

**Torstein Rekkedal & Elisabeth Møystad:**  
**Recruitment Barriers to Learning on the Internet II**  
**Survey among active correspondence students and prospective**  
**students at NKI**

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The survey reported consists of an integrated report of two surveys, which constituted one sub-project of the Project 'Internet-Based Learning Spaces' (Nettbaserte læringsarenaer).

The main project has involved a large number of colleagues at NKI Distance Education. Some have been directly involved in the development of new courses for Internet-based studies, some have been working on developing a specific programme on "how to study on the Internet", and one group has been responsible for the survey part of the project.

The main project was one major activity in the efforts of developing the NKI Electronic College, "Nettskolen".

The main aim of the surveys was to examine attitudes to technologies necessary for Internet-based distance learning, experiences in using technology, and access to PC and the Internet among active distance students and prospective distance students.

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## **Preface**

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*The project has been partly financed by project grants from the Norwegian Ministry of Education, Research and Church Affairs.*

*The members of the project team planning and carrying out the surveys were Anne-Karine Akre, Stephan Gundersen, Elisabeth Møystad and Torstein Rekkedal.*

***Bekkestua, April 1999***



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## Introduction

“There is little doubt that the Web is the most phenomenally successful educational tool to have appeared in a long time” (Mason 1998). Keegan (1999) cites Mason’s statement and also argues that web based education is a subset of distance education and that skills, literature and management decisions developed within distance education are applicable to web based education. Today, web based education is growing faster than any other educational technology (Crossman 1997), specifically at tertiary level. There is good reason that NKI, as a dedicated distance teaching institution, has been strongly involved in developing and researching on computer mediated communication. Recently, efforts have been concentrated on developing courses and didactics for Internet/WWW based education at both secondary and tertiary level (see e.g. Rekkedal 1990, Paulsen 1992a, Paulsen 1998, Paulsen & Rekkedal 1990, Paulsen & Rekkedal 1996, Rekkedal & Paulsen 1997).

During a quite long phase of transition from a 2<sup>nd</sup> generation to a 3<sup>rd</sup> generation distance teaching institution (to use an often applied metaphor of distance education based on print and audio visual media changing to apply computer based multi-media communication technologies (Garrison 1986, Nipper 1989)), strategic policy research (Bates 1993) may constitute one basis for decisions on how and when to introduce changes in the teaching and learning system. This research may focus on market developments concerning attitudes and access to technology, as well as research on faculty and administration attitudes, perceptions and skills.

The project reported here focused on perceptions of and access to computers and the Internet, experiences in using the technology among active distance students taking courses not applying the WWW, and prospective distance students.

Although NKI has offered distance education via computer mediated communication for more that 10 years, it seems that the market has been ready mainly for courses and study programmes in information

technology – specifically at college and university level. This project aimed at examining attitudes to Internet courses among distance students in general and among people interested in further education and training.

Two groups were selected for the survey, a group of newly enrolled distance students and a group of prospective students who had approached NKI for information on distance learning possibilities.

## Research Questions

As in most other industrial countries there is in Norway a broad political consensus on the need for life-long learning and continuous competence development of the total population. The Competence Reform Report No. 42 to the Storting (1997-98) (KUF 1997, KUF 1998) presents the principles and challenges of life long learning for the total population. Some focal principles of the reform involve specific challenges for distance education institutions. E.g. it is stressed that:

- The workplace as a whole and the total population must be motivated and encouraged to take an active part in a long-term, wide-ranging competence reform
- The reform will require educational opportunities adapted to the needs of the adult population
- The reform must have a broad perspective of reaching learners with different degrees of disadvantages, such as unemployed, women, people with low basic education, people in urban areas.
- The reform must be based on the structure of Norwegian working life, for instance that more than 90% of enterprises have less than 20 employees.
- The enormous possibilities of the new information and communication technologies should be exploited to a maximum in the competency reform.

As one of the leading distance education institutions in Norway, NKI is concerned with how to adapt distance education to the needs of the society and the individual learner. In connection with developing distance education based on the new information and communication technologies, specifically the Internet and the WWW, information on barriers to enrolment in distance study generally and specifically to studies on the Internet is important.

Thus, this study was designed to look into barriers to distance learning, with main emphasis on attitudes towards the new technologies, specifically towards PC and the Internet, access to technology, and experience in using the technology.

Statistics on access to technology do exist. For instance, Norsk Gallup examines the access to the Internet and frequency of use as part of the Gallup-Inter Track survey, which is based on interviews carried out every day during the year. The results are published on the WWW at the beginning of every month. The following is cited from Gallup's summary of status for Internet access and use in Norway at the end of 1998 (at the same time as our surveys reported here):

- Nearly half the Norwegian population has access to the Internet (46%)
- Every third Norwegian is a regular user of the Internet (33%)
- Every fourth household has Internet access (24%)
- Every day one out of ten Norwegians accesses the Internet (10%)
- One half of persons between 13 and 40 years are Internet users (52%)

Although, the number of users and frequency of use have increased during the last three years, the demographic characteristics of users have not changed much. The proportion of men and women, young and old and people with high and low education is much the same as three years ago. The proportion of woman users has remained stable between 30 and 40 percent. The mean age of Internet users is 32-33 years (very much the same as the mean age of NKI distance students).

Norway is a world leader concerning access to and application of the Internet. However, we are behind the leading OECD countries in electronic commerce.

Norsk Gallup believes that the number of Internet users will pass 1.4 million during 1999. It is estimated that 600,000 households will have Internet connections in December 1999. It is supposed that Norway will have 2 million Internet users in December 2001. At that time 'the late majority' will be connected to the Internet (Norsk Gallup 1999).

Related to the above considerations, we decided that prospective distance students and active distance students would constitute important sources for information on barriers to enrolment in distance

study, generally, and motivation and/or barriers concerning enrolment in Internet-based distance study, specifically. Thus, the respondents of the surveys represent two different groups, people who actually have taken the decision of embarking on distance study (involvement in distance study) and people who have approached NKI for information on distance study (interest in distance study).

## **Main Research Questions Covered by the Questionnaires**

### **Both Surveys**

- Do distance students and prospective students have access to computers and/or Internet?
- Do distance students and prospective student use a PC at work and/or at home, and how often?
- Do distance students and prospective students prefer using the PC or hand when writing?
- Are there among distance students and prospective students any correlation between variables such as gender, age, previous education, domestic background and variables related to access, experience and attitudes towards computers and the Internet?
- Are there differences between distance students and prospective students concerning access, experience and attitudes towards computers and the Internet?
- Which aspects of distance study do distance students and prospective students emphasise as important, e.g. aspects concerned with individual freedom or aspects concerned with group learning and communication?
- Are there differences between distance students and prospective students concerning which aspects of distance learning they emphasise as important?

### **The Distance Student Survey**

- Are there any relationships between study programme and attitudes towards Internet study, attitudes towards use of computers and the Internet and experience in use of computers?
- Would the students have enrolled if their course/programme required access to and use of the Internet?

- If not, what are their reasons for not being interested in distance study on the Internet?

### **The Prospective Student Survey**

- Which forms of study are actually of interest to the prospective students taking contact with NKI autumn 1998?
- Do the prospective students have sufficient knowledge about different forms of study, specifically do they know enough about Internet-based distance study?
- Do prospective students feel that studies on the Internet are suited to their needs?
- What are the barriers to enrolment in distance study?

## Methodology

We decided to carry out surveys based on questionnaires sent by mail. The only other possibility would have been to carry out a telephone interview. In our experience the telephone interview normally gives a much higher rate of responses. However, time and resources involved in the study led to the decision to carry out the survey by means of a questionnaire sent by post. In constructing questions and items, designing the questionnaires and other procedures, we tried to follow general recommendations on questionnaire based survey research (see e.g. Borg & Gall 1989), although some ideal solutions were not followed, such as hand-written signature, hand-stamped envelopes, sequence of reminders etc.

In designing the questionnaire we applied a stepwise procedure. The research group discussed the research problems and focus of the research to decide on possible questions to include. Some questions were taken from previous surveys among Internet students at NKI (see e.g. Rekkedal 1998a). We also carried out a semi-structured group interview with a small group of correspondence students on reasons for not choosing Internet-based distance study. The results from the group interview have been published on the NKI public Internet pages (Rekkedal 1998b, Rekkedal et al. 1998). The questionnaires were checked and discussed by the research group before they were finalised. We did not pre-test the questionnaires. The questionnaires are presented in Appendix 3 and 4.

The questionnaires were distributed in the beginning of December 1998 with a letter to motivate answering. To stimulate responses among the prospective students we included a lottery among respondents. This was not found necessary for the students, who, we believed, would not need extra incentives to respond. A postal-permit return envelope was enclosed. The questionnaires were anonymous, and no follow-up letters were sent. Questionnaires received before 15<sup>th</sup> January 1999 were included in the analyses.

The statistical analyses have been carried out using the Norwegian FOSS Software Package (Amundsen 1993).

In connection with the analyses we have found it most meaningful to present the two surveys separately. When presenting the results from the prospective student survey, we point to some similarities and differences in relation to the student survey. Finally, we carry out a common discussion and present some conclusions based on the two parallel surveys.

## **Distribution of Questionnaires and Response Rates**

### **The Student Survey**

In the first week of December 1998 a questionnaire was distributed to a selected sample of students at NKI Distance Education. The number of questionnaires distributed to students studying different programmes is shown in Table 1.

**Table 1. Number of questionnaires distributed to and received from students in different study programmes.**

Study programme	Questionnaires distributed		Questionnaires received	
	n	%	n	%
Studiekurs IT*	72	5	22	5
Bedriftsøkonomi	50	3	18	4
Ledelse og organisasjon	50	3	18	4
Led. og adm. For H&S	50	3	25	6
Skolefritidspedagogikk	50	3	10	2
Teknisk fagskole	203	14	54	12
Arbeidslederskolen	200	14	53	12
Fagprøver	202	14	22	5
Interiørskolen	200	14	36	8
Generell st. kompetanse	100	7	19	4
Helse- og sosialfag	100	7	36	8
Andre studier	195	13	45	10
Uoppgitt			75	17
Total	1472	100	433	97

\*Note that these students have had a choice between Internet-based studies and correspondence study – and deliberately chosen correspondence study.

The study programmes were selected to cover a wide variety of courses and programmes with supposed different student groups as to gender, age and previous level of education, interests, course level.

The main aim was to cover a broad group of active distance students taking courses not on the Internet or having preferred the more traditional form of print based material and communicating by ordinary post (where courses and programmes had been offered in both forms). Only the students studying the IT Programmes had actually had a real choice between forms and chosen 'correspondence study'. In the questionnaire the variable 'Study Programme' had to be filled in by the students. We may note that a considerable number of respondents have not answered the question on study programmes, which means that there are great difficulties in judging possible variations in response rates among different groups of students. Some 10 questionnaires were returned as undeliverable. Thus, the total response rate was approximately 30%, when we finished coding the data 15<sup>th</sup> of January 1999.

For all the study programmes, the questionnaire was sent to those students enrolled most recently until reaching the decided number of subjects. For the IT courses we selected all the 72 students, who had enrolled during 1998 and not chosen Internet-based learning.

### **The Survey of Prospective Students**

The second part of this research study constituted a parallel postal survey among prospective students. A random sample of 1000 persons, who had asked for the NKI Distance Education prospectus in August 1998 and, according to our registrations, had not enrolled for any course or study programme at NKI Distance Education studies was selected for the survey. The time period was chosen as a compromise of reaching recent prospective students that still had had time to consider and decide whether to enrol or not. The questionnaires were distributed during the second week of December 1998. To stimulate responses, the respondents were promised that they would take part in a lottery to win a travel prize worth up to 5,000.- Nkr. Many people contact NKI on behalf of others, e.g. spouse or children and we pointed out specifically if this was the case, we preferred them not to reply to the questionnaire. January 15<sup>th</sup> 1999 we had received 277 filled in questionnaires. We also received 15 questionnaires returned because the addressee had not been identified.

Thus, the response rate was 28% (if all were supposed to be actual prospective students themselves).

### **Response Rates and Consequences**

The response rates in the student survey and the prospective survey were 30 and 28 percent respectively. There is no doubt that these quite low response rates lead to serious difficulties in deciding to which extent the respondents really are representative for the groups that we wished to examine. It might be that responses are biased for instance in the sense that a higher percentage of students and prospective students with interest, knowledge and experience related to computers have responded. One way of checking whether the respondents represent a biased group is to interview a randomly selected number of non-respondents. Borg & Gall (1989) recommend that 20 case interviews would constitute a good basis for judging possible biases. In our case, we find that the pre-survey group interview to some extent has supported that there is reason to believe that the survey results are not necessarily especially biased. Additionally 15 questionnaires were received from both groups after the analyses had been carried out. These late respondents did not differ much from the others. The question of bias should be followed up by further research in similar groups at NKI and elsewhere.

## Results – The Student Survey

### Some Background Information on the Students

#### Gender

**Table 1. Gender – Students.**

Gender	n	%
Women	235	54.8
Men	194	45.2
Total	429	100.0

No answer: 4

There are more women than men among the respondents. This is not in accordance with the average distance student population at NKI. The gender distribution among all students enrolled to NKI distance courses (not included combined studies) during 1998 was examined as a control. The overall gender distribution in the 1998 cohort was 57% men and 43% women. As mentioned, the sample of students was not supposed to be randomly selected. In fact we wished to cover specific courses and programmes of large importance and with different student populations concerning gender, age, educational background, and probably areas of interest. We will see from the analyses to come that access to PCs and the Internet and experience and attitudes to computer and communication technology give women a disadvantage concerning recruitment to Internet-based distance study. Consequently, we will assume that related to the real distribution of men and women in NKI distance courses the overall interest for technology based studies is somewhat larger than the total figures indicate in our study.

#### Age

**Table 2. Age - Students.**

Age	N	%
24 years or less	62	14.4
25-29 years	88	20.4
30-34 years	105	24.3
35-39 years	85	19.7
40 years and more	92	21.3
Total	432	100.1

No answer: 1                      Md = 32.6 years

In the same way as with the gender variable we have examined the age distribution of the whole cohort of students enrolled to NKI distance courses and programmes during 1998. The age distribution between the sample selected for this survey and the total cohort of 1998 students did not differ much. The median age of students enrolled during 1998 was 32.3 years – nearly exactly the same as in the survey. However, in the total cohort of students there were significantly more students aged 24 years or less (24%) and fewer students in the 25-29 year group (14%). As the youngest students in the survey group had less access to PCs and the Internet, this difference would count in the opposite direction of the gender differences in drawing conclusions or generalising to the total student population. In conclusion, we would tend to assume, that in spite of not selecting a random sample for our survey, the sample may be considered to be reasonably representative of distance students recruited to NKI during the last year concerning PC use and access to the Internet. During 1997/1998 we have carried out a number of different evaluation surveys among NKI distance students. In these studies median age has showed little difference and varied between 30.7 and 34.3:

Completed WWW students in different tertiary level courses:

Md = 34.3 (Rekkedal 1998c)

Exam candidates Technical College:

Md = 31 (Rekkedal 1997)

Active students in secondary school general subjects:

Md = 30.7 (Rekkedal & Qvist-Eriksen 1998)

Active students on WWW courses:

Md = 31.8 (Rekkedal & Paulsen 1997)

It seems that NKI students on an average are somewhat younger than students in Norwegian distance teaching institutions in general, see e.g. Madsen & Sannes (1998).

## Previous Level of Education

**Table 3. Previous level of education - Students.**

Level of education	n	%
Primary school 9 years	31	7.2
Primary + 1 or 2 years	131	30.3
3 year secondary school	90	20.8
Above 3 year secondary	78	18.1
1-3 year higher education	63	14.6
4 years or more higher ed.	39	9.0
<b>Total</b>	<b>432</b>	<b>100.0</b>

No answer: 1

The median educational background of the students is close to completed 3 years of secondary school equivalent to General Certificate of Education ‘A’ level (University entrance level). Above 3 years secondary means that they have completed some additional education not defined as higher education.

## Vocational Situation

**Table 4. Vocational situation - Students.**

Vocational situation	N	%
Working full time	279	65.6
Working part time	64	15.1
Home working	35	8.2
Unemployed/student/disabled	47	11.1
<b>Total</b>	<b>425</b>	<b>100.0</b>

No answer: 8

The majority of the students are working full-time. A large group is also working part-time. Some are also working at home. Some of the students study full-time at a distance, while a few also take distance study besides other types of ordinary studies.

## Domestic Background

**Table 5. Domestic background - Students.**

Domestic background	N	%
Large city (Oslo/Bergen/ Trondheim/Stavanger	117	27.0
Smaller city	112	25.9
Densely built up area	100	23.1
Countryside	104	24.0
Total	433	100.0

The four defined types of geographical background are represented with about ¼ of the sample in each. The categories do not correspond completely to demographic definitions used in official Norwegian statistics.

## Main Reason for Taking the Course

**Table 6. Main reason for taking the course - Students.**

Main reason	N	%
Need for the competence in present job	64	16.1
Increasing formal competence	150	37.8
Possibilities for change of job	108	27.2
Interest in the subject	75	18.9
Total	397	100.0

No answer: 36

The students enrol in distance study for increasing formal competence or for job related causes. Increasing the possibility of changing jobs seems to be of greater importance for a larger group of students than actually studying to be able to achieve better in their present job.

## Access to a PC, the Internet and Use of a PC

### Access to a PC

**Table 7. Do you have access to a PC - Students?**

Access to a PC	N	%
No	62	14.3
Yes, at work	69	15.9
Yes, at home	143	33.0
Yes, both at home and at work	159	36.7
Total	433	100.0

More than 85% have access to a PC, either at home or at work. It seems from our general experiences and also from information in this survey that access at home is a necessary condition for most students for technologies to be applied in distance learning. 70% of the students have access to personal computing at home. It is important to note that possible access does not mean that the respondent uses the PC or know how to use a PC.

### Access to the Internet

**Table 8. Do you have access to the Internet - Students?**

Access to Internet	N	%
No	179	41.8
Yes, at work	91	21.3
Yes, at home	108	25.2
Yes, both at work and at home	50	11.7
Total	428	100.0

No answer: 5

It is worth noting that nearly 60% of the students have access to the Internet, a significantly higher proportion than the Norwegian population as a whole (46%)(Gallup 1998). 37 % of the students have access from home, again a considerably higher access rate than the population (24%)(Ibid.). Thus, concerning questions to which degree the market of distance learners is technologically prepared for study on the Internet, it seems that there is a higher proportion of distance students with access to the Internet than among the general public in 1998/99. Other studies have shown that access to technology seems to

be higher among distance students than in the population as a whole (see e.g. Kirkwood (1997) on access to computers among the British Open University distance students).

## Use of PC

**Table 9. Do you use a PC yourself - Students?**

Do you use a PC?	N	%
No	93	21.6
Yes, at work	74	17.2
Yes, at home	114	26.5
Yes, both at work and at home	150	34.8
Total	431	100.1

No answer: 2

The figures on rate of PC use show clearly that a large group of students with access to PC do not use a PC. While 70% have access to a PC at home, 61% use the computer at home. The general impression through analyses carried out here is that there are some students, specifically a group of women 35 years and older, who might have both PC and access to the Internet at home, which is used mainly by the spouse or perhaps more often by the teenager child.

**Table 10. How often do you use a PC - Students?**

Frequency of PC use	N	%
Never	52	12.3
Once a while	95	22.4
Weekly	71	16.7
Daily	206	48.6
Total	424	100.0

No answer: 9

While more than 20% say that they do not use a PC at home or at work, only 12% say that they never use a PC. A large majority uses the PC frequently, e.g. 65% of the students use a PC weekly or daily.

**Table 11. When you write something, do you prefer to use a PC or do you prefer writing by hand - Students?**

Preference when writing	N	%
Prefer handwriting	144	35.0
Prefer using PC	268	65.0
Total	412	100.0

No answer: 21

It has been discussed in the organisation whether the NKI student population is prepared to write their assignments on a PC. The answers to the question on preference when writing show that 65% of the students in this survey actually prefer to use a PC when writing.

## Attitudes towards Studying on the Internet Probability of Enrolment in Internet-Based Study

**Table 12. If your present study programme had required that you had to use a PC and communication on the Internet, would you have enrolled - Students?**

Probability of enrolment in Internet-based study	N	%
Yes, absolutely certain	118	27.4
Yes, probably	129	29.9
Don't know	66	15.3
No, probably not	83	19.3
No, absolutely certainly not	35	8.1
Total	431	100.0

No answer: 2

It is a general experience of survey research that factual questions normally give reasonable reliable and valid results. Asking hypothetical questions involves large difficulties in interpretation answers. Thus, one should be careful in drawing conclusions on the students' inclination of enrolling in Internet-based courses based on their answers to the above question. Cross tabulations between access and technology use variables and inclination of enrolling to Internet-based courses show significant relationships indicating that access to PC and frequent use of PC both at work and at home and access to the Internet from home are positively correlated with interest for Internet study.

**Table 13. Reasons for not enrolling in study requiring access to the Internet – Students (Percentages).**

Reason	N	Important	Some Importance	No Importance
Uncertain about what Internet studies demand of me	185	21	39	40
I have no access to PC at home	176	42	11	48
I have no access to PC at work	172	20	9	70
I never or seldom use a PC	176	23	22	55
I do not have access to the Internet	178	58	14	28
Correspondence study functions just fine for me	177	51	37	12
I have never learnt how to use a PC	173	20	17	64
I do not know which advantages Internet study gives	178	34	32	34
I will not get hold of a PC in the near future	169	23	21	56
I prefer writing by hand	174	22	21	56
I am afraid of encountering technical problems	176	15	27	57
Other reasons	105	20	6	74

No access to the Internet is the most frequent reason for the students who have answered negatively to the question on probability of enrolling in Internet-based distance study. It seems quite clear, and it is also stated specifically by many students, that they consider access from home as a necessary condition for taking courses on the Internet.

In planning Internet-based distance courses and programmes, one should also note that a large majority of the students tick the alternative “Correspondence study functions just fine for me” as important or of some importance when answering that they would not enrol in Internet courses.

The answers also indicate that experience in the use of PCs is of some importance in their negative attitude to the possibility of enrolling in Internet studies. There seems to be relatively little anxiety about possible technical problems.

Uncertainty about what Internet study demands of the student and about advantages of Internet study does play some importance in their stated reluctance towards Internet-based distance education.

## Attitudes Towards some Specific Aspects of Distance Learning

**Table 14. Importance of some specific aspects of distance learning – Students (Percentages).**

Aspect of distance Learning	Very important		Of little importance			N	Md
	1	2	3	4	5		
That the studies are part time	66	16	10	3	5	419	1.26
That you can start at any time	60	21	14	3	4	423	1.36
That you can choose your own pace	68	19	9	2	2	430	1.24
That you can be in contact with fellow students	20	12	16	21	32	416	3.61
That you can participate in local face-to-face	21	14	17	15	34	414	3.43
That you receive quick feedback from teacher	52	29	14	3	2	421	1.46
That the studies apply modern technology	19	21	28	12	21	413	2.87

Concerning the question of the importance of participation in local face-to-face class teaching, the distribution of answers is largely influenced by the students of ‘*Arbeidslederskolen*’ (Lower level management). The majority of these students study distance education courses in combination with participation in local classes. With these students excluded the Md = 3.90. With the same students excluded concerning ‘contact with fellow students’, the Md = 3.77.

Similar questions on aspects of teaching and learning presented in the above table have been asked in other NKI evaluation studies. When designing courses on the WWW, one may apply models originating in traditional distance study, traditional face-to-face study or develop didactics based on the generic characteristic of learning on the Internet and WWW. We have, through more than 10 years of experimenting and developing distance teaching based on computer mediated communication, come to the conclusion that a majority of students seem to prefer learning in a system with more emphasis on individual autonomy and flexibility than on group based learning.

Consequently, we have quite some liking for the position taken by Keegan (1999) “...that web based education is best regarded as a subset of distance education and that the skills, literature and practical management decisions that have been developed in the form of educational provision known as ‘distance education’ will be applicable mutatis mutandis to web based education.” In this

connection we could also refer to Gamlin's (1995) discussion of didactic and pragmatic characteristics of teaching and learning in the classroom, the extended classroom and in the correspondence education model. The teaching strategies and the emphasis on individual and group learning activities may, of course, vary between different target group, educational level and courses with different aims and objectives. See e.g. Paulsen (1992b) for a discussion of restraints in schemes relying on co-operation related to needs for individual freedom and flexibility.

The answers presented in table 14 clearly support the assumption that distance students appreciate individual freedom and flexibility and put much less emphasis on group learning and communication with fellow students. It should be noted that quick feedback from the tutor also is considered important. The answers are very similar to answers given by students with actual experience from Internet and WWW based learning (Rekkedal & Paulsen 1997).

As we will see later in this report, the same aspects are valued similarly by prospective distance education students.

## Some Relationships between Student Background Variables and Access to Computers and the Internet, Use of Computers and Attitudes towards Internet Studies

### Study Programme

**Table 15. Relationships between Study Programme and Variables Related to PC and Internet – Students (Percentages, N varies from 412-433).**

Study Programme		IT	Bed. øk.	Led. og Org.	Led/ Adm H&S	SFP	TF	AL	Fag-Prøv	IS	Gen. st.k.	H&S	Other	Un-known	Tot%
Access to a PC	No	-	11	6	4	10	2	6	14	28	21	50	22	10	14
	Job	5	11	11	24	20	7	36	23	8	11	6	22	15	16
	Home	46	11	17	32	30	37	15	36	39	53	42	36	35	33
	Both	50	67	67	40	40	54	43	27	25	16	3	20	40	37
Access to the Internet	No	32	39	39	52	40	17	45	36	50	50	69	46	40	42
	Job	27	22	28	20	30	26	21	23	14	17	8	21	25	21
	Home	27	17	11	28	20	33	23	36	31	33	19	21	24	25
	Both	14	22	22	-	10	24	11	5	6	-	3	14	13	12
Use of PC	No	-	11	17	12	10	4	17	36	37	21	61	31	16	22
	Job	5	6	33	32	20	7	30	14	17	11	8	20	18	17
	Home	50	17	6	16	30	33	8	36	26	53	28	29	27	27
	Both	46	67	44	40	40	56	45	14	20	16	3	20	39	35
Freq. of PC Use	Never	-	6	6	8	10	4	7	20	26	16	42	16	4	12
	Once a Weekl	9	17	22	24	20	6	21	36	43	5	31	32	22	22
	Weekly	9	17	11	16	50	24	2	5	9	53	8	18	23	17
	Daily	82	61	61	52	20	67	69	41	23	26	19	34	51	49
Writing Prefer.	PC	95	75	65	68	70	81	57	50	47	68	40	56	77	65
	Hand	5	25	35	32	30	19	43	50	53	32	60	44	23	35
Prob. of Enrol in Internet Studies	Yes, c	32	44	44	13	20	63	17	32	11	16	17	27	20	27
	Yes, p	27	17	22	33	20	22	45	36	33	32	17	20	39	30
	Don't	18	11	6	33	-	9	13	14	25	5	8	18	20	15
	No, p	18	28	17	13	40	6	21	18	17	21	44	29	10	19
	No, c	5	-	11	8	20	-	4	-	14	26	14	7	11	8
<b>N</b>		<b>22</b>	<b>18</b>	<b>18</b>	<b>25</b>	<b>10</b>	<b>54</b>	<b>53</b>	<b>22</b>	<b>36</b>	<b>19</b>	<b>36</b>	<b>45</b>	<b>75</b>	<b>433</b>

It is recommended not to apply the  $\chi^2$ -test to examine relationships when theoretical cell frequencies are less than 5. Still, an examination of the table will clearly demonstrate that there are significant differences of theoretical interest between students studying different programmes concerning the variables examined in the above table. See discussion below.

Relationship between Study Programme and Writing Preference gives:

$$\chi^2 = 38.756, df = 12, p < .001***$$

There are significant differences between study programmes concerning the students' preference for PC or handwriting.

There is no doubt that there are significant co-variations between the study programmes in table 15 and demographic variables such as gender, age, level and type of previous education. In fact, that is the main reason for selecting students on the basis of study programme, rather than selecting the students randomly from the whole NKI distance student population. For example, there are more than 90 percent women in LAHS (*Management and administration for the health and social sector*), Interiørskolen (*Interior design*) and Helse- og sosialfag (*Health and social subjects*), while there are more than 80 percent men in Teknisk fagskole (*Technical College*) and Fagprøver (*Theory for vocational qualifying examination*). Similar differences exist concerning age, e.g. 40% of LAHS students are over 40 years old, while more than 40% of the students in the *Health and Social Subject courses* are 24 years or younger. Thus, the students taking these studies are relatively old and quite young women, respectively.

Concerning differences in access to technology, experiences in using technology and probability of enrolment to Internet-based studies, it must be noted that students in the first category, the IT students, actually have had a choice between correspondence and Internet-based study and chosen correspondence study. Thus, it is not specifically surprising that they have less preference for Internet studies than some of the other student groups have.

Access to a PC at home varies from (96% among IT students) 91% among Technical College students to 45% among health and social subject students. Access to the Internet from home varies from 57% among Technical College students to 22% among health and social subject students. Similar differences are found concerning use of PC

and probability of enrolling in Internet-based studies if this would be the only choice. Note that 85% of Technical College students tick on the positive side.

When deciding distance teaching technology, there is no doubt that there are significant differences between types of courses and studies and student access to technology, experiences in using technology and preferences for technology.

## Gender

**Table 16. Relationships between Gender and Variables Related to PC and Internet – Students (Percentages, N varies from 408-429).**

Gender		Women	Men	Total %
Access to a PC	No	20	8	15
	Job	15	18	16
	Home	36	30	33
	Both	30	44	37
Access to the Internet	No	46	37	42
	Job	21	23	22
	Home	24	27	25
	Both	10	14	12
Use of PC	No	27	15	22
	Job	19	12	17
	Home	27	26	27
	Both	28	43	35
Frequency of PC Use	Never	17	7	12
	Once a while	29	14	22
	Weekly	17	16	17
	Daily	37	63	49
Writing Preference	PC	60	71	65
	Hand	40	29	35
Probability of Enrolling in Internet Studies	Yes, abs. certain	23	33	27
	Yes, probably	26	34	30
	Don't know	18	12	15
	No, prob. not	24	14	19
	No, abs. cert. not	10	6	8
<b>N</b>		<b>235</b>	<b>194</b>	<b>429</b>

**Relationship between Gender and Access to PC:**

$\chi^2 = 18.648$ ,  $df = 3$ ,  $p < .001^{***}$

**Relationship between Gender and Access to the Internet:**

$\chi^2 = 4.157$ ,  $df = 3$ ,  $p = .246$

**Relationship between Gender and Use of PC:**

$\chi^2 = 14.329$ ,  $df = 3$ ,  $p = .003^{**}$

**Relationship between Gender and Frequency of PC Use:**

$\chi^2 = 32.711$ ,  $df = 3$ ,  $p < .001^{***}$

**Relationship between Gender and Preference when Writing:**

$\chi^2 = 4.961$ ,  $df = 1$ ,  $p = .026^*$

**Relationship between Gender and Probability of Enrolling in Internet Studies:**  $\chi^2 = 15.473$ ,  $df = 4$ ,  $p = .004^{**}$

There are marked and significant differences between gender and the variables of access to, use of and attitudes towards computing.

Concerning access to the Internet, there are less difference between men and women. This is probably caused by the fact that access to the Internet at home is related to the family as a whole, rather than to the individual person in this survey.

## Age

**Table 17. Relationships between Age and Variables Related to PC and Internet – Students (Percentages, N varies from 411-432).**

Age		<24 years	25-29 years	30-34 years	35-39 years	>40 years	Total %
Access to a PC	No	31	11	11	15	9	14
	Job	16	21	18	11	13	16
	Home	40	32	34	31	30	33
	Both	13	36	37	42	48	37
Access to the Internet	No	60	40	43	35	36	42
	Job	15	25	20	19	26	21
	Home	21	23	26	30	26	25
	Both	5	12	11	17	12	12
Use of PC	No	44	15	13	25	19	21
	Job	11	21	21	14	17	17
	Home	34	28	31	24	18	27
	Both	11	36	35	38	47	35
Frequency of PC Use	Never	26	7	10	16	8	12
	Once a while	32	21	19	20	22	22
	Weekly	21	22	16	12	14	17
	Daily	21	51	55	52	55	49
Writing Preference	PC	42	75	68	71	62	65
	Hand	58	25	32	29	38	35
Probability of Enrolling in Internet Studies	Yes, abs. certain	18	33	30	33	21	27
	Yes, probably	18	26	33	32	37	30
	Don't know	10	19	15	14	17	15
	No, prob. not	37	19	14	15	17	19
	No, abs. cert. not	18	2	8	6	9	8
N		62	88	105	85	92	432

### Relationship between Age and Access to PC:

$\chi^2 = 33.095$ ,  $df = 12$ ,  $p < .001^{***}$

### Relationship between Age and Access to the Internet:

$\chi^2 = 15.388$ ,  $df = 12$ ,  $p = .223$

### Relationship between Age and Use of PC:

$\chi^2 = 41.662$ ,  $df = 12$ ,  $p < .001^{***}$

### Relationship between Age and Frequency of PC Use:

$\chi^2 = 32.597$ ,  $df = 12$ ,  $p < .001^{***}$

### Relationship between Age and Preference when Writing:

$\chi^2 = 20.134, df = 4, p < .001^{***}$

**Relationship between Age and Probability of Enrolling in Internet Studies:**

$\chi^2 = 37.757, df = 16, p < .002^{**}$

There are also marked and significant relationships between age and the technology variables examined. Again, access to the Internet is the only variable with no significant relationship to age. See explanation above. It might be a surprise that it is the youngest students, who have the lowest access to a PC and the Internet, use a PC least and have the lowest probability of enrolling in Internet-based distance study. The explanation is probably that these students are in an early phase of career development. Many of them are probably single, and many say that they just cannot afford to buy a PC and/or subscribe to the Internet. The highest rate of access to the Internet at home is among the 35-39 years olds. The explanation, which is confirmed by other research (information from Telenor Research), seems to be that many of these adult distance students have teenage Internet surfers in the family. This does not mean that they are specifically motivated to use the Internet themselves, although according to their answers, the probability of enrolling in Internet studies is nearly the same in all age groups, except the lowest age group with the lowest probability of enrolling.

## Previous Education

**Table 18. Relationships between Previous Education and Variables Related to PC and Internet – Students (Percentages, N varies from 411-432).**

Previous Education		Primary	Primary	3 years	3 years	1-3 y	>4 y	Tot.
			+2-3 y	Second.	+	Higher	Higher	%
Access to a PC	No	26	17	12	17	11	3	14
	Job	19	17	17	10	18	15	16
	Home	36	31	47	30	32	18	33
	Both	19	36	27	44	40	64	37
Access to the Internet	No	53	40	47	35	45	33	42
	Job	13	19	17	21	21	49	21
	Home	30	30	28	26	23	5	25
	Both	3	11	9	19	11	13	12
Use of PC	No	47	27	20	24	11	-	22
	Job	20	16	14	13	21	25	17
	Home	23	25	40	21	22	23	27
	Both	10	32	26	42	46	51	35
Frequency of PC Use	Never	28	13	12	16	8	-	12
	Once a while	21	26	28	20	15	18	23
	Weekly	14	13	19	16	23	21	17
	Daily	38	49	41	49	55	61	49
Writing Preference	PC	55	63	67	57	77	76	65
	Hand	45	37	33	43	23	24	35
Probability of Enrolling in Internet Studies	Yes, abs. certain	29	28	27	32	23	23	27
	Yes, probably	39	29	27	30	26	39	30
	Don't know	13	15	17	12	21	15	15
	No, prob. not	16	19	17	22	25	15	9
	No, abs. cert. not	3	9	13	5	5	8	8
<b>N</b>		<b>31</b>	<b>131</b>	<b>90</b>	<b>78</b>	<b>63</b>	<b>39</b>	<b>432</b>

**Relationship between Previous Education and Access to PC:**

$\chi^2 = 33.911$ ,  $df = 15$ ,  $p = .004^{**}$

**Relationship between Previous Education and Access to the Internet:**

$\chi^2 = 33.494$ ,  $df = 15$ ,  $p = .004^{**}$

**Relationship between Previous Education and Use of PC:**

$\chi^2 = 48.423$ ,  $df = 15$ ,  $p < .001^{***}$

**Relationship between Previous Education and Frequency of PC Use:**

$\chi^2 = 22.759$ ,  $df = 15$ ,  $p = .092$

**Relationship between Previous Education and Preference when Writing:**

$\chi^2 = 9.268$ ,  $df = 5$ ,  $p = .100$

**Relationship between Previous Education and Probability of Enrolling in Internet Studies:  $\chi^2 = 3.894$ ,  $df = 20$ ,  $p = .834$**

There are clear and significant relationships between previous education and access to a PC, access to the Internet and whether they

use a PC or not – the higher education levels have a larger rate of access and use. The relationship between frequency of use and preference for PC when writing show similar relationships, however, not statistically significant. Concerning the above relationships, it is surprising that there are only small differences in probability of enrolling in Internet-based distance study between the different levels of previous education.

It might be worth noting that the highest previous education group has the lowest rate of access to the Internet from home. This might be a result of their high rate of access from work. These are relationships that must be taken into account when deciding on technology for different types of distance education programmes – as access to the Internet from home by most students is seen as a necessary condition for Internet-based distance learning. This may be one of the reasons for the low correlation between educational level and interest for enrolling in Internet-based study.

## Domestic Background

**Table 19. Relationships between Domestic Background and Variables Related to PC and Internet – Students (Percentages, N varies from 412-432).**

Domestic Background		Large City	Small City	Densely Pop.Area	Country-Side	Total %
Access to a PC	No	13	13	9	21	14
	Job	16	14	16	17	16
	Home	32	33	40	28	33
	Both	39	39	35	34	37
Access to the Internet	No	40	44	39	45	42
	Job	29	13	24	19	21
	Home	19	29	29	26	25
	Both	12	14	9	11	12
Use of PC	No	18	21	21	27	22
	Job	21	18	14	15	17
	Home	26	25	30	25	27
	Both	35	37	35	33	33
Frequency of PC Use	Never	11	10	9	20	12
	Once a while	23	21	26	21	22
	Weekly	16	18	13	20	17
	Daily	50	51	52	40	49
Writing Preference	PC	71	68	64	56	65
	Hand	29	32	36	44	35
Probability of Enrolling in Internet Studies	Yes, abs. certain	31	25	32	21	27
	Yes, probably	28	32	29	30	30
	Don't know	12	14	16	18	15
	No, prob. not	21	22	15	18	19
	No, abs. cert. not	7	6	8	12	8
<b>N</b>		<b>117</b>	<b>112</b>	<b>100</b>	<b>104</b>	<b>433</b>

### Relationship between Domestic Background and Access to PC:

$\chi^2 = 8.810$ ,  $df = 9$ ,  $p = .456$

### Relationship between Domestic Background and Access to the Internet:

$\chi^2 = 12.057$ ,  $df = 9$ ,  $p = .212$

### Relationship between Domestic Background and Use of PC:

$\chi^2 = 4.654$ ,  $df = 9$ ,  $p = .863$

### Relationship between Domestic Background and Frequency of PC Use:

$\chi^2 = 10.059$ ,  $df = 9$ ,  $p = .347$

### Relationship between Domestic Background and Preference when Writing:

$\chi^2 = 5.513$ ,  $df = 3$ ,  $p = .139$

### Relationship between Domestic Background and Probability of Enrolling in Internet Studies: $\chi^2 = 8.362$ , $df = 12$ , $p = .756$

There are only small and non-significant relationships between the type of home background, as defined in this study, and any of the variables of access to a PC and the Internet, experience in PC use, preference when writing and probability of enrolling in Internet-based distance study.

## **Open Answers to the Student Survey**

The student questionnaire ended with an open question:

**If you have answered “Don’t know” or negative to the question whether you would have enrolled in the course/programme if it required use of PC and access to the Internet, can you explain the necessary conditions for you to enrol in Internet courses?**

The answers fall generally in the following categories:

### **1. No access to a PC and/or the Internet**

Some stressed specifically that they had not access to the Internet from home. Others emphasised specifically that they could not afford buying a PC, modem or the pay the subscription fee of Internet access. Some few stressed that they saw large advantages of Internet study, but that it was out of their reach because of costs.

### **2. I don’t know how to use a PC – and/or the Internet**

A considerable number of students said that they don’t know how to use a PC, and many stressed that they have to learn how to use the Internet. It seems specifically that many students studying ‘Health and Social Subjects’ at secondary level are disadvantaged in that they have no access to PC and Internet; they don’t know how to use the technology; and they cannot afford to buy the equipment or subscribe to Internet.

### **3. Dislike using PC/Technology**

Some state that they don’t like to use a PC, don’t like to work in front of a computer screen, and that they are satisfied with distance study based on the correspondence form.

### **4. There are a few prison inmates who are not allowed access to the Internet.**

## **Conclusions – Student Survey**

The students participating in the survey were not selected at random. We selected students who had recently enrolled in some specific programmes at NKI distance education. This procedure was decided because one main aim of the study was to examine differences between distance students taking different kinds of courses in different subjects at different levels. The resulting sample consisted of a much larger proportion of women than men. As our analyses have shown, there are significant differences between men and women concerning the main variables examined in the study. This means that access to PC and the Internet, use of PC and interest of enrolling in Internet-based distance study probably are greater among NKI distance students generally than among the sample examined in this study.

It seems clear that the rate of Internet access is larger among NKI distance students than it is in the population generally. This may indicate that the real distance education market is more ready for technology-based learning than impressions given by general population surveys and statistics.

A large majority of the students have experience in using PCs, many use a PC weekly or daily, and a large majority prefers to use the PC for writing. Thus, while access to the Internet from home presently is a barrier for enrolling in Internet-based education, lack of experience in using a PC does not seem to be a large difficulty for many students.

It should be taken into account, than many young students cannot afford buying the equipment or pay the subscription fee to the Internet. There are large differences between types of courses, between age groups, between men and women and between people with different educational backgrounds in their access to technology and experience in the use of PCs.

No access to the Internet, specifically from home, seems to be the most important reason for reluctance of enrolling in Internet-based studies. It also seems clear, and it is an important fact, that many students are quite satisfied with their experiences from more

traditional distance study based on print, telephone and correspondence education.

Concerning barriers to technology based learning, as is the focus of this project, it should also be noted that many students are uncertain about advantages of Internet-based learning, and also worried about demands and requirements concerning learning on the screen, group communication and possible reduced flexibility.

There is no doubt that the distance students are more concerned about individual freedom and flexibility than about group communication and group learning.

Internet study excludes inmates in prisons, who are at a great disadvantage concerning education opportunities, and to whom distance learning has been an excellent opportunity for rehabilitation in the past. This is a problem that has to be solved by the responsible authorities. Similarly, some groups, such as women, young adults of modest means and others with low income and low previous education, are at a disadvantage concerning access to technology. These problems should be addressed seriously by the authorities. As access from home seems to be important, technology access is not actually solved by establishing local study centres etc., although centres may be to some help to some potential students.

## Results - The Prospective Student Survey

The questionnaire to prospective students was distributed to persons having made contact with NKI Distance Education from August 1<sup>st</sup>. 1998, until we reached 1000 persons who had not yet enrolled for any course. Although the sample was not randomly selected, we have considered the sample to be quite representative of prospective students in autumn 1998.

### Some Background Information on the Prospective Students

#### Gender

**Table 20. Gender – Prospective students.**

Gender	n	%
Women	165	60.2
Men	109	39.8
Total	274	100.0

No answer: 3

There are about 60% women and 40% men in the sample. The proportion of women is much larger than in the student sample, and, in fact, also larger than for the whole 1998 group of prospective students (56% women). Relative to the total NKI Distance Education student population with 57% men, the prospective student sample is very different. As there seem to be significant differences between men and women concerning the use of a PC and access to a PC and the Internet, the different proportions of men and women in the two samples of this survey would probably have some effect on differences between the samples on these variables. The differences between the prospective students and active students concerning gender and other variables such as age and previous education might either be a result of NKI not offering the range of courses that the prospective students are searching for, or because of different barriers to enrolment in distance study among different groups (as measured by the variables examined in this survey).

## Age

**Table 21. Age – Prospective students.**

Age	N	%
24 years or less	80	29.1
25-29 years	66	24.0
30-34 years	43	15.6
35-39 years	33	12.0
40 years and more	53	19.3
Total	275	100.0

No answer: 2

The main difference between prospective students and students concerning age is that the prospective student group includes many more persons in the lowest age group. (The over-representation in the lowest age group of prospective students is somewhat larger than when looking at the total prospective population of 1998 with 24% 24 years or younger.) The over-representation of young adults is also a factor, referring to the student answers, that decreases probability of access to PC and Internet both in the home and at work.

## Previous Level of Education

**Table 22. Previous level of education – Prospective students.**

Level of education	n	%
Primary school 9 years	10	3.6
Primary + 1 or 2 years	42	15.2
3 year secondary school	42	15.2
Above 3 year sec.	48	17.4
1-3 year higher education	71	25.7
4 years or more higher ed.	63	22.8
Total	276	99.9

No answer: 1

The prospective students, have on average, much higher previous education than the students. For instance, among the students, there are relatively twice as many in the two lowest previous education categories and not much more than half as many in the two highest education categories. There is good reason to believe that this difference may be due to the fact that NKI Distance Education offers a greater range of courses on secondary level and college/lower

university level. It might be worth noting that access to the Internet is correlated with level of education, but, both among students and prospective students rate of access to the Internet **from home** is largest in the middle level education groups.

## Vocational Situation

**Table 23. Vocational situation – Prospective students.**

Vocational situation	N	%
Working full time	164	60.3
Working part time	32	11.8
Home working	17	6.3
Unemployed/student/disabled	59	21.7
<b>Total</b>	<b>272</b>	<b>100.0</b>

No answer: 5

It is probably not surprising that a smaller proportion of the prospective students is working full time or part time and a larger proportion are not working. Probably, many of the prospective students are presently studying or in a transitional phase of life, searching for educational possibilities of which asking for the NKI Distance Education prospectus is one among other activities in this search. This is also shown by the answer that the majority is searching information about educational possibilities in general.

## Domestic Background

**Table 24. Domestic background – Prospective students.**

Domestic background	N	%
Large city (Oslo/Bergen/ Trondheim/Stavanger)	115	41.7
Smaller city	69	25.0
Densely built up area	50	18.1
Countryside	42	15.2
<b>Total</b>	<b>276</b>	<b>100.0</b>

No answer: 1

A considerable larger proportion of the prospective students comes from the larger cities. This is probably not surprising, and supporting the fact that distance education is represents specific opportunities for some people living in non-urban areas.

## The Contact with NKI

We asked the prospective students whether the contact with NKI was based on a clear idea of which course or study programme they were interested in, or whether they were searching for general information on educational possibilities. The answers were categorised as in table 25.

### General or Specific Information?

**Table 25. Reason for contacting NKI Distance Education – Prospective students.**

Reason for contact	N	%
Interested in general information on study possibilities	148	54.8
IT-related courses tertiary level	32	11.9
Other tertiary level courses	61	22.6
Vocational courses/secondary level courses	29	10.7
Total	270	100.0

No answer: 7

Nearly 55% of the prospective students state that they have approached NKI and asked for the prospectus to get general information, while 45% had been interested in specific courses or study programmes.

### Full Time or Part Time?

**Table 26. Were you primarily interested in full time or part time study – Prospective students?**

	N	%
Part time	225	82.1
Full time	16	5.8
Don't know	33	12.0
Total	274	99.9

No answer: 3

Related to the fact that NKI Distance Education offers educational opportunities that can be studied part time, it seems that the offers are in line with the primary interests of the prospective students. The

distance courses can, of course, also be taken as full time studies, as some students, in fact do.

## Attitudes to Internet Studies and Other Forms of Study

The following questions relate to interest in, knowledge about and suitability of different forms of study. The focus of this research is on Internet study, and the other forms are included to examine the relative interest and insights in studies on the Internet.

The table below gives the number and percentage of respondents who have answered that they were interested in the given form of study when asking for the NKI prospectus. Thus, the percentages and number of respondents may exceed the total, as all respondents in principle could tick for every alternative.

### Study Forms of Interest to the Prospective Students

**Table 27. Which forms of study were you interested in – Prospective students?**

Form of study	N	%
Study on the Internet	75	27.1
Correspondence Study	168	60.1
Combined Study	91	32.9
Classroom Study – Full Time	12	4.3
Classroom Study – Part Time	43	15.5

Of the 75 prospective students, who state that they were interested in Internet studies, only 32 (42.7%, i.e. less than half) had ordered the prospectus via the Internet. And vice versa, those 58 students who had ordered the prospectus on the Internet were interested in ‘Studies on the Internet’ (32 = 55.2%), ‘Correspondence Study’ (24 = 41.4%), ‘Combined Study’ (14 = 24.1%). Thus, there is no direct relationship between the channel by which the prospective students order the catalogue and which form of study they prefer.

## Knowledge about Different Forms of Study

**Table 28. Do you feel that you know enough to choose between different forms of study – Prospective students?**

Form of study	Yes, know enough		Do not know enough		Sum	
	n	%	n	%	N	%
	Study on the Internet	85	32.7	175	67.3	260
Correspondence Study	202	76.5	62	23.4	264	100.0
Combined Study	127	49.8	128	50.2	255	100.0
Classroom Study	168	66.4	85	33.6	253	100.0

It seems clear, that among persons who made contact with NKI (and probably after having studied the prospectus), a large majority feel that they have sufficient knowledge about correspondence based distance study. Only about 1/3 feel that they have a sufficient knowledge of Internet studies to be able to choose between alternatives. This confirms the need for reaching the potential distance education market with more and better information on advantages of Internet studies and demands on the students. One may say that the answers here support the answers from the active students that lack information and understanding of Internet-based studies to some extent constitute a barrier for enrolment.

## Suitability of Different Forms of Study

**Table 29. To which degree do you believe the different forms of study would suit you – Prospective students?**

Form of study	Suits me fine		Does not suit me		Don't know		Sum	
	n	%	n	%	n	%	N	%
	Study on the Internet	134	51.3	95	36.4	32	12.3	261
Correspondence Study	214	80.8	30	11.3	21	7.8	265	100.0
Combined Study	148	57.8	59	23.0	49	19.1	256	99.9
Classroom Study – Part Time	97	37.7	115	44.7	45	17.5	257	99.9
Classroom Study – Full Time	25	10.3	192	79.3	25	10.3	242	99.9

We may clearly conclude, that the answers indicate that correspondence based distance study suits the needs of a large majority of the prospective students. And, vice versa, that full time classroom study suits very few of the prospective students. Thus, it

seems that marketing activities to a large extent have reached the intended group of people. It might be considered quite surprising that more than 50% of the prospective students actually answer that study on the Internet suits them well. A cross tabulation between suitability of Study on the Internet and Correspondence Study shows that the majority of the prospective students (100 of 134) who state that “study on the Internet suits me fine” also answer that “correspondence study suits me fine” (while the opposite, of course, gives 100 of 214).

## Access to a PC, the Internet and Use of a PC

### Access to a PC

**Table 30. Do you have access to a PC – Prospective students?**

Access to a PC	N	%
No	48	17.5
Yes, at work	45	16.4
Yes, at home	92	33.6
Yes, both at home and at work	89	32.5
Total	274	100.0

No answer: 3

Access to a PC is nearly as frequent in the prospective group as it is among the NKI distance students. The number of students saying that they have no access is a little higher, but the difference between the students and the prospective students is quite small.

### Access to the Internet

**Table 31. Do you have access to the Internet – Prospective students?**

Access to the Internet	n	%
No	108	39.7
Yes, at work	56	20.6
Yes, at home	58	21.3
Yes, both at work and at home	50	18.4
Total	272	100.0

No answer: 5

The prospective students have about the same (although a little higher) rate of access to the Internet as the active distance students in these surveys. We consider this to be a quite surprising finding. E.g. more

than 60% have access from home or work or both, 39% have access to the Internet at work (among students, 33%), and 40% have access at home (among students, 37%). In comparing the two groups it should be taken into account that the student group is not selected at random, and that it includes a selected group of IT students who actually have opted not to enrol in the Internet study alternative. 40% access rate to the Internet from home is significantly higher than in the Norwegian population. As significantly more men than women have access, and women are over-represented in the survey, the real difference could probably be even larger than indicated by the sheer numbers.

## Use of a PC

**Table 32. Do you use a PC yourself – Prospective students?**

Do you use a PC?	n	%
No	56	20.2
Yes, at work	51	18.4
Yes, at home	80	28.9
Yes, both at work and at home	90	32.5
Total	277	100.0

No answer: 0

The use of PCs at work and/or at home is also very similar among the students and the prospective students. Only 20% of the prospective students state that they do not use a PC either at work or at home.

**Table 33. How often do you use a PC – Prospective students?**

Frequency of PC use	n	%
Never	30	10.9
Once a while	60	21.7
Weekly	41	14.9
Daily	145	52.5
Total	276	100.0

No answer: 1

The frequency of use also seems to be very similar in the two groups. Only 11% say that they never use a PC, while more than half state that they use a PC daily.

It seems that for the large majority of prospective distance students a possible lack of experience in using a PC, is not a major barrier to studies on the Internet.

**Table 34. When you write something, do you prefer to use a PC or do you prefer writing by hand – Prospective students?**

Preference when writing	N	%
Prefer handwriting	87	28.9
Prefer using PC	179	71.8
Total	266	100.0

No answer: 11

The preference of using a PC when writing is also a little higher in the group of prospective students than it is among active correspondence students. Thus, it might seem that the possibility of using a PC in connection with studying is now (1998/99) considered to be more an advantage than a disadvantage for a large majority of both active students and prospective students.

## **Barriers to Enrolling in Distance Study at NKI**

We asked the prospective students whether they at the time of answering the questionnaire had enrolled in any kind of study, whether distance education at NKI or other forms of study with other institutions. As the persons selected for the survey were registered in the prospective register, they are supposed not to have enrolled in courses at the NKI Distance Education at the time when the questionnaires were distributed. 217 respondents (78.4%) said that they presently had not enrolled in any form of study, 53 (19.1%) had started to study elsewhere, while 7 (2.5%) had started study at a distance with NKI.

We further asked what form of study the starters had enrolled in. 51 respondents answered this question (Full time classroom study (17), Part time classroom study (10), Correspondence-based distance study (15), Internet studies (2), and Combined studies (7)).

**Table 35. Reasons for *not yet* having enrolled in distance study at NKI – Prospective students.**

Reason	n	Important		Some Importance		No Importance	
		n	%	n	%	n	%
Have not decided yet	255	94	36.9	52	23.1	102	40.0
Was actually only interested in general information	258	54	20.9	94	36.4	110	42.6
Prefer ordinary classroom study	258	19	7.4	34	13.2	205	79.5
Know too little about distance education	258	23	8.9	79	30.6	156	60.5
Studying on one's own is too demanding	259	17	6.6	68	26.3	174	67.2
NKI did not offer the course/programme searched	258	50	19.4	64	24.8	144	55.8
The course/programme costs too much	260	92	35.4	100	38.5	68	26.2
Job situation has changed	260	55	21.2	62	23.8	143	55.0
Family situation has changed	257	27	10.5	39	15.2	191	74.3
Have enrolled in full time study	257	18	7.0	6	2.3	253	90.7
Have enrolled in part time study	259	16	6.2	10	3.9	233	90.0
Have enrolled in distance study at another institution	257	18	7.0	6	2.3	234	90.7
Did not receive support from my employer	258	17	6.6	14	5.4	227	88.0

An examination of table 35 of reasons for not enrolling (when not having to choose between reasons), shows that cost is an important factor for many students. Financial support from the Ministry of Education to distance education has decreased considerably during the preceding 20 years. It can clearly be concluded that many prospective students have great difficulties in financing distance studies. There is also a tendency that respondents in the youngest age group tick this reason more frequently.

We also asked the prospective students to tick the main and most important reason for not yet having enrolled in distance study at NKI. 197 respondents answered the question. The results are presented in table 36.

**Table 36. The most important reason for *not yet* having enrolled in distance study at NKI – Prospective students.**

Reason	The most important reason	
	n	%
Have not decided yet	49	24.9
Was actually only interested in general information	18	9.1
Prefer ordinary classroom study	2	1.0
Know too little about distance education	1	.5
Studying on one's own is too demanding	3	1.5
NKI did not offer the course/programme searched	25	12.7
The course/programme costs too much	48	24.4
Job situation has changed	22	11.2
Family situation has changed	10	5.1
Have enrolled in full time study	5	2.5
Have enrolled in part time study	3	1.5
Have enrolled in distance study at another institution	7	3.6
Did not receive support from my employer	4	2.0
<b>N</b>	<b>197</b>	<b>100.0</b>

Concerning the ‘most important reason’ for not having enrolled, cost is the most frequent mentioned alternative (and also that many of the prospective students just have not yet decided).

## Attitudes Towards some Important Aspects of Distance Learning

**Table 37. Importance of some important aspects of distance learning – Prospective students.**

Aspect of distance Learning	Very important					Of little importance					N	Md
	1	2	3	4	5	3	4	5				
That the studies are part time	65	14	11	2	8	268	1.27					
That you can start at any time	55	19	15	6	5	268	1.42					
That you can choose your own pace	66	19	11	3	2	267	1.26					
That you can be in contact with fellow students	21	14	27	18	20	263	3.05					
That you can participate in local face-to-face	17	16	27	16	24	262	3.13					

It seems clear that the prospective students appreciate the same aspects concerning autonomy, flexibility and freedom of pace as the distance students. (Because of a mistake during construction and printing of the questionnaires, the two questions on quick feedback and use of modern technology were not included in the prospective questionnaire.)

## Some Relationships between Background Variables and Access to Computers and the Internet, Use of Computers and Attitudes towards Internet Studies among Prospective Students

### Gender

**Table 38. Relationships between Gender and Variables Related to PC and Internet – Prospective students (Percentages, N varies from 264-274).**

Gender		Women	Men	Total %
Access to a PC	No	21	13	18
	Job	24	12	17
	Home	34	32	33
	Both	25	44	33
Access to the Internet	No	46	32	40
	Job	22	19	21
	Home	20	22	21
	Both	12	28	18
Use of PC	No	25	14	20
	Job	22	13	19
	Home	28	29	29
	Both	25	44	33
Frequency of PC Use	Never	12	9	11
	Once a while	29	12	22
	Weekly	18	10	15
	Daily	41	69	52
Writing Preference	PC	63	83	71
	Hand	37	17	29
N		165	109	274

**Relationship between Gender and Access to PC – Prospective Students:**

$\chi^2 = 11.452$ ,  $df = 3$ ,  $p = .010^{**}$

**Relationship between Gender and Access to the Internet – Prospective**

**Students:**  $\chi^2 = 13.063$ ,  $df = 3$ ,  $p = .005^{**}$

**Relationship between Gender and Use of PC – Prospective Students:**

$\chi^2 = 14.675$ ,  $df = 3$ ,  $p = .002^{**}$

**Relationship between Gender and Frequency of PC Use – Prospective**

**Students:**  $\chi^2 = 20.658$ ,  $df = 3$ ,  $p < .001^{***}$

**Relationship between Gender and Preference when Writing – Prospective**

**Students:**  $\chi^2 = 11.763$ ,  $df = 1$ ,  $p < .001^{***}$

There are significant differences between men and women measured by all the variables of access to technology, experience in using

computers and preference for technology when writing. These findings support information reported elsewhere (see e.g. Kirkup & von Prümmer 1997). Consequently, while distance education may function as a compensatory possibility for competence development for women (von Prümmer 1993), it seems quite clear that women are at some disadvantage when it comes to access and use of technology. The statistics and open answers in the student survey presented above show this also. This fact should be carefully taken into account when introducing courses depending on access to and use of computers and the Internet. However, as familiarity with information technology seems to be a general goal and also parts of aims and objectives of many educational programmes and official governmental policy, one should examine possibilities of support for women as well as for other groups with special needs.

## Age

**Table 38. Relationships between Age and Variables Related to PC and Internet – Prospective students (Percentages, N varies from 264-275).**

Age		<24 years	25-29 years	30-34 years	35-39 years	>40 years	Total %
Access to a PC	No	24	15	12	21	12	17
	Job	14	21	21	15	10	16
	Home	47	27	33	30	26	34
	Both	15	35	35	33	53	33
Access to the Internet	No	47	38	36	44	33	40
	Job	17	24	24	19	20	20
	Home	27	24	19	22	12	22
	Both	11	14	21	16	35	19
Use of PC	No	34	18	12	18	9	20
	Job	10	23	28	18	17	18
	Home	35	23	30	30	26	29
	Both	21	36	30	33	47	33
Frequency of PC Use	Never	13	11	12	15	6	11
	Once a while	33	18	9	21	21	22
	Weekly	18	12	16	12	15	15
	Daily	39	59	63	52	58	53
Writing Preference	PC	63	71	80	70	77	71
	Hand	37	29	20	30	24	29
N		<b>80</b>	<b>66</b>	<b>43</b>	<b>33</b>	<b>53</b>	<b>275</b>

**Relationship between Age and Access to PC – Prospective Students:**

$$\chi^2 = 27.528, df = 12, p = .007^{**}$$

**Relationship between Age and Access to the Internet – Prospective**

**Students:  $\chi^2 = 17.598, df = 12, p = .131$**

**Relationship between Age and Use of PC – Prospective Students:**

$$\chi^2 = 27.161, df = 12, p = .008^{**}$$

**Relationship between Age and Frequency of PC Use – Prospective**

**Students:  $\chi^2 = 14.349, df = 12, p = .281$**

**Relationship between Age and Preference when Writing – Prospective**

**Students:  $\chi^2 = 4.853, df = 4, p = .303$**

There is also a relationship between age and the access, use and preference variables among the prospective students. Specifically, there is a larger percentage in the lower age group that does not have access to a PC – which naturally results in less use and less preference for using a PC when writing. The differences between the age groups of prospective students mirror differences, which were found among the students.

## Previous Education

**Table 40. Relationships between Previous Education and Variables Related to PC and Internet – Prospective students (Percentages, N varies from 264-276).**

Previous Education		Primary	Primary +2-3 y	3 years Second.	3 years +	1-3 y Higher	>4 y Higher	Tot. %
Access to a PC	No	56	33	21	21	7	8	18
	Job	11	5	10	15	26	19	16
	Home	33	50	43	36	14	37	34
	Both	-	12	26	28	53	37	33
Access to the Internet	No	78	59	52	33	29	30	40
	Job	11	-	14	15	31	32	21
	Home	-	32	19	30	16	19	21
	Both	11	10	14	22	24	19	19
Use of PC	No	50	36	31	31	7	5	20
	Job	20	5	10	17	30	21	18
	Home	30	48	31	27	13	35	29
	Both	-	12	29	25	51	40	33
Frequency of PC Use	Never	40	17	14	15	6	3	11
	Once a while	40	33	31	21	16	10	22
	Weekly	10	17	14	23	7	19	15
	Daily	10	33	41	42	72	68	53
Writing Preference	PC	44	56	59	67	83	84	71
	Hand	56	44	41	33	17	16	29
<b>N</b>		<b>10</b>	<b>42</b>	<b>42</b>	<b>48</b>	<b>71</b>	<b>63</b>	<b>276</b>

In connection with the chi-square calculations, the two lowest categories of previous education are combined because of low theoretical cell frequencies (as the number of respondents in the lowest category is only 10).

**Relationship between Previous Education and Access to PC – Prospective Students:  $\chi^2 = 58.368$ ,  $df = 12$ ,  $p < .001^{***}$**

**Relationship between Previous Education and Access to the Internet – Prospective Students:  $\chi^2 = 37.306$ ,  $df = 12$ ,  $p < .001^{***}$**

**Relationship between Previous Education and Use of PC – Prospective Students:  $\chi^2 = 66.697$ ,  $df = 12$ ,  $p < .001^{***}$**

**Relationship between Previous Education and Frequency of PC Use – Prospective Students:  $\chi^2 = 42.815$ ,  $df = 12$ ,  $p < .001^{***}$**

**Relationship between Previous Education and Preference when Writing – Prospective Students:  $\chi^2 = 19.714$ ,  $df = 4$ ,  $p = .001^{**}$**

There are very clear and significant relationships between previous education and access to PCs, to the Internet, and the use of PCs and preference for using a PC when writing. While access to the Internet at work is common in the highest education group, the middle education groups have a higher rate of access to the Internet from home. This is the similar picture as shown in the student survey.

## Domestic Background

**Table 41. Relationships between Domestic Background and Variables Related to PC and Internet – Prospective students (Percentages, N varies from 265-276).**

Domestic Background		Large City	Small City	Densely Pop.Area	Country-side	Total %
Access to a PC	No	17	18	14	24	18
	Job	21	19	14	3	17
	Home	31	29	44	33	33
	Both	31	34	28	41	33
Access to the Internet	No	35	39	45	49	40
	Job	24	21	20	12	21
	Home	22	19	20	24	21
	Both	20	22	14	15	19
Use of PC	No	18	22	20	24	20
	Job	24	20	12	7	19
	Home	25	22	40	36	29
	Both	32	36	28	33	33
Frequency of PC Use	Never	10	9	12	17	11
	Once a while	18	22	28	24	22
	Weekly	15	16	16	12	15
	Daily	58	54	44	48	53
Writing Preference	PC	75	76	60	64	71
	Hand	25	24	40	36	29
N		115	69	50	42	276

**Relationship between Domestic Background and Access to PC –**

**Prospective Students:  $\chi^2 = 11.876$ ,  $df = 9$ ,  $p = .222$**

**Relationship between Domestic Background and Access to the Internet –**

**Prospective Students:  $\chi^2 = 5.705$ ,  $df = 9$ ,  $p = .769$**

**Relationship between Domestic Background and Use of PC – Prospective Students:  $\chi^2 = 12.110$ ,  $df = 9$ ,  $p = .209$**

**Relationship between Domestic Background and Frequency of PC Use – Prospective Students:  $\chi^2 = 5.590$ ,  $df = 9$ ,  $p = .780$**

**Relationship between Domestic Background and Preference when Writing – Prospective Students:  $\chi^2 = 5.578$ ,  $df = 3$ ,  $p = .135$**

There is hardly any relationship between domestic background (type of municipality) and any of the variables examined. Again, this is the similar picture as given by the student survey. It seems that access to and use of information technology are independent of whether the student or the prospective student lives in a city or urban area or in the rural periphery.

## **Conclusions – Prospective Students Survey**

The prospective student group consists of the respondents to a questionnaire sent to the first 1000 persons who had made contact with NKI from August 1<sup>st</sup> 1998 and not yet enrolled at the end of November. Except for the fact that marketing procedures and media used for establishing contact may vary over the year, we have reason to believe that the selected sample would not differ much from a randomly selected sample of prospective students. The implications of the low return rate of questionnaires (appr. 30%) are not clear, except that as we know little about the non-respondents, generalisations might be quite hazardous. On the other hand, it seems that young people and women are over-represented relative to NKI students generally, to students in this survey, and to the population of 1998 prospective students. Women and young people seem to be at a disadvantage concerning access to technology, experience in using technology, preference for using PCs and positive attitudes towards Internet-based study. Thus, there might be reason to believe that a higher response rate not necessarily would give a more negative picture of readiness for participating in distance learning based on information and communication technologies.

A large proportion of the prospective students had made contact to get general information on study possibilities. Thus, the fact that NKI did not offer the programme they were looking for seems to be one major reason for not enrolling. However, it also seems that generally the NKI marketing and information activities reach the intended target group, in the sense that the prospective students are searching for part-time study, they are interested mainly in either correspondence-based or Internet-based distance learning or combined studies.

It is worth noting that 27% answer that they were interested in ‘study on the Internet’ as one possible alternative. A majority confirms that they “know enough about correspondence study” (77%), while only 1/3 “know enough about study on the Internet”. It is also worth noting that more than 50% say that “study on the Internet suits me fine”, while more than 80% say the same about correspondence study. The

cross tabulations show that most of the respondents, who find Internet studies suitable, also are positive towards correspondence study. The prospective students in this survey have to a large extent access to a PC, only 18% say that they have not. 66% have access to a PC at home. Also Internet access is quite frequent relative to the situation among the population as a whole. 60% have access to the Internet either at home or at work and 40% have access from home.

This means that a large group of prospective students have the necessary access to and experience in using information technology for enrolling in Internet-based distance study.

Concerning reasons for not enrolling, the prospective students emphasise costs and/or that they have not yet decided.

In relation to political aims of offering equal opportunities for competence development and further education regardless of race, age, gender, previous education, occupation, and geographical restraints, there is good reason to stress the clear relationships that exist between gender, age and education factors and access to technology. Young adults, women and low educated persons are disadvantaged. This means that when developing courses targeting these groups one must take this into account when selecting technology, and/or that steps are taken to support these groups practically and/or financially concerning access to the necessary technology.

## Discussion and Conclusions

This project has focused on perceptions of computers and communication technologies in distance education and on access to computers and the Internet. For different reasons the survey approached active distance students in 'low technology' courses and prospective distance students. Through a number of surveys and evaluation studies involving Internet students we have looked into similar questions. Technology use and access have continuously been examined among the general population. For our study we selected a sample of active distance students and a sample of prospective students when trying to examine problems concerning recruitment to distance study based on the Internet and communication technologies. The questions related to market readiness for Internet studies are of pivotal importance when deciding strategies for transforming a 'traditional' distance teaching system into a complete and coherent 'Internet-based teaching and learning system' for the 21<sup>st</sup> century.

In this report the two interrelated surveys have been treated separately. This chapter discusses the general conclusions and tries to integrate results discussed under the main headings above.

The respondents in both samples have access to PCs either at home or at work – or both. No access is reported by less than 20%. A large percentage prefers to use a PC for writing, rather than writing by hand. More than 65% in both samples use a PC weekly or daily. Access to the Internet is much higher than in the population as a whole.

Nearly 60% of the distance students say that they certainly or probably would enrol in Internet-based studies if that were their only choice. More than 50% of the prospective students say that Internet studies are suited to their needs.

These answers do not, however, mean that Internet studies are preferred before more traditional 'low technology' distance study. It is clear that both groups favour aspects of distance study concerned with individual freedom, non-pacing and flexibility, which can be

implemented in both Internet-based and 'correspondence' based distance study. The students put less emphasis on valuing group learning and communication with fellow students. The distance students indicate clearly that they are quite satisfied with correspondence studies.

It seems clear that access to the Internet from home is seen as a necessary condition for enrolling in Internet-based distance study programmes.

There are large differences in experience of using technology, access to technology and interest for studying on the Internet between men and women, between different age groups, between persons with different educational backgrounds and between persons studying different types of courses.

Concerning technology interest, experience and access, women are disadvantaged relative to men, the youngest age groups are disadvantaged relative to older students and prospective students, low educated persons are disadvantaged relative to higher educated persons. These findings are, of course, not at all unexpected.

As repeatedly pointed out in official policy, equal access to education is a main challenge for society (see e.g. Samferdselsdepartementet 1996, KUF 1995). Thus, it is important that the authorities through regulations and financial measures lay foundations for equal opportunities so that disadvantaged groups are not falling increasingly behind. This is perhaps specifically important in adult and distance education, that in many cases constitute compensatory possibilities for groups that for a variety of reasons do need a second chance for catching up with others who have been more successful in traditional schools and colleges. It is also a responsibility for the institutions to plan studies and choose technologies for different courses and programmes that do not raise additional barriers for prospective students with low access to learning technologies.

## Bibliography

Amundsen, A. (1993) : *FOSS-Fil-Oriented-Statistical-System*. User manual. Oslo.

Bates, A. W. (1993): Distance education in a changing world: The Importance of policy research. In: *Research in distance education. Present situation and forecasts*. Report from a Nordic conference in Umeå 14-16 June 1993. Umeå University.

Borg, W. R. & Gall, M. G. (1989): *Educational Research. An Introduction*. 5<sup>th</sup> ed. London: Longman.

Crossman, D. M. (1997): The evolution of the World Wide Web as an emerging technology tool. In: Kahn, B. H. (ed.): *Web-based Instruction*. (pp. 19-25). NJ, Englewood Cliffs: Ed. Techn. Publ.

Davis, G. (ed.) (1998): *Teleteaching '98 – Distance Learning, Training and Education. Proceedings of the XV. IFIP World Computer Congress, 31 Aug.-4 Sept. 1998*. Vienna: Austrian Computer Society.

Gamlin, M. (1995) Distance Learning in Transition; The Impact of Technology: A New Zealand Perspective. Proceedings, EDEN Open Classroom Conference. Distance Learning and New Technologies in School Level Education and Training. Oslo, 18-20 September 1995.

Garrison, D. R. (1986): Multifunction microcomputer enhanced audio teleconferencing: Moving into the third generation of distance education. *Int. J. Of Innov. High. Ed.* 3 (1), pp, 26-29.

Kahn, B. H. (ed.): *Web-based Instruction*. (pp. 19-25). NJ, Englewood Cliffs: Ed. Techn. Publ.

Kirkwood, A. (1997): S281 Computing Access Survey 1997: The ERCOMS Project. PLUM Paper No. 86 IET. Milton Keynes: The Open University.

(<http://www.iieir.dmu.ac.uk/Projects/ERCOMS/Ercoms97.htm>)

Keegan, D. (1999): Seamless interfaces: distance education and web-based training. *Istruzione a Distanza' (1999-1)*(in print)

Kirkup, J. & von Prümmer, C. (1997): Distance Education for European Women. The Threats and Opportunities of New Educational Forms and Media. *The European Journal of Women's Studies Vol 4 Issue 1 (February)*, pp39-62. ISSN 1350-5068

KUF (1995): *IT i norsk utdanning. Plan for 1996-99*. Oslo: Kirke-, utdannings- og forskningsdepartementet.

KUF (1997): *Ny kompetanse. Grunnlaget for en helhetlig etter- og videreutdanningspolitikk*. NOU 1997:25. Oslo: Kirke-, utdannings- og forskningsdepartementet.

KUF (1998): The Competence Reform Report No. 42 to the Storting (1997-98)

Madsen, B.-E. & Sannes, J. (1998): *Effekter av fjernundervisning ved de tilskuddsberettigede fjernundervisningsinstitusjonene*. Trondheim, NVI.

Mason, R. (1998): *Globalising Education. Trends and Applications*. London: Routledge

Nipper, S. (1989): Third Generation Distance Learning and Computer Conferencing. In: Mason, R. & Kaye, A. (ed.): *Mindweave. Communication, Computers and Distance Education*. Oxford: Pergamon.

Norsk Gallup (1999): INTERTRACK DESEMBER 1998  
(<http://www.gallup.no>)

Paulsen, M. F. (1992a): *From Bulletin Boards to Electronic Universities: Distance Education, Computer-mediated Communication, and Online Education*. University Park, Pennsylvania: The American Centre for the Study of Distance Education.

Paulsen, M. F. (1992b): The hexagon Of Cooperative Freedom: A Distance Education Theory Attuned to Computer Conferencing. In Paulsen, M. F. (1992a). Also published in DEOSNEWS Vol. 3 No. 2. 1993 and as:  
<http://www.nettskolen.com/alle/forskning/21/hexagon.html>

Paulsen, M. F. (1998): *Teaching Techniques for Computer-Mediated Communication*. PhD Thesis. Pennsylvania State University.

Paulsen, M. F. & Rekkedal, T. (1990): *The Electronic College. Selected Articles from the EKKO Project*. Bekkestua: NKI/SEFU.

Paulsen, M. F. & Rekkedal, T. (1996): Technology for Adult Learning in Norway. Including a Case Study on the NKI Electronic College. In: *Adult Learning and Technology in OECD Countries*.

Rekkedal, T. (1990): Recruitment and Study Barriers in the Electronic College. In: Paulsen, M. F. & Rekkedal, T.: *The Electronic College. Selected Articles from the EKKO Project*. Bekkestua: NKI/SEFU.

Rekkedal, T. (1997) 'Fjernstudenter med suksess' - Evalueringsundersøkelse ved NKI Teknisk Fagskole våren 1997. Internal paper.

Rekkedal, T. (1998a): Teaching and learning in the Electronic College. Some didactic considerations based on feedback from students. In: Davis, G. (ed.): *Teleteaching '98 – Distance Learning, Training and Education. Proceedings of the XV. IFIP World Computer Congress, 31 Aug.-4 Sept. 1998, pp. 825-834*. Vienna: Austrian Computer Society.  
<http://www.nettskolen.com/alle/forskning/40/Teletea3.html>

Rekkedal, T. (1998b): Recruitment barriers to learning on the Internet. Group interview with newly enrolled “correspondence students”. Article prepared for the EU Leonardo CISAER Project – Courses on the Internet, Survey, Analysis, Evaluation and Recommendations. <http://www.nettskolen.com/alle/forskning/41/Nettbas6.html>

Rekkedal, T. (1998c): Courses on the WWW – Students Experiences and Attitudes Towards WWW Courses. An Evaluation Report Written for the Leonardo Online Training Project. <http://www.nettskolen.com/alle/forskning/35/030698.html>

Rekkedal, T., Møystad, E. & Gundersen, S. (1998): Nettbaserte læringsarenaer. Delprosjekt 1: Kartlegging av hindringer for deltaking i opplæring basert på informasjons- og kommunikasjonsteknologi. Gruppeintervju foretatt med studenter som har valgt «tradisjonell brevundervisning» i stedet for studier over Internett.

Rekkedal, T. & Paulsen M. F. (1997): *The Third Generation NKI Electronic College - A Survey on Student Experiences and Attitudes*. Bekkestua: NKI. <http://www.nettskolen.com/alle/forskning/33/evaluati.htm>

Rekkedal, T. & Carlsen, T. (1998): *Fjernundervisning og kompetanseutvikling i mellomstore bedrifter - kartlegging av kunnskaper om og holdninger til fjernundervisning*. Bekkestua, NKI. [http://www.nettskolen.com/alle/forskning/36/be97\\_3.html](http://www.nettskolen.com/alle/forskning/36/be97_3.html)

Rekkedal, T. & Qvist-Eriksen, S. (1998): Elever som tar kurs som leder til generell studiekompetanse – hvordan går det med dem? Internal paper.

Samferdselsdepartementet (1996): *Den norske IT-veien. Bit for bit*. Rapport fra Statsekretærutvalget for IT: Oslo: Samferdselsdepartementet.

Umeå University (1993): *Research in distance education. Present situation and forecasts*. Report from a Nordic conference in Umeå 14-16 June 1993. Umeå University.

von Prümmer, C.: (1993): Women in Distance Education, a Researcher's view. In: Umeå University: *Research in distance education. Present situation and forecasts*. Report from a Nordic conference in Umeå 14-16 June 1993. Umeå University.

## **Appendix 1: Some Examples of Open Answers to the Student Survey**

I would have to take a course to learn how to use a PC and the Internet. (Middle aged woman (Mathematics in Secondary School, Health and Social Subjects))

The conditions had to be access to PC and Internet, and that I could use it without specific costs – further, I would have to enjoy working on the screen. (Secondary School, Health and Social Subjects)

Firstly, I have no possibility of buying a PC, at least not now. I prefer writing by hand. Because of economic difficulties, some will not have access to PC. I would not have enrolled if the course required access to Internet. In my view, correspondence education is fine, it does not matter if the turn-around time might be 1 to 2 weeks. (Secondary School, Health and Social Subjects)

The condition would be that I had a PC and access to the Internet. (Secondary School, Health and Social Subjects)

I would very much liked to have PC and access to Internet in my studies, but I cannot afford that. (Secondary School, Health and Social Subjects)

I am of the old fashioned type, I don't like PC, and people learned before also – without PC. (Secondary School, Health and Social Subjects)

I would need a course in how to use the Internet. (Secondary School, English language)

The condition would be that I could afford to use the Internet. (Unemployed Studying IT, Tertiary Level)

If I had had a more powerful PC and access to the Internet, I would no doubt have enrolled, however, when I started such investments were not possible. (IT student)

Access to Internet at home. (IT student PC both at home and at work and Internet at work)

I have PC at home, but no intention of subscribing to Internet, thus I chose correspondence study (IT student, PC user both at home and at work, access to Internet at work)

I have a PC but no modem to access Internet. This costs money, and this is my main reason for not being willing to enrol in Internet studies. (SFP)

The possibility of access to a PC and Internet at a local school or study centre. (Secondary School, General subjects)

I have not learnt how to use Internet, and feel that I would not take the time to do so for this course. (Single course, Personal Development)

Presently, I have no access to Internet – I feel that co-operating with fellow students is important. (Medium Level Management (Arbeidslederskolen), enrolled in combined studies with local face-to-face)

I hate PC, PC and Internet don't interest me at all (Arbeidslederskolen, has access to PC and Internet at home, but does not use PC at all)

If Internet access had been required, I could not have taken the course. (Inmate of prison, IT, Tertiary Level)

Better economic situation is the only problem. I am very positive towards Nettskolen and would have liked to be in the 'yes' category. INTERNET STUDIES IS THE FUTURE – EVEN FOR POOR STUDENTS – SOON EVERYONE WILL HAVE A PC! (Secondary School, General subjects)

The necessary condition would be that I was interested in studying that way. (Secondary School, Health and Social Subjects)

I would need some help on how to communicate on the Internet, I don't know how and feel insecure, and I would need someone to phone for help. Also insecure on who can read what is written on e-mail, afraid of loosing control of what I send. I have little time for learning new technologies. (Management and Administration Health, Tertiary Level)

## Appendix 2: Student Questionnaire

Bekkestua, d.d.

### Undersøkelse blant studenter og elever ved NKI Fjernundervisningen om undervisning på Internett

Dette spørreskjemaet er sendt til aktive elever og studenter ved NKI Fjernundervisningen.

Som mange av dere vet, har NKI Fjernundervisningen vært langt fremme når det gjelder utvikling av fjernundervisningstilbud på Internett. Vi kaller denne delen av NKI Fjernundervisningen for Nettskolen.

Alle studiene våre tilbys som fjernundervisning. I de fleste studiene er hovedformen brevundervisning, der kontakten med lærer hovedsakelig foregår gjennom innsending av besvarelser som rettes, vurderes og kommenteres av lærer. Noen av studiene organiseres også som kombinert undervisning, der elevene regelmessig møter til lokal klasseundervisning.

Noen av NKI Fjernundervisningens studier tilbys bare på Nettskolen, mens andre studier og kurs tilbys både over Internett og i mer tradisjonell form som brevundervisning.

Ved undervisning over Internett får elevene tilgang til viktig informasjon på Nettskolens hjemmesider, kursmaterialet eller deler av det ligger på nettet, og det er også tilgang til annen informasjon på nettet. Alle som deltar i studier på Nettskolen vil kunne kommunisere med de andre deltakerne gjennom egne diskusjonsgrupper i faget eller gjennom ren sosial kommunikasjon med andre studenter. Deltakerne kan sende elektronisk post til lærer og medelever, og kommunikasjonen går normalt svært raskt.

Når NKI er i ferd med å utvikle flere og flere kurs og studier til undervisning på Internett, er det viktig for oss å få vite noe om hvordan dere som nå studerer ved NKI ser på denne utviklingen. Vi ville derfor være svært takknemlig om du ville ta deg tid til å svare på dette spørreskjemaet og returnere det til NKI i den frankerte svarkonvolutten så raskt som mulig.

**HVIS DU HAR SVART PÅ DETTE SKJEMAET TIDLIGERE, ØNSKER VI IKKE AT DU SVARER EN GANG TIL.** Du kan da se bort fra denne henvendelsen.

Ellers benytter vi anledningen til å ønske deg en riktig GOD JUL.

Vennlig hilsen  
NKI Fjernundervisningen

Torstein Rekkedal  
forskningsleder

## Spørreskjema (Undersøkelse blant studenter og elever ved NKI Fjernundervisningen om undervisning på Internett)

1. Hvilket studium holder du på med på NKI Fjernundervisningen?

---

2. Har du tilgang til PC?

- Nei
- Ja, på jobben
- Ja, hjemme

3. Har du tilgang til Internett

- Nei
- Ja, på jobben
- Ja, hjemme

4. Bruker du PC selv?

- Nei
- Ja, på jobben
- Ja, hjemme

5. Hvor ofte bruker du PC?

- Aldri
- En gang i blant
- Ukentlig
- Daglig

6. Når du skal skrive noe, foretrekker du å skrive på PC eller for hånd?

- PC
- For hånd

7. Bosted

- Stor by (Oslo, Bergen, Trondheim, Stavanger)
- Mindre by
- Tettsted
- Bygd

8. Din alder

- < 24 år
- 25-29 år
- 30-34 år
- 35-39 år
- > 40 år

9. Kjønn

- Kvinne
- Mann

10. Yrke

- Arbeider full tid
- Arbeider deltid
- Hjemmearbeidende
- Annet \_\_\_\_\_

11. Tidligere utdanning

- Grunnskole
- Grunnskole + 1-2 år
- 3-årig videregående skole/examen artium
- Utdanning utover videregående skole (ikke universitets-/høgskolestudier)
- 1-3 år høgere utdanning
- 4 år eller mer i høgere utdanning

12. Hovedgrunnen til at du nå tar utdanning ved NKI (sett bare ETT kryss for den VIKTIGSTE grunnen).

- Behov for kunnskapene i nåværende jobb  
 Øke formell kompetanse  
 Muligheter for skifte av jobb  
 Interesse for faget

13. Hvis det studiet du nå tar, hadde krevd at du måtte benytte PC og kommunikasjon over Internett, ville du da ha begynt på studiet?

- Ja, helt sikkert  
 Ja, antagelig  
 Vet ikke  
 Nei, antagelig ikke  
 Nei, helt sikkert ikke

14. Hvis du har svart «Nei» eller «Vet ikke», kan du ved å krysse av nedenfor gi informasjon om grunnen til at du ikke ville velge undervisning over Internett. Sett kryss under «Viktig», «Betyr noe» eller «Betyr ikke noe» for alle grunnene. Sett kryss under «Betyr ikke noe» også hvis grunnen ikke passer for deg i det hele tatt.

Grunn til ikke å velge studier som krever tilgang til Internett	Viktig	Betyr noe	Betyr ikke noe
Usikker på hva studier på Internett krever av meg	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Har ikke tilgang på PC hjemme	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Har ikke tilgang til PC på jobben	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Bruker aldri eller sjelden PC	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Har ikke tilgang til Internett	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Synes brevundervisning fungerer greit for meg	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Har aldri lært å bruke PC	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Vet ikke hvilke fordeler Internett-undervisning gir	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Jeg kommer ikke til å skaffe meg PC med det første	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Jeg foretrekker å skrive for hånd	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Engstelig for å møte tekniske problemer	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Andre grunner, forklar	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

15. Hva føler du er viktig for deg i din situasjon når du skal studere?

- |  |              |  |             |
|--|--------------|--|-------------|
| At utdanningen er på deltid                  | Svært viktig | <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> | Lite viktig |
| At en kan starte når som helst               | Svært viktig | <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> | Lite viktig |
| At en kan studere i sitt eget tempo          | Svært viktig | <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> | Lite viktig |
| At en kan ha kontakt med medstudenter        | Svært viktig | <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> | Lite viktig |
| At en får støtteundervisning i klasse lokalt | Svært viktig | <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> | Lite viktig |
| At en får rask tilbakemelding fra lærer      | Svært viktig | <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> | Lite viktig |
| At studiene benytter ny teknologi            | Svært viktig | <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> | Lite viktig |



## Appendix 3: Prospective Student Questionnaire

Bekkestua, d.d.

### Undersøkelse om motiver og hindringer for deltaking i fjernundervisning

NKI har fått støtte fra Kirke-, utdannings- og forskningsdepartementet til å gjennomføre en undersøkelse med sikte på å se hvorfor voksne ønsker å ta videreutdanning, og om det er spesielle hindringer når det gjelder deltaking i fjernundervisning, og spesielt fjernundervisning som benytter ny teknologi og læring på Internett. Undersøkelsen er et ledd i departementets ønske om å stimulere voksne til å benytte seg av ulike tilbud om videreutdanning.

For å få svar på disse spørsmålene, har vi tatt kontakt med elever og studenter ved NKI Fjernundervisningen og med personer som har henvendt seg til NKI for å få informasjon om utdanningstilbudene. Informasjonen vil bli behandlet fortrolig, slik at ingen informasjon vil kunne knyttes til enkeltpersoner.

Du har henvendt deg til NKI for å få informasjon om fjernundervisning. Hvis din henvendelse til NKI var med sikte på egen utdanning, vil vi gjerne at du fyller ut spørreskjemaet og returnerer det så snart som mulig. Hvis din henvendelse til NKI var på vegne av andre (barn, ektefelle eller andre), kan du se bort fra denne henvendelsen.

**ALLE SOM RETURNERER SKJEMAET I UTFYLT STAND VIL VÆRE MED I EN TREKNING OM SYDENTUR TIL EN VERDI AV KR. 5.000.-**

For deltakelse i trekningen om sydentur, må du fylle ut det siste arket med navn, adresse og telefonnummer. Dette arket vil umiddelbart bli skilt fra spørreskjemaet, slik at svarene på skjemaet ikke på noen måte kan forbindes med den enkelte.

På forhånd takk for hjelpen.

Med hilsen  
NKI

Torstein Rekkedal  
forskningsleder

## Spørreskjema (Undersøkelse blant personer som har vært i kontakt med NKI med sikte på informasjon om studier og kurstilbud)

1. Da du tok kontakt med NKI, visste du hvilket kurs eller studium du var interessert i, eller ønsket du generell informasjon?

Generell informasjon om utdanningsmuligheter

Spesielt kurs/studium, hvilke(t)? \_\_\_\_\_

2. Var du primært interessert i å studere på

Heltid       Deltid       Vet ikke

3. Hvordan bestilte du studiekatalogen?

Sendte inn kupong fra dagsavis

Sendte inn kupong fra ukeblad

Sendte inn kupong fra reklamekatalog

Ringte NKI

Bestilte over Internett

Annen måte \_\_\_\_\_

4. Ga katalogen den informasjon du ønsket?  Ja     Nei

Hvis Nei, hva savnet du? \_\_\_\_\_

5. NKI Fjernundervisningen tilbyr flere undervisningsformer.

*Brevundervisning:* Elevene sender besvarelser til læreren gjennom postverket. Læreren retter og gir veiledning gjennom skriftlige kommentarer. Elevene kan også ringe læreren eller rådgivere ved NKI om de ønsker.

*Kurs over Internett:* Mange kurs og studier tilbys også over *Internett*. For å delta på kurs på Internett må du ha tilgang til PC og Internett-tilknytning (på jobben eller hjemme). Ved studier på Internett får du tilgang til studiemateriell på nettet, samtidig som du kan kommunisere med medstudenter gjennom elektronisk post og i datakonferanser.

*Kombinert undervisning:* Mange av NKIs studier gjennomføres også som *kombinert undervisning*, der du i tillegg til brevundervisningen møter regelmessig til klasseundervisning, en gang pr. uke eller hver 14. dag.

Visste du da du henvendte deg til NKI hvilke(n) undervisningsform(er) du var interessert i? Sett ett eller flere kryss.

Brevundervisning

Undervisning på Internett

Kombinert undervisning

Vanlig klasseundervisning (deltid)

Vanlig klasseundervisning (fulltid)

Vet ikke

6. Vær vennlig å krysse av for i hvilken grad du tror de ulike formene ville passe for deg.

	Passer bra	Passer dårlig	Vet ikke
Brevundervisning	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Undervisning på Internett	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Kombinert undervisning	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Vanlig klasseundervisning (deltid)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Vanlig klasseundervisning (fulltid)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Eventuelle kommentarer \_\_\_\_\_

**7. Hva føler du er viktig for deg i din situasjon når du skal studere?**

- |  |              |  |             |
|--|--------------|--|-------------|
| At utdanningen er på deltid                  | Svært viktig | <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> | Lite viktig |
| At en kan starte når som helst               | Svært viktig | <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> | Lite viktig |
| At en kan studere i sitt eget tempo          | Svært viktig | <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> | Lite viktig |
| At en kan ha kontakt med medstudenter        | Svært viktig | <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> | Lite viktig |
| At en får støtteundervisning i klasse lokalt | Svært viktig | <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> | Lite viktig |

**8. Har du påbegynt noen form for utdanning etter at du var i kontakt med NKI?**

- Ja, på NKI       Ja, på annen skole       Nei

**Hvis Ja, Undervisningsform**

- |  |  |   |
|--|--|---|
| <input type="checkbox"/> Fulltidsutdanning | <input type="checkbox"/> Brevundervisning          | <input type="checkbox"/> Klasseundervisning     |
| <input type="checkbox"/> Deltidsutdanning  | <input type="checkbox"/> Undervisning på Internett | <input type="checkbox"/> Kombinert undervisning |

**9. Føler du at du vet nok om ulike undervisningsformer til å velge mellom ulike alternativer?**

- |                           | Vet nok                  | Vet ikke nok             |
|---------------------------|--------------------------|--------------------------|
| Brevundervisning          | <input type="checkbox"/> | <input type="checkbox"/> |
| Undervisning på Internett | <input type="checkbox"/> | <input type="checkbox"/> |
| Kombinert undervisning    | <input type="checkbox"/> | <input type="checkbox"/> |
| Klasseundervisning        | <input type="checkbox"/> | <input type="checkbox"/> |

**10. Hvis du ikke har påbegynt studier ved NKI Fjernundervisningen, hva er grunnen til det? Sett kryss under «Viktig», «Betydde noe» eller «Betydde ikke noe» for alle grunnene. Sett kryss under «Betydde ikke noe» også hvis grunnen ikke passer for deg i det hele tatt**

Grunn til ikke å ha påbegynt studier ved NKI Fjernundervisningen	Viktig	Betydde noe	Betydde ikke noe
Har ikke bestemt meg ennå	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Var egentlig bare interessert i informasjon	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Foretrekker ordinær undervisning i klasse	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Vet for lite om fjernundervisning	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Det er for krevende å studere på egen hånd	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
NKI hadde ikke det tilbudet jeg var interessert i	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Synes kurset/studiet koster for mye	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Jobbsituasjon har endret seg	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Familiesituasjon har endret seg	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Har begynt på fulltidsstudier	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Har begynt på deltidsstudier	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Har begynt på fjernstudier ved annen skole	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Fikk ikke støtte fra arbeidsgiver	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Andre grunner	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Se på grunnene en gang til. Kan du sette en ring rundt krysset for den grunnen du mener er **ALLER VIKTIGST** for at du ikke har påbegynt studier ved NKI Fjernundervisningen.

**11. Har du tilgang til PC?**

- Nei  
 Ja, på jobben  
 Ja, hjemme

**12. Har du tilgang til Internett**

- Nei  
 Ja, på jobben  
 Ja, hjemme

**13. Bruker du PC selv?**

- Nei
- Ja, på jobben
- Ja, hjemme

**14. Hvor ofte bruker du PC?**

- Aldri
- En gang i blant
- Ukentlig
- Daglig

**15. Når du skal skrive noe, foretrekker du å skrive på PC eller for hånd?**

- PC
- For hånd

**16. Bosted**

- Stor by (Oslo, Bergen, Trondheim, Stavanger)
- Mindre by
- Tettsted
- Bygd

**17. Din alder**

- < 24 år
- 25-29 år
- 30-34 år
- 35-39 år
- > 40 år

**18. Kjønn**

- Kvinne
- Mann

**19. Jobbsituasjon**

- Arbeider full tid
- Arbeider deltid
- Hjemmearbeidende
- Annet \_\_\_\_\_

**20. Tidligere utdanning**

- Grunnskole
- Grunnskole + 1-2 år
- 3-årig videregående skole/examen artium
- Utdanning utover videregående skole (ikke universitets-/høgskolestudier)
- 1-3 år høgere utdanning
- 4 år eller mer i høgere utdanning

**19. Grunnen for din interesse for utdanning (sett bare ETT kryss for den VIKTIGSTE grunnen).**

- Behov for kunnskapene i nåværende jobb
- Øke formell kompetanse
- Muligheter for skifte av jobb
- Interesse for faget

**Andre kommentarer**

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## NKI Research and Development Reports

1. Rekkedal, T.: **Korrespondansestudier. Rekruttering, prestasjon og frafall.** NKI. 1972.
2. Rekkedal, T.: **Correspondence Studies. Recruitment, achievement and discontinuation.** NKI. 1972.
3. Rekkedal, T.: **Systematisk elevoppfølging. En eksperimentell undersøkelse av virkningen av kontaktbrev til elever ved NKI-skolen.** English summary. NKI. 1972.
4. Rekkedal, T.: **Tre årskull brevskoleelever.** English summary: Three years' enrolments to NKI-skolen's correspondence courses. NKI. 1973.
5. Rekkedal, T.: **Innsendingsoppgavene i brevundervisningen.** English summary: The Written Assignments in Correspondence Education. Effects of reducing turn-round time. NKI. 1973.
6. Rekkedal, T. & Hallem, S. A.: **Begynneroppfølging av brevskoleelever.** English summary: Follow-up of correspondence students. NKI. 1975.
7. Rekkedal, T.: **Tekniske studier: Korrespondanseundervisning og klasseundervisning. Delrapport 1: Rekruttering.** English summary. NKI. 1976.
8. Rekkedal, T.: **Tekniske studier: Korrespondanseundervisning og klasseundervisning. Delrapport 2: Brevskoleelevene.** NKI. 1978.
9. Rekkedal, T.: **Studier ved NKI's tekniske skole. Delrapport 3 fra prosjektet "Tekniske studier - Brevundervisning og klasseundervisning."** English summary. NKI. 1979.

10. Rekkedal, T.: **Introducing the personal tutor/counsellor in the system of distance education. Project report 1. Experiment description.** NKI. 1981.
11. Rekkedal, T.: **Introducing the personal tutor/counsellor in the system of distance education. Project report 2. Final report.** NKI. 1985.
12. Rekkedal, T.: **The Telephone as a Medium for Instruction and Guidance in Distance Education.** SEFU/NKI. 1989.
13. Paulsen, M. F.: **En virtuell skole. Del I. Fundamentet i EKKO-prosjektet.** SEFU/NKI. 1989.
14. Paulsen, M. F.: **En virtuell skole. Del II. Erfaringer fra EKKO-prosjektet.** SEFU/NKI. 1989.
15. Paulsen, M. F. & Rekkedal, T.: **The Electronic College. Selected articles from the EKKO project.** SEFU/NKI. 1990.
16. Paulsen, M. F. & Rekkedal, T.: **EKKO-prosjektet. Del III. Den elektroniske høskolen.** SEFU/NKI. 1990.
17. Rekkedal, T. & Vigander, K.: **Forsøk med bruk av Telewriter i matematikkundervisning.** SEFU/NKI. 1990.
18. Holden, G.: **Videokonferanser som del av undervisningsopplegg i fjernundervisning.** SEFU/NKI. 1992.
19. Rekkedal, T.: **Telefax som medium for toveis kommunikasjon i individuell fjernundervisning.** SEFU/NKI. 1992.
20. Bjørgen, A. M.: **Teknologi og hverdagsliv. Fjernstudenters bruk og opplevelse av datakonferansesystemet EKKO med familien som læringsmiljø.** SEFU/NKI. 1992.

21. Peersen, V. S.: **Evaluering av høgskolestudiet "Ledelse og administrasjon for helse og sosialsektoren". Rapport 4: Sluttrapport.** SEFU/NKI. 1992.
22. Holden, G.: **Multipunkt videokonferanse. Evaluering av fjernundervisning via video.** SEFU/NKI. 1994.
23. Rekkedal, T. & Blakstad, I. L.: **Submission Density and Assignment Workload Revisited. Report 1: SEFU Project on 'Submission Density, Student Autonomy and Modes of Communication in Distance Education'.** SEFU/NKI. 1994.
24. Rekkedal, T. & Paulsen, M. F.: **The third Generation Electronic College. A survey of student experiences and attitudes.** NKI. 1997.  
[http://www.nki.no/ekko/for\\_alle/fagartikler/evaluation/evaluati.htm](http://www.nki.no/ekko/for_alle/fagartikler/evaluation/evaluati.htm)
25. Rekkedal, T. & Carlsen, T.: **Fjernundervisning og kompetanseutvikling i mellomstore bedrifter - kartlegging av kunnskaper om og holdninger til fjernundervisning.** NKI. 1998.
26. Rekkedal, T. & Møystad, E.: **Recruitment Barriers to Learning on the Internet II. Survey among active correspondence students and prospective students at NKI.** NKI. 1998.

### **Reports from the Centre for Distance Education (SEFU):**

1. SEFU: **Forskningsprogram om fjernundervisning. Arbeidsseminar 1989 arrangert av Senter for fjernundervisning, Statens Spesiellærerhøgskole.** SEFU. 1989.
2. SEFU: **Evaluering av fjernundervisning.** SEFU. 1992
3. SEFU: **Selected Articles on Policy, Research and Evaluation in Distance Education.** SEFU. 1993.

4. SEFU: **Fjernundervisning - utvikling og mangfold. Et utvalg av foredrag, artikler og rapporter fra Senter for Fjernundervisning SEFU 1988-1992.** SEFU. 1993.

5. SEFU: **Evaluering av fjernundervisning - en praktisk veiledning.** SEFU. 1994.

6. SEFU: **Forskning og fjernundervisning - utfordringer mot år 2000. Rapport fra konferansen om forskning og fjernundervisning i Oslo 23.-24. januar 1995.** SEFU. 1995.

7. Lundberg, I. : **Voksne med lese- og skrivevansker - En forskningsoversikt.** SEFU. 1996

8. Letrud, K., Baaberg, B. & Enge, T.: **Tilrettelegging av fjernundervisning for voksne med lese- og skrivevansker. - En konsekvensvurdering.** SEFU. 1997.

**Articles, reports and conference papers on distance education and Internet-based teaching and learning:**

<http://www.nettskolen.com/alle/forskning/>

\*\*\*\*\*baksidetekst\*\*\*\*\*

Torstein Rekkedal & Elisabeth Møystad  
Recruitment Barriers to Learning on the Internet II  
Survey among active correspondence students and prospective students at NKI

This survey is carried out as a part of the continuous activities of research and evaluation at NKI Distance Education.

The survey reported consists of an integrated report of two surveys, which constituted one sub-project of the Project 'Internet-based Learning Spaces' (Nettbaserte læringsarenaer).

The main project has been one major activity in the efforts of developing the NKI Electronic College, "Nettskolen".

The main aim of the surveys was to examine attitudes to technologies necessary for Internet-based distance learning, experiences in using technology, and access to PC and the Internet among active distance students and prospective distance students.

The project has been partly financed by project grants from the Norwegian Ministry of Education, Research and Church Affairs.

The members of the project team planning and carrying out the surveys were Anne-Karine Akre, Stephan Gundersen, Elisabeth Møystad and Torstein Rekkedal.

#### NKI Distance Education

One of Norway's leading distance teaching institutions offering study programmes in a wide variety of areas at secondary and tertiary level. The study programmes are offered as distance education applying different media and technologies. The Electronic College (Nettskolen) offers study programmes and courses via the Internet and the WWW.

The NKI-group <http://www.nki.no/>

The NKI Group is one of Norway's largest non-governmental educational institutions. The NKI Group includes The Polytechnic College (Den Polytekniske Høgskolen) (NKI Distance Education, (NKI Fjernundervisningen), Academy of commerce and industry (NæringsAkademiet), NKI Publishing (NKI Forlaget) and PrePress.