A survey of drop-outs from GIS Distance learning Courses

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Abstract

Drop-out is one of the major challenges to E-learning. This paper reports the initial findings from a drop-out study and discusses causes of drop-out within the LUMA-GIS student community. The study is part of the research project Learning in the ICT-Extended University: Experienced context and constituted meaning in ICT-supported outreach initiatives involving flexibility and diversity, at Lund University and is sponsored by the Swedish National Science Foundation.

The 100 drop-out students were by email sent an open invitation were they were asked to elaborate their experiences and understanding on why they are behind there chosen study tempo or have decided to leave the course. 63 students have answered. One of the main findings is that only a minority (8 out of 63) find themselves to be drop-out students. Instead, they expressed a high level of satisfaction with the course. Our preliminary analyses of data thus showed complex reasons for not following their scheduled tempo; a mixture of personal reasons, job-related reasons, program-related reasons and technology-related reasons.

INTRODUCTION

Since January 2004, the GIS Centre at Lund University offers a two year fully internet-based Masters programme for professionals and traditional students from all over the world, free of charge and possible to study at a flexible pace. Lund University Master's Program in Geographical Information Science (LUMA-GIS) is given in English and is equivalent to 120 European ECTS credits (two years full time studies). It consists of an initial semester with three compulsory GIS courses (total 30 ECTS) followed by a full academic year with elective courses allowing the student to specialise and personalise their GIS knowledge and skills. The last semester is devoted to a 30 ECTS master's thesis work. A list and brief presentation of LUMA-GIS courses is presented at http://www.giscentrum.lu.se/luma-gis/index.htm.

COURSE DEVELOPMENT CONCEPTS AND IDEAS

Flexibility was the key word for course design concept for the LUMA-GIS program. It was considered important that the course material should be accessible from whatever location (high speed to low speed Internet) and in different forms, as video, audio, text and interactive presentations. The courses developed so far do not always contain all four types of presentations for the same material, and the ideas of students using very bad Internet connections have to a certain degree had to be abandoned, since some of the more technically advanced courses require relatively fast Internet connections. Construction of course materials has been presented at the EUGISES2004 conference (Onstein & Martensson 2004) and in a report from Lund University (Pilesjo et. al. 2006).

Another design factor considered important for assuring flexibility was the study tempo, it was decided that a student should be allowed to set any study tempo between 25 and 100 % of full time studies. LUMA-GIS students have a common starting date and could select three different study tempos; 25, 50 and 100 %.

For the LUMA-GIS communication between teacher and student and the student's possibilities to interact with each other has been a major concern. Communication teacher – student is inevitable but it must at least to a degree be beyond just saying "here is my hand in", "thank you – it has been approved". Student to student communication is much less obvious, and if left entirely up to the students, chances are that there will be very little communication

The drop out criteria in the study were defined as student being inactive for at least six months after showing initial activity (i.e. sending in at least one report/exercise). Out of the entire LUMA-GIS student population approximately 26 % (100 out of 395) were so in-active that they were categorized as drop-out students. The 100 drop-out students were by email sent an open invitation were they were asked to elaborate their experiences and understanding on why they are behind there chosen study tempo or have decided to left the course. 63 students have answered the questions.

THE LUMA-GIS STUDENT POPULATION

The LUMA-GIS programme attracts students from all continents of the world and today has over five hundred students enrolled. Our attribute data is based on a questionnaire where students give background information about themselves and their family-, work- , ICT- and study conditions.

- Presently we have attribute data from 340 students:
- 70% of the students are men and 30% women
- Age span of students ranges from 20 to 60 years, with an average of 31 years.
- Students come mainly from engineering and science backgrounds.
- 60% are single, 30% live family lives with children and 10% are married without children.
- 65% state that they can find a comfortable study environment at home.
- 21% do not work while studying while 62% work fulltime, 6% work halftime and 9% work part-time.
- 10% of students get financial support for their studies from their employer.
- 4% state that they do not have easy access to a computer with internet connection while 53% have it at home, 52% at work and 24% find it elsewhere.
- 95% feel confident as ICT- and internet users but 13% still feel that computers make studying harder.

Application procedure requires the student to first apply on the web and then send application and certificates via ordinary mail. Totally 1741 web applications have been registered and 1119 paper applications received. Of these 564 students have been accepted and 395 are active (have at least handed in one assignment). Initial drop-out among the LUMA-GIS is only 29 % that never started the first course.

The LUMA-GIS students have been accepted in two categories, full program students (246 of the 564), and "approbation" students. The latter group (318 students) was given access to the first course and if they did well and re-applied the next round they were normally accepted as full program students. Figure 1 summarise these two categories and how many that actually started on the first course in the program. It implies that students accepted for the full program are more motivated and

actually started the course work. Only 38 of the program students never started the course work (15%), while 158 of the non-program students (50%) never begun the course.

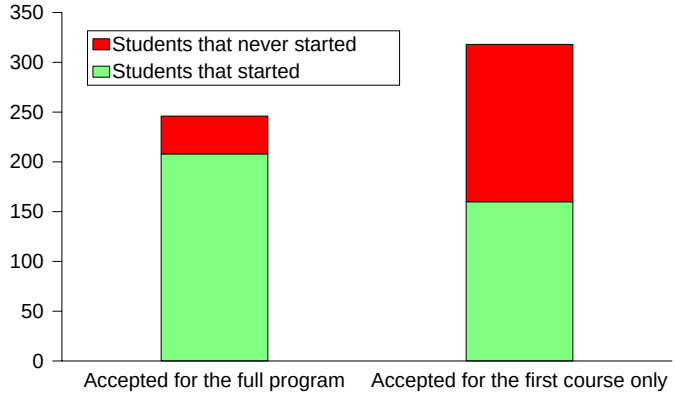

Figure 1: Students accepted for the full LUMA-GIS program and students accepted for the first course only do not start the course work to the same extent.

The LUMA-GIS program has attracted an international interest and students are from 73 different countries around the world. Of these 139 are from Sweden, 40 from Nigeria, 30 from India, followed by about 25 from Ethiopia, Jamaica, Ghana and Pakistan.

DATA ANALYSES AND INTERPRETATION

After the completion of the first course in the programme all students filled in a questionnaire about their studying and their flexibility-related learning experiences. Of the 140 students who to date have answered this questionnaire on the introductory course 78% stated that they communicated with fellow students. The communication was related to course work, technical problems, or social matters. The importance of communicating about course work was rated to 2.6 of a possible high score of 4. Communicating about technical matters was also rated to 2.6 while the importance of communicating for social reasons scored 1.9. Students networked mainly to address and solve technical difficulties and to facilitate course work discussions, and valued this kind of networking higher than communicating for social reasons.

Out of 140 students 125 made open-ended comments. These relate to different issues. Some chose to write about flexibility in study tempo, while others concentrated on e.g. interaction. Below follows a summary of comments categorized in different sub-groups.

The 63 drop-outs who answered the question about why they had left the course, many where surprised that they where considered as drop outs. The majority had different reasons for being “temporary” inactive, most of them rather complex involving combinations of private and professional reasons. Also reasons connected to the software and other technical problems where on the list of reasons. The preliminary evaluation of the results demonstrates that students tend to underestimate the actual workload involved with a serious study commitment. When they find out and at the same time they encounter some problems connected to software installation or other technical problems. Sometimes, in this early stage of participation, students are a bit reluctant to ask for support (they do not want to flag any problems) and they try to solve the problem themselves or with help from their local environment. If not successful, some just give up and do nothing.

Consequently they will be considered as drop-outs, but mentally they are just having problems getting started and still consider them selves as students.

Other important reasons are due to changes of job responsibilities, which in combination with the unexpected workload create frustration. The student naturally must perform well at her/his regular job and when the workload increase it is difficult to be devoted enough to keep the estimated study tempo or even to find any time at all to spend on studies. This is particularly true for students that are married and has a family responsibility.

CONCLUSIONS

The student evaluations of the courses are positive in general when it comes to content, how the content is presented, and with the stimulation and professionalism of the teachers. Two major negative issues are stated. The first issue is difficulties to understand what is expected from the student, e.g. the instructions to an assignment do not state clearly enough what the student should hand in to the teacher. This could be avoided by make absolutely sure that instructions are 100 % foolproof and it is also a good idea to have "model" hand-ins available as examples for the students.

The second issue is lack of communication (student to student) and sense of being part of a student community ("class"). It is very important that the design of the learning environment provides methods for communication (e-mail, forum, chat, skype, etc) and that the teacher community stimulates cooperation and communication as far as appropriate. Group work may be difficult to stage if flexibility should be maintained concerning study tempo and individual pace through a course. Communication between students also always increases the risk of plagiarism and cheating, a fact that must be considered and counteracted by the teacher community. LUMA-GIS have fortunately suffered from very few attempts of such from the students.

Student motivation and feelings to belong to a "selected and exclusive" group is important for their success in the education program. It is important to find means giving the student this feeling of exclusivity. We believe that for the LUMA-GIS, with the actual high application pressure, the fact being accepted in the competition with hundreds of other applicants is strongly contributing to this.

Teachers entering Internet based education must also be very motivated and be prepared for the differences from campus "interactive" and "real time" teaching. The work load and time consumption is almost never less than, rather more compared to campus courses. Communication is sometimes very cumbersome, language barriers and experience explaining a problem could make it very difficult for a student to tell the teacher what her/his problem is, which could be very frustrating.

Like students, the teachers could also suffer from "loneliness", and it is important that the teacher is part of a team or teaching context. To put a single teacher on a course without having colleges to discuss problems with is degrading quality. It is also important to have more than one teacher competent in the same field. If not, being absent from the virtual classroom can be very stressful for the teacher, since students will continue to work and get annoyed when they get no response and feedback.

The experience from LUMA-GIS is that with large student groups, teacher-student communication must be restricted to rather formal issues in order to maintain a reasonable workload for the teachers. At the same time it is important to be engaged in the process and all types of "template" answers to students should be avoided (if student to student communication is effective they will compare responses and get disappointed if they realise that they get "auto-replies"). On the other hand, at higher courses with few students, it is not uncommon that the teacher and students develop a much more personal communication that extends outside the particular scope of the course.

Students in the LUMA-GIS program seem to approach their studies and their learning of GIS in different ways and with different results. Our results would indicate that a major reason for this difference is in students' inclination to network about course work and engage in other task-oriented academic interaction with others in the course. In such an academic environment students can develop their intellectual and ethical capacity and move beyond a black-and-white absolutistic view of knowledge where the teachers hold the answers, and embrace a more relativistic epistemological view based in the divers validity claims contained in the multi-voiced discussions.

Students are offered a multitude of choices; they can e.g. start the course any time within two months of registering on the course, they can choose their own study tempo, their preferred mode of study and the material format they wish to work with while studying. The problem with flexible start and study tempo, at least in the beginning of a programme, is that students do not work in the same modules, or even courses, for very long. Despite this negative consequence of flexibility and freedom of choice, student should be made aware of the advantages of networking to deep learning and course designers and teachers should endeavour to create assignments where networking, synchronously or asynchronously, with fellow students in the course is part of the didactic design.

This study also highlights the importance of task-oriented interaction. Interacting students are generally more satisfied and successful than other. It is therefore of great importance to offer students possibilities of interaction and to inform them of theses possibilities. The use of study guides (and/or other channels of information) encouraging students to interact and cooperate are highly recommended. It seems necessary to have a system (probably built-in to the LMS) that allows students to signal openness to interaction. A valuable support for students would also be to create an internet-based community for both students of GIS and established GIS-practitioners. This could serve as a way to bridge the gap between students, practitioners and experts giving students the opportunity to discuss e.g. ideas for their final thesis – or even be contracted to conduct a study for someone in this community.

RECOMMENDATIONS

To avoid early drop-outs, the suggestions listed under A) may be useful, particularly valid for the first course when students are entering the program. Once in the program and progressing to the second course there is little that can be done on the practical side of support, e.g. software and other technical issues, it is more likely that problems arise from a change of circumstances in the environment around the student, see suggestions under B) below:

A) Early drop-outs

- Timely delivery of support material before the course start, including study guides, necessary documentation and tools (software) as hard copies.
- Tight follow-up initially, where teachers and technical support staff collaborates and send questions to students that has not shown sign of activity after a stipulated time, say three weeks after course start.
- Fast response on initial hand-ins is very important and the more personalized the response the more the student will feel "unique" and well looked after. It is here that the teacher – student communication routines/rules are created and it is important that the student get a sense of being supported by the teacher community.

B) Later drop-outs

- The communication issue is very important, when it comes to teacher – student communication it is important that the student feels confident in raising study related issues

with the teacher, and will not hesitate to, e.g. raise a personal problem or professional problem that hinders the student to fulfill her/his study tempo commitment. In the LUMA-GIS program this has been somewhat a problem, since the number of student starting each new batch is quite high, about 100, and it is impossible to have only one teacher involved in the course, this has been tested but the teachers tend to "wear out" very quickly due to the high work load. But when the student has passed the initial compulsory courses, number on each course is reduced to between 5 and 20, and here the teacher may well develop a very personal contact with each individual. Experience indicate that quite few students actually feel that it is ok to report to the teacher that their personal or professional circumstances have changed and due to this they need to take a break from the program for a limited period.

- Creating a student community and making the student feel part of an academic learning community is also part of the insurance to minimize drop-outs at later stages of a program. This means that the student may be able to discuss and get advice not only on issues that are directly related to course work, but can get support from fellow students on more personal problems as well, e.g. other student may describe how they coped with an increase in workload, the arrival of a new boss, divorce, birth of a child, etc.

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