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# STUDENTS' ACTIVITY ON A DISCUSSION FORUM- ATTITUDES AND LEARNING OUTCOMES

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## Abstract

The study focuses on a group of distance students and their attitudes towards knowledge construction in distance education. Their usage of a web based Learning Management System (LMS) is studied and the relation between the students' activity on a discussion forum and their learning outcomes is described and discussed. The study was carried out by interviewing a group of distance students and their teachers and also by studying the students' behaviour on a LMS. The students' attitudes towards their own learning process showed lack of confidence in their capability of contributing to knowledge construction in a student group. The concluding part of this paper indicates that the students' attitudes towards knowledge construction and learning processes affected the way they behaved on the discussion forum. The study also shows that the students' activity on a discussion forum is related to their learning outcome.

Discussion forum, Distance course, Learning Management System, Learning outcomes.

## Introduction

Information technology has made it possible to distribute, share and store information independent of time and place. This has led to new alternatives for education and learning; a flexible distance education [1, 2]. In this paper the term "distance education" is used to describe education on distance utilized by a computer based Learning Management System (LMS) distributed by the Internet. A LMS makes it possible to communicate with teachers and fellow students on distance. There are several LMS:s used today as "virtual classrooms" or web based tools for communication and learning in distance education. They provide tools for course production, course administration and communication. One essential tool for communication is an asynchronous discussion forum, independent of time and place, which can be used for group discussions. This tool is especially important for collaboration issues [3].

The dialogue has always been a way to learn and share experiences and knowledge and with a LMS the important dialogue can be handled in distance education. A LMS enables students and teachers to meet virtually and discuss issues concerning their studies. An increased use of discussion forums has been noticed in higher education [4]. Social interaction, for example discussions, has a great impact on the learning process [4, 5, 6]. Bill Pelz [7:37] states that "*Interactivity is the heart and soul of effective asynchronous learning*". It has been proven, in educational research that a student who is actively involved has a greater learning potential compared to a passive listener [8].

Dysthe [9] argues that it is essential to try to understand the learning process from the student's perspective. In order to do that it is necessary to understand how knowledge is constructed and how learning processes can be handled. Dysthe's [9] standpoint stresses the importance of showing interest in students' learning processes and inspires to study the communication between participants on a discussion forum and the usage of the tools supporting the communication.

In this paper a study of the learning process and knowledge construction by usage of a LMS in a distance course is described and discussed. Focus is on students' behaviour i.e. activity on a discussion forum. The following questions will be answered:

- Do the students' attitudes towards knowledge construction have any impact on their behaviour on the LMS?
- Does distance students' behaviour on the LMS indicate anything about their learning outcomes at the end of the course?

## **The learning process in distance education**

If we accept learning as a social process, communication and collaboration are essential for learning situations [2, 10, 11, 12]. The dialogue is important for communication and collaboration and consequently also in any learning process [8]. Knowledge can be constructed through collaboration. This is especially effective for strengthening critical thinking, problem solving or to understand different perspectives of a certain phenomenon. In these situations students need the opportunity to discuss and exchange ideas with others and this will help them to develop their own thoughts. [2, 3, 11, 12, 13] The level of interaction between participants is vital for a successful web based distance course [3], the more interaction the more learning situations. The existence of a discussion forum in a distance course is important for distance students' active learning process and the level of collaboration intrinsic in the course is significant for the usage of a discussion forum [11].

Dysthe [9] has proven that an asynchronous discussion forum supports learning because it offers an opportunity to study and use the discussion forum whenever it suits the students best. As a consequence this can lead to more extensive discussion contributions compared to oral discussions, due to the fact that students have time to reflect on an issue before they express their own opinion. Some negative aspects of being independent of time and place can also be observed. A successful distance student needs the ability to organize and allocate time for the studies. In this aspect self-learning and the need of self discipline are essential student characteristics to be considered in distance education. Students who are not able to handle these aspects may not accomplish good learning outcomes. [3, 6, 14]

According to Soong et al [11] one of the critical factors that need to be considered when using a LMS is the mindset about learning. This factor deals with what teachers and students perceive learning to be (construction or absorption) and has a great impact on how they act in teaching and learning situations [9]. Distance teachers can influence the students' communication behaviour in different ways depending on their view on the learning process. Dysthe [9] has established some fundamentals for a well functioning discussion on distance. One important aspect is the creation of need for communication through intellectual challenges. The author argues further that the design of the task is important for stimulating the students to feel the need for communication. By designing tasks that forces or stimulates students to work together the teacher can encourage and support collaboration [2, 6, 11, 12, 13]. Students may need different kinds of help and support to carry out and complete a distance course and therefore the need for intervention of the teacher varies for different student groups. By monitoring the system, a tutor can use this information to encourage and give students adequate support and feedback [9, 14].

Students' learning achievements in a distance course are to a great extent dependent on their activity on the LMS [6, 14]. Active students are more successful in their studies compared to less active students. A positive association between students' participation in discussion forums and learning outcomes have been proven in recent studies [8, 15]. These studies confirm that activity on the discussion forum improved the students' perceived learning.

## **The Distance Course**

The course in question was a web based distance course *Introduction to Academic Studies* offered by Mälardalen University in Sweden. It was a part time course, comprising ten Swedish credit points which lasted from November 2004 to April 2005. The course was part of a one year college program for students interested in university studies but not fully qualified for studies on an academic level. The objective of the course was to encourage and prepare the students for future academic studies. The

course was interdisciplinary and aimed to introduce and provide basic knowledge about scientific and critical thinking. A LMS called WebCT was used in the course.

The course was divided into two main parts of ten weeks each. The first focused on social and behavioural science and the second on natural science. An integrated component based on humanities was carried out parallel with the two parts described above. This integrated component aimed to support and encourage students to practise and develop the oral and writing skills required for academic studies.

The teachers provided the students with a study guide which described the content of the course and the tasks week by week. For every weekly task the students were required to make their own original postings to the discussion forum and to respond on other's messages.

Eleven students began the course but two dropped out after a few days. The nine students left were all female students. None of them had any previous experience of university studies, but some of the students had studied on distance on a lower educational level. After part one another student left the course and therefore her activity and participation is not considered in this study. Eight students carried through the whole course. Three students completed the course, passed all the examination modules and obtained a pass grade.

### **The Learning Management System – WebCT**

The Learning Management System (LMS) used in the course was WebCT (Web Course Tool). In the course *Introduction to Academic Studies* the main communication tool was a forum for discussions. The forum was used by all teachers and students through the whole course. None of the participants indicated any difficulties using the discussion forum.

The discussions were held in an asynchronous mode which made the participants independent of time. In order to avoid confusion among the students threaded discussions were used in WebCT. The threads allow the reader to follow the various contributions to a discussion and respond to specific messages. The students were obliged to take an active part in the different discussions and their participation was part of the course examination. A thread in this context is equivalent to each student's original postings to the discussion forum. Each time a student posted a new original message a new thread was created in contrast to the responses which prolonged the thread.

In this paper the term *original posting* is used to describe a new thread in the discussion forum. The expression *follow-up posting* stands for a response on a message.

### **The study**

The study was preliminarily a qualitative analysis of student participation in the course *Introduction to Academic Studies* and was carried out by interviews with participating teachers and students and observations of the students' behaviour and contributions on a discussion forum in WebCT. In addition statistical information about the students' behaviour on the discussion forum has been retrieved from WebCT. An initial questionnaire was carried out, aimed to explore the students' attitudes towards their own learning process. The answers indicated that the students did not expect much support from each other. The interviews also showed lack of the students' confidence in their own capability to contribute to knowledge construction in a group of students. The importance of self-discipline and self-efficiency was mentioned several times among the students and teachers in the interviews. Statistical information about the discussion forum participants' behaviour on WebCT shows that teachers and students made 1328 postings (original and follow-up postings) in total to the discussion forum during the entire course. The number of the students' original posts and follow-up posts were summarized and put together in diagrams showing each student's achievements and activity in the discussion forum.

As measurement concerning the students' learning outcomes the sum of credit points (maximum 10) taken of each student is used. The table below shows the result for each student.

*Table 1*

Students	1	2	3	4	5	6	7	9
Credit points	2	10	4	10	0	10	0	4

*Number of credit points for each student*

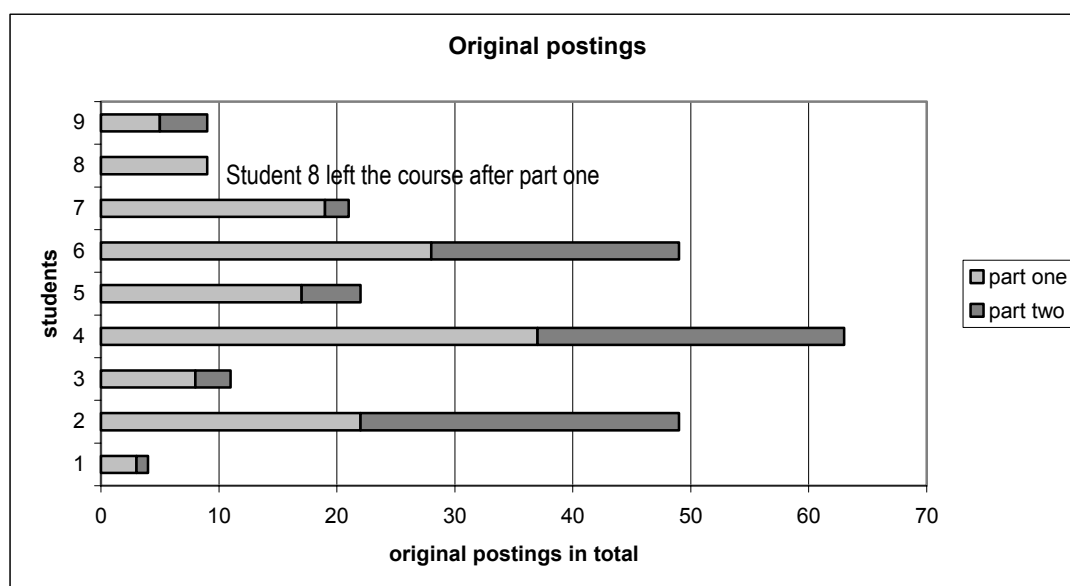
### **Students' usage of WebCT**

An analysis of the content of the various messages in the discussion forum show a mixture of social small talk and task related comments. In an interview one of the teachers expressed her critical view of the way the students used the discussion forum. She meant that the purpose of the discussions was not fulfilled since the discussions had too much character of a social dialogue among friends. Sometimes she could notice a discussion which was clearly leading to knowledge construction, but this did not occur very frequently and it was only related to a few students.

In a qualitative analysis of the content of the messages Students 2, 4, and 6 show a larger amount of task related messages in comparison to the other students. Students 5 and 7 have the smallest number of task related messages.

### **Original postings**

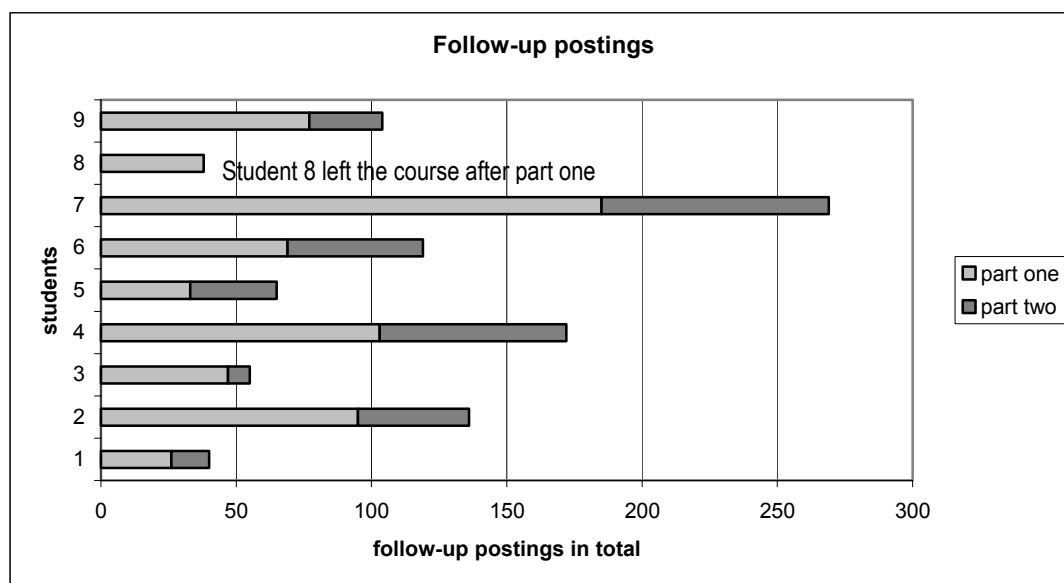
As can be seen from diagram 1 three students 2, 4 and 6 show an outstanding number of original postings compared to the other students, both in part one and two of the course. This means that they started between 49 to 63 new threads in total. The other students 1, 3, 5, 7, and 9 had four to 22 original posts and show a more active participation in part one compared to part two.



*Diagram 1 – number of original postings*

### ***Follow-up postings***

In diagram 2 students 2, 4, and 6 are among the most active students, but the most active is student 7. The same tendency as in diagram 1 can be perceived – the students participated more actively in part one in comparison with part two.



*Diagram 2 – number of follow-up postings*

### **Discussion**

Diagram 1 clearly shows that students 2, 4 and 6 were more active than the other students regarding original postings. According to Webb et al [8] and Wang & Newlin [14] some predictions about the students learning outcomes can be made by studying distance students activity in discussion forums on a LMS. To start a new thread, i.e. make an original posting on a subject can be related to students' mindset about learning but also to what Volery & Lord [3] found about self-learning and self discipline. This also coincides with the interviewees thoughts about self discipline. Posting an original message is more demanding than to respond on fellow students' messages. The tendency for the three active students' behaviour was quite obvious in part one of the course and became even more distinct in part two. They showed an outstanding number of original postings compared to the other students. According to the findings of Clark, [6], Webb et al [8], Wang & Newlin [14] and Wu & Hiltz [15] the extent of activeness of the students is related to their learning outcomes.

Soong et al [11] underpin the importance of students' attitudes towards the course and show that students' own learning capability i.e. mindset about learning appears to be a vital component according to the question of students' active role in discussion forums. The initial questionnaire and the interviews indicated the students' attitudes towards knowledge construction and learning processes. Many of the students expressed their scepticism about their own capability to contribute to knowledge construction in a group of students. The students' lack of previous experience from academic studies could be an explanation to this view. These doubts could have been relevant for the outcome of the students' activity on the discussion forum. Students who did not value their own contribution to a discussion forum as a part of a learning process may not have been motivated to participate in a discussion. The teacher had observed that some discussions lead to knowledge construction, but these were only related to a few students. This coincides with the findings of Soong et al [11] that the students' mindset about learning is a critical factor worth considering in distance education.

## ***Conclusions and further studies***

Due to the limited quantity of students it is not possible to draw any firm conclusions simply based on the empirical material in this study. Nevertheless, supported by previous research, the assumption is that students' attitudes towards knowledge construction and learning processes affect the way they behave on a discussion forum. It can also be established that the study points in the same direction as previous research results regarding prediction of students' learning outcomes, namely that students' behaviour on a discussion forum indicates their learning outcomes at the end of a course.

The conclusions indicates that monitoring the students activities on the LMS can be relevant for the distance teacher when evaluating, planning and developing the teaching methods and the kind of support needed in a web based distance course. Regarding these aspects the distance teacher's role in distance education needs further investigations.

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