UNIVERSITY OF GOTHENBURG

Mentoring in Distance Education

Preventing Attrition to Promote Public Health

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Master Thesis in Learning, Communication and Information Technology

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SUMMARY

The number of college and university students has increased greatly in Europe during the past quarter century, and the number of distance education students has tripled in Sweden since 1996. More than 20% of the students in Sweden now choose distance education, with a student population where 42% are older than 34 years of age, compared to 18% of the campus based students. This is a clear indication of an increased interest in lifelong learning.

The average European college student dropout rate is about 40%, which is very close to the Swedish on-campus (38%) and traditional off-campus (39%) dropout rates. An increasing number of the distance education students, now more than 70%, choose IT supported (online) distance education, but the problem is that this increasingly popular choice has resulted in an average dropout rate of 58%.

The present study was designed to investigate how online mentoring affects attrition in IT supported distance education. A masters degree program at the IT University of Gothenburg, Sweden, was used as an empirical example, and mentoring was introduced during the first course. The dropout rate was 55% in the first course, while the second and third courses had no dropouts at all, for the first time in the history of the program.

A number of studies have indicated a strong relationship between education and public health. Low educational level is associated with poor physical and mental health. Education is clearly an important factor in promoting, restoring and maintaining physical, social and mental health. Lifelong learning is an essential part of a lifestyle that will help to maintain body and mind in good health.

Lifelong learning may be facilitated by online access to university courses. This should also be recognized as an important part of public health promotion. Student attrition in distance education is a public health problem that may be addressed in a number of different ways, including active support from distance education mentors. Online mentoring should always be included as an important part of all distance education programs.

Key words: distance education, e-mentoring, graduate mentoring, online mentoring, telementoring, virtual mentoring, attrition, student dropout, education and public health, educational level and health

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1 Introduction

There are approximately 4 000 colleges and universities in Europe, and most of them are located within the European Union member states. These institutions of higher learning are facing many new challenges, including an increased demand for higher education, the internationalization of education and research, greater co-operation between universities and industry, the reorganization of knowledge and proliferation of places where knowledge is produced.

The number university students has increased greatly in Europe during the past quarter century, and the number of distance education students has tripled in Sweden since 1996. More than 20% of the students in Sweden now choose distance education, and 42% are older than 34 years of age, compared to 18% of the campus based students (HSV 2007; SCB 2007). This is a clear indication of an increased interest in lifelong learning.

The European universities are involved in the *e*Europe initiative and the *e*Europe 2005 Action Plan, which encourages all universities to develop online access ("virtual campus") for students, teachers and researchers. Most aspects of this co-operative program are open to universities in all countries of the world (COM 2001:172).

The Swedish Net University was founded in 2002 to promote IT supported distance education in co-operation with 35 Swedish state colleges and universities. More than 70% of the distance education students now choose to study online, but the problem is that this increasingly popular choice has resulted in an average dropout rate of 58% (Mårald & Westerberg, 2006 a & b).

Student attrition in distance education has become a global public health problem, especially in higher education at colleges and universities. The average European college student dropout rate is about 40%, which is very close to the Swedish on-campus (38%) and traditional off-campus (39%) dropout rates (COM 2003:58).

1.1 Education and Public Health

A number of studies have indicated a strong relationship between educational level and public health. Low educational level has been associated with poor physical & mental health and an increased mortality risk, while increased educational level improves physical & mental health and reduces mortality risk (Sundquist & Johansson, 1997; Regidor *et al.*, 1999; Fong *et al.,* 2007).

A review by the Institute of Public Health in Ireland (Higgins *et al.,* 2008) states that the evidence *"shows strong links between education and health. Greater levels of education can lead to:*

- Improved chances of finding secure, well paid employment, with subsequent health benefits.

- More opportunities for social development and enhanced social skills, with positive impacts for both the individual and wider community, and subsequently, for general health.

- Greater likelihood of developing knowledge, attitudes and behaviours conducive to good health."

According to Tahin *et al.*(2000), there is a *"direct effect on health of the process of acquiring an education. The educational process ... is a kind of training for using the brain, for studying, and for logical reasoning. This mental training process keeps the central nervous system in good condition just like physical training keeps the body in shape."*

Education is an important preventive public health factor for an aging population according to Joung *et al.* (2000). *"The rise in the educational level counteracts the expected increases in ill-health based on population aging to a substantial degree (10-100%). We therefore recommend that in projections of ill-health also changes in educational level are taken into account."*

Education is clearly an important factor in promoting, restoring and maintaining the physical, social and mental health of each person, who in turn will be able to form healthy families and communities. Lifelong learning is an essential part of a lifestyle that will help to maintain body and mind in good health.

Lifelong learning may be facilitated by online access to university courses. This should be recognized as an important part of public health promotion. Student attrition in distance education is a public health problem that may be addressed in a number of different ways, including active support from distance education mentors.

1.2 Preventing Attrition

A number of personal, social and institutional factors contribute to attrition, and preventive measures should therefore be focused on ways to positively change and/or influence these factors. Distance education teachers and mentors can help to identify problem areas, facilitate the changes which are necessary in order to address various issues, and help to create a healthy and positive learning environment, including the following areas:

- **Personal educational goal**: Morgan and Tam (1999) have shown that the student needs to see a meaningful connection between a course of study and a personal educational goal.

- **Sense of isolation**: Distance education may cause a sense of isolation that weakens the motivation, which is an important reason for student attrition according to Pithers and Twyford (2000).

- **Positive learning environment**: A social environment where the student experiences security, takes responsibility and is inspired, produces positive learning effects and also reduces student attrition, according to Svensson (2002) and Rovai (2002).

- **Learning community**: Many researchers believe that the student's ability to cooperate in a healthy and positive learning community is crucially important for the decision to drop out or complete the studies (Bernard & Amundsen 1989, Kelly 1993, Bertrand et al. 1994, Gibson 1996, Visser 1998).

- **Quality in distance education**: Carnevale (2002) emphasized the importance of quality in distance education and points out that high student attrition is often a side effect of poor quality in the online classroom.

Some IT supported distance education courses are poorly designed and tend to isolate the students from each other by a lack of communication tools and collaborative learning activities. This problem may be corrected by forming small study groups, cultivating CoP's (Communities of Practice), conducting interactive online seminars and conferences via Skype, Marratech, etc.

Seidman (2001), at the Center for the Study of College Student Retention, has developed a program to prevent attrition based on the assumption that, *"for intervention programs and services to be successful they must be powerful enough to effect change"*. This program emphasizes the importance of early identification of the problem, followed by early, intensive and continuous intervention.

Seidman's formula: *Retention = Early Identification + Early + Intensive + Continuous Intervention.*

Continuous student interventions require resources which may not be available at many universities. The teachers often do not have enough time for their normal duties, and may not be prepared to get personally involved in such interventions. There are usually a few academic advisors or educational counselors, but they may not have enough time to meet all the student needs. This an important reason for the introduction of university mentoring programs.

Undergraduate mentors are used to prevent attrition by serving as role models in the areas of academic achievement and co-curricular involvement, helping first year students to successfully adjust to the new learning environment. Peer mentors are usually senior college students who form mentoring relationships with new students. This is a common practice at colleges and universities in Australia, the USA and many other countries around the world, including at some universities in Sweden.

Graduate students at a major American university *"remarked that their biggest desire was for more mentoring. We heard this from students regardless of their race, gender, sexual orientation, age, nationality, social class, disciplinary interest or departmental affiliation."* Who can serve as a graduate mentor? The primary focus is on faculty mentors, but students are also urged to consider *"peers, more advanced graduate students, departmental staff, retired faculty, faculty from other departments, faculty from other universities, and friends from outside the academy as potential mentors."* Rather than trying to find one mentor, the student is advised to build a mentoring team (Weiss, 2008).

Graduate mentors take the time to develop personal relationships with graduate students, taking on the responsibility to ensure that the students become sophisticated in an academic discipline or field of study, learn critical thinking and become intellectually challenged to create new knowledge. Mentoring involves a personal relationship and is therefore distinct from academic advising, which normally does not involve such a relationship.

More advanced graduate students who become graduate mentors may benefit from their experience, both socially and academically. Mentoring may be regarded as a form of LdL (Lernen durch Lehren = Learning by Teaching), which was developed in the 1980's by Jean-Pol Martin, professor of didactics at the University of Eichstätt-Ingolstadt in Germany. The main purpose of LdL is to transfer as many teaching functions as possible to the learners themselves, which will also enhance their own learning (Grzega, 2005).

1.3 Research Questions

1. What motivates students to choose distance education?

2. What reasons do students give for interrupting their studies?

3. How does online mentoring affect attrition in distance education?

1.4 Purpose

The present study was designed to investigate how online mentoring affects attrition in IT supported distance education, in addition to the first two research questions that were also addressed in my previous study. As an empirical example I chose to study the use of online mentoring in a masters degree program at the IT University.

The purpose of my previous study was to describe the global public health problem of student attrition in higher education and to discuss possible ways to prevent and/or reduce this problem. As an empirical example I chose to study attrition in a previous masters degree program at the IT University, to investigate underlying causes, and to suggest ways to deal with the problem.

1.5 Limitations

The present study is focused on an online (virtual) mentoring intervention and the results of a survey on attrition and mentoring which was directed to the students in a masters degree program at the end of the academic year 2007 – 2008.

My previous study focused on the results of a survey on attrition directed to the students in a masters degree program at the end of the academic year 2006 – 2007. The study exclusively addressed my first two research questions (see 1 and 2 above).

The initial description of the problem area refers to a limited selection from the very extensive scientific literature in this area. The emphasis rests on an introduction to the scientific literature, an outline of the reasons for the choice of IT supported distance education, the causes of student attrition, and a description of how mentoring can be used in response to the public health problem of attrition in distance education.

1.6 Personal Observations

In the fall of 2006 I entered a masters degree program in Learning, Communication and Information Technology (LCIT) at the IT University, which is a joint faculty of Chalmers University of Technology and Gothenburg University in Sweden. After a short on-campus introduction, the program continued online by IT supported distance education, using Fronter as the learning platform.

During my first academic year I noticed that many students did not start and/or continue their studies. At the end of the year only 6 of 24 students remained, corresponding to a dropout rate of 75% In this masters degree program. 78% of the dropouts (14 students) occurred during the first semester and 22% (4 students) during the second semester.
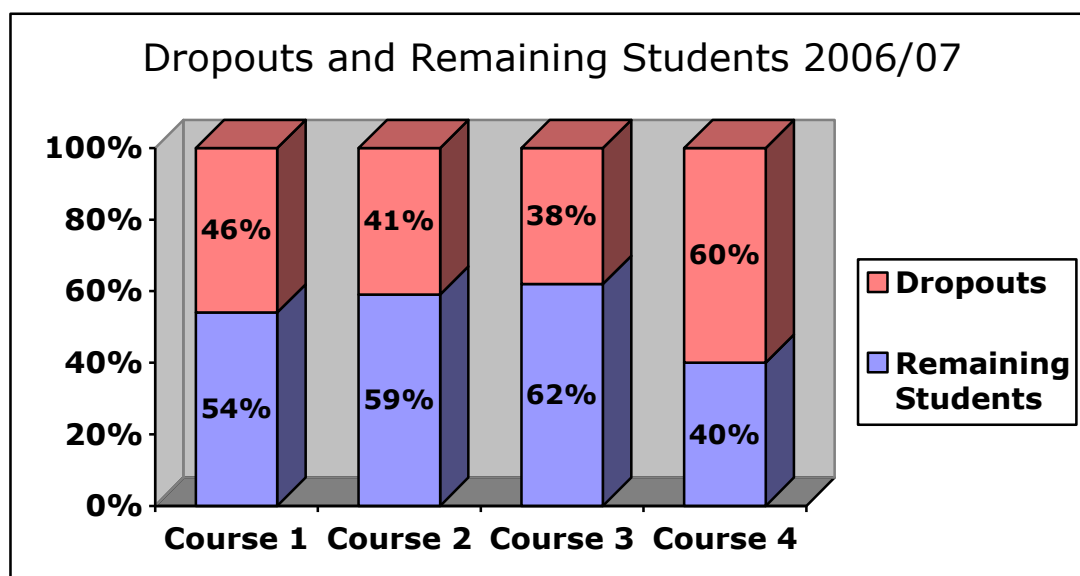
Figure 1-1. 18 of 24 students (75%) dropped out during the academic year 2006 - 2007.

This IT supported distance education masters degree program in Learning, Communication and Information Technology (LCIT) was introduced at the IT University in the fall semester of the 2002/03 academic year. New students were accepted into the program each fall semester of the following academic years.

During the first year, 2002/03, 30 students registered for the first course of the LCIT program, 27 for the second course, 23 for the third course and 18 for the fourth course. The second year, 2003/04 there were 22, 11, 8 and 7 students registered in the respective courses. The third year, 2004/05, there were 22, 11, 10 and 4 students respectively. The fourth year, starting in 2005, there were 16, 7, 4 and 3 students registered for the respective courses (Nilsson Lissvall, 2007).
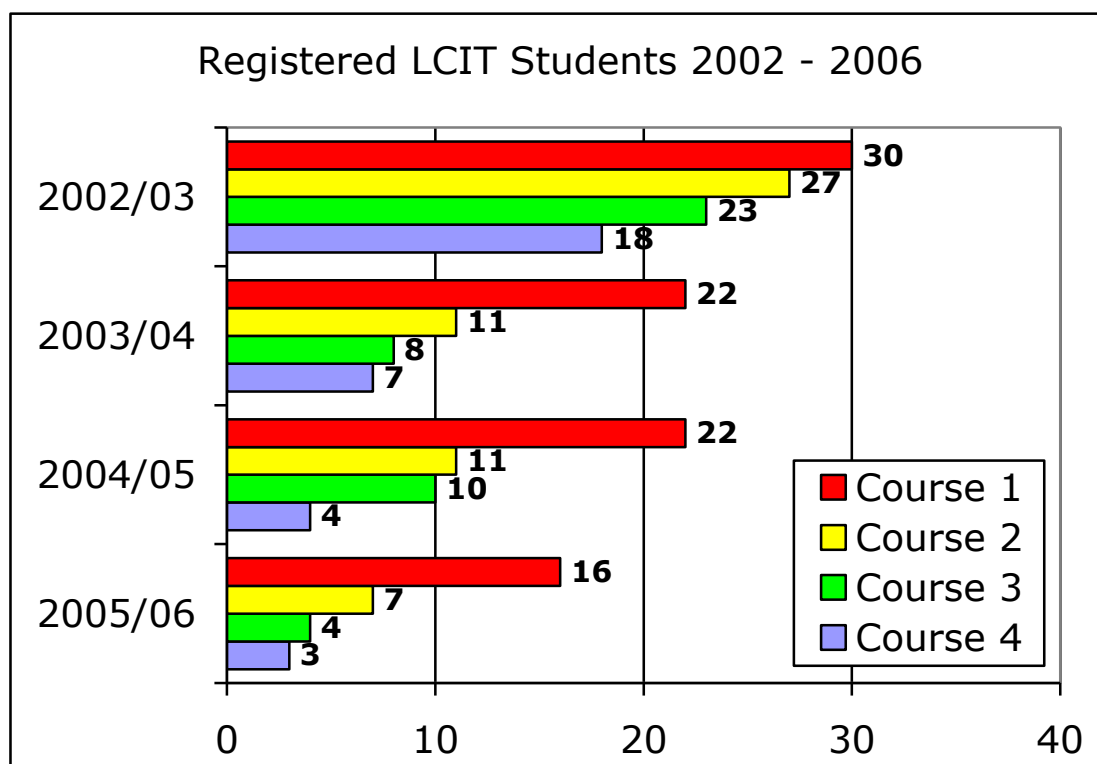
Figure 1-2. Students registered in each course of the LCIT programs during the first four academic years, 2002 – 2006.

The first year (2002) was quite successful, with 60% of the initial students registering for course 4, but the following years had much lower retention rates. During the second year, only 32% registered for the same course. During the next two years the numbers dropped to 18% and 19% students registering for course 4. It is especially interesting to note the 90% retention rate in the very beginning of the initial program in 2002, which subsequently fell to 50% after the first course in 2003 and 2004 respectively, followed by 44% in 2005, 54% in 2006 and 45% in 2007.

1.7 Two Part Investigation

My personal observations of a high dropout rate prompted me to start an investigation into the problem of student attrition in IT supported distance education in order to clarify the main causes and identify possible ways to deal with this problem. My first study was published in the report Student Attrition in Distance Education (Juneby, 2007), and its results are included in the present report.

The main reasons for the high dropout rate were found to be a lack of time to study, as well as internal and external factors with a negative influence on student motivation, such as poor teacher communication, participation, support and feedback, and also poor fellow student communication and support.

The fact that Swedish academic teachers are seriously overworked according to a recently published report (HSV, 2008) may be a contributing factor. Lack of funding adds to the problem, since not enough qualified teachers can be hired to meet the increasing needs of the growing number of distance education students.

The present study consisted of an active intervention with online mentoring that was introduced into a second masters degree program in LCIT during the fall semester of 2007. The dropout rate was 55% (11 of 20 students) in the first course, while the second course (8 students), and the third course (9 students), had no dropouts at all. The fourth course (10 students) had no mentoring and the dropout rate increased to 50%.
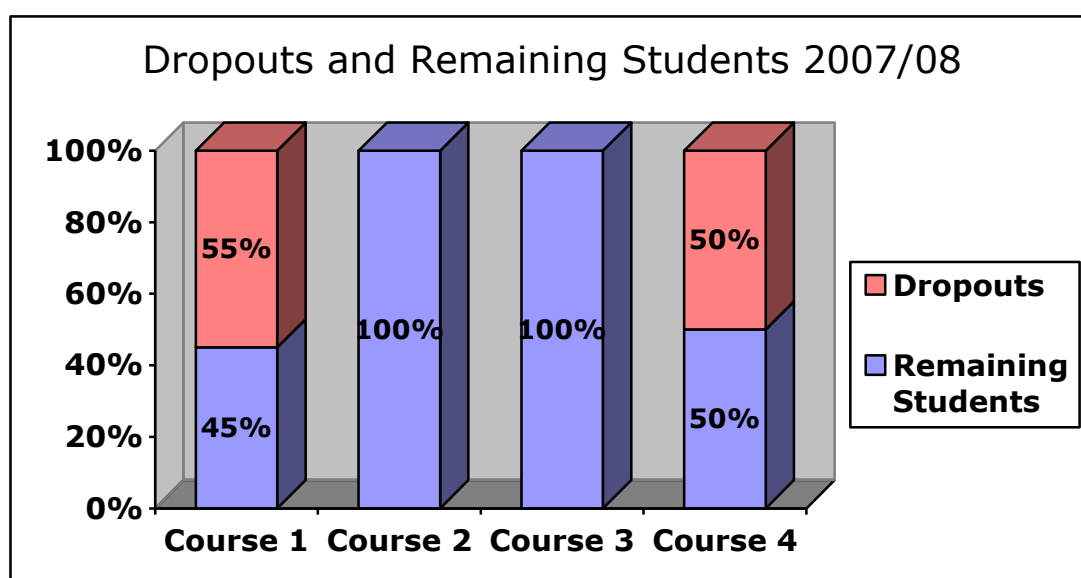

Figure 1-3. No dropouts with mentoring in courses 2 and 3.

2 Problem Area

Student attrition in distance education is a global public health problem, especially in higher education at colleges and universities. Since the 1970's the research in this area has identified a number of more or less important factors that may influence a student to complete or drop out of a course or a whole educational program. Most of the studies have been conducted in the USA, and they have primarily focused on exploring the conditions during the first year in college (Grayson & Grayson, 2003; Seidman, 2005).

Researchers have often published somewhat conflicting results, which may be due to the fact that many of the studies have only investigated one or a few factors, which have been given too great significance. Many still agree that some factors are more important, while other factors are relatively insignificant. Most researchers also agree that various factors often work together in a synergistic way (Morgan & Tam, 1999; Bourdages & Delmotte, 2001).

Many researchers believe that the student's ability to cooperate in a learning community is crucially important for the decision to drop out or complete the studies (Bernard & Amundsen, 1989; Kelly, 1993; Bertrand *et al*., 1994; Gibson, 1996; Visser, 1998).

Nagi and Sassani (2003) emphasized the importance of the three promoting factors pedagogy, collaboration and technique in distance education. According to this study, the high student attrition rate is caused by educational, technical and social deficiencies created by the transfer of a traditional classroom environment to a completely technology based distance education. Inexperienced teachers do not have the necessary educational experience to distribute knowledge by distance education. Distance education remains a very isolated activity in the absence of a study environment with collaboration and a sense of social interaction.

Distance education may cause a sense of isolation that weakens the motivation, which is an important reason for student attrition according to Pithers and Twyford (2000). Of course all students are not as negatively affected by their relative isolation. There are some students who choose distance education courses because they prefer to study at their own pace without any regular contact with the teacher and their fellow students.

A social environment where the student experiences security, takes responsibility and is inspired, produces positive learning effects and also reduces student attrition, according to Svensson (2002) and Rovai (2002).

Keller (1983) emphasized the importance of motivation to counter-act the sense of isolation that is often associated with distance education. Giles (1999) also stressed the importance of a student's motivation, especially in IT supported distance education. Clark (1998) emphasized that study perseverance is a sign of a good motivation.

Kennedy (2000) described how various internal and external factors affect motivation, which in turn determines a student's tendency to complete the distance education. Morgan and Tam (1999) have shown that the student needs to see a meaningful connection between a course of study and a personal educational goal.

Kember (1989 & 1995) adapted Tinto's analytical model of how a student's motivation and endurance may be increased. While Tinto (1975) worked with young full time on-campus students, Kember was more interested in adult students, with an emphasis on how to combine part time distance education with work, family and other social activities.

Tinto (1998) found that collaborative education may help to prevent student attrition by active participation in a social and academic environment. Studies that specifically looked at distance education (e.g. Peters, 1992; Long, 1994) support Tinto's emphasis on the importance of social support.

Tinto (2005) has extended his earlier research and has developed a model of *Institutional Action* with a focus on academic, social and economic support of first year college students. He emphasizes the importance of *feedback* from the college staff, as well as academic and social involvement.

Carnevale (2002) emphasized the importance of quality in distance education and points out that high student attrition is often a side effect of poor quality in the online classroom. Students who complete their course with passing grades are more satisfied with the course than students who have dropped out because they did not like the course format or design.

 Lindh and Soames (2004) observed that *"The paradox is that those students who complete the [online university] course do so successfully and express their great satisfaction. It seems to be a case of all or nothing. Either the students thoroughly enjoy the course and benefit, or they disappear."* (p. 133)

Garland (1993) has shown that well motivated students successfully complete their studies because they can overcome difficulties and are able to adapt to changes in their life situation.

Linnenbrink & Pintrich (2002) and Pintrich (2003) emphasized the great importance of motivation in academic success. Motivation can be seen from a socio-cognitive perspective as a multidimensional phenomenon that changes according to the present circumstances. The student's experiences of self-sufficiency and self-determination are very important factors in strengthening the motivation.

Lack of motivation is a primary cause of student attrition according to a study by Kim (2004), who also pointed out that more research is needed in this area. *"The results of this study confirm other research findings that the lack of motivation is the major reason for student drop-outs in online courses. … Interaction is found to be critical for creating motivating online learning environments."* (p. 465)

Motivation and various factors that affect it emerge as an important common denominator in many reports from scientific studies about the underlying causes of student attrition. Motivation appears to be the link that connects a number of contributing factors that combine and ultimately result in the decision to drop out or complete the education.

2.1 Distance Education

According to a report (SCB, 2007) from Statistics Sweden (a central government authority for official statistics), the number of distance education students has almost tripled, from 28 400 in 1996-97 to 82 300 during the academic year 2005-06, which means that more than one in five is now a distance education student. The fact that 42% of the distance education students were older than 34, shows a great increase of interest in and/or need of lifelong learning.

The proportion of distance education students varied greatly among different institutions during the academic year 2005-06, from 4% at Stockholm University to 68% at the Mid Sweden University. There were 13% distance education students at Gothenburg University, of which 70% were women and 30% men.

Several factors contribute to the increasingly popular choice of distance education instead of campus-based studies. The four major factors according to the UCER motivational study (Mårald & Wester-berg, 2006a) are the following:

- I wish to take advantage of the opportunity to study at my own pace
- I can not study in any other way because of my work
- I live too far from the closest university location
- I can not study in any other way because of my family situation

2.2 Student Attrition

The attrition (dropout) rate among students in the European Union stands at an average of about 40% according to a report from the Commission of the European Communities (COM 2003:58). This can be compared to a 38% dropout rate among Swedish on-campus students and 39% among traditional distance education students. IT supported distance education has the highest dropout rate, 58% according to reports from UCER, the Umeå Centre for Evaluation Research (Mårald & Westerberg, 2006 a & b).

Which factors contribute to the high dropout rates? Here are some observations derived from the two UCER reports, which will help to identify some of these factors (Mårald & Westerberg, 2006 a & b). The following quotes have been translated to English and the page references in parenthesis are to the original Swedish version. The quotes have been organized into different categories, followed by my own comments.

2.2.1 General Observations

- IT supported distance education does not suit all individuals or all situations. The student's previous education, study experience and motivation are all important factors (a, p. 89).

- Attrition was more common among students of the humanities, theology, law, social science, natural science and technology, but the dropout rate was lower among students of health care, nursing, medicine and dentistry (a, p. 85).

- From a lifelong learning perspective the traditional measure of successful studies, to earn academic credits, is no longer the main concern (a, p. 109).

Health science students apparently have a stronger motivation to finish their studies than students in other academic disciplines. This may be due to various reasons, e.g. that the training is a part of the continuing professional development towards more interesting and stimulating work with greater responsibilities and more personal satisfaction.

Others may participate in courses for personal development and satisfaction without any greater ambitions to gain formal educational merits in the form of academic credits and degrees. Lifelong learning may be a way for many older students to stimulate and exercise their intellect in combination with a social network provided by interaction with other students, which may help to improve their mental and social health.

2.2.2 Community, Family and Friends

- Social environments where the student experiences security, responsibility and inspiration enhances learning and reduces the tendency to drop out (b, p. 58).

- Motivation and support from family and friends are factors which increase the likelihood that a student will complete the education (a, p. 86).

- Distance education students who have their own families are somewhat more likely to drop out. At the same time there are slightly more women than men who chose to complete their studies (a, p. 86).

- Some students think that it is easier to drop out of an IT supported distance education course compared to an on-campus course for reasons such as lack of a learning community and limited contact with the teacher (a, p. 85).

Social factors can obviously play an important role in creating the motivation to study, the security, responsibility and inspiration that increase the likelihood that a student will complete the education. Paradoxically the family and friends can either help to create a good social environment, which promotes learning and reduces the drop out risk; or they can make it difficult for the student to complete the studies, by causing conflicts and making unreasonable demands on the student's time and attention for other competing activities.

A few more women than men chose to complete their studies, which might be because they are more persevering and goal oriented than the male students, or the significant men in their lives may be more supportive of the women's learning activities than the other way around. This would be an interesting topic to study from a gender point of view.

2.2.3 Contact with the Teacher

- Communication, especially with the teacher, is an important ingredient in IT supported distance education. This may be a significant reason why teachers experience a great demand of always being accessible to the students. There may be various reasons for the special emphasis on the importance of this communication (b, p. 57).

- One reason could be that there are great deficiencies in the communication between teacher and student, which should have a greater emphasis on the role of the teacher as a facilitator of dialog, active participation or mediation of online discussions (b, p. 57).

- The teacher plays a very central role in IT supported distance education, where many students think that the teacher is more important than in regular on-campus courses. Communication between teachers and students is very important as educational support, and the students need to perceive that the teacher is present and gives regular feedback (a, p. 87).

- All contacts with teachers and fellow students are important for supporting learning and participation. This should also decrease the risk that the student feels isolated, especially when the course does not have any physical meetings (b, p. 57).

It has been reported that the contacts between teacher and student are often considered to be more important in IT supported distance education than in on-campus courses. The teacher plays a central role in the creation of a positive study environment that promotes a high study activity and increases the likelihood that the students will complete their education. The teacher should always be ready to communicate with the students, be accessible, encourage a dialog, promote an active student participation and online discussions, in addition to being present and giving regular feedback.

What can be done to improve the important contacts between teacher and student? The first step is to realize how important this contact is to support learning and active student participation, which may lead to the conclusion that more time must be spent to provide the support which many students need to successfully complete their education instead of giving up and abandoning their studies.

2.2.4 Contact with Other Students

- Contact with other students is considered to be important, but not as much as contact with the teacher. Studies show that fellow students have a significantly positive effect on satisfaction and motivation, which can support the learning process in IT supported distance education (b, p. 57).

- Fellow students also provide an important educational support network, which is valuable from a learning perspective where students learn with and from each other in a stimulating social environment (a, p. 88).

- Some of the course dropouts claimed that one reason was their insufficient contacts with other students or that they did not fully participate, while other students claimed that there had been too much group work and too many physical meetings (a, pp. 86-87).

Contact with other students can lead to the creation of a learning community where you can experience participation, motivation, inspiration and support in the learning process, at the same time as it provides a good social study environment. Poor contact with other students is a contributing reason why some students choose to drop out of their studies. Therefore it is necessary to institute measures

to strengthen the contact between students by using good channels of communication, preferably in combination with physical meetings and/or meetings online. In this way the course participants will have better opportunities to get acquainted and to form well functioning learning communities, such as a CoP (Community of Practice) according to Wenger (1998 & 2002), or CSCL (Computer Supported Collaborative Learning) according to Wegerif (2005).

2.2.5 Lack of Time and Motivation

- Lack of time was one reason why online students chose to drop out (a, p. 86).

- Students who had already dropped out stated that there was something which could help them complete their course. Most students mentioned factors such as more time and a different course design (a, p. 86).

- Other drop out reasons were simultaneous work and studies, parallel studies, and a lack of motivation. Most of the students gave more than one reason why they had decided to drop out (a, p. 86).

- Students who took another course parallel with the online course were most likely to become dropouts (a, p. 86).

There are probably many time optimists who start an IT supported distance education course and later discover that they do not have enough time to study because there are too many other time consuming activities with a higher priority, such as work, family, recreation, other courses, etc.

It may often be a question of how strong the motivation is to complete a course or educational program, which in turn is based on a number of personal and/or work related factors that result in a certain order of priorities. Sometimes a course of study may have a very low priority to a student, who then decides to drop out in order to spend more time on other activities.

One way to deal with this kind of problem is to give a more realistic view of the time and level of motivation that is required in order to complete a certain course. This should be an important part of the course description to clearly tell the prospective student how much time and effort will be required to complete the course, which could also reduce the number of potential dropouts.

Good contacts with teachers, mentors and other course participants may also encourage the student to reevaluate priorities in favor of a course that would otherwise be abandoned. It is very important to make these contacts and build such positive and meaningful relationships at the very beginning of a distance education course.

2.3 Mentoring

Mentor as a name and as a concept has its origin in ancient Greek mythology. According to Homer's Odyssey, Mentor was a tutor given the responsibility of protecting, nurturing, educating and guiding Odysseus' son, Telemachus, when Odysseus left to fight in the Trojan War (Bell, 1996).

According to Newby and Corner (1997), mentoring is a dynamic relationship between an individual who needs to learn and one who is willing to help and guide. Mentoring in schools and universities have three main purposes, educational mentoring, career mentoring and personal development mentoring (Dennis, 1999).

Mentors are normally seen as an important part of the university community, and are recognized for their valuable contributions. University teachers often provide mentoring and specialized training to graduate students, who in turn mentor undergraduate students. Graduate mentors may also serve as teaching assistants, project managers or supervisors. At many universities the mentors are paid a competitive wage for their work, and/or receive academic credits and other forms of compensation.

2.3.1 Mentoring Categories

Traditional mentoring *"brings to mind an older, wiser sage taking a young and naive, but ambitious, person under his or her wing. The focus is on the one-to-one relationship between these two individuals, which is of relatively long duration. The duo's relationship will evolve and change as the mentoring progresses, until the expert views the novice more as a colleague and resource than as a student and protégé"* (Zeeb, 2007).

Peer mentoring is also a one-to-one relationship, which forms between people on a more equal level, who frequently interact in a learning (educational) environment and is focused on acquiring specific knowledge or skills and it often concludes when the purpose has been fulfilled. For example a senior college student who forms a mentoring relationship with a new student. Group (team) mentoring is similar to peer mentoring, but involves more than two individuals.

There are many advantages of peer mentoring for the mentor and the mentee alike. Peer mentoring may help new students adapt to a new academic environment faster. The relationship between the mentor and mentee gives the mentee a sense of being connected to the larger community where they may otherwise feel lost. Mentors are usually slightly more advanced students, so they can share useful knowledge and experience that is otherwise difficult to obtain. Mentors are chosen

because they are academically successful and because they possess good communication, social and leadership skills. As a consequence, mentors serve as positive role models for the students, guiding them towards academic and social success. Mentors provide support, advice, encourage-ment, and even friendship to students. Peer mentoring may improve student retention rates. (Wikipedia, 2008)

College peer mentoring programs are not a new concept. As far back as the nineteenth century, institutions of higher education established programs in which upper division students took some responsibility as proctors or mentors to first year students, intro-ducing them to culture, traditions, and responsibilities of citizenship at their new institution. After World War II, informal Big Brothers Big Sisters programs matched upper division students with first year students to ease the transition to college life (Carter & McClellan, 2000).

Telementoring is also known as online or virtual mentoring. It is done online, either synchronously or asynchronously, and may be any type of traditional, peer or group mentoring. Communication is maintained by e-mail, Skype, learning platforms, etc. The mentor and mentee (protégé) may never meet face-to-face, but are still able to carry on a successful relationship independent of time and location.

Zeeb (2007) notes that *"telementoring is a strategy that is emerging as a way to enhance the distance learning experience. Studies suggest that telementoring improves learning, reduces attrition, enhances communi-cations, and facilitates cooperative learning experiences for distance learners."* Online (virtual) mentors are often more advanced students or recent graduates who are familiar with the academic discipline of their mentees. Mentors are usually paired with specific mentees, and work with up to ten persons at the same time.

2.3.2 Distance Education Mentors

Teachers can serve as mentors to distance education students, and they usually pass on subject matter knowledge, but may also help students in their personal development. Heller and Sindelar (1991) describe them as seasoned, experienced teachers who act as teachers, guides, counselors, role models, and friends.

Students mentoring other students is a form of peer mentoring as mentioned above. Many students wish to have contact with fellow students to feel part of a group, to be able to discuss problems, to take part in group work and to benefit from peer support according to Doring (1996).

Professional experts in various occupations and disciplines can serve as excellent mentors to distance education students within the same subject or occupational field, as well as providing personal encouragement, motivation and support. Students in a number of telementoring projects especially appreciated mentors who shared some of their own personal lives, along with their knowledge and expertise (Bennett, 1997).

2.3.3 Mentoring Programs

There are many traditional and online (virtual) mentoring programs at colleges and universities all around the world. Here are just a few examples of such programs that are designed for first year college distance students, more advanced students, and even for distance education teachers.

Central Queensland University

Distance Education Mentor program that provides peer mentor support to distance education students enrolled with the university. In 2003 all distance education students seeking mentors were accommodated, with mentors having a manageable workload of an average of seven students each. A crucial element in the success of such a program is the support given to the students who volunteer to act as mentors. While giving information and moral support to other students, the mentors also require information, advice and support in their new role, which they receive from the program coordinator and from other mentors. (Sturgess & Kennedy, 2004)

Costal Carolina University

A program of peer mentors who serve as role models in the areas of academic achievement and co-curricular involvement in order to help first-year students successfully adjust to the University. Peer mentors are matched with instructors to create unique teaching teams that provide support to students during their first year of college. Mentors are trained by attending two academic courses on peer mentoring and by working with an instructor in a teaching team. (CCU, 2007)

Florida Community College at Jacksonville

One of the largest and most comprehensive community colleges in the United States, serving more than 60 000 students annually in a variety of programs, including Distance Learning. During the 2004 - 2005 academic years, there were over 25 000 enrollments in the online courses taught by full-time and about 200 adjunct faculty.

The college has a virtual adjunct mentoring program to help support all new online adjunct instructors as they teach their first semester. Mentors are also available to existing online instructors, who may be experiencing problems with a particular process or issue, or are teaching a specific course for the first time and request a mentor. Each online mentor works with up to 10 online adjuncts per semester. A lead mentor provides leadership for the online mentors, and assists new online mentors with mentoring processes and developing strategies for building successful mentoring relationships. In 2004 Florida Community College at Jacksonville's mentoring program was recognized by receiving the Sloan Consortium Award for having the top national online instructor mentoring program (FCCJ, 2007).

Gothenburg University

A peer helper program was introduced during the spring semester 2003 in cooperation with universities in Port Elizabeth, South Africa. A peer helper is a registered student at Gothenburg University who has been selected and trained to facilitate the social, emotional and academic integration of students and to promote wellness amongst the general student population. The program is administered by the Division for Student Affaires, and it has a special focus on newly admitted students (GU, 2006).

International Telementor Program

Facilitates electronic mentoring relationships between professional adults and students worldwide, and is recognized as the leader in the field of academic based mentoring. Since 1995 over 15 000 students throughout nine countries have received support, encouragement, and professional guidance. ITP serves students in K-12 and home school environments as well as college and university settings. (ITP, 2008)

San José State University

Prepares the peer mentors in a course that focuses on mentoring skills including good communication skills and technology skills. Peer mentors help new students adjust to SJSU and empower themselves to become academically successful. Mentors receive a number of benefits, including a competitive wage starting at $10 an hour for 10 – 20 hours a week, academic course credit, a laptop computer while working in the program, teaching experience, references for future job applications, etc. (SJSU, 2007)

Appendix C: Preliminary plan for a graduate Mentoring Practice course.

3 Methods

The choice of suitable research tools is a very important part of the planning for empirical studies. Previous positive experiences with *personal interviews* caused me to initially consider this form of data collection, which offers many advantages in the form of rich details and flexibility. The main disadvantage is the lack of anonymity, which might influence the answers and make them less reliable, especially in view of my own involvement in the mentoring inter-vention during the course of the investigation (Kuniavsky, 2003).

As an alternative I considered using *focus groups* and tested the method with a group of 12 students (Kuniavsky, 2003; Hart, 2005). After a two hour long structured group interview I tried to process the recorded material, and soon realized that the method presented me with some serious problems, e.g. the interpretation of non-verbal communication, etc. It was also very difficult to encourage the participants to stay within the subject matter and to follow the preplanned interview structure. This method also lacks anonymity, which might cause some answers to be less candid and reliable.

I also tested the method of creating a number of *user profiles* of fictitious students who variously choose to complete or interrupt their studies (Kuniavsky, 2003). The purpose of this exercise was an attempt to show significant differences between the two catego-ries, which might yield some greater insights into the problem of attrition. However, it was difficult to create these profiles in such a way as to truly represent some typical students who choose IT supported distance education and are subsequently confronted with the factors that may lead to the choice of interrupting their studies.

After carefully considering the various options, I finally decided to use *surveys* to collect my data since this method appeared to be the best tool to gather the information that was most relevant to my empirical studies. In this choice I agree with Kuniavsky (2003) who states that *"the best tool to find out who your users are and what their opinions are is the survey."* (p. 303).

According to Kuniavsky (2003), a survey should be limited to 20 questions, which can be answered in less than 20 minutes. My first survey has 18 questions, while my second survey has 25 questions but several of the questions are very short and can be answered quickly, so my second survey could still be completed in less than 20 minutes by most respondents.

3.1 Mentoring Intervention

Graduate students at a major American university *"remarked that their biggest desire was for more mentoring"* (Weiss, 2008). Our mentoring intervention followed the example of many colleges and universities around the world where mentoring is used successfully as a way of reducing student attrition. The present study was designed to investigate how online mentoring affects attrition in IT supported distance education.

The study consisted of an intervention with two volunteer (unpaid) online mentors, who were introduced one month after the beginning of the first course in a masters degree program at Gothenburg University during the fall semester of 2007. The study also investigated the factors which motivates students to choose distance education and what reasons some students give for interrupting their studies.

Our intervention is quite unique compared to most other graduate mentoring programs in one respect. A graduate student in an LCIT program served as the main mentor for other graduate students in the same program, just after having completed the same courses. Who could be better qualified to serve as a mentor and/or assistant teacher than someone who has just successfully completed the very same course(s), in which the students were going to be mentored?

I served as the main mentor during the whole intervention, from the beginning of October 2007 until the end of April 2008, spending about 500 hours of mentoring. The second mentor, who was also teaching at another university, spent an additional number of hours mentoring, mainly during the first course. We were both recent graduates from another masters program in IT supported distance education.

The course room in the online learning platform (Fronter) had a special section for the mentors, who were thereby easily available to all the students in the program. The mentors worked as adjunct teachers, assisting the main teacher by following the online course seminars, answering questions, writing comments, giving feedback to the students, providing literature references, etc.

There were no formal changes in the course plans in connection with the mentoring intervention, and the role distribution between the regular course teacher and the mentors was not clearly defined. One student commented that, *"sometimes the role of the mentor is a bit unclear in relation to the role of the teacher."* This may also have influenced some of the students' answers to the second survey, questions 10, 11 and 12, regarding the activities of the teacher(s).

The program director decided to include the first three courses of the masters degree program in the mentoring intervention, which was terminated at the end of the third course without any prior consultation with the mentors or the students. At this time it was assumed that the students no longer needed the mentoring support. This is important to note since most of the students (93%) said that it would be beneficial to have mentoring during the whole program, especially during course four and later, during the planning and execution of their masters degree projects.

3.2 Conducting the Surveys

The first survey was directed to the students in a masters degree program in Learning, Communication and Information Technology (LCIT) at the IT University. The students were invited to participate in the study by e-mail and via the virtual course platform. The invitation contained a direct link to the survey at Chalmers University of Technology, which made it very easy for the participants to go directly to the online survey and answer the questions anonymously.

The first survey was conducted during a summer month in 2007, and 18 answers were received during the first week. A total of 24 answers were received, which is 100% of the students who had been accepted to the program according to the university statistics. The design of the survey (in Swedish) can be seen in Appendix A.

The second survey was directed to the students in a second LCIT masters degree program at the IT University. Just like in the first survey, the students were invited to participate in the study by e-mail and via the virtual course platform and the invitation contained a direct link to the survey at Chalmers University of Technology.

The second survey was conducted during the spring of 2008, and a total of 15 answers were received, which is 75% of the students who had been accepted to the program. The five students who did not answer the survey had probably never started the program or had dropped out during the early part of the first course. The design of the second survey (in Swedish) can be seen in Appendix B.

A description of the questions and design of the surveys (in English) can be found in the following section (3.3). Most of the questions were patterned after other surveys and textbooks, including Mårald & Westerberg (2006a & b), SCB (2007) and Kuniavsky (2003), but some were specifically created for the present surveys.

3.3 Survey Questions and Design

Questions 1–12 are the same in both surveys, questions 13–18 in the first survey correspond to 20–25 in the second survey with some minor differences. Questions 13–19 in the second survey are specifically related to the mentoring intervention. Here are all the questions in the second survey with the corresponding questions in the first survey in parenthesis after questions 20(13) – 25(18).

1 – 3 are questions of a demographic nature, including sex, age and marital status. These are rather obvious questions that are usually included in most surveys.

4: *Why did you choose distance studies instead campus based studies?* This question and the response options are taken from the UCER reports (Mårald & Westerberg, 2006 a & b).

5: *Why did you choose this masters degree program in Learning, Communication and IT, or single course(s) in the program?* This question has an open-ended answer field that may yield valuable information about the choice of this specific program.

6: *How motivated were you to complete the whole masters degree program (or the single course)?* The answer is given on a 5 point scale between (1) *Totally unmotivated* and (5) *Very motivated.* The degree of motivation may be directly related to the drop out risk.

7: *How would you describe your study environment?* The answer is given on a 5 point scale between (1) *Very poor* and (5) *Very good.* The study environment may be an important contributing factor for success or failure.

8: *How would you describe the study support from family and friends?* The answer is given on a 5 point scale between (1) *Very weak* and (5) *Very strong.* Study support may also be an important contributing factor.

9: *What kind of contacts did you have with your fellow students?* The answer is given on a 5 point scale between (1) *Very poor* and (5) *Very good.* It is well documented that good contacts and cooperation with other students in a well functioning learning community may be very important to the individual student.

10: *What kind of contacts did you have with the course teacher?* The answer is given on a 5 point scale between (1) *Very poor* and (5) *Very good.* The student – teacher relationship is an important

ingredient in IT supported distance education according to the reports from UCER (Mårald & Westerberg, 2006 a & b).

11: *Did you get regular feedback from the course instructor?* The answer is given on a 5 point scale between (1) *Very seldom* and (5) *Very often.* According to the reports from UCER (2006), feedback is a very important part of the teacher – student relationship.

12: *Did the teacher participate enough in the course activities?* The answer is given on a 5 point scale between (1) *Far too little* and (5) *Completely sufficiently.* Many students experience that their contacts with the teachers are more important in IT supported distance courses than in on-campus courses, according to the reports from UCER (Mårald & Westerberg, 2006 a & b).

13: During the fall semester of 2007 we conducted a trial with mentors in the masters degree program, as a complement to the course teacher. *How do you rate the mentors' work?* The answer is given on a 5 point scale between (1) *Very poor* and (5) *Very good.*

14: *What kind of contacts did you have with the mentors?* The answer is given on a 5 point scale between (1) *Very poor* and (5) *Very good.*

15: *Did you get regular feedback from the mentors?* The answer is given on a 5 point scale between (1) *Very seldom* and (5) *Very often.*

16: *Did the mentors participate enough in the course activities?* The answer is given on a 5 point scale between (1) *Far too little* and (5) *Completely sufficiently.*

17: *When do you think that the mentors can be most beneficial?*

- In the beginning of the masters program, during the first course.
- In the middle of the program when the studies are really underway.
- During the Scientific Methods course and planning the final project.
- During the final project.
- During the whole masters degree program.

18: *Would you consider becoming a mentor in a future masters degree program?*

- No
- Don't know
- Yes, with economic compensation
- Yes, with academic compensation (credits)
- Yes, without compensation

19: *Your further comments about mentors in distance education:* (Open-ended answer field.)

20(13): *Did you interrupt your studies in the masters degree program or the single course?* If you answer Yes, also answer the questions 21, 22 and 23, if No, you may go directly questions 24 and 25. The options are Yes or No.

21(14): *When did you interrupt your studies in the masters degree program or the single course?*

- Before or at the beginning of the first course
- In the middle of the first course
- At the end of the first course
- Before or at the beginning of the second course
- In the middle of the second course
- At the end of the second course

22(15): *What is the main reason why you interrupted your studies?* This question has an open-ended answer field that may yield valuable information on where the most effective measures need to be used to prevent and counteract attrition.

23(16): *Do you plan to complete the masters degree program or the single course at a later time?* The options are Yes, the whole masters degree program; Yes, the single course; No and Don't know. This question may help to clarify how many students have actually dropped out, and how many have just taken a temporary break from their studies.

24(17): *What more could the teacher, the mentors or the university have done to facilitate your studies in the masters degree program?* This question has an open-ended answer field that may yield some valuable information on future measures to prevent and counteract attrition.

25(18): *Your further comments:* This is an open-ended answer field to give an opportunity for a more general response at the end of the survey. Kuniavsky (2003) claims that most people do not take advantage of this opportunity to give their further comments, but that it should still be provided.

NB: Number 3 on the 5 point scale, which is used in questions 6 – 16, may be interpreted as neutral, acceptable or adequate. It may also be added together with the lower (1 and 2) or higher (4 and 5) alternatives for comparisons, which will be clear from the context.

4 First Survey Responses

The first survey was conducted during a summer month in 2007, and 18 answers were received during the first week. A total of 24 answers were received, which is 100% of the students who had been accepted to the program according to the university statistics.

4.1 Sex

There were 11 responses from women and 13 from men to this survey, corresponding to a sex ratio of 46% women to 54% men. This study had significantly more men than the average distance education course at Gothenburg University, which had 70% women and 30% men during the academic year 2005-06.

4.2 Age

This is the age distribution as reported in the survey:

- < 25   0%
- 25 – 34   21% (1 woman + 4 men = 5)
- 35 – 44   29% (3 women + 4 men = 7)
- 45 – 54   29% (5 women + 2 men = 7)
- 55 – 64   21% (2 women + 3 men = 5)
- 65 +   0%

79% of the participants in the study were older than 34, which is almost twice as high as the Swedish average of 42% for distance education students according to SCB (2007).

4.3 Marital Status

The participant's marital status was reported as follows:

- 17% Single (3 women + 1 man = 4)
- 13% Single, with minor children (2 women + 1 man = 3)
- 42% Married* (4 women + 6 men = 10)
- 29% Married*, with minor children (2 women + 5 men = 7)

    * (Including common-law marriage.)

4.4 Choice of Distance Education

Why did you choose distance studies instead of campus-based studies? (It was possible to select more than one alternative.)

- 43% I wanted to study at my own pace.
- 61% I could not study in any other way because of my work.
- 26% I lived far from the closest university.
- 17% I could not study in any other way because of my family.
- 22% Other reasons (which may be specified in your answer to question 5).

4.5 Choice of this Masters Program

Why did you choose this masters degree program in Learning, Communication and IT? (This question has an open-ended answer field.) The individual answers are divided into different categories:

4.5.1 Improved competency

- *I thought that it could be useful in my profession as a teacher and improve my competency.*

- *It appeared to be interesting and an opportunity to advance my competency.*

- *I have worked for a long time with IT supported education as a teacher, but I have always felt a lack of competency. I also wanted to develop my teaching skills with the help of IT and needed to supplement my teacher's license with some IT competency.*

- *I chose this course because I was going to develop an online course within an international project that I am coordinating.*

- *Important content and practical application in my profession.*

- *I wanted to improve my teaching methods.*

- *I work with these issues in my profession, and felt that this course would give me a deeper foundation, which it also did. I also enjoy studying, and look forward to be able to work in a different way thanks to my newly acquired knowledge.*

- *It was perfectly adapted to my profession, my interest in the area, and my previous studies. I saw it as a chance to obtain the specialized knowledge that I need to enter the job market as an educator or a person who can convey knowledge by using information technology.*

4.5.2 Interest in Education/Pedagogy

- *My choice was guided by my old interest in education, combined with an interest in the new digital learning technology.*

- *I work in this field and my ambition is to continue my studies. I am stimulated by my continuing education at the same time as I work within the field.*

- *I was very interested in the subject and was hoping for support and interest from my employer. Unfortunately there was only a weak interest and there was no financial support.*

- *I wanted to learn more about IT.*

4.5.3 Personal interest

- *Good reviews by friends and colleagues.*

- *Interesting subject that is close to my professional discipline.*

- *I have studied at the IT University before and had positive experiences from that time.*

4.5.4 Good Way to Study

- *It was a good alternative within the area of education/learning and I could study at a distance while continuing to work.*

- *I already had a bachelor's degree in education and new media and wanted to earn a masters degree. I live in Stockholm and wanted to study at this special program, which is not offered anywhere else in the country – that is why I chose this distance education course.*

4.5.5 Elective Course

- *I was a student in the masters degree program IT supported distance education and chose this as an elective course.*

- *I chose this as an elective course in addition to a masters degree program at another institution. I had a great interest in learning more of this subject, besides my previous studies in the area of informatics.*

4.6 Motivation

How motivated were you to complete the whole masters degree program (or the single course)?

1. 13% Totally unmotivated
2. 13%
3. 13%
4. 21%
5. 42% Very motivated

4.7 Study Environment

How would you describe your study environment?

1. 9%   Very poor
2. 9%
3. 39%
4. 22%
5. 22% Very good

4.8 Study Support

How would you describe the study support from family and friends?

1. 9%   Very weak
2. 14%
3. 23%
4. 32%
5. 23% Very strong

4.9 Student Contacts

What kind of contacts did you have with your fellow students?

1. 26% Very poor
2. 22%
3. 22%
4. 22%
5. 9% Very good

4.10 Teacher Contacts

What kind of contacts did you have with the course teacher?

1. 9% Very poor
2. 9%
3. 39%
4. 22%
5. 22% Very good

4.11 Teacher Feedback

Did you get regular feedback from the course teacher?

1. 13% Very seldom
2. 26%
3. 26%
4. 26%
5. 9% Very often

4.12 Teacher Participation

Did the teacher participate enough in the course activities?

1. 26% Far too little
2. 22%
3. 22%
4. 26%
5. 4% Completely sufficiently

4.13 Interrupted Studies

Did you interrupt your studies in the masters degree program? If you answer Yes, also answer the questions 14, 15 and 16; if No, you may go directly to questions 17 and 18.

57% Yes
43% No

4.14 Time of Interruption

40% Before or during the first course
40% Before or during the second course
0% Before or during the third course
20% Before or during the fourth course

4.15 Cause of Interruption

What is the main reason why you interrupted your studies? (This question has an open-ended answer field.) The individual answers are divided into different categories:

4.15.1 Lack of Time

- *Lack of time. Full-time work plus two other extra jobs. English language professional literature requiring extra time.*

- *Lack of time (a lot of course literature) and because the course content was not directly relevant to my work at this time. However, what we studied was very interesting, useful and worthy of consideration from a wider perspective, and good knowledge for future use.*

- *Lack of time. I am working full-time and have realized that I have too many commitments at work to also have time for an additional course.*

- *Lack of time. Lack of equipment, because I could not borrow the promised Internet ready computer for this course …*

4.15.2 Work Related Problems

- *Serious persistent problems with my employer.*

- *I have experienced enormous pressures at my office and I have had to work overtime a lot. Consequently I have not been able to carry out my studies at the pace that was my ambition at the beginning of the course.*

- *I may resume my studies again if new projects appear at work and I am able to conduct a part of my research there. I am ultimately looking for economic support or other profits. The school system is not interested in rewarding or valuing these studies.*

- *I have had to temporarily interrupt my studies, first in the fall during course two, and later in the spring during course four. In the fall because I became a father, and in the spring because of changed and expanded work duties.*

4.15.3 Health Problems

- *Health problems put an end to the elective course, otherwise I would probably have completed it. Now I was not even able to start, which was a pity.*

- *My [maternal] aunt became sick and died during course two and course three, which eliminated my time for studies. My sister and I were the next of kin, and I was the one who had to take care of the estate.*

4.15.4 Educational Quality

- *Worthless course design.*

- *The educational program was simply worthless. Just a lot of wishy-washy stuff that ultimately would not have landed me a job anyway, so it felt like a waste of time. Why can't the University offer educational programs that might result in a job, and that are not just designed to pass the time? There is evidently too much leisure-time research.*

- *I thought that there was generally a poor communication during the course. In my opinion you must have some kind of daily contact with the teacher and fellow students, as well as a longer [online] seminar once a week to maintain a vital interest in the studies.*

4.16 Complete the Studies Later?

Do you plan to complete the masters degree program at a later time?

29% Yes
29% No
43% Don't know

4.17 Facilitate the Studies

What more could the teachers or the university have done to facilitate your studies in the masters degree program? (This question has an open-ended answer field.) The individual answers are divided into different categories:

4.17.1 Lack of Time

- *They could not do very much, because it was mainly a lack of time that caused me to interrupt my studies in this course.*

- *Nothing more. I have had a very good response from [the teacher] Lars-Erik, but I have not had enough time to study. However, I have received the support I need to catch up.*

4.17.2 Work Related Problems

- *Promote the University programs and research findings more effectively in the schools. University knowledge and research must become more reality oriented. Both worlds need to have closer ties. I have a good relationship with the university and I have learned a lot, but unfortunately my employer is not equally interested. Consequently I choose to do other things during my leisure time.*

4.17.3 Support from the University

- *I must say that I have received very good support from the University. I experience that the course leadership has done its utmost to assist me in completing my studies. However, I had intended to participate in other courses within the Net University, but all attempts to do this failed, which delayed my start in one course, and I had to select another course long after the start of the semester. This partly contributed to the fact that I did not complete my studies during the spring semester. This is not the fault of the University, because the course leadership has given me a lot of assistance with my problems.*

- *Could not have acted much differently. I have received the help and support that I have needed and timely answers to my questions.*

- *Not very much in my case. I am an experienced student. LEJ [the main teacher] worked as much as his time allowed, but the other teacher did not do very much.*

- *Generally, I have been satisfied with the information and support from the course leadership and from the University. Regarding further improvements, the description of certain course contents could have been more clear, but this problem was solved during the course by distance communication.*

4.17.4 Educational Quality

- *The teachers should be more active and devote more time to the course.*

- *They [the teachers] should first take the course themselves, because then it would probably turn out differently.*

- *The teachers should be more visible and accessible. Questions arise which can only be answered by the course leadership. I would like to have more influence and be able to control the direction of my studies. The course assignments sometimes appear to be stereotyped and some of the course literature is unnecessarily complicated and hardly relevant.*

- *It felt like the literature was too heavy, especially since it was in English.*

- *I am not sure; there were some problems with the course literature, but I doubt that this made a difference in my situation at the time. I have not tried to continue my studies, so I don't know if they [the teachers] could have helped me. Hope to get help when I am strong enough to ask for it.*

- *More clear instructions and meetings. That way I would never have to worry about missing a meeting or submission date.*

- *I thought there was generally a poor communication during the course. In my opinion there must be some daily contact with the teacher and fellow course participants, in addition to a longer seminar session once a week to maintain an interest in the studies.* (The same answer was given under 15.4)

- *Maybe a meeting with all the students at the beginning of the course could increase the interest.*

4.17.5 Mixed Comments

- *Make sure to keep given promises.*

- *Well, I really don't know.*

- *Nothing.*

- *Absolutely nothing.*

4.18 Further Comments

Your further comments. (This question has an open-ended answer field.) The individual answers are divided into different categories:

4.18.1 Educational Quality

- *The course director has too many courses and does not have enough time to give feedback to everyone. The course requirements were unclear at the beginning. I believe that many students were misled.*

- *Maybe there is not enough pressure on us as course partici-pants. I believe that it would be better with more of a whip, with dates when tasks and assignments simply have to be completed. Now I think that the course has a rather unclear*

structure. I would also appreciate if the teachers were more active during the course and functioned as moderators in the discussions. I believe that this would increase the students' motivation.

- *I prefer individual assignments to group assignments. When you are short on time, it is easier to plan and implement the assignments if you don't have to coordinate your work with some other students. Fronter [the learning platform] worked well.*

- *My most serious problem with following the course was the uncertainty about the design of next course section and how to complete the course assignments. Therefore it always felt like I had missed something at the beginning of a course, even if this was not the case. I did not recognize the course design, even though I have studied for more than five years at the university level.*

- *I think that this program should be discontinued. It should be replaced by a more reality oriented program that does not major in academic concepts. Pedagogy is probably the worst wishy-washy academic area around.*

- *I am 90% satisfied with the course design and administration, and I don't think that you can ask for anything more. If the University wants an even higher quality, it should provide better response and guidance from the course leadership, but I realize that the resources are limited and with this in mind I am satisfied with the support which I received. I had plenty of time to study, in a very good environment, which I think has contributed to the fact that I have not encountered any major problems. The only thing that affected me in a slightly negative way was a move with interrupted telecommunications during a period of time.*

- *I think that the collaborative learning that we are a part of in this course works in an excellent way. I greatly benefit from reading your [the mentor's] and the other course participants' contributions. I often find myself making great personal strides in my understanding that had not been possible without the collaborative course design. This learning method suits me very well and I would not hesitate to continue attending similar courses in the future. Sometimes the collaborative course design has caused me to fall hopelessly far behind in my studies when I have had to take a take break due to some personal problems. After such a one or two week long break it is usually easy to catch up on the reading, but you can not conduct a seminar discussion by yourself. Thus it*

appears that the strength of collaborative learning is also its weakness. You really have to be actively engaged in the discussions at the same time as the other course participants, or else you will fall behind in such a tangible way that it is easy to give up. Catching up on a reading assignment also becomes a bit meaningless when you can not participate in discussions that have already finished.

- *I have greatly benefited from the course.*

4.18.2 Technical and Administrative Problems

- *At times it has been difficult to log on to Fronter [the learning platform]. Sometimes the server has been unavailable for several days. I understand that it may be difficult to do something about this during evenings and weekends, but at the same it becomes rather annoying because these are the very times when a regular day-time worker can study and communicate with the other course participants.*

- *Review the communication technology. Present the user instructions at the introduction and test the communication functions when all the students are on location in the same place at the program kick-off meeting. Do not assume that everyone is familiar with virtual communications. I know how to do it, but I think that we generally did not communicate enough during the course!*

- *The parts of the course that I have become acquainted with look promising, and I fell challenged to tackle all of it. But there were some problems with my registration, password to Fronter [the learning platform] and rental computers that coincided with some other personal problems. I definitely want to continue the course and hope that it will be possible! I think that the problem with student dropouts may be related to the group work design. If you encounter problems outside of the studies, it becomes very difficult to feel responsibility to the group. I must admit that my fellow group members were incredibly supportive and forgiving when it happened to me! But I still think that a rather individual course design is most compatible with handling various challenging life situations. I believe that the course has much to offer!*

- *For the type of dropout that I did, I can not answer the majority of the questions. I miss the alternative, don't know / can not answer.*

4.18.3 Work Related Problems

- *I would consider completing the course at a later time. Right now I prioritize other courses that are more relevant to my present work, e.g. the course Knowledge and assessment.*

- *I would like to be contacted regarding if I am still eligible to participate in the course when it starts. I am presently unemployed after completing a masters degree program. In that case I need to get permission from my unemployment insurance office as soon as possible. My mobile number is ...*

- *This far I have been very pleased with my studies. As far as I know I only have a remaining thesis, a 5 credit [7.5 ECTS] course and a small part of another course left [before graduation]. I should be able to complete this during the next semester. I think that the problem with student dropouts is mainly related to a combination of studies and a full-time job. It is usually the reason given when course participants turn in their assignments late or not at all. Maybe an analysis should be made of what kind of students are taking this educational program. My guess is that most of them are teachers, and in that case it should not be difficult to more closely integrate the course and the assignments with the work situation of the course participants, thus making the course easier and more interesting to them. I also think that the motivation would increase if two teachers from the same school team were studying together, which would create further impetus.*

- *My age makes it unlikely that these studies will open the way for me to a university career. The course has been instructive and interesting, and I would like to continue studying, but there are only 24 hours in a day.*

5 Second Survey Responses

The second survey was conducted during the spring of 2008, and a total of 15 answers were received, which is 75% of the students who had been accepted to the program. The five students who did not answer the survey had probably never started the program or had dropped out during the early part of the first course.

5.1 Sex

There were 7 responses from women and 8 from men to the survey, corresponding to a sex ratio of 47% women to 53% men. This study had significantly more men than the average distance education course at Gothenburg University, which had 70% women and 30% men during the academic year 2005-06.

5.2 Age

This is the age distribution as reported in the survey:

- < 25   0%
- 25 – 34   7%
- 35 – 44   53%
- 45 – 54   20%
- 55 – 64   13%
- 65 +   0%

87% of the participants in the study were older than 34, which is twice as high as the Swedish average of 42% for distance education students according to SCB (2007).

5.3 Marital Status

The participants' marital status was reported as follows:

- 20% Single
- 7%   Single, with minor child(ren)
- 33% Married*
- 40% Married*, with minor child(ren)

    * (Including common-law marriage.)

5.4 Choice of Distance Education

Why did you choose distance studies instead of campus-based studies? (It was possible to select more than one alternative.)

- 47% I wanted to study at my own pace.
- 53% I could not study in any other way because of my work.
- 33% I lived far from the closest university.
- 13% I could not study in any other way because of my family.
- 13% Other reasons (which may be specified in your answer to question 5).

5.5 Choice of this Masters Program

Why did you choose this masters degree program in Learning, Communication and IT, or single course(s) in the program? This question has an open-ended answer field.

- *Out of personal interest.*

- *It's an interesting subject.*

- *I am interested in education and IT.*

- *I am interested in learning and IT.*

- *It focuses on questions that are of interest to me in my work.*

- *The masters degree program at this University was the best match to the academic discipline that I was interested in.*

- *Because it is a more advanced level of the program which I have studied before.*

- *Because it appeared to have an interesting content and I wanted to improve my theoretical knowledge in an area I have worked with during the last ten years.*

- *Because I wanted to become established at the university to be able to do research.*

- *I thought that it would give me more than a bachelor's degree, including a better job.*

- *I wanted to advance my IT knowledge and skills, because this is important for my work.*

- *I am interested in this area. I have taken courses in how to create digital learning tools and wanted deeper theoretical knowledge. I am an IT examiner and learning platform administrator at my school, and I am also responsible for the IT resources at the school administration.*

5.6 Motivation

How motivated were you to complete the whole masters degree program (or the single course)?

1. 20% Totally unmotivated
2. 7%
3. 13%
4. 27%
5. 33% Very motivated

5.7 Study Environment

How would you describe your study environment?

1. 0%   Very poor
2. 20%
3. 7%
4. 7%
5. 67% Very good

5.8 Study Support

How would you describe the study support from family and friends?

1. 7%   Very weak
2. 20%
3. 27%
4. 13%
5. 33% Very strong

5.9 Student Contacts

What kind of contacts did you have with your fellow students?

1. 13% Very poor
2. 47%
3. 40%
4. 0%
5. 0%   Very good

5.10 Teacher Contacts

What kind of contacts did you have with the course teacher?

1. 13% Very poor
2. 20%
3. 27%
4. 13%
5. 27% Very good

5.11 Teacher Feedback

Did you get regular feedback from the course teacher?

1. 0%   Very seldom
2. 20%
3. 13%
4. 27%
5. 40% Very often

5.12 Teacher Participation

Did the teacher participate enough in the course activities?

1. 0%   Far too little
2. 7%
3. 21%
4. 21%
5. 50% Completely sufficiently

5.13 Mentor's Work

During the fall semester of 2007 we conducted a trial with mentors in the masters degree program, as a complement to the course teacher. *How do you rate the mentor's work?*

1. 7%   Very poor
2. 14%
3. 21%
4. 14%
5. 43% Very good

5.14 Mentor Contacts

What kind of contacts did you have with the mentors?

14% Very poor
7%
43%
21%
14% Very good

5.15 Mentor Feedback

Did you get regular feedback from the mentors?

21% Very seldom
0%
36%
7%
36% Very often

5.16 Mentor Participation

Did the mentors participate enough in the course activities?

0%   Far too little
21%
21%
21%
36% Completely sufficiently

5.17 Mentoring Practice

When do you think that the mentors can be most beneficial?

7%   In the beginning of the masters program, during the first course.
0%   In the middle of the program when the studies are really underway.
29% During the Scientific Methods course and planning the final project.
7%   During the final project.
57% During the whole masters degree program.

5.18 Future Mentor

Would you consider becoming a mentor in a future masters degree program?

29% No
36% Don't know
21% Yes, with economic compensation
14% Yes, with academic compensation (credits)
0%   Yes, without compensation

5.19 Comments on Mentoring

Your further comments about mentors in distance education.

The students commented that mentoring is *"a good alternative", "a good concept", "a good idea", "an interesting idea",* and that the mentors *"are very good".* One comment was that mentoring is *"A new and nice experience, but sometimes the role of the mentor is a bit unclear in relation to the role of the teacher. The mentor appears to be more demanding than the teacher, but maybe that's good."*

5.20 Interrupted Studies

Did you interrupt your studies in the masters degree program or the single course? If you answer Yes, also answer the questions 21, 22 and 23; if No, you may go directly to questions 24 and 25.

43% Yes
57% No

5.21 Time of Interruption

When did you interrupt your studies in the masters degree program or the single course?

0%   Before or at the beginning of the first course
0%   In the middle of the first course
40% At the end of the first course
20% Before or at the beginning of the second course
0%   In the middle of the second course
40% * At the end of the second course *

* All these students actually finished the second course after completing the survey, so the correct value should be 0%.

5.22 Cause of Interruption

What is the main reason why you interrupted your studies?

- *I didn't have enough time for studies.*

- *Lack of time. I work full time and realized that this was a new area of study where I would have to devote all my leisure time to my studies, and this would not work for the next two years.*

- *I don't have enough leisure time and no longer have the motivation to continue my studies. I was also taking another course which was too demanding for me, so I was not able to concentrate on my studies very well.*

- *My work situation changed, which meant that I could not devote so much time on my continued education as I had planned from the beginning.*

- *I dropped out, because I think that distance studies are too impersonal for me. I need a physical environment with physical relations.*

- *Didn't get more knowledge than I already had.*

5.23 Complete the Studies Later?

Do you plan to complete the masters degree program or the single course at a later time?

25% Yes, the whole masters degree program.
0%   Yes, the single course
12% No
63% Don't know

5.24 Facilitate the Studies

What more could the teacher, the mentors or the university have done to facilitate your studies in the masters degree program?

- *Everything was just fine.*

- *Hardly anything else since the problem was my own work situation.*

- *Not very much I should think, because I just could not meet the deadlines.*

- *I actually don't know. I thought that all that could be done was done. The prerequisites were clear to me and in my case my dropout was not due to the academic program but my own personal situation.*

- *Distance education is difficult for me. I am very dependent on lectures and routines. Maybe it would have been easier for me with more clearly scheduled activities.*

5.25 Further Comments

- *I totally approve of this program and I have been a very happy participant.*

- *This is a very nice program. I feel very stimulated. There are challenges and you grow. Literature and discussions is a good combination. But the poster was difficult and could better be combined with the final degree project.*

- *This is my first experience with IT supported distance education. It works extremely well for me. Most of all I like all the discussions we have in Fronter. Maybe it's getting a little bit boring with the same format all the time – read, write contributions, make comments . . . I think that it should be possible to have more variations. Why not use more digital options? Make a radio program or a movie instead of a written contribution?*

- *It's nice that I may return to the program!*

6 Summary and Analysis

It is interesting to read some of the comments from the survey participants, which give valuable insights into the factors that contribute to the decision to drop out or continue in the programs. This is a combined summary and analysis based on the responses to the first and second surveys. All the answers to the first survey can be found in chapter 4 and to the second survey in chapter 5.

Demographical data on the participant's sex, age and marital status are presented first, followed by an account of reasons for the choice of distance education, factors that may lead to dropout, motivation as an important factor in the decision to interrupt or complete the studies, the importance of regular feedback, and social factors. Mentoring is the special focus of the present investigation and several questions deal with this specific topic.
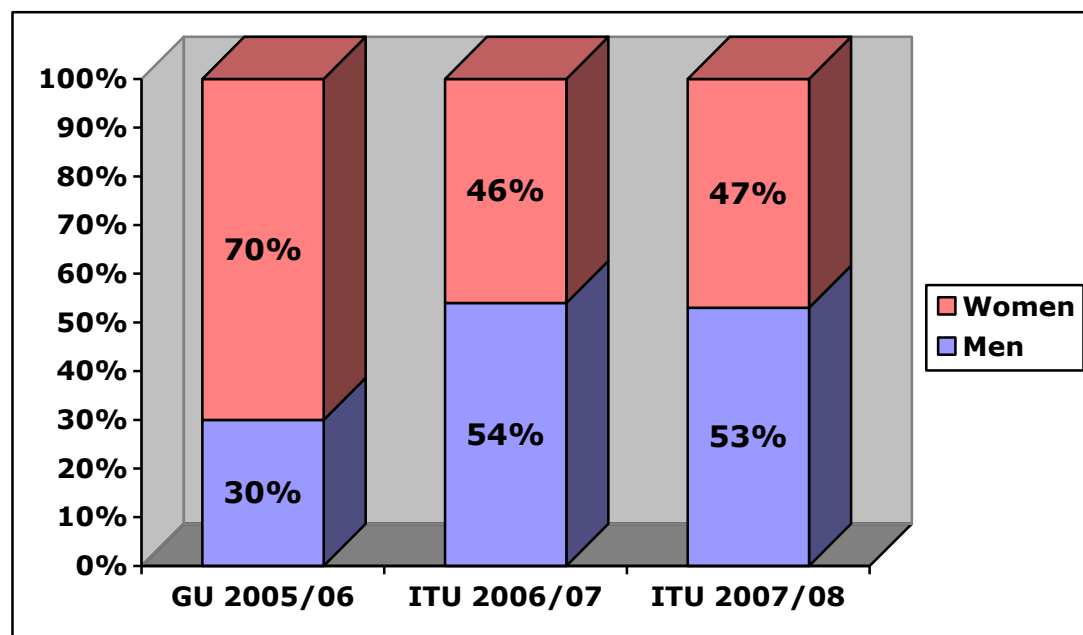
6.1 Sex

Figure 6-1. Sex distribution at Gothenburg University (GU) compared to the first and second surveys at the IT University (ITU).

The sex distribution in the first survey at the IT University (ITU 2006/07) was 46% (11) women and 54% (13) men. The second survey (ITU 2007/08) had almost the same sex distribution, 47% (7) women and 53% (8) men. Both masters degree programs had significantly more male participants than the average for distance education students at Gothenburg University, where there were 70% women and 30% men during the academic year 2005/06.
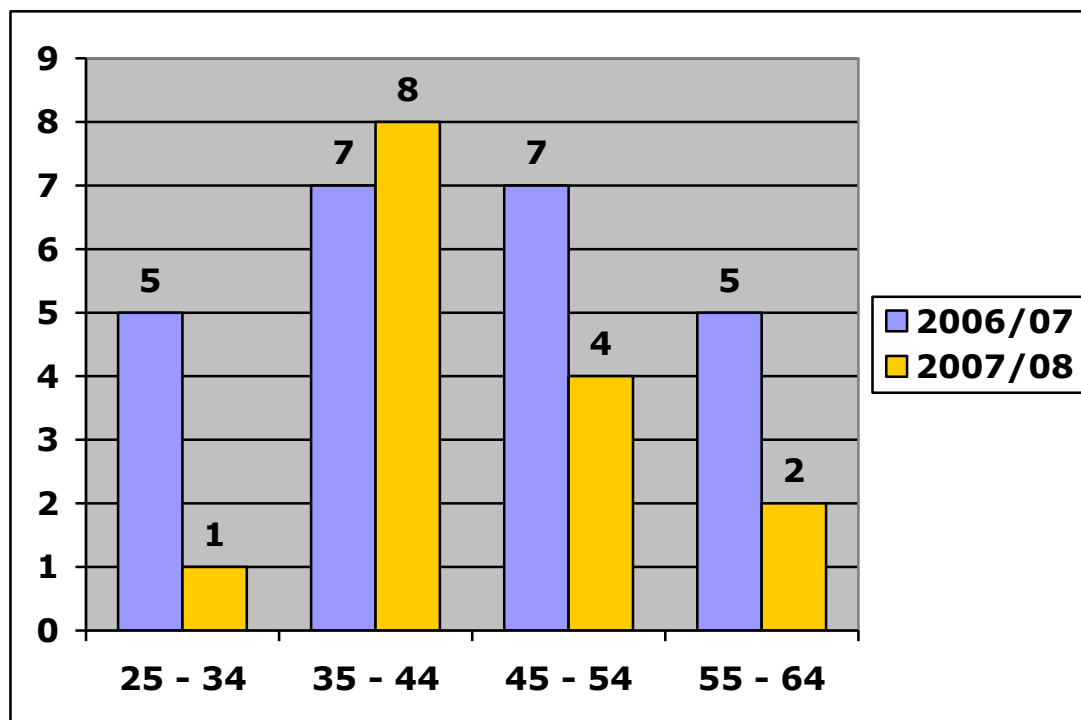
6.2 Age Distribution

Figure 6-2. Age distribution in the two surveys.

58% of the students in the first survey were between 35 and 54, 21% were between 25 and 34, and 21% were between 55 and 64. 79% of the course participants in the first survey were older than 34, which is almost twice the Swedish average of 42% for distance education students according to SCB (2007).

80% of the students in the second survey were between 35 and 54, 7% between 25 and 34, and 13% between 55 and 64 years of age. 93% of the course participants in the second survey were older than 34, which is more than twice the Swedish average of 42%.

There are different opinions about the importance of age for the risk of attrition. Rekkedal (1993) found that the study endurance was reduced with increasing age, while Fjortoft (1996) reported just the opposite.

An independent adult student with work experience is probably quite good at scheduling adequate time for studies and to establish good communication with faculty and fellow students. This should give a clear advantage to an older adult student compared to a young and less experienced student. At the same time it is possible that the adult student may experience serious conflicts between the demands of work, family and studies, while the young student may find it easier to devote more time to studies.
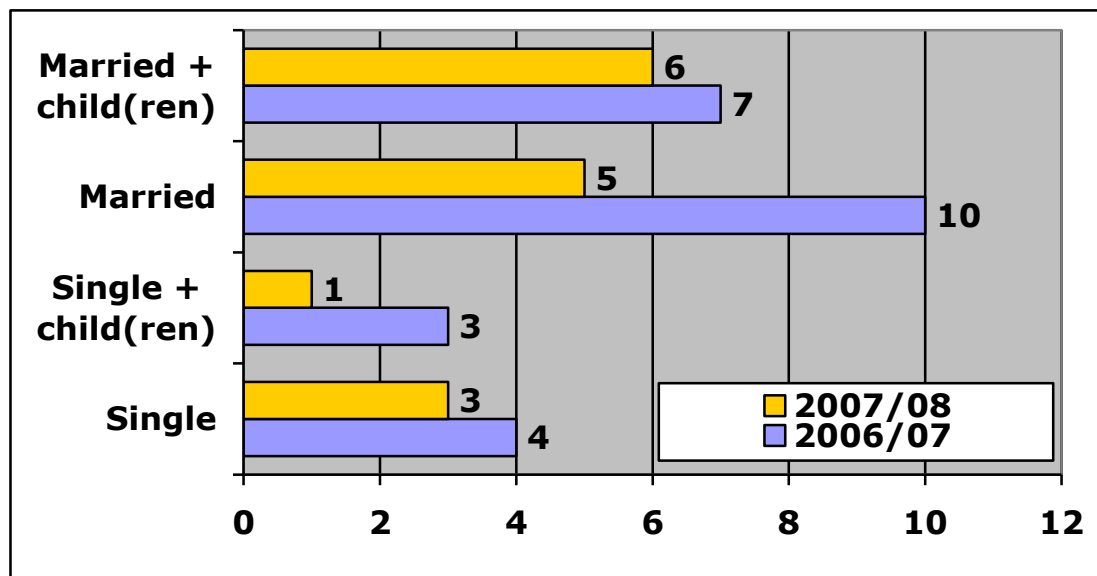
6.3 Marital Status

Figure 6-3. Student marital status in the two surveys.

17% of the students in the first survey were single, 13% single with child(ren), 42% married and 29% married with child(ren). 20% of the students in the second survey were single, 7% single with child(ren), 33% married and 40% married with child(ren).

It is obvious that the marital status and family responsibilities may greatly influence how much time can be devoted to studies. A young student who lives at home with the parents has a great advantage over a single working mother with young children.

6.4 Choice of Distance Education

The most common reasons for the choice of distance education instead of campus-based studies were the inability to study in any other way because of work (61% in the first and 53% in the second survey), the desire to study at their own pace (43% and 47%), and the distance to the closest university (26% and 33%).

The fact that so many gave work as a reason for the choice of distance education is interesting, because time conflicts between work and studies and a general lack of time are given as main reasons to quit the studies. See chapter 4, sections 4.15.2, 4.17.2 and 4.18.3, and chapter 5, sections 5.22 and 5.24.

Improved competency in the area of IT supported distance edu-cation was given as the most important reason to choose the LCIT masters degree program in the first survey, while the participants in the second survey made the choice out of personal interest in education and information technology.

6.5 Student Attrition and Retention

Both masters degree programs in my investigation had a dropout rate of 75% at the end of the first academic year. However, there is a significant difference between the first (2006/07) and second (2007/08) programs in the passing rates of students in the individ-ual courses, which can be seen from the following comparative diagram.
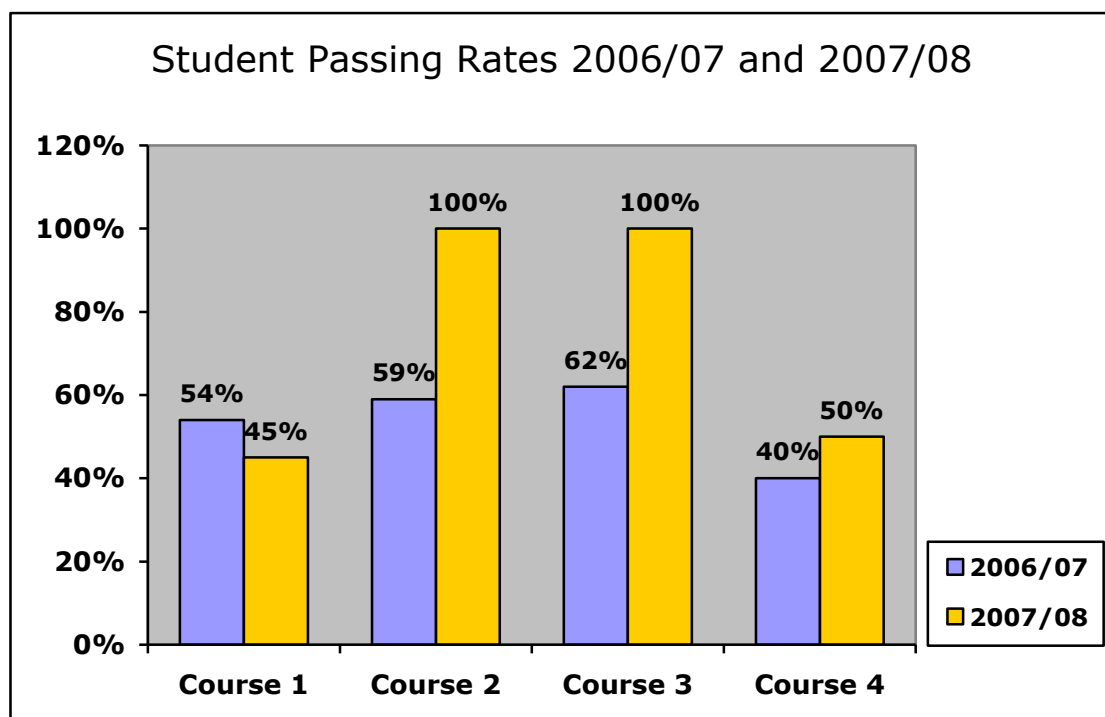
Figure 6-4. All students passed with mentoring in courses 2 and 3.

The high dropout rates of 46% (11 0f 24 students in 2006/07) and 55% (11 of 20 students in 2007/08) during course one of the two masters degree programs show the importance of early and active teacher and/or mentor support. This may help to create a positive and healthy learning environment where students are encouraged to continue their studies, which can be especially helpful for stu-dents who experience problems with motivation and other factors that may otherwise lead to attrition.

6.6 Motivation

63% of the students in the first and 60% in the second survey stated that they were motivated or very motivated to complete the whole masters program (or the single course). Motivation may be the link that connects a number of contributing factors that combine and ultimately result in the decision to drop out or complete the education. Lack of motivation is a primary cause of attrition according to Kim (2004).

Motivation to continue the studies may be seriously weakened by a perceived lack of time, which was clearly the most common cause of attrition given in both surveys. Most of the reasons for attrition in the surveys have a negative influence on student motivation, which in turn increases the risk of attrition. Positive factors that increase motivation may therefore decrease the risk of attrition.

6.7 Teacher Feedback and Participation

Tinto (2005) and other researchers emphasize the great importance of feedback, which constitutes an important part of the communication between teachers and students. Good communication with the teacher is very important in IT supported distance education according to the UCER reports (Mårald & Westerberg, 2006 a & b).

In the first survey almost half of the students indicated that they seldom or very seldom received teacher feedback (39%) and that the teacher participated too little in the course activities (46%). Here are some student comments on this topic:

- *The course director has too many courses and does not have enough time to give feedback to everyone.*

- *The teachers should be more active and devote more time to the course. They should be more visible and accessible.*

- *I would also appreciate if the teachers were more active during the course and functioned as moderators in the discussions. I believe that this would increase the students' motivation.*

In the second survey a majority of the students indicated that they often received teacher feedback (67%) and that the teacher participated sufficiently in the course activities (71%). The mentors were working as adjunct teachers, which may partly explain the improved student satisfaction with the teacher(s). "*Sometimes the role of the mentor is a bit unclear in relation to the role of the teacher.*"

6.8 Mentoring Practice

The present study started with the introduction of a mentoring intervention during the first part of a second masters degree program in LCIT 2007/08. According to the second survey, 80% of the students thought that the mentors were doing an acceptable, good or very good job and a majority (78%) stated that they had an acceptable, good or very good contact with the mentors.

A majority (79%) of the students indicated that they had received adequate, frequent or very frequent feedback from the mentors, and also that they participated sufficiently in the course activities. As an example, one student received feedback from a mentor one day after submitting her course examination assignment, but she had to wait another 25 days for feedback from the main teacher.

Most of the students (93%) indicated that it would be beneficial to have mentoring during the whole or the later part of the masters degree program. More than half (57%) of the students thought that it would be beneficial to have mentors during the whole program. Another third (36%) of the students thought that the mentors could be most beneficial during the Scientific Methods course, and the planning and execution of their masters degree projects.

One third (36%) of the students indicated their interest in becoming mentors in a future masters degree program, provided that they were given financial and/or academic compensation (credits), but no one was interested in becoming a mentor without compensation.

Most of the students made positive comments, that mentoring is: *"a good alternative", "a good concept", "a good idea", "an interesting idea",* and that the mentors *"are very good".*

One comment contains more mixed sentiments, that mentoring is: *"A new and nice experience, but sometimes the role of the mentor is a bit unclear in relation to the role of the teacher. The mentor appears to be more demanding than the teacher, but maybe that's good."*

A final positive comment comes from another distance education student (2008): *"The possibility of having a mentor in the course as …. has been in this course is totally fantastic and should be provided in all distance courses!"*

6.9 Social Network

70% of the students in the first and 60% in the second survey indicated that they had poor or very poor contacts with their fellow students. This is an important factor that may contribute to weaken the motivation and increase the risk of attrition according to many researchers, who believe that a student's ability to cooperate with others in a learning community is crucially important for the decision to quit or complete the studies (Bernard & Amundsen, 1989; Kelly, 1993; Bertrand *et al*., 1994; Gibson, 1996; Visser, 1998).

> *I thought that there was generally a poor communication during the course. In my opinion you must have some kind of daily contact with the teacher and fellow students, as well as a longer [online] seminar once a week to maintain a vital interest in the studies.*

This quote speaks for the majority of students, who stated that they had a poor contact with their fellow students (and the teacher). The minority, who said that they had a good contact with their fellow students, is represented by the following quote:

> *I think that the collaborative learning that we are a part of in this course works in an excellent way. I greatly benefit from reading your [the mentor's] and the other course participants' contributions. I often find myself making great personal strides in my understanding that had not been possible without the collaborative course design. This learning method suits me very well and I would not hesitate to continue attending similar courses in the future.*

82% of the students in the first and 80% in the second survey stated that they had an acceptable, good or very good learning environment. 78% of the students in the first and 73% in the second survey stated that they had adequate, strong or very strong support from family and friends. These two social factors could have some positive effect on motivation and contribute towards reducing the attrition rate.

7 Discussion

There is almost no difference in the sex distribution, and only some minor differences in the age distribution and marital status between the first and second masters degree programs in the study. None of these three factors alone or in combination could reasonably explain the great difference in attrition and retention that occurred during course 2 and 3 of the program.

The most common reasons for the choice of distance education instead of campus-based studies are the inability to study in any other way because of work (61% in the first and 53% in the second survey), the desire to study at their own pace (43% and 47%), and the distance to the closest university (26% and 33%). They coincide with the major factors according to the UCER motivational study (Mårald & Westerberg, 2006a).

The fact that so many give work as a reason for the choice of distance education is interesting, because time conflicts between work and studies and a general lack of time are given as main reasons to quit the studies. Mårald & Westerberg (2006a) also point to the lack of time as a reason why online students chose to drop out. One student comments that, *"I am working full-time and have realized that I have too many commitments at work to also have time for an additional course."* Another student comments that, *"it was mainly a lack of time that caused me to interrupt my studies in this course."*

Both masters degree programs in my investigation had a dropout rate of 75% at the end of the first academic year. About half of the students (46% in the first and 55% in the second program) dropped out during the first course. The dropout rate remained at a high level during the two following courses of the first program, but there was a remarkable change in the dropout rate during our mentoring intervention in the second program.

7.1 Mentoring Intervention

University teachers often provide mentoring and specialized training to graduate students, who in turn mentor undergraduate students. The focus has been on mentoring to facilitate the social, emotional and academic integration of first year undergraduate students that has resulted in many published studies on mentoring which reflect this traditional model.

Graduate students at a major American university *"remarked that their biggest desire was for more mentoring."* This shows that graduate

students also experience a great need of mentoring, but who can serve as graduate mentors? The primary focus has been on faculty mentors, but graduate students may also consider *"peers, more advanced graduate students, departmental staff, retired faculty, faculty from other departments, faculty from other universities, and friends from outside the academy as potential mentors"* (Weiss, 2008).

The present study was designed to investigate how online mentoring affects attrition in IT supported distance education. The study focused on an intervention with more advanced graduate students in a masters degree program who served as online mentors for other less advanced graduate students in the same program during 2007/08. We have not been able to find any other published studies with the same design to compare our results with.

Our mentoring program did not have any effect on the high (55%) dropout rate during the first online masters course. This may be due to several factors, including the fact that mentoring was first introduced a whole month after the beginning of the first course. An earlier introduction of the mentors, from the very start of the program, may have prevented some of the early dropouts.

Statistical data from the initial LCIT program (2002/03) shows that it is possible to reach a low dropout rate (10%) during the first course of the program, given the right combination of positive factors (Nilsson Lissvall, 2007). Further research may be able to identify some of these positive factors and if an earlier introduction of mentoring could help to reduce the dropout rate during the first course of the program.

The second course of the LCIT program had an average dropout rate of 27% (between 9% and 43%), and the third course had an average dropout rate of 31% (between 12% and 60%), according to the statistical data from the first five academic years, 2002 - 2007 (Nilsson Lissvall, 2007).

The dropout rate fell to 0% in the second and third courses during our mentoring intervention 2007/08, which was the first time in the history of the LCIT program that there were no dropouts at all. The dropout rate jumped to 50% among the students in the fourth course, after the end of the mentoring intervention.

Our mentoring intervention appears to have been quite successful in reducing student attrition, but the study is very small and further research should be done to establish the positive effects on attrition and other public health indicators. Education is an important health factor and many could benefit from participating in lifelong learning.

7.2 Conclusions

The first two research questions were addressed in both of my studies, and the third question was specifically addressed in my second study. The respective questions and answers may be summarized as follows:

1. <u>What motivates students to choose distance education</u>?

   The choice of distance education is mostly influenced by the prospective students' work situation, the opportunity to study at their own pace, and the distance to the closest university.

2. <u>What reasons do students give for interrupting their studies</u>?

   The main reasons for the high dropout rate in both masters programs were found to be a lack of time and motivation to study. Inadequate teacher communication, participation, support and feedback. Poor fellow student communication and support.

3. <u>How does online mentoring affect attrition in distance education</u>?

   Mentoring was introduced one month after the beginning of a masters degree program. The dropout rate was 55% in the first course, while the second and third courses had no dropouts at all – for the first time in the history of the program. After the end of mentoring, the dropout rate jumped to 50% in the fourth course.

Student attrition in distance education is a global public health problem that may be addressed by providing active support from distance education mentors. Online mentoring should always be included as an important part of all distance education programs.

Education, including lifelong learning, should be recognized as an important factor in promoting, restoring and maintaining physical, social and mental health. Lifelong learning is an essential part of a lifestyle that will help to maintain body and mind in good health.

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Appendix A: First Survey Questions (1/3)

Problemet med studieavhopp

Denna enkät riktar sig till alla studenter som antogs till magisterprogrammet ITU 161, Lärande, kommunikation och IT, ht 2006. Av de 30 deltagare som från början antogs till programmet var det endast 6 (20%) som avslutade delkurs 4 vid slutet av vårterminen 2007, vilket motsvarar ett bortfall på 80%.

Mitt studie avser att kartlägga omfattningen och de främsta bakomliggande orsakerna till studieavhopp vid IT-universitetet, samt föreslå åtgärder som man kan vidta för att försöka komma tillrätta med problemet. Dina svar på enkäten är en mycket viktig del av studien och de kommer naturligtvis att behandlas helt konfidentiellt. Tack på förhand för din värdefulla medverkan!

Hans Juneby

1: Kön:
- ○ Kvinna
- ○ Man

2: Ålder:
- ○ < 25
- ○ 25 - 34
- ○ 35 - 44
- ○ 45 - 54
- ○ 55 - 64
- ○ 65 +

3: Civilstånd:
- ○ Ensamstående
- ○ Ensamstående med minderåriga barn
- ○ Gift/sammanboende
- ○ Gift/sammanboende med minderåriga barn

4: Varför valde du distansstudier i stället för campus-baserade studier? (Du kan markera mer än ett alternativ.)
- ☐ Jag ville utnyttja möjligheten att studera i min egen takt.
- ☐ Jag kunde inte studera på något annat sätt på grund av mitt arbete.
- ☐ Jag bodde långt från närmaste studieort.
- ☐ Jag kunde inte studera på något annat sätt på grund av min familjesituation.
- ☐ Andra orsaker (som du kan ange i ditt svar på fråga 5)

5: Varför valde du magisterprogrammet Lärande, kommunikation och IT?

6: Hur motiverad var du att genomföra hela magisterprogrammet?
- ○ 1 Helt omotiverad
- ○ 2
- ○ 3
- ○ 4
- ○ 5 Mycket motiverad

Appendix A: First Survey Questions (2/3)

7: Hur skulle du beskriva din studiemiljö?
- ○ 1 Mycket dålig
- ○ 2
- ○ 3
- ○ 4
- ○ 5 Mycket bra

8: Hur skulle du beskriva studiestödet från familj och vänner?
- ○ 1 Mycket svagt
- ○ 2
- ○ 3
- ○ 4
- ○ 5 Mycket starkt

9: Vilken kontakt hade du med dina studiekamrater?
- ○ 1 Mycket dålig
- ○ 2
- ○ 3
- ○ 4
- ○ 5 Mycket bra

10: Vilken kontakt hade du med kursens lärare?
- ○ 1 Mycket dålig
- ○ 2
- ○ 3
- ○ 4
- ○ 5 Mycket bra

11: Fick du regelbunden feedback från kursens lärare?
- ○ 1 Mycket sällan
- ○ 2
- ○ 3
- ○ 4
- ○ 5 Mycket ofta

12: Deltog lärarna tillräckligt mycket i kursens aktiviteter?
- ○ 1 Alldeles för lite
- ○ 2
- ○ 3
- ○ 4
- ○ 5 Fullt tillräckligt

13: Har du avbrutit dina studier på magisterprogrammet? Om du svarar Ja, besvara även frågorna 14, 15 och 16, om Nej, kan du gå direkt till frågorna 17 och 18.
- ○ Ja
- ○ Nej

14: När avbröt du dina studier på magisterprogrammet?
- ○ Före eller under första delkursen
- ○ Före eller under andra delkursen
- ○ Före eller under tredje delkursen

Appendix A: First Survey Questions (3/3)

○ Före eller under fjärde delkursen
○ Före eller under uppsatsarbetet

15: Vad är den främsta orsaken till att du avbröt dina studier?

[text box]

16: Planerar du att fullfölja magisterprogrammet vid ett senare tillfälle?

○ Ja
○ Nej
○ Vet inte

17: Vad kunde kursledningen och/eller IT-universitetet ha gjort för att underlätta dina studier på magisterprogrammet?

[text box]

18: Dina övriga kommentarer:

[text box]

[Send my answers]

Appendix B: Second Survey Questions (1/4)

Mentorer och studieavbrott - Magisterprogrammet N2LKD

Denna enkät riktar sig till alla studenter som antogs till magisterprogrammet N2LKD, Lärande, kommunikation och IT, ht 2007. Den omfattar också alla som läser delkurserna TIA 037, TIA 038 osv som fristående kurser.

Min studie avser att ytterligare kartlägga omfattningen och de främsta bakomliggande orsakerna till studieavbrott vid kurser och utbildningsprogram på IT-universitetet, samt att pröva åtgärder som kan motverka problemet. Under ht 2007 har vi prövat mentorer som ett komplement till programmets lärare och enkäten innehåller därför några frågor om hur detta har påverkat studierna.

Dina svar på enkäten är ett viktigt bidrag till min forskning och de kommer naturligtvis att behandlas helt konfidentiellt. Tack på förhand för din värdefulla medverkan!

Hans Juneby, Mentor

1: Kön:
- ⬭ Kvinna
- ⬭ Man

2: Ålder:
- ⬭ < 25
- ⬭ 25 - 34
- ⬭ 35 - 44
- ⬭ 45 - 54
- ⬭ 55 - 64
- ⬭ 65 +

3: Civilstånd:
- ⬭ Ensamstående
- ⬭ Ensamstående med minderåriga barn
- ⬭ Gift/sammanboende
- ⬭ Gift/sammanboende med minderåriga barn

4: Varför valde du distansstudier i stället för campus-baserade studier? (Du kan markera mer än ett alternativ.)
- ☐ Jag ville utnyttja möjligheten att studera i min egen takt.
- ☐ Jag kunde inte studera på något annat sätt på grund av mitt arbete.
- ☐ Jag bodde långt från närmaste studieort.
- ☐ Jag kunde inte studera på något annat sätt på grund av min familjesituation.
- ☐ Andra orsaker (som du kan ange i ditt svar på fråga 5).

5: Varför valde du magisterprogrammet Lärande, kommunikation och IT, eller fristående kurser i programmet?

6: Hur motiverad var du att genomföra hela magisterprogrammet (eller den fristående delkursen)?

Appendix B: Second Survey Questions (2/4)

    ◯ 1 Helt omotiverad
    ◯ 2
    ◯ 3
    ◯ 4
    ◯ 5 Mycket motiverad

7: Hur skulle du beskriva din studiemiljö?
    ◯ 1 Mycket dålig
    ◯ 2
    ◯ 3
    ◯ 4
    ◯ 5 Mycket bra

8: Hur skulle du beskriva studiestödet från familj och vänner?
    ◯ 1 Mycket svagt
    ◯ 2
    ◯ 3
    ◯ 4
    ◯ 5 Mycket starkt

9: Vilken kontakt hade du med dina studiekamrater?
    ◯ 1 Mycket dålig
    ◯ 2
    ◯ 3
    ◯ 4
    ◯ 5 Mycket bra

10: Vilken kontakt hade du med kursens lärare?
    ◯ 1 Mycket dålig
    ◯ 2
    ◯ 3
    ◯ 4
    ◯ 5 Mycket bra

11: Fick du regelbunden feedback från kursens lärare?
    ◯ 1 Mycket sällan
    ◯ 2
    ◯ 3
    ◯ 4
    ◯ 5 Mycket ofta

12: Deltog läraren tillräckligt mycket i kursens aktiviteter?
    ◯ 1 Alldeles för lite
    ◯ 2
    ◯ 3
    ◯ 4
    ◯ 5 Fullt tillräckligt

13: Under ht 2007 genomförde vi ett försök med mentorer på magisterprogrammet, som ett komplement till programmets lärare. Hur värderar du mentorernas arbete?
    ◯ 1 Mycket dåligt

Appendix B: Second Survey Questions (3/4)

⭘ 2
⭘ 3
⭘ 4
⭘ 5 Mycket bra

14: Vilken kontakt hade du med mentorerna?
⭘ 1 Mycket dålig
⭘ 2
⭘ 3
⭘ 4
⭘ 5 Mycket bra

15: Fick du regelbunden feedback från mentorerna?
⭘ 1 Mycket sällan
⭘ 2
⭘ 3
⭘ 4
⭘ 5 Mycket ofta

16: Deltog mentorerna tillräckligt mycket i kursens aktiviteter?
⭘ 1 Alldeles för lite
⭘ 2
⭘ 3
⭘ 4
⭘ 5 Fullt tillräckligt

17: När tror du att mentorerna kan göra störst nytta?
⭘ 1 I början av magisterprogrammet, under den första delkursen.
⭘ 2 I mitten av programmet, när studierna har kommit igång på allvar.
⭘ 3 Under metodkursen och planeringen av examensarbetet.
⭘ 4 Under examensarbetet.
⭘ 5 Under hela magisterprogrammet.

18: Kan du tänka dig att själv bli mentor på ett kommande magisterprogram?
⭘ 1 Nej
⭘ 2 Vet inte
⭘ 3 Ja, med ekonomisk ersättning
⭘ 4 Ja, med ersättning i form av akademiska poäng
⭘ 5 Ja, utan ersättning

19: Dina övriga kommentarer om mentorer vid distansutbildning:

20: Har du avbrutit dina studier på magisterprogrammet eller den fristående delkursen? Om du svarar Ja, besvara även frågorna 21, 22 och 23, om Nej, kan du gå direkt till frågorna 24 och 25.
⭘ Ja
⭘ Nej

21: När avbröt du dina studier på magisterprogrammet eller den fristående delkursen?

Appendix B: Second Survey Questions (4/4)

○ Före eller i början av första delkursen (TIA 037)
○ I mitten av första delkursen
○ I slutet av första delkursen
○ Före eller i början av andra delkursen (TIA 038)
○ I mitten av andra delkursen
○ I slutet av andra delkursen

22: Vad är den främsta orsaken till att du avbröt dina studier?

23: Planerar du att fullfölja magisterprogrammet eller den fristående kursen vid ett senare tillfälle?
○ Ja, hela magisterprogrammet
○ Ja, den fristående kursen
○ Nej
○ Vet inte

24: Vad mer kunde kursledningen, mentorerna och/eller IT-universitetet ha gjort för att underlätta dina studier?

25: Dina övriga kommentarer:

[Send my answers]

Appendix C:

Course plan for

Mentoring Practice

Advanced level, 7.5 – 30 ECTS

Course code: XXX

Approval

The board/dean of the faculty of the XXX College/University has approved the course plan YYYY-MM-DD.

Purpose

Mentoring distance education students through computer – mediated communication technologies to improve learning, reduce attrition, enhance communications, and facilitate cooperative learning experiences for distance learners. The mentor acts as a teacher, guide, counselor, role model and friend. Mentoring is a dynamic relationship between an individual who needs to learn and one who is willing to help and guide.

Course organization and learning goals

Mentoring practice is designed to support the work of the course teacher, help to meet specific needs of individual students and the creation of a good learning community that encourages communication and fellowship. Mentors learn to work in cooperation with teachers/instructors to meet course objectives and encourage the progress of course participants in order to improve learning and prevent student attrition.

Mentors study the current literature on mentoring in different areas of education, organizations and industry, in addition to practical work that will help to develop good mentoring skills. Senior (graduate) students who mentor junior (graduate) students become part of a learning community (Community of Practice), are able to discuss problems, take part in group work and benefit from peer support. They will also gain a deeper understanding of distance education and the role of computer-supported communication technologies in collaborative learning (CSCL).

Participation in the course requires basic knowledge and skills in the use of computers, communication programs, and daily access to a computer with a high speed Internet connection.

Prerequisites

The course is open to masters degree students and graduates who have successfully completed the same course, or the equivalent, as the one in which they are going to serve as mentors. Prior teaching experience and/or participation in at least a basic course in education, including the principles and practice of mentoring, is recommended.

Examination

The mentoring practice participation and performance will be continuously evaluated by the teacher, who may also give special assignments during the course. The student will receive one of the following grades based on performance: Fail (U), Pass (G) or High Pass (VG).

A student who has failed the examination twice has the right to request the faculty board of the university to appoint a different examiner to determine the grade.

Credits

The number of ECTS credits awarded for successful mentoring practice will be the same as the course(s) in which the person has served as a mentor. The mentoring practice course may be repeated for additional credits up to a total of 30 ECTS, which may be used as advanced level credits in a masters degree program in the area of educational science.

Evaluation

After completion the course will be evaluated by the students. The results of the evaluation will be used to modify and improve future courses.

Course Literature

The course literature will mainly be in the form of digital publications and current scientific articles on mentoring. The selection of literature will be a combination of required and/or recommended reading and literature based on individual choice. An updated literature list will be provided for each new course.