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Motivation, Peer Learning and Feedback in Flexible Learning

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Abstract—Based on material from previous classes, three features were examined 1) the respective roles of student-to-student, teacher-to-student and student-to-teacher feedback, 2) the ways in which students collaborated with each other in a peer-learning mode, and 3) the strategies used to enhance the students' extrinsic and intrinsic motivation. The purpose was to study and describe how feedback, peer learning and motivation were manifested in two VLE-based courses at our department, in order to learn how they relate to constructive alignment and how they support flexible learning in diverse student groups, and based on that suggest changes to enhance student learning.

Index Terms—flexible learning, motivation, feedback, peer learning.

I. INTRODUCTION

FLEXIBLE learning is designed to provide learners with increased choice, convenience and personalisation. This is highly compatible with the concept of constructive alignment and its key concept, that students construct meaning from what they do to learn (Biggs, 1999). At the Department of Design Sciences, two courses are given that rely entirely on virtual learning environments (VLEs) (Resta and Laferrière, 2007; Ke and Hoadley, 2009). The courses were used as resources in this study, where we took a closer look at feedback, peer learning and motivation, and their relation to constructive alignment. Based on material from previous classes, we examined 1) the respective roles of student-to-student, teacher-to-student and student-to-teacher feedback, 2) the ways in which students consulted and collaborated with each other in a peer-learning mode, and 3) the strategies used to enhance the students' extrinsic and intrinsic motivation.

The purpose was to study and describe how feedback, peer learning and motivation were manifested in two VLE-based courses at our department, in order to learn how they relate to constructive alignment and how they support flexible learning in diverse student groups, and based on that suggest changes to enhance student learning.

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II. METHOD

The study had two empirical sources: literature studies on the topics of feedback, peer learning and motivation, and analysis of available data from previous classes of the below courses:

1. "Design of Everyday Cognitive Support" (DECS), Spring 2011 and Fall 2011, 10 ECTS, pace 34% - 43%.
2. "Use of Digital Pictures in Healthcare, Schools and Social Services" (UDP), Spring 2011, 7.5 ECTS, pace 25%.

Both courses are elective courses within the department of design sciences at Lund University. All activity in the courses takes place online within a VLE called Moodle. The students in these courses come from all parts of Sweden and are people who work with individuals with cognitive disabilities as teachers, occupational therapists, support workers, personal assistants etc. They can also be relatives to individuals with cognitive disabilities. Most of them work while they are studying and study part time. The courses include assignments where the students can apply what they learn in their work, such as designing cognitive support for an individual with cognitive disability and evaluate the result.

A. Course 1: Design of Everyday Cognitive Support

The studied DECS course took place during spring of 2011 and it also ran during fall of 2011. The course took 20 weeks and there were two teachers: T1 and T2. The course was structured around a number of different themes.

Each theme contained specific literature that the students should read and an assignment that had to be sent in to the teachers. There was also a specific forum associated with each theme and a number of other forums where the students could discuss the literature, design solutions or other topics that they were interested in. All in all there were 15 different forums in the course. Most of the forums were voluntary to post in, with one exception. In the theme "Theories about cognitive design" the students had to describe one artefact that was difficult to use or understand from a cognitive perspective and post their description in a forum called "Hall of shame". They also had to post a description of an artefact that was easy to understand in the "Hall of fame", and then comment on one or two of their fellow students' posts. In a third forum they had to write about some common denominator that they had found between different artefacts that had been described in the "Hall of

fame” and “Hall of shame” forums.

B. Course 2: Use of Digital Pictures in Healthcare, Schools and Social Services

The studied UDP course took place during spring of 2011. The course took 20 weeks and there were two teachers: T2 (the same as in the DECS course) and T3. The course was structured around a number of different themes.

The UDP course differed from the DECS course in that the students did not send in their assignments to the teachers, instead they posted their assignments in a forum that was associated with the specific theme. In this way the students were able to see each other’s work. The course contained a number of different forums, and it was voluntary to post other things than the assignments in the forums and to comment on other people’s posts.

III. LITERATURE REVIEW

A. Feedback

One of the key concepts of constructive alignment is that students construct meaning from what they do to learn (Biggs, 1999). However, taking into account Laurillard’s (2002, p.55) view that “action without feedback is completely unproductive for a learner”, we must pay close attention to the ways in which student action is connected to feedback from both peers and teachers.

Feedback can be described as information provided to an individual to increase performance (Kluger & DeNisi, 1996). In many learning situations, there is a tendency to focus on the feedback that teachers give to their students. However, feedback can also be given by fellow students, by computers, by books and other agents. Furthermore, feedback can target different levels: the task, the processing, the regulatory, and the self levels. (Hattie & Timperley, 2007) Regardless of which level the feedback is directed at, effective feedback must answer three major questions:

Where am I going? How am I going? Where to next? Answering these questions can enhance learning when there is a discrepancy between what is understood and what is aimed to be understood (Hattie & Timperley, 2007).

Apart from insufficient resources to provide feedback, students often have difficulties understanding what their teachers mean (e.g. Weaver, 2006), and they often lack specific advice on how to improve (e.g. Higgins et al, 2001).

Corneli and Mikroyannidis (2011) build their work on a couple of basic axioms about feedback:

1. Feedback doesn't do much good if the agent(s) receiving the feedback can't use it.
2. Giving feedback tends to be an “extra step”, so we should make it useful for people to give feedback (or they won't do it).

B. Feedback as dialogue

We have been inspired by the concept of dialogic feedback cycles (Beaumont, O’Doherty, and Shannon, 2008), where

interpretations are shared, meanings negotiated and expectations clarified in an interactive exchange.

The notion of sustainable feedback (e.g. Hounsell, 2007, and Carless et al, 2011) has also been influential in our work, for example through the use of two-stage assignments to motivate students to engage in peer learning (Boud, 1999) with the teacher as a coach and a facilitator rather than as an authority.

“Feedback is sustainable when it supports students in self-monitoring their own work independently of the tutor” (Carless et al., 2011).

C. Peer learning

Topping (2005) defines peer learning as “the acquisition of knowledge and skill through active helping and supporting among status equals or matched companions” (p.631). Peer learning involves “people from similar social groupings who are not professional teachers helping each other to learn and learning themselves by so doing.” (ibid.)

A key challenge when aiming at peer learning is that peers are not domain experts, as opposed to teachers, which means that the accuracy of peer feedback can vary greatly. Feedback from peers may be partially correct, fully incorrect or misleading (Gielen et al, 2010). Further, since a peer is usually not regarded as a “knowledge authority”, students can be reluctant to accept judgement or advice made by a peer (Gielen et al, 2010). Interestingly, there are some potential benefits following from these considerations. For example, the absence of an obvious “knowledge authority” (e.g., a teacher) implies that students need to be mindful about the accuracy of the feedback they receive, inducing discussions and reflections about the interpretation (Yang et al, 2006). Involving students in the assessment process is also a way to increase the number of assessors and feedback opportunities, increasing the frequency, extent and speed of feedback while keeping teacher workload under control (Gielen et al, 2010).

IV. RESULTS AND DISCUSSION

A. Posting in the forums

Since the studied courses only took place online, the students never met in person, apart from some students who themselves arranged a meeting with other students who lived nearby. The students thus had some flexibility in choosing when, where and how to interact with students and teachers. However, even if all students had the possibility to interact with the other students and the teachers through the forums, there were huge differences between the students regarding how much they took advantage of this opportunity. Of the 44 students in the DECS courses, 13 frequently posted comments in the forums, while the rest did not. The same phenomenon was seen in the UDP course. Most new posts in the course forums were posted by the main teacher, but a few students also started several topics. Many of the topics that were started by the teacher were suggestions about literature and informative web sites, but he also provided the students with a

lot of other information through the forums. In a way, these postings by the teacher may be seen as substitutes for classroom teaching, instead of topics that had to be discussed.

Some students attended both the DECS and the UDP courses, and one such student started an interesting discussion in the DECS course in the spring of 2011. She liked the fact that the students could see each other's texts in the UDP course, and she suggested that it ought to be like that in the DECS course too, so that they could learn from each other. The student stated, that despite the fact that the students were different and worked in different ways, they often seemed to come across the same problems. She concluded: "Sometimes other thought paths are needed to open new possibilities and I think you would get that if you had the opportunity to study each other's texts."

B. Activity in the forums

As we saw a difference between how much the individual students were engaged in the forums, we wanted to learn how that relates to the courses' goals. In the syllabus for both courses it is stated that "*Assessment of student performance is based on the individual assignments submitted throughout the course. The course is process oriented and based more on the student's ability to analyse and take actions on situations and problems and to exchange thoughts and experiences with other students than on the factual information studied. A grade of VG (pass with distinction) will be given to students who demonstrate the ability to analyse and reflect on the knowledge acquired and exhibit independent thinking in relation to the course contents.*"

With that in mind, we were surprised to find that activity in the forums did not correlate with the students' grades. It became obvious that the mentioned analysis and reflection had not necessarily taken place in the course forums, at least not for the students who have passed with distinction, despite minimal participation in the forums. Instead we have to take into account the fact that there were several written assignments in both courses, which the students had to send to the teacher or post in the forums. In these assignments they had to write a text about the topic at hand, and they were also supposed to report their analyses and reflections.

C. Feedback given in the courses

The teachers gave written feedback to the students on each assignment, and this feedback included suggestions about what the students needed to do to improve. This kind of feedback was given to the students individually and was usually not visible in the forums, so although it had the desired qualities (Hattie & Timperley, 2007; Corneli & Mikrovannidis, 2011) it did not benefit the whole group.

In the forums for learning, two forums stand out, in which there was a high amount of feedback between the students. They are the Hall of Fame and Hall of Shame forums in the DECS course, where it was mandatory to comment on the other students' posts. This finding seems to confirm the claim by Corneli and Mikrovannidis (2011) that giving feedback has

to be useful for the students, for them to be willing to take that extra step. That there are many instances of feedback from the students to the teacher may reflect that the teacher T2 introduced many topics in the forums. He may be seen as the discourse guide that Littleton and Whitelock (2005) request, but the sheer amount of forum postings by this teacher could also have had an adverse effect on students who struggled to keep up with the pace of the course, with all its assignments.

V. CONCLUSION

Courses that rely entirely on VLEs have many advantages, in that they can make it possible for students who work and who live in different parts of the country (or world) to attend. They can study when and where it suits them best and they can apply what they learn to their daily lives. The courses that we have studied here have already been formed with constructive alignment in mind. Great effort has been employed to create assignments that lend themselves to analyses and reflection by the students, as well as to solutions that can be of use in the real world.

Students who have taken part in both courses have wished to be able to read their fellow students' assignments also in the DECS course. These assignments include stories that make up great learning opportunities for the students, who get to learn how students with different roles and perspectives than their own view things, so this feature ought to be included in the DECS course.

From the data we have seen that there is a huge variation in the degree to which the students participate in the forums. Most of the interaction in the forums seems to take place in the forums that are not directly related to the course assignments, and to be attended by a minority of the students. From the Hall of Fame and the Hall of Shame forums in the DECS course, we have learned that in order to make most students participate in the forums, the comments on the other students' assignments have to be mandatory. Thus, one suggestion is to create more assignments that lend themselves to be commented in ways that make the students analyse and reflect. These assignments should be closely related to the core concepts and goals for the course. The alignment between course aims, assignments and examination has to be made clear to the student. As part of this, the level of activity in the forums as well as quality of posts and feedback should be weighed in as a factor in the examination.

Many students have wished to see their teachers and fellow students and talk to them, not just write everything down. This can be realized in several ways. Some assignments can be created as group assignments, where the participants can see and talk to each other through Skype or arrange to meet in person if they get to participate with one or two students who live nearby. These assignments could be created as two-step assignments to promote feedback through dialogue. Another way is to plan a couple of Skype meetings (audio) where the students can ask questions and bring up subjects that they find hard to write about.

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