned out that many of them worked much more than that as can be seen in section 5.4.5.

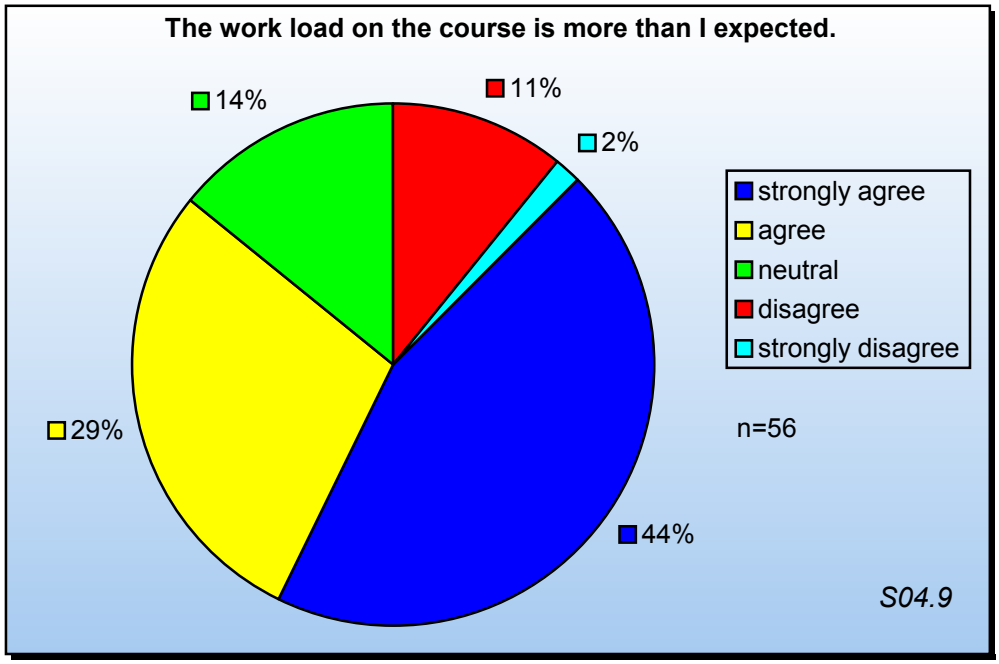

Figure 5.4-13

In the 1994 questionnaire, the students were asked about the workload on the course. It can be clearly seen on Figure 5.4-13 that the majority of them thought that the workload was more than they had expected. As many as 73% of them agree or strongly agree that the workload was more than they had expected.

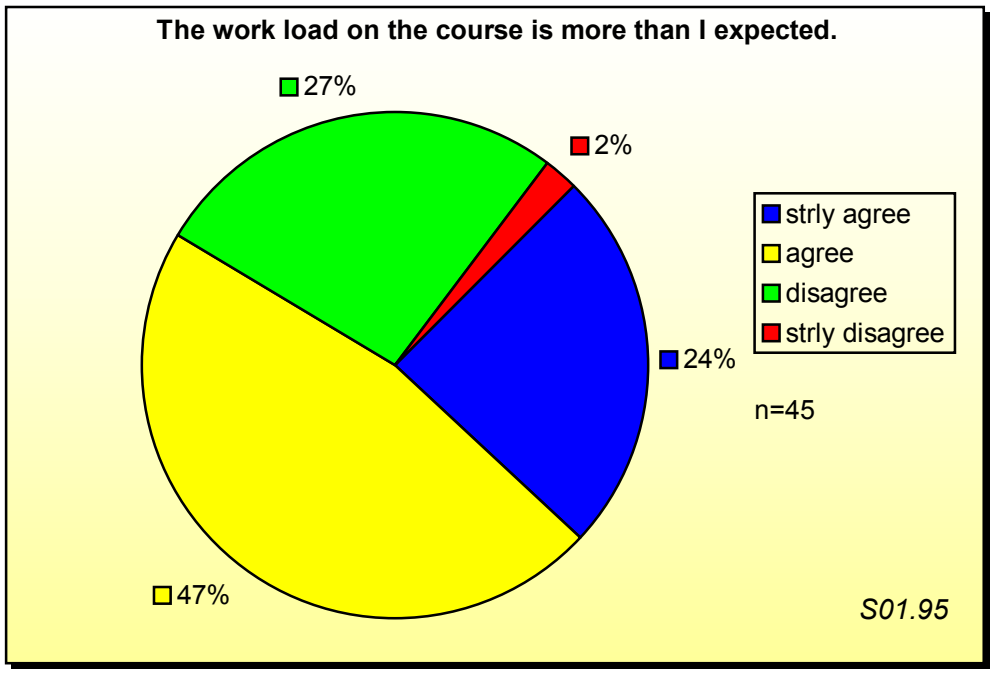

Figure 5.4-14

In the 1995 questionnaire shown on Figure 5.4-14 slightly less than in the 1994 questionnaire or 71% of them agree or strongly agree that the workload was more than they had expected.

5.4.5 Work alongside the study

Most of the students were working as they started on the course and many of them more than full time although they were advised not to work more than 50% in paid employment (see section 2.3.4). The majority of them were working as unqualified teachers (see section 5.3.4). In the 1993 questionnaire, 27% of them were working overtime during the course. In the 1995 questionnaire the figure had gone down to 13% as can be seen on Figure 5.4-15. In 1995 only about 10% were not working outside the home (see also Figure 5.4-15). When the students entered the course they were advised not to work more than half time but very few of them followed that advice.

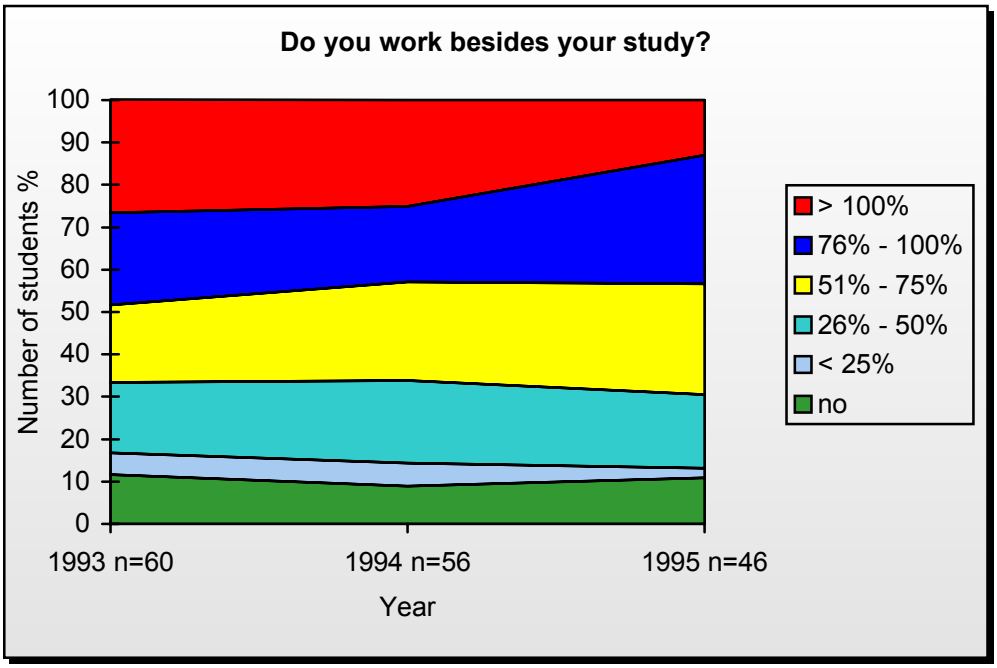

Figure 5.4-15

From Figure 5.4-15 it can be seen that fewer students were working more than full time as the course went on. This does not mean that the individuals decreased their work. The ones who worked the most at the beginning dropped out of the course and most of these were men.

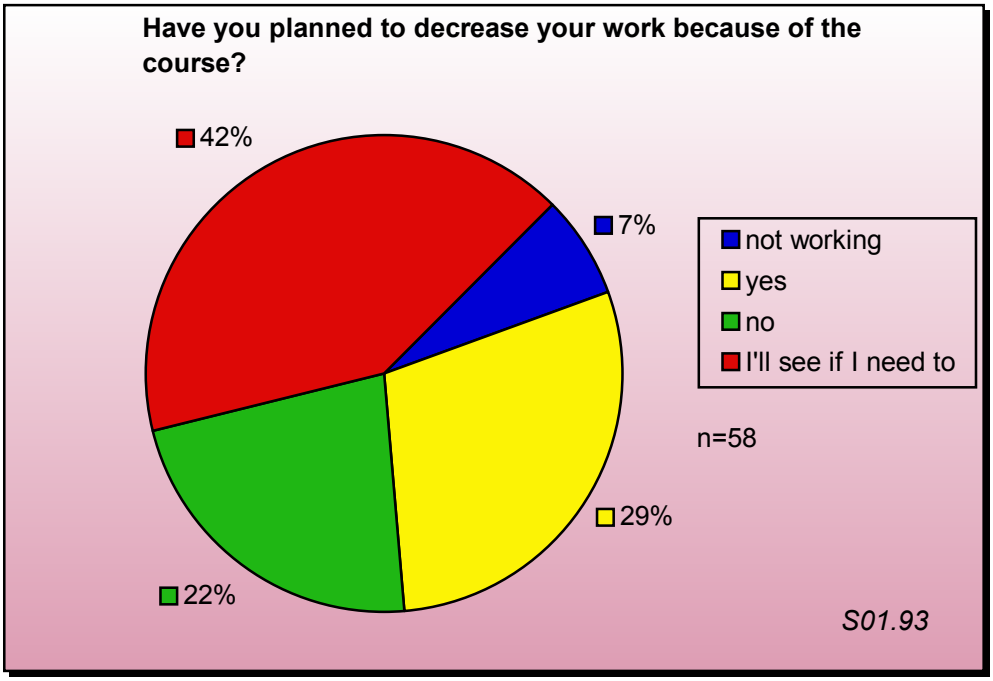

Figure 5.4-16

As can be seen from Figure 5.4-16 which is from the 1993 questionnaire, 29% said that they would decrease their work and 42% of the students said that they would see if they needed to decrease their work as the course went on. This has to be considered high as about 70% of them were working half time or more (see Figure 5.4-15).

Crosstabulation

Count

		Do you work besides your study? (01.95)					
		no	26%-50%	51%-75%	76%-100%	> 100%	Total
Do you work besides your study? (01.93)	> 100%	1		1	1	4	7
	100%			2	5	1	8
	about 75%		1	2	4		7
	about 50%	1		4			5
	about 25%		1				1
	no		2		2	1	5
Total		2	4	9	12	6	33

Pearson Chi-Square value significant at 0.013 **S01.93 & S01.95**

Figure 5.4-17

When crosstabulating the answers from the 33 students who answered both the 1993 and 1995 questionnaires (see Figure 5.4-17), it can be seen that there is not much change in

their workloads. There are 4 who were working more than full time in 1993 and still are in 1995.

Many of the students were teaching besides their study. Both in the April 1994 and January 1995 questionnaires they were asked if they were teaching at that time.

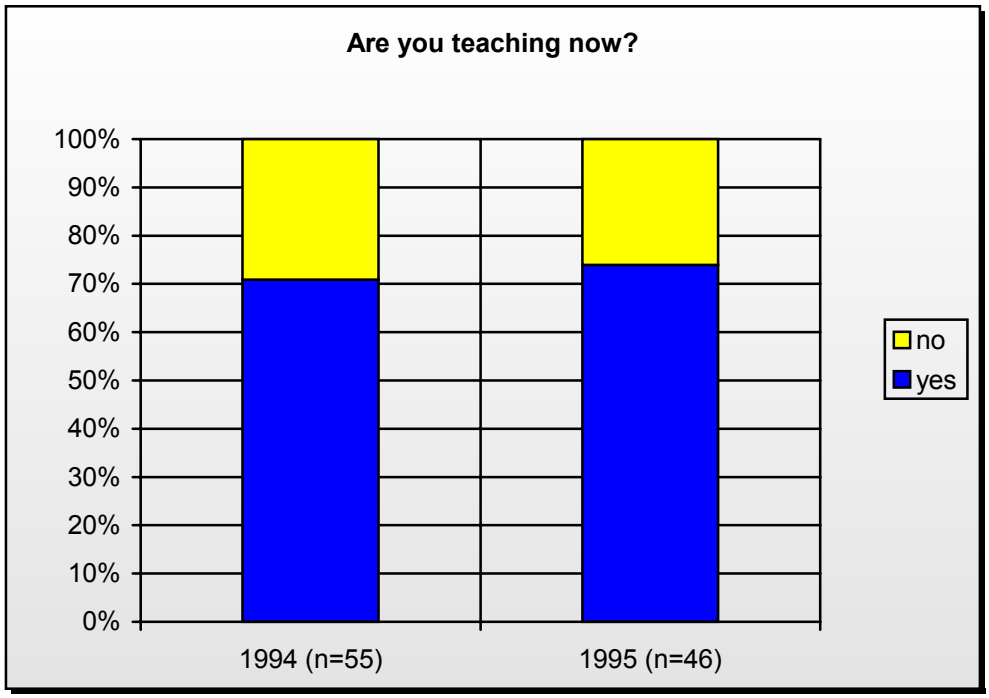

Figure 5.4-18

As can be seen on Figure 5.4-18 just over 70% of them were teaching in both years. In the same questionnaires, they were also asked if they thought it was important or valuable to teach besides their study.

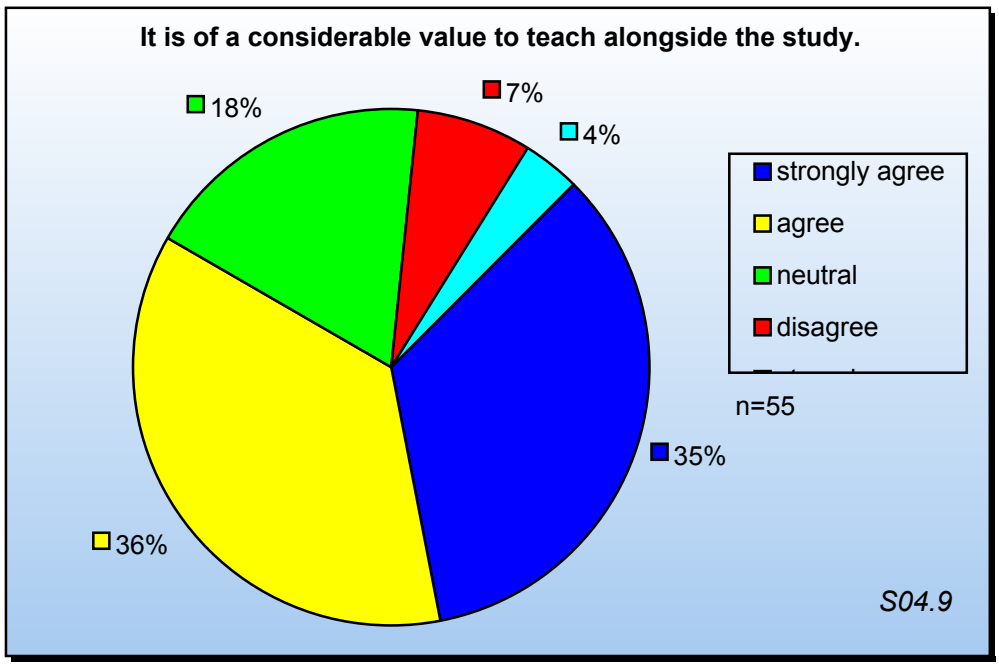

Figure 5.4-19

Figure 5.4-19 shows that in the April 1994 questionnaire just over 70% of the students 'strongly agree' or 'agree' that it is of considerable value to teach alongside the study. Only 4% 'strongly disagree'.

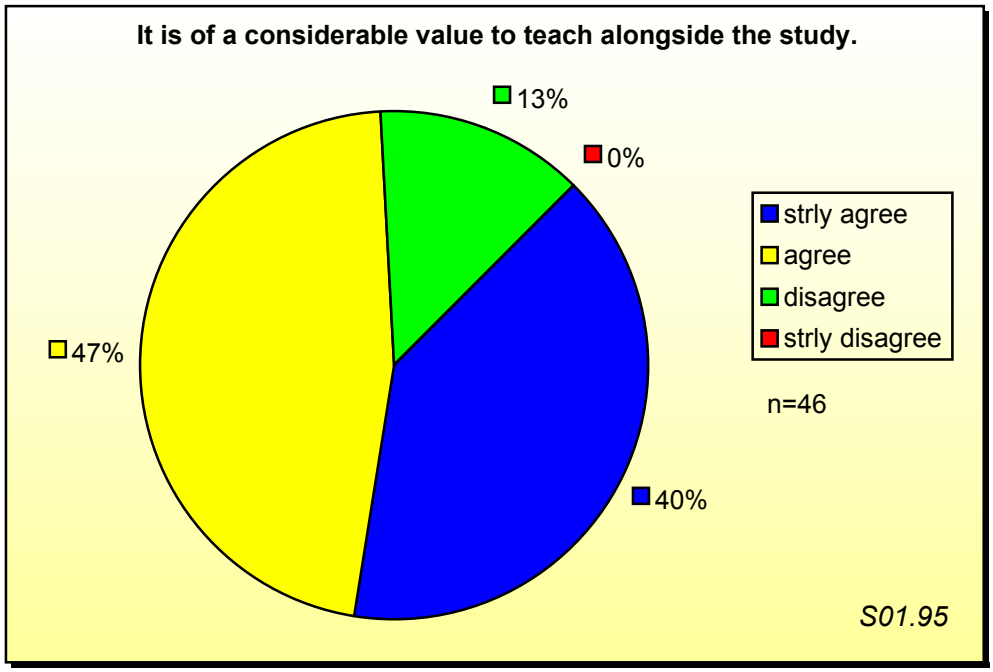

Figure 5.4-20

When asking the same question in the January 1995 questionnaire almost 90% answered 'strongly agree' or 'agree'. No one said 'strongly disagree'. Because the multiple choices are not the same in both questionnaires, it is impossible to compare these two questions.

Crosstabulation

Count

		It is of considerable value to teach alongside the study.					
		strly. agree	agree	neutral	disagree	strongly disagree	Total
Are you teaching now?	yes	18	12	3	4	1	38
	no	1	7	7		1	16
Total		19	19	10	4	2	54

Pearson Chi-Square value significant at 0.003 **S04.94**

Figure 5.4-21

Crosstabulation

Count

		It is of considerable value to teach alongside the study.			
		strongly agree	agree	disagree	Total
Are you teaching now?	yes	17	14	3	34
	no	1	7	3	11
Total		18	21	6	45

Pearson Chi-Square value significant at 0.039 **S01.95**

Figure 5.4-22

As can be seen both on Figure 5.4-21 and Figure 5.4-22 the group that is teaching thinks it is of more value to be teaching alongside the study than the group that is not teaching.

Crosstabulation

Count

		Has it occurred to you to quit?			
		never	once	more than once	Total
Do you work alongside your study?	no	1	1	3	5
	less than 25%	3			3
	26% - 50%	4	3	4	11
	51% - 75%	5	1	6	12
	76% - 100%	3		7	10
	more than 100%	5		9	14
Total		21	5	29	55

Pearson Chi-Square value significant at 0.176 **S04.94**

Figure 5.4-23

Crosstabulation

Count

		Has it occurred to you to quit?			
		never	once	more than once	Total
Do you work alongside your study?	no	3		2	5
	less than 25%			1	1
	26% - 50%	3	2	3	8
	51% - 75%	4	3	5	12
	76% - 100%	4	3	7	14
	more than 100%	2	2	2	6
Total		16	10	20	46

Pearson Chi-Square value significant at 0.932 **S01.95**

Figure 5.4-24

When crosstabulating the questions about whether the students had thought about quitting, from the April 1994 and January 1995 questionnaires with the questions about working alongside study, no significant difference could be found (see Figure 5.4-23 and Figure 5.4-24). This can partly be explained by the fact that the majority of them were teaching which has been shown to support them in their study (see Figure 5.4-19 and Figure 5.4-20).

5.4.6 Further education plans

When phoning the newly graduated teachers in September and October 1996 while administrating the last questionnaire I had long discussions with some of them about their future plans regarding education. Many of them wanted to discuss the possibility especially of finding a postgraduate distance programmes. These conversation proved to me that the course had been successful and this had opened a new possibility for these people scattered all around the country to further their education and at the same time live and work in the parts of the country they had chosen.

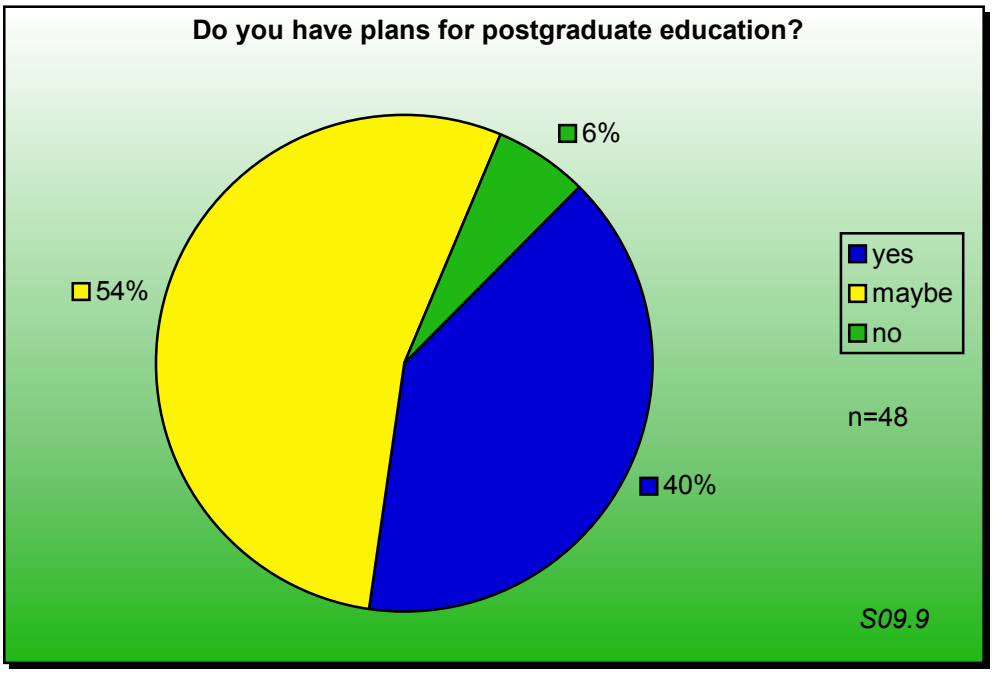

Figure 5.4-25

In the 1996 questionnaire, the newly graduated teachers were asked if they had any plans for further education. As can be seen on Figure 5.4-25 as many as 40% of them answered yes and only 6% no. Some of them said that if they had been asked the same question just after the course finished they might not have answered yes. Having had a few months to relax after a very busy three and a half years, they were ready to start again.

6 Discussion and conclusions

Solitude and Company

When I was young
and walked alone,
alone I lost my way.
I felt rich
when I found a company.
Man delights in man.
(Hávamál, 1995:62)

This chapter highlights the main trends found in the evaluation research of the first B.Ed. distance course offered by KHÍ.

6.1 Student co-operation groups

Co-operation between the students on the course proved to be of great importance for them. This co-operation was different in many ways but the students who had formed working groups tended to feel better about their study or as one said in January 1994 "I have started working a lot with one from Patreksfjörður. We meet once a week. It makes a lot of difference being in co-operation with others." (See section 5.4.1). When asked in the April 1994 questionnaire how important they thought it was to be in co-operation with other students on the course 70% of them answered 'very much', 23% 'much', 5% answered 'some', 2% 'little' and no-one said 'not at all' (see Figure 5.4-3 in section 5.4.1). This has also been noticed elsewhere.

> *Learners benefit significantly from their involvement in small learning groups. These groups provide support and encouragement along with extra feedback on course assignments. Most importantly, the groups foster the feeling that if help is needed it is readily available. (Distance Education at a Glance, Guide #10)*

Some of the lecturers also divided the students into formal co-operation groups working on specific assignments. It was noticed both in formal and informal interviews that students who were in some kind of co-operation with fellow students did not complain as much about lack of communication with their lecturers between the face-to-face courses. The lonesomeness of being a distance student was overcome by forming these co-

operation groups where the students were able to help and support each other, discuss what they were studying and support each other morally.

From this it can be learned that it is of importance to encourage distance students to work together or divide them into formal co-operation groups. Of course, some individuals choose to work alone but when all comes together co-operation between distance students seems to have many advantages. As electronic communication becomes more advanced the possibility of not only written communication over the Internet but also audio and video communication will become much easier and more 'natural'. It may be hard to imagine today that the technology will ever substitute for face-to-face co-operation but with video conferencing and virtual reality, it is becoming closer and closer to the face-to-face situation. The difference between face-to-face communication and electronic communication will become less and less and might eventually in the future stop being significant. It is therefore very important for educators especially distance educators to be aware of the new technology and keep up with new developments in the technical field as well as to adapt teaching and learning methods to this new technology by using it to its full extent.

6.2 Interactive communication

One of the things that was looked into in this evaluation was the students' need for interactive communication. As can be seen in section 3.2, interaction is one of the fundamental concepts in distance education as in education in general. Keegan 1993:13 states that: "Education is a process most simply characterized as an interaction between teacher and student for the purpose of identifying, understanding, and confirming worthwhile knowledge". From both informal and formal interviews and the questionnaires it could be learned how strong the students' need for interaction was. "It happens too often that the lecturers do not answer the E-mails we send them. I for example sent four E-mails to one of my lecturers and got a reply to only one after one week." This is taken from one of the early interviews with one of the students. Many of the lecturers were also concerned about this as can be seen for example in section 5.2.7 where one lecturer says in interview in January 1993:

The main disadvantage with this course is that one is not so much in personal contact with the students. Because of the non face-to-face communication, the students miss an important factor in teacher education. To be at the same place at the same time as the lecturers and other students is in my opinion very important in teacher education and these distance students will miss that. (Lecturer 01.1993)

In this evaluation research there was also found a strong indication that the students who had someone to discuss what they were studying were less likely to drop out (see section 5.3.11). It can be seen on Figure 5.3-31 that the ones who had lesser access to someone to discuss what they are learning seem to be more likely to drop out. Figure 5.3-31 in section 5.3.11 shows the result of crosstabulating the following two questions: 'Do you have someone you can discuss with, what you are studying?' and 'Has it occurred to you to quit?' The students that 'always' or 'often' had someone to discuss what they were studying formed two equally large groups answering the question about whether it had occurred to them to quit. There 17 said 'yes' and 17 said 'no'. On the other hand, the group that said that 'sometimes', 'seldom' or 'never' they had someone to discuss what they were studying was different. Only 4 of them gave the answer 'no' to the question has it occurred to you to quit as 18 said 'yes' to the same question. The Pearson Chi-Square value is significant at 0.016.

The need for interaction is very strong in all education as education has through the years been based on interactive communication. Teacher education in particular is based on and is about interaction and communication. It has to be taken into account that many of the students were teaching at the same time as they were studying and were in the situation of being able to discuss what they were learning with their colleagues (see section 5.3.3).

Through the years distance education or correspondence education has been based on specially designed learning material that can be used without so much outside help or interaction. This has mainly been because of the technical difficulties of interactive communication, which today is changing rapidly. A huge number of new software packages of so-called 'learning environment' for use on the Internet can be found. These packages imitate in a way the face-to-face situation and are sometimes referred to as 'virtual schools'. They are often divided into 'virtual areas' or 'virtual rooms' for discussions both synchronous and asynchronous, written learning material, audio and video clips, slideshows and so on. Some of these 'virtual rooms' encourage interactive communication. The use of teleconferencing or videoconferencing is also making it easier

for educators and learners to be in interactive communication simultaneously. Increasing or improving the interactive communication is one of the key issues in distance education according to Garrison and Shale (1990:128): “improving the quality of the educational process through increasing two-way communication is likely to have the most significant impact upon the effectiveness of learning and in turn is likely to raise completion rates in distance education”. (See section 3.2).

With all the new possibilities that the technology provides for communication, distance educators should move their emphases from producing special learning material to increasing and improving interactive communication.

6.3 Working alongside the study – advantages and disadvantages

As described in section 5.4.5 most of the students were working alongside their study and the majority of them teaching or working in the educational sector. Although they were advised not to work more than half time, (see section 2.3.4) many of them were working more than full time. That proved to be difficult although some of them managed to cope with that as can be seen in section 5.4.5. The reason for that is without a doubt that they were teaching as they were learning to become teachers. If their job had been in no relation with teaching or education the case would have been different. In section 5.4.5, it can also be seen that teaching alongside the study was considered valuable by a great majority of the students (see Figure 5.4-19 and Figure 5.4-20 in section 5.4.5). There were many indications in this research that teaching alongside the study had many great advantages. In that way the students were putting into practice what they were learning as they were learning it. Many of them also had a long teaching experience as the majority of them were older than the face-to-face students and therefore also with more life experience.

This set-up of KHÍ’s B.Ed. distance programme is in some ways similar to apprenticeship teacher training programmes, which can be found in various countries. The main difference is that in apprenticeship teacher training programmes, the learner’s teaching is a formal part of their education and simultaneously they attend courses. In KHÍ’s distance programme on the other hand the teaching was not a formal part of the course and although the students attended courses simultaneously to their teaching most of them had already many years experience of teaching as the course started. Even though the

teaching was not formally part of the students' teacher education many of the lecturers encouraged the students to try out what they were learning in their teaching.

6.4 Support from others than teaching staff

In distance education programmes like the B.Ed. course carried out by KHÍ it is very important to have a network of supporting resources both for teachers and for learners.

As can be seen in sections 5.1.6.1 and 5.3.6.1 the students were pleased with the service they got from the library. In the January 1995 questionnaire students' response to the statement 'The service from the library is excellent' was that 84% of them 'strongly agreed' and 14% 'agreed'. On the other hand 0% 'disagreed' and 2% 'strongly disagreed' (see Figure 5.3-16 in section 5.3.6.1). Almost all data gathered from questionnaires, interviews and diaries about the service of the library was positive. The library seems to have prepared and coped very well with this new situation and this new task.

Students as well as lecturers were pleased with the service and support of Ísmennt in general (see sections 5.1.6.3 and 5.3.6.3). Ísmennt's support to both students and lecturers proved to be sufficient and there are no complaints found in interviews about delay in responses and dealing with problems emerging. On the contrary both students and lecturers stated in interviews and questionnaires how pleased they were with Ísmennt's service or as one of the lecturers said in the January 1993 interview: "Just by sending E-mail to Ísmennt's staff, they seem to be ready to solve ones problem around-the-clock."

As has been described both in section 5.1.6.2 and 5.3.6.2 student counselling was not much used. The reason for that is without doubt that the student counsellor went on a pregnancy leave soon after the course started. Her substitute was not familiar with the preparation or with the distance students. It turned out that the director of the course got very much involved in what should have been typical job for the student counsellor. Figure 5.3-19 from the April 1994 questionnaire shows responses to the statement 'I rather seek help and support from the director of the course than the student counsellor'. 52% of the students 'strongly agreed' and 21% 'agreed' while one 'disagreed' and only 2% 'strongly disagreed'. The rest or 25% were 'neutral'.

From all this it can be learned how important the support network is in modern distance education. In many cases both learners and teachers are using new techniques and skills in delivering and receiving. It is also important for distance educators to have access to people with technical knowledge of new possibilities for delivering learning material and

new ways of electronic communication. In our fast moving world of technology and rapid changes in almost all sectors of our society, distance educators need this technical support and to be informed about new possibilities to teach at a distance what they have specialized in. Instead of using a lot of their time seeking for possible solutions they should be informed about various possibilities so they could choose what is best in their situations and set-up.

6.5 The face-to-face components

As described in section 4.1.1 each term started with a face-to-face component lasting for about two weeks. The students stated both in interviews and in questionnaires that they valued these face-to-face components. The reason was not primarily to get lectures. They found the social aspect very important. In discussions with the students while administering the 1996 questionnaire one of them said: "The face-to-face components are of importance because then we meet the lecturers and get to know them. I find it less important to get lectures". Another student said: "The face-to-face components are important for meeting the other students". According to the questionnaires this need for face-to-face components seemed to grow as the course went on. Both in the 1994 and 1995 questionnaires (see section 5.4.2) there was this statement 'There should be no face-to-face component'. In the 1994 questionnaire 63% 'strongly disagreed', 16% 'disagreed', 7% were 'neutral', 7% 'agreed' and 7% 'strongly agreed'. In the 1995 questionnaire 71% 'strongly disagreed', 20% 'disagreed', 2% 'agreed' and 7% 'strongly agreed'. The 1995 questionnaire did not have 'neutral' as a possible answer. If only the ones who disagree and strongly disagree are counted in both questionnaires they are 79% in the 1994 questionnaire and 91% in the 1995 questionnaire. Even though the neutral are added in the 1994 questionnaire they are only 86%. In the 1996 questionnaire the students were asked 'Should there be a face-to-face component?' and they were only given two options 'yes' or 'no'. The answers were even more in favour to the face-to-face component as 96% answered 'yes' and only 4% 'no'.

The growing need for a face-to-face component can be explained by the fact that the students learned better to know each other as the course went on. The fact that many of them said in interviews that they valued the face-to-face components as a social event proves that the lines from Hávamál in the beginning of this chapter "I felt rich - when I found a company. - Man delights in man." (Hávamál, 1995:62), have not lost their value.

Whether the new communication technology will substitute our need for face-to-face socialization only the future can tell.

6.6 Distance teaching influencing the traditional teaching

One interesting and positive spin-off from the DE-course was that many of the lecturers adapted techniques from their distance teaching and began using it in their traditional settings. Some lecturers stated this in interviews and it was also noticed in the administration of the courses and course description. Lecturers began to use the Internet in communication with their students and some of them decreased direct contact time with students using the Internet instead. Later as the Web became more used, lecturers also made web pages for their face-to-face courses similar to those that they used on the distance courses. There is no doubt that the distance course speeded up the development in using the Internet and the Web in the traditional settings and in KHÍ in general.

As described in section 4.1.1 the distance course was identical to the traditional one in every way except it would take a longer period. The same books were used although most of the lecturers made some learning material in addition to that, mainly in the form of short reading guides with key questions on the books. This has without doubt been a major factor in decreasing the gap between the distance courses and the face-to-face courses at KHÍ. This should also make KHÍ's staff more capable of adopting new technology in teaching.

7 The future

Experience

He is truly wise
who's travelled far
and knows the ways of the world.
He who has travelled
can tell what spirits
governs the men he meets.
(Hávamál, 1995:33)

A class of 8 years old was getting their first lesson in Icelandic history. The teacher had divided them into groups and they were doing a project on the first settlers who came to Iceland around the year 874. One group was making a model of a Viking ship, another the animals that the pupils thought the Vikings had brought with them, and the third the tools that they would have taken with them. When the teacher was walking around looking at their work, she noticed that the group working on the tools had made a TV. As a good teacher she stopped and said to the children, "This is a nice TV you've made, but do you think that the Vikings had a TV"? "Yes" said the children without hesitation. The teacher trying to let them discover their fault, said "but the Vikings came here a long, long, long time ago". "Yes we know", said the children, "this is black and white TV". This is not only a good pedagogical story but it also reminds us of how fast the technology is moving us into the future. The technology we see the glimpse of today will be a part of our daily life tomorrow.

A lot has been written about technology in distance education. We must always bear in mind that learning is a process that takes place in the learner's mind. In education, however there is a need for interaction. As can clearly be seen from the story of the Vikings TV that two-way communication is essential as also is emphasised in section 6.2. The one who is being educated needs to discuss what she or he is learning. The Internet is likely to make dramatic changes in distance education as it has the technical capability to transmit not only the written word and images but also audio and video. This is not tomorrow's technology. It is all possible today but it is not yet a part of the daily life.

7.1 Merging of face-to-face and distance education

Through the years, the making of special learning material has characterised distance or correspondence education. The main reason for this has been the lack of possibilities for two-way communication between a student and a teacher (see section 6.2). Therefore, much of the learning material that has been produced for distance education is almost in the form of do-it-yourself material suitable for self-study. Special learning material and limited two-way communications are the two elements that have distinguished distance from traditional education the most (see section 3.1).

The Internet will narrow and eventually bridge the gap between traditional and distance education. There will not be as much need for special learning material for distance courses because the Internet is an interactive or two-way media. It gives the opportunity for real-time audio and video discussions. In this manner, the Internet will narrow the gap from the distance education side.

As an excellent tool for making and presenting learning material it is likely that the Internet, especially the Web and learning environment based on virtual reality, will be much more used not only for distance education but also for those providing traditional education. In this manner, the Internet will narrow the gap from the traditional education side.

Because of its low cost and wide accessibility it is likely that the Internet will replace the usage of both radio and TV in distance education and probably in general too. At least there are many indications that newspapers, radio, TV, Internet and probably the telephone will all merge in the near future. Then the Internet or its follower will be the main media in both traditional and distance education as well as in general.

If distance education does not need special learning materials any more and the skills in using the Internet are a part of the educator's daily routine, more and more Universities and other educational institutions will be in a better position to offer distance or mixed courses for students across the world.

A sign of this merging was found in this research. The lecturers that taught on the KHÍ distance course adopted methods from the distance course and began using them on the traditional face-to-face course (see section 6.6).

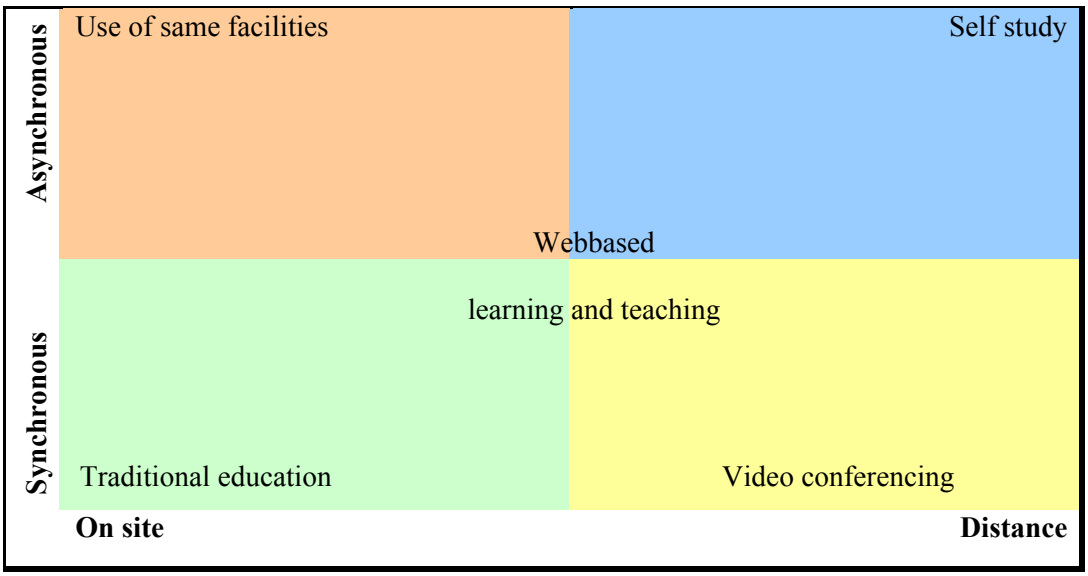

Figure 7.1-1

Figure 7.1-1 can be used for placing different modes of teaching and learning in terms of how time and place dependent they are. The traditional teaching would be placed at the bottom left corner in the green quadrangle, as it is both bound in time and place. Video conferencing would be placed somewhere in the bottom right corner in the yellow quadrangle, as it is bound in time but not so much by place. Most of web based teaching and learning would be placed close to the middle of the figure. This is also the place where KHÍ's B.Ed. distance course would be placed. In the top right corner in the blue quadrangle, self-study would be placed as it is totally independent of time and place. Very little of education can be placed in the top left corner in the pink quadrangle. It mainly relates to learning where there is a need to share some equipment or the facilities on a particular site.

7.2 Where are we heading in education?

It is obvious that Information and Communication Technology will have a major effect on education in the near future. Changes in teaching and lecturing have not been so much compared to most other professions in our society. If we imagine a University lecturer and a surgeon being able to come back after having being away for one century it is no doubt that the lecturer would be in a much better position to start working than the surgeon would be. By using Information and Communication Technology, learning and teaching will change dramatically. The intention in this section is draw a picture of where we seem to be heading in educational settings with the focus on distance education and the use of Information and Communication Technology. Here the distance programme

offered by KHÍ is put into wider context not seen as an isolated project but a part of an evolution already taking place in education today.

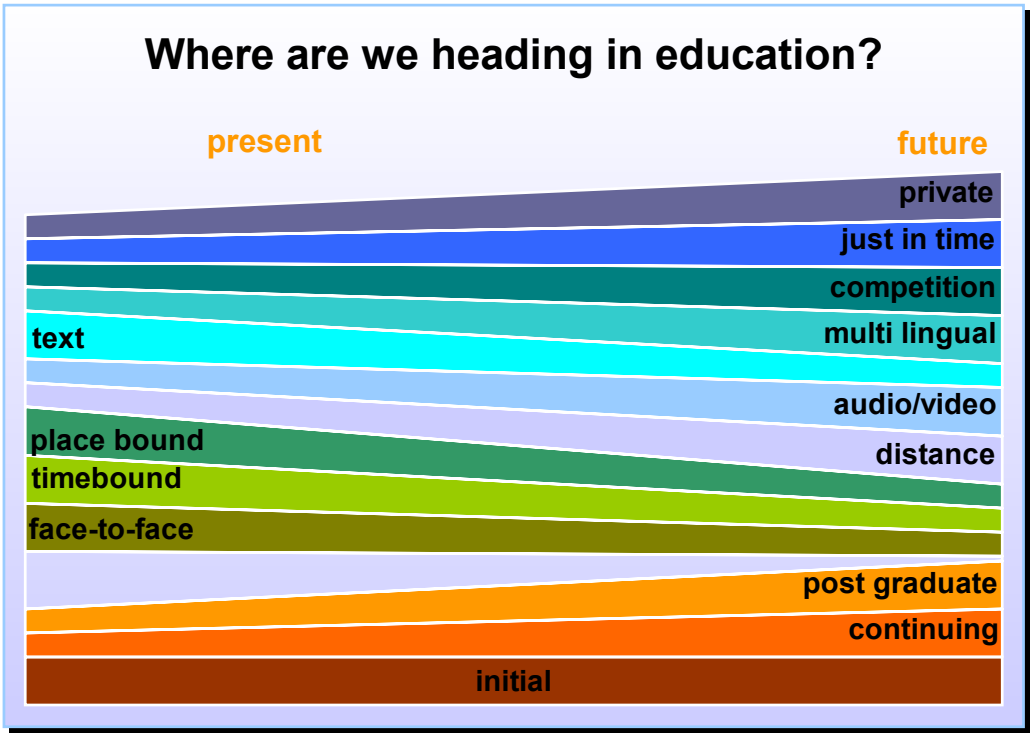

Figure 7.2-1

Figure 7.2-1 shows the main elements in the process of learning and teaching and the most likely trends in the nearest future. The 'present' is not put at the far left on the graph in order to emphasize that what is shown on the graph is already taking place.

There is no clear indication that the role of initial education will increase in the nearest future. It might become more specialized, but in our fast evolving society initial education needs to be a base to build upon. Years ago one could almost learn for life in the short period of initial or compulsory schooling because the changes in society were slow and at times almost at a stand still. The demand for in-service and continuing education is growing everywhere and will keep on growing (see section 2.1). The term 'lifelong learning' is being increasingly used to indicate the importance of keeping up with the changes that are taking place everywhere in our society. As mentioned above we do not learn for life. We constantly need to adapt new skills and gain new knowledge to keep up with changes in our fast evolving society. The demand for post-graduate studies is also increasing rapidly and people are getting their post-graduate degrees later in their lifetime nowadays than before. The fact that more and more people with higher qualifications apply for each job has a snowball effect as it puts pressure on others to further their education by achieving a post-graduate qualification. Distance education will increase at

the same time as face-to-face education will decrease. We already see many indications of this today. The great demand for the B.Ed. distance course offered by KHÍ is just one of the indications we see pointing in that direction (see section 2.3.4). Further more, we will probably in a few years time, no longer distinguish between distance education and face-to-face education. The ICT will without doubt wipe out the distinction, as it will be used more widely in both traditional and distance education (see sections 3.2 and 7.1). As a result of the increment of distance education, time and place bound teaching and learning will decrease.

Referring to Figure 7.1-1 we will see the increment towards and in the blue top right quadrangle, as educational opportunities will be increasingly independent on time and place. This will occur due to new developments in information and communication technology, especially virtual reality and easier, faster and more open access to the Internet. The use of audio and video has been playing an increasing role in education for some decades. Video taped learning material, live broadcasting and interactive use of audio and video for communication are being more and more used in education especially distance education. At the same time, the use of the written word is decreasing. Educational videos or films are replacing textbooks in all education. Voice-mail is starting to replace the written e-mail. For synchronous interactive communication real-time audio/video software like NetMeeting are replacing the text based chat like the IRC (Internet Relay Chat). We are heading towards a text-less society. Whether or when we will reach that stage only time can tell. English is the language of the Information Age. Many people fear that it will completely take over and be everybody's first language or at least equal to ones mother tongue. Linguistic engineers are the ones that could prevent this from happening. They amongst others are working on developing computer programmes for translating one language to another, not only the written but also spoken word. On the Web today programmes for translating text can be found although they are still primitive. In the future these computer programmes will break down the language barriers so everyone can choose courses no matter what the original language of the course is. In this way education will become more international and in this sense multi lingual. As education becomes more and more time, place and language independent competition will increase. We will see more of private schools and companies offering courses on the Internet or its followers regardless of place or language. At the same time, more and more self-study material will be available and what has been called 'learning on demand' or 'just in time learning' will play a major role in in-service and continuing education in the near future.

Whether these changes will improve education in general is hard to tell but they should make education more easily accessible at least for those with skills and access to the information highway, the Internet. It has been said that the social classes of the future will be two; the upper class of the people with access to this new media and the lower class that do not have that access either for economical or other reasons. It is therefore of great importance to teach the young generation the skills needed to use this new media and guide them in their first steps on the information highway. That is only possible if educators are aware of the new technology and keep up with new developments in the technical field as well as keeping up with new developments in their own professional fields.

The new technology of the information age, multimedia and virtual reality open new possibilities that we could not even think of some decades ago. Today, as at every time, we only see a glimpse of what is going to be. We have started our journey on the information highway – a journey into the unknown. This is in a way like driving in a foreign country, except here we can not get any roadmaps because the road is being built as we drive it and often by ourselves. On this journey we must always bear in mind to let the technology serve us in order to reach our aims.

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