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Establishing a Sense of Community, Interaction, and Knowledge Exchange Among Students

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Abstract

In this chapter, we share experiences from a project at Aalborg University (AAU), in which the authors designed a course using Google+ Communities for the first semester of the Communication and Digital Media programme. The main pedagogical idea was to use Google+ Communities to foster both an academic and social sense of community among the students, through encouraging interaction and knowledge exchange. Studies show that students prefer to use Facebook for academic and social purposes. Consequently, teachers have limited insight into the academic challenges facing students, which is problematic when trying to create and support an academic community. Moreover, it is problematic that the institutional system Moodle primarily is used by the teachers to push information in the direction of the students. Thus, we wanted to design a third space that would fit in-between Facebook and Moodle, and which would allow the students to experience the benefits of participating in an online community with fellow students and teachers. The study shows that teachers are crucial in developing and maintaining the online community. Nevertheless, there was also evidence that some of the online activities encouraged students to interact and exchange knowledge which fostered a sense of community.

Introduction

In this study, we discuss and analyse experiences from a pedagogical research and development project taking place in the first semester of the educational programme Communication and Digital Media (CDM). This programme is in the Faculty of Humanities, in the Department of Communication and Psychology at Aalborg University (AAU). Aalborg University is a relatively young university established in 1974 and it is characterised by being founded on the principles of Problem Oriented Project Work, or what has come to be known as the Aalborg PBL model (Kolmos, Fink, & Krogh, 2004). In brief, this means that each semester students work in groups over 4 months with self-selected problems and produce a project report which accounts for half their ECTS for a semester (15 ECTS). Although, the concrete adoption of the PBL principles and the model vary across different programmes it is a model that underpin all programmes in the university. The research and development project took its point of departure in the learning activities related to a 5-ECTS course introducing students to Problem Based Learning as it is practiced in AAU and in the CDM programme, but also extended beyond the particular course. In the project, we used the Google+ Communities (henceforth Google+) to design an online learning environment supporting and extending the classroom based teaching and learning activities. Thus, the chapter introduces to and reflects on a concrete implementation of social media (or web 2.0 technologies) in a PBL environment within Higher Education.

The overarching aim of the project that we discuss and analyse in this chapter was two-fold. For one thing to employ social media (or web 2.0 technologies) to create a stronger collective learning environment amongst the first semester students and to encourage them to see each other as valuable resources for learning at a semester level. While the students in AAU work collaboratively in smaller groups, our aim was to help them establish a stronger sense of community, and increase interactions and knowledge exchange at a semester level i.e. to become learning partners at the scale of the semester and not only in the individual groups. Secondly, to support the students in gaining concrete first-hand experiences with academic practice and the PBL-principles to get them ‘under their skin’. The latter were part of the learning goals for the introductory course, and are not the focal point of attention of this chapter i.e. whether students successfully developed these PBL- related competences. As such, the PBL introductory course acted as a stepping stone to develop a semester-wide learning environment or scholarly community aimed at creating a stronger sense of

community, establish interactions and promote knowledge exchange among the students. That is: to develop a scholarly, subject related feeling of community among the students.

A sense of community we understand as the basic idea that students feel that they belong to a community i.e. that they are together in being 'first semester students in the CDM programme', and that they can benefit and learn from each other. Interactions are the ongoing communicative activities that are required to maintaining the experience of being a community; having a joint enterprise. Knowledge exchange we understand as a type of communication where the interactions include a scholarly or subject related dimension and extends beyond purely informal and informal interaction.

In this chapter, we initially describe the context of the pedagogical development project and its impact on the design of the environment and activities on Google+. We present the rationale and reason for choosing the Google+ environment and then the pedagogical design of the environment, the learning activities, as well as the lecturers' roles. Following this we analyse the students' experiences of the environment and the activities. This analysis is based on a survey, two focus group interviews and data from Google+. Finally, we discuss the potentials and challenges of facilitating such online communities and learning environments in Higher Education.

The PBL Principles and the Introductory Course in the CDM programme

The development project is anchored in an already existing course on Problem Based Learning at 1. Semester, CDM. A programme and course that 85 regular on-campus students enrolled in in 2015. The purpose of the course is to introduce the students to PBL as it is practiced at Aalborg. The course consists of 12 lectures and introduces the students to PBL, problem formulation, group dynamics, project management etc. The faculties and programmes introduce to PBL in different ways, but most programmes in AAU are based on the following principles (Askehave, Linnemann Prehn, Pedersen, & Thorsø Pedersen, n.d):

- The problem as point of departure
- Projects organised in groups
- The project is supported by courses
- Collaboration – groups, supervisor, external partners
- Exemplarity
- Student Responsibility for learning

These principles underpin how PBL is practiced at AAU (although with some variance across the different programmes). In practice, this means that students each semester: work in groups; define their own real-world, societally relevant problems to address (often with external stakeholders); engage in long-term collaboration (3-4 months) where they - together with a supervisor - choose relevant theories and methods; carry out empirical and theoretical studies; analyse and discuss empirical data and/or theories to address their problem. The 'solution' to the problem is disseminated in a final project report that accounts for (typically) half of the students' credit for a semester (15 ECTS). Thus, it is a pedagogical model, which is heavily participant-driven, collaborative and problem-oriented and is profoundly inspired by the work in critical pedagogy (e.g. Paolo Freire and Oscar Negt). The model operates at a programme and semester level, rather than being confined to an individual course. This means that the model is implemented at a systemic level where it pervades the organisation of the entire curriculum of an educational programme. This affects the design of relations between courses and project work within a semester, as well as the physical architecture of the university. For example, students should - ideally - have their own group room. In addition, the model is applied as a university wide pedagogy, rather than being confined to particular programmes, such as medicine or engineering, where ideas of Problem Based Learning have traditionally been more pronounced than in other disciplines.

To support the students in understanding the underpinning principles and how to do group work in practice many programmes use so-called P0-projects (P-zero) on 1. Semester. In the P0-projects, the students work in pre-defined groups and with a problem or case defined by the lecturers. This is also done in the CDM programme and in this way, the students get to practice problem oriented project work and collaborating with a supervisor. Later in the semester the students will work with their real semester project (often named P1-project) where they form their own groups, and decide on a self-selected problem to work with (within the thematic frame of the particular semester).

Apart from the P0-project the students at CDM are also enrolled in a 5 ECTS course on PBL (as well as two other 5 ECTS courses). This course functions as the platform and point of departure for the problem oriented project work throughout their Bachelor and Master education. It is this PBL course that we have re-designed and supplemented with activities in Google+. The purpose was two-fold. More specifically in relation to the PBL course our aim was to support

the students in gaining concrete first-hand experiences with academic practice and the PBL-principles to get them 'under their skin'. More broadly, our aim was to create a sense of community, interaction, and knowledge exchange amongst the students and between the students and the lecturers that extends beyond the boundaries of the PBL course. This is based on our experiences with project groups. Often project groups become quite self-contained as the semester progresses and the project work commences (Dirckinck-Holmfeld, 2016; Ryberg & Wentzer, 2011). This is the case even though the groups often work with very similar issues and problems. Furthermore, in a recent study it has become clear that the new students in CDM live a very nomadic life (Ryberg, Davidsen, & Hodgson, 2016). By this we mean that they have no permanent group space or room and as such they experience less opportunities for informal sharing with the other students; and such informal sharing can be valuable. For example, Hommes et al. (2012) studied three social networks amongst first-year medical students in Maastricht University, and through statistical analysis of the social interaction amongst groups, they found that interaction within and outside the institutional boundaries has a great impact on the students' learning outcomes. Further, Rienties, Carbonell, Alcott and Willis, (2012) point out that knowledge exchange over time alternates between being internal to the groups as well as external exchange with other groups. This is one of the important reasons to experiment with digital technologies in the early semesters to support and encourage a stronger sense of community, interaction, and knowledge exchange. Our intention with the pedagogical development project was that this could potentially promote a stronger culture and practice of sharing and collaborating beyond the individual group.

ICT in the CDM Programme – For Courses and Project Work

AAU uses the Learning Management System (LMS) Moodle for course administration and to support the running of courses. The majority of courses in AAU are held as face-to-face courses, as most programmes are designed for full-time, on-campus students. This means that Moodle is used to supplement the lectures and other learning activities. In Moodle lecturers can put up descriptions of their modules, add literature, create forums, establish wikis, do quizzes etc. However, in practice there is often little interaction between students and lecturers through the LMS. While the CDM programme has employed Moodle for the past seven years to administrate and run courses it functions mostly as a repository for slides and for basic messaging from lecturers to students (Bygholm & Nyvang, 2013). Although the Moodle system in its core design is fundamentally based on a 'dialogical and interactive pedagogy' it seems that in the CDM programme (and more broadly within AAU) it is more often employed as an information system i.e. students get messages about the course, can see a list of readings, and slides will be uploaded. This seems a more common problem with institutional LMSs, and although they were designed and adopted to support collaboration and student centred learning, many critics now see the LMSs as retrograde systems that are enforcing a traditional 'pedagogy of transmission' model (Dirckinck-Holmfeld & Jones, 2009).

While the average use of the LMS within the CDM programme, is perhaps less pedagogically innovative than what might have been hoped for, it is also an educational programme that has been characterised by numerous creative experiments with ICT and learning over the years. Lecturers' in the CDM programme have previously experimented with establishing online communities with social media/web 2.0 technologies e.g. by using the platforms Elgg og Mahara (Ryberg et al., 2010; Ryberg & Wentzer, 2011). These were meant to support students': work in groups; work with portfolios; and in developing a professional and academic identity, and as we shall return to, these previous experiences have been helpful in developing the design for the current project.

Whereas Moodle is the official system available for course activities, there is not a specific system in place to support the students' group and project work in AAU. While Mahara was envisioned as a candidate to support the project work it lives a bit of secluded life, and it is not internally promoted by the IT-services department or adopted by the students. Therefore, the students often put together and compose their own solutions to support the group work, and particularly Facebook is used for communication and coordination in project groups, as well as for internal communication amongst student' in a semester (Ryberg et al., 2016; Thomsen, Sørensen, & Ryberg, 2016). Furthermore, the students combine their use of Facebook, with other popular and mainstream platforms such as Google Docs/Drive/Calendar, Dropbox and Skype to support coordination and collaboration (Khalid, Rongbutsri, & Buus, 2012; Rongbutsri, Khalid, & Ryberg, 2011; Thomsen et al., 2016). The new students at CDM also go through a small course developed by 5th semester students within the same programme. The purpose of this small course is for the 5th semester students to introduce the new 1st semester students to study-relevant digital technologies (Konnerup & Dirckinck-Holmfeld, 2016) and here they introduce the new students to e.g. Dropbox, Google Drive/Docs/Calendar, but also more specialised and academic types of software such as Mendeley or Zotero (which are used for managing academic references).

Social Media in Higher Education and Our Reasons for Choosing Google+

Since the vast majority of students, and probably most lecturers, use Facebook one could critically ask why we chose to use Google+ rather than Facebook. It is quite common amongst students in Higher Education to use Facebook as part of their studies and study life – for example for internal communication between students in a semester (Madge, Meek, Wellens, & Hooley, 2009), and even in upper secondary schools, students form self-directed Facebook groups where they communicate, support and help each other e.g. with homework (Aaen & Dalsgaard, 2016). Cuesta et al. (2016) have experimented with using Facebook to build online learning communities, to help students understand academic practice, and to create study groups guided by a tutor (Cuesta, Eklund, Rydin & Witt, 2016). The authors argue that this shows positive results in relation to students (n=24) understanding of academic practice and that the tutors have an important role in creating and maintaining and open and supporting atmosphere. Madge et al. (2009) also report positive impact of students use of Facebook, but equally that lecturers should be careful in mixing the students' informal spaces with formal learning activities. Furthermore, according to (Thoms, 2016) the use of more recognisable systems, such as Twitter, Facebooks and Google Drive offer better opportunities to support online communities of practice, knowledge construction and learning compared to institutional systems.

In general, however, there seems to be mixed experiences with employing Facebook (and social media more generally) in Higher Education for educational or course related purposes from both students' and lecturers' perspectives. In their review of 23 studies, Manca & Ranieri (2013) highlight that students are not always comfortable mixing the formal and informal spaces. Nicolajsen (2014) argued that such a mix could generate 'noise' in the students' informal spaces, but also that, specifically in relation to Facebook, this can mean that the combination of social connections and algorithmic processing influences who sees what from whom (Nicolajsen, 2014; Nicolajsen & Ryberg, 2014). In saying so, we are not suggesting that Facebook is unfit for educational purposes, as the discomfort or tensions reported e.g. by Manca and Ranieri (2013) are not limited to Facebook. They highlight more generally the clashes that can emerge when bringing social media into classroom settings. For example, Dohn (2009) suggests tensions can arise when adopting the underlying participatory, communal and informal rationale of web 2.0 technologies into educational settings where power relations are asymmetrical and students are assessed based on a rationale of whether they have individually acquired sufficient knowledge and competence. She argues that what counts as a relevant and meaningful contributions to e.g. a Wiki can differ whether it is made as part of an educational assignment or as part of contributing to the ongoing knowledge development in an informal community. This was also reported as part of Nicolajsen's (2014) experiment where students were asked to post and discuss academic issues in a blog format, but where the discussions did not initially develop, as the students were uncertain about what they were supposed to do. While they knew of blogs and academic assignments respectively, they were not sure of the 'genre' and the demands, when they had to post and comment for academic purposes. The same reluctance and tensions we experienced in our own practice, when we experimented with Elgg and Mahara in the CDM programme in the years 2007-2010 (Ryberg et al., 2010; Ryberg & Wentzer, 2011). Our intentions at that time were similar to the present project, but we experienced some challenges in the various implementation cycles. In the initial phases, our aim was to let the students be the main initiators of the interactions and activities in the system (Elgg and Mahara), as we felt this approach was in alignment with a more user-driven and participatory web 2.0 mindset. Thus, we encouraged students to network, blog and comment on each other's postings, but we did not enforce this through making assignments required or assess their work. This resulted in very little interaction and only a minority of the students posting any reflections, let alone interacting with other students. Contrary to our intended mindset of a student or participant driven community of interest the students in the evaluations sought for more teacher presence and teacher initiated activities (Ryberg et al., 2010). In a later implementation, we did require students to post reflexive blog posts as part of a course, which were meant also to be *potentially* shared with other students. However, students found the Mahara system difficult and confusing, and they could not establish an overview of the postings that were made or how to share their own posts with others (nor did we explicitly require them to do so although we encouraged it). In turn, this led our implementation and design of Mahara to become a somewhat difficult place for students to upload individual assignments – something they could have done more easily in Moodle (Ryberg & Wentzer, 2011).

This leads to another question of why we did not implement our design in Moodle, rather than establishing a new environment. While recently LMSs have been portrayed as retrograde technologies that enforce a transmission pedagogy (Dirckinck-Holmfeld & Jones, 2009), it should be noted that it is equally possible to use Moodle or other institutional learning management to design both interactive and innovative courses. Prior to and after the advent of web 2.0 technologies LMSs such as Moodle (and less advanced technologies) have been employed to design pedagogically innovative courses and programmes (Buus, 2016; McConnell, Hodgson, & Dirckinck-Holmfeld, 2012). For example, in the fully online master's programme for professionals 'Master in ICT and Learning' (an online programme run in collaboration between four Danish Universities in Moodle and previously FirstClass) there are vivid, interactive forum

discussions and a strong sense of community among students (Dirckinck-Holmfeld, 2010). There are evidently multiple functions in Moodle to support knowledge construction and interaction. However, interface- and architecture-wise there are some advantages to Google+ (and similar social media). For example, Google+ resembles a flat whiteboard where students quickly can post text and multimodal content. In Moodle, such interactions require more steps (finding the course room, browse blocks, getting into the right forum, finding a thread etc.) and posting a video or a picture and having other's comment is a more cumbersome task than what Google+ offers (also our Moodle does not support 'likes' or '+1s' for posts).

It was with these considerations in mind, that we settled with the Google+ environment. With the design and use of Google+ we wished to create a third space in-between students informal use of social media for communication and coordination and then the programme's formal use of the LMS. We were fully aware that during the experiment students would also be using their semester Facebook group for communication and coordination, and we did not intend the Google+ group to substitute Facebook as the informal communication forum for the students (and based on previous experiences we would not have been successful in such an endeavour). Rather, the Google+ environment was intended to be an in-between space where we could develop a scholarly and subject related community between the students, and between the students and the lecturers. An environment that would also develop beyond the more transmission oriented or informational role the use of Moodle has developed into in the CDM programme (module descriptions, readings, messages to students and uploading of slides). These findings and considerations, as briefly summarised above, lead us to argue that while the environment is an important affordance for the interaction, it is equally important to have a strong pedagogical design rationale, where the role of the lecturers is clear and that the lecturers are instrumental in scaffolding and supporting the activities in the community, as we shall return to in outlining the pedagogical design of the Google+ environment.

Google+ in Brief

Google+ Communities is a free, web based online platform. Apart from the web version there are also applications for smart phones and tablets. The individual community can be made private so that only invited users can participate. Users can create traditional text-postings, but they can also create posts with videos, pictures, and polls. Furthermore, users can easily share documents from Google Docs in Google+. Thus, the system offers multimodal communication forms providing more ways for the individual user to express their thoughts, ideas, and feelings. Google+ has a "+1" button that functions similar to the "Like" button known for instance from Facebook. While this supports an affective and informal, everyday communication it is also a way to signal presence and a sense of community in the online community. In contrast to 'classic' threaded forums (as in Moodle) all post are gathered in a common 'flat' stream similar to a pinboard with new messages on the top. This stream can quickly become chaotic and confusing as the number of posts increase, but messages can be grouped in categories and one can further use hashtags (#) to help sort the posts.

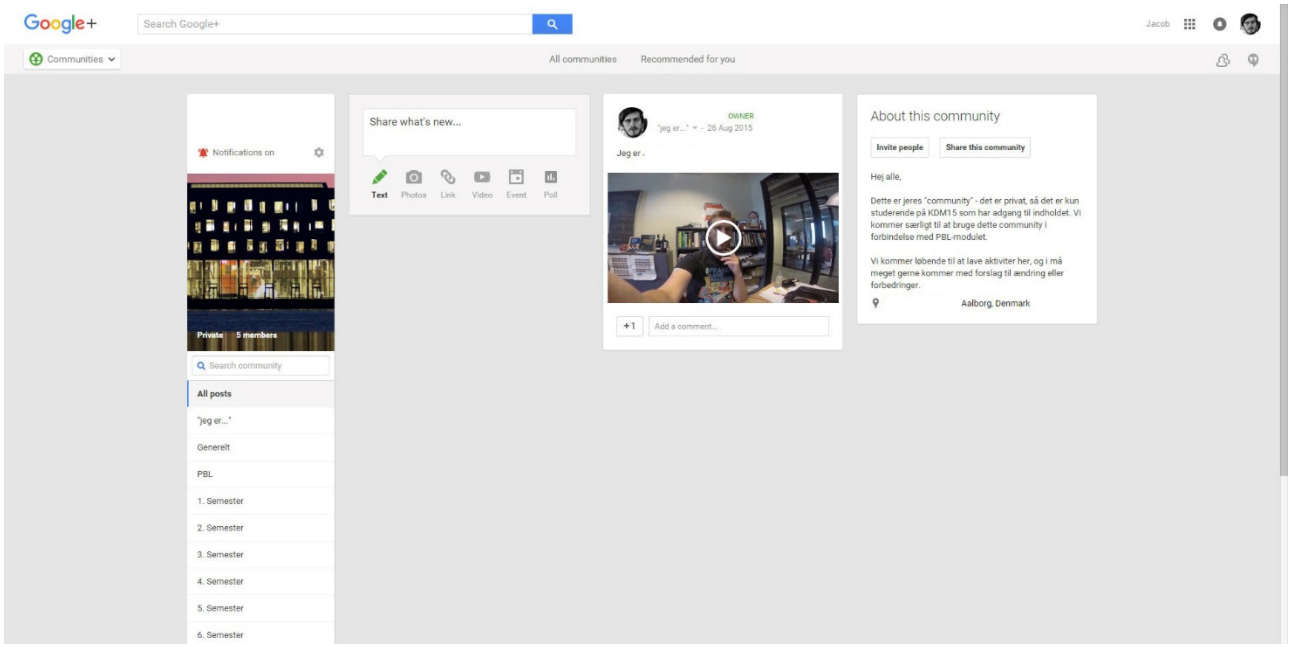

Figure 1. Screenshot of Google+.

We had initially planned that each group should have their own 'room', in the form of a category. However, Google+ only supports 20 categories so instead we decided that groups should use hashtags for handing in their assignments (e.g. with a group number #P0-1 and the title of the assignment #collaborationVScooperation). In this way students could retrieve their posts later in the semester. The final design of Google+ in terms of categories became quite simple with categories for:

- Each semester (to show the possibly extension over several semesters)
- Video presentations
- Messages from the lecturers
- The PBL course
- Assignments
- Sharing of tools and resources
- The students' council (established later in the semester)

To support the creation of a sense of community, interaction and knowledge exchange we decided that all the assignments (that were all made in groups) should be shared and be available to all students in the semester, so others could read and comment. Creating assignments that are open to other students come with advantages as well as challenges. On the one hand, students can feel anxious and nervous about publishing their work for other students to inspect. On the other hand, it can be very motivating that others, beside the lecturers read their work. In many of the assignments they used diagrams and templates from the main text book in the PBL course (Holgaard, Ryberg, Stegeager, Stentoft, & Thomassen, 2014) for example on problem analysis and negotiation of expectations in the group, so that they would have very similar points of departure for the assignments.

Pedagogical and Communicative Design of the Google+ Environment

One of the overarching aims of our pedagogical design was to create a series of activities and assignments that would: 1) position students as active contributors to a scholarly community 2) make students more aware that they are valuable resources to each other – also across the project groups. The Google+ environment and activities did not appear in a vacuum, rather they were linked to the existing face-to-face lectures, assignments and workshops. As such the Google+ environment was a form of hybrid teaching and learning environment that we sought to establish together with the

students, and through combining exercises in the lecture room with activities in Google+. In the early research on PBL Illeris (1974, p, 121) argued that:

> "Learning happens (...) through an ongoing interplay between the individual and its surroundings, and the nature of these surrounding – physical as well as social – thus become crucial to the opportunities for learning"

We sought to realise this principle by creating a routine and practice where it became natural for the students to share and show each other their notes, texts, assignments and exercises across the project groups in the semester. The goal was that the students would develop an understanding that they can learn together and find inspiration in each other's work. This is what we have aimed to promote and support through our focus on a sense of community, interaction and knowledge exchange. These concepts are inspired by Wenger's (1998) theory on Communities of Practice (CoP), where 'sense of community' resembles what Wenger terms 'joint enterprise', interaction is similar to 'mutual engagement' and knowledge exchange can be likened to 'shared repertoire' without the concepts being identical. We understand a sense of community as a foundation stone in the semester community where students are, or become, aware of each other as members and participants. While this might sound banal there is no guarantee that a community will exist or develop amongst the students. Students could come to the lectures and work in groups without having a sense of community at the level of the semester cohort. Therefore, our aim was that students should gain experiences with how the cohort could function as a context for both their individual, as well as group based activities. The sense of community should be supported and developed through ongoing interaction covering everything from questions and comments on Google+ between the students, and between the students and the lecturers. Such interaction entails purely social, affective communication, which is an important part of creating and sustaining the sense of community, but also encompasses interaction around exercises, resources, and subject related questions. The ultimate goal was that students began to find value in each other's work, challenge each other and share relevant resources to create a shared pool of knowledge. This, however, requires that a basic social community is established where people trust other members and are comfortable in sharing their work (Salmon, 2002).

With the introduction of Google+ as a part of the learning environment the role of both the students and the lecturers change. Whereas the lecture room is usually structured as one-way communication from lecturer to students we aimed to structure the students' participation in the Google+ environment differently. We wished for them to become active members and contributors to a scholarly community rather than being passive receivers of information. Based on the previous experiences with Elgg and Mahara (Ryberg & Wentzer, 2011) we designed a series of required assignments, as our previous experiments showed that voluntary assignments did not generate sufficient interaction and development of community. Therefore, to cultivate and facilitate a sense of community, interaction, and knowledge exchange we designed both mandatory assignments, small exercises related to the lectures, as well as some smaller informal activities that were not mandatory – all were to be uploaded to Google+:

- Personal introduction in the form of a 15 seconds' video.
- Small group assignments in relation to the lectures e.g. "write half a page describing the differences between cooperation and collaboration and find pictures that represent each of them".
- Five group assignments with point of departure in themes from the course. These were mandatory assignments that would later be assessed.
- Small polls – e.g. what kind of upper secondary education do you come from.

As lecturers, we also produced small video presentations to frame the expectancy of the format of the video production. Some students produced very advanced and creative short films, whereas others produced more basic video introductions e.g. just talking to their laptop cam, which was also the format we as lecturers had adopted. This was the only individual assignment, but some students did the videos together. Subsequent exercises and assignments had to be made in the project groups. To the extent possible we commented on the students' post or asked further questions. The students also commented on each other's posts and assignments, but we did not come to a stage where students on a regular basis would do this or where spontaneous dialogues would emerge around particular assignments or topics.

Analysis – the Students' Experiences with Google+

The analysis is based on a survey (which 55 out of 72 students answered), two focus group interviews with four and five students respectively. Also, all the interactions are stored in the Google+ community and we have re-accessed this as part of the analysis. We have structured the analysis around three themes: Frequency of Google+ visits, relations between Moodle, Google+ og Facebook, and finally inspiration and knowledge exchange amongst the students in Google+. This

leads us into discussions of the potentials and challenges of using Google+ (or similar platforms) to facilitate a sense of community, interaction and knowledge exchange.

Frequency of visits

In the survey, we asked the students to state how often they visited the Google+ community. While we could retrieve some activity reports for Google+ via a plugin (CommunityMeter) the reports were not very detailed, and we could not see number of visitors, but only number of posts. Even though self-reporting is less accurate than actual log data, they give a hint of the students' experiences of how often they visited the community. From the survey, we could see that frequency of visits varied from 'several times a day' (13%), 'once a day' (33%), 'a number of times pr. week' (45%) and 'a few times since they started at university' (9%) (Diagram 1). Thus, the majority report that they visited the online community a couple of times pr. week. This indicates that the students did find the online community relevant for their study, but says very little about their interaction with the lecturers or each other.

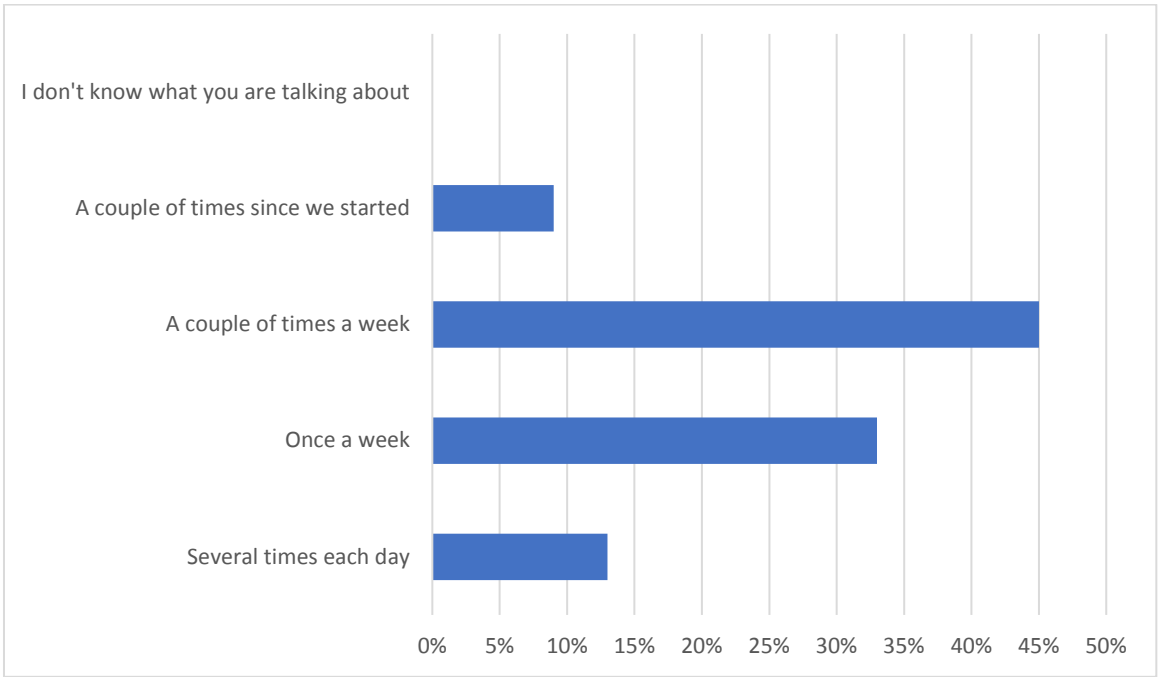

Diagram 1 – How often have you visited Google +?

Based on the statistics from the Google+ plugin we could further see that students' activities (postings and +1s) fluctuated but became particularly pronounced around set course activities (handing in of assignments or exercises). Thus, we can see that students' activity in the Google+ environment seems to be closely aligned with the activities initiated by the lecturers, whereas there was less spontaneous, public and subject related interaction. Although we encouraged students to ask questions in the public, many still wrote private messages to the lecturers, rather than putting them out in the open. Often, we chose to answer the question in public to encourage others to share their questions. However, in doing so we kept the students asking the question anonymous, and just answered in the general form 'Someone brought up a good question'.

The Relationship Between Moodle, Google+ and Facebook

From the perspective of the CDM programme and the lecturers, the students are expected to use Moodle, and for this particular experiment also Google+. However, it is also clear that students use Facebook, Google Drive and Dropbox on their own accord. In the survey, we therefore asked students to indicate which environments were the most important study and subject-wise (Diagram 2).

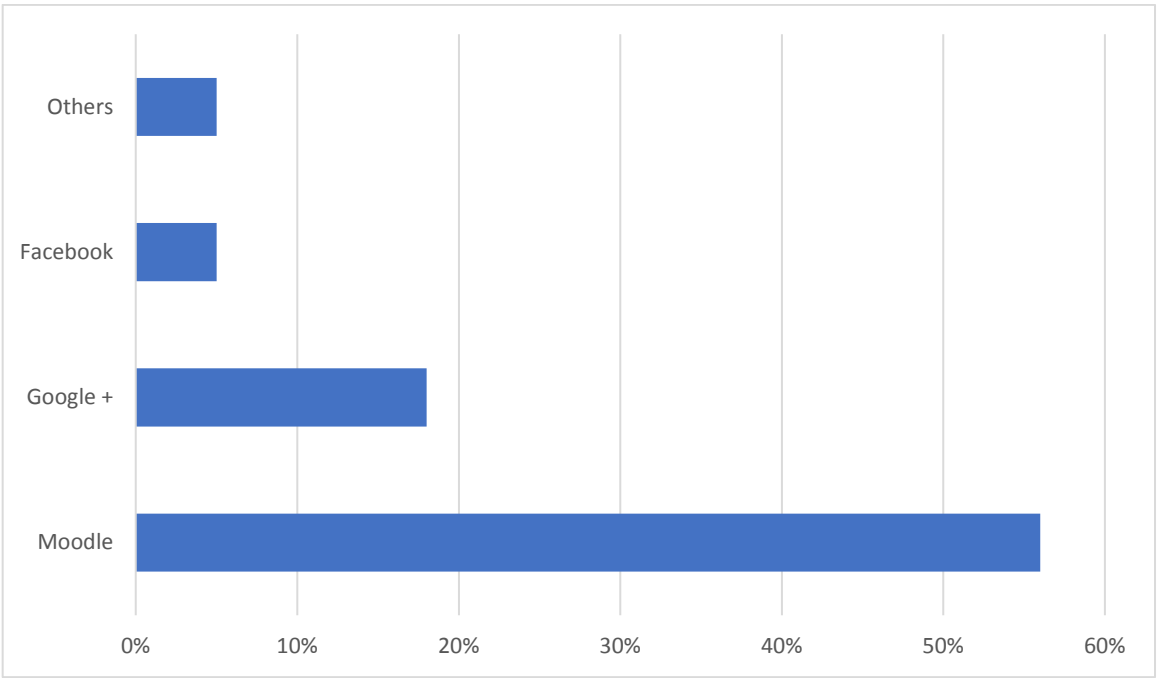

Diagram 2 – What community has had the most academic impact at the semester?

It is in many ways positive to see that 56% of the students indicate that Moodle is the most important system study-wise/subject-related, followed by Google+ at 33% (Diagram 2). Finally, 10% of the students indicate that 'Facebook' or 'other services' were most important. However, even though the numbers seem to ascribe Moodle an important role, the relations between the technologies are explained somewhat differently by the students during the focus group interviews. During the interviews, several of the students rank the technologies in the following way: 1. Facebook, 2. Google+ og 3. Moodle, as illustrated in a drawing from one of the interviews (Figure 2).

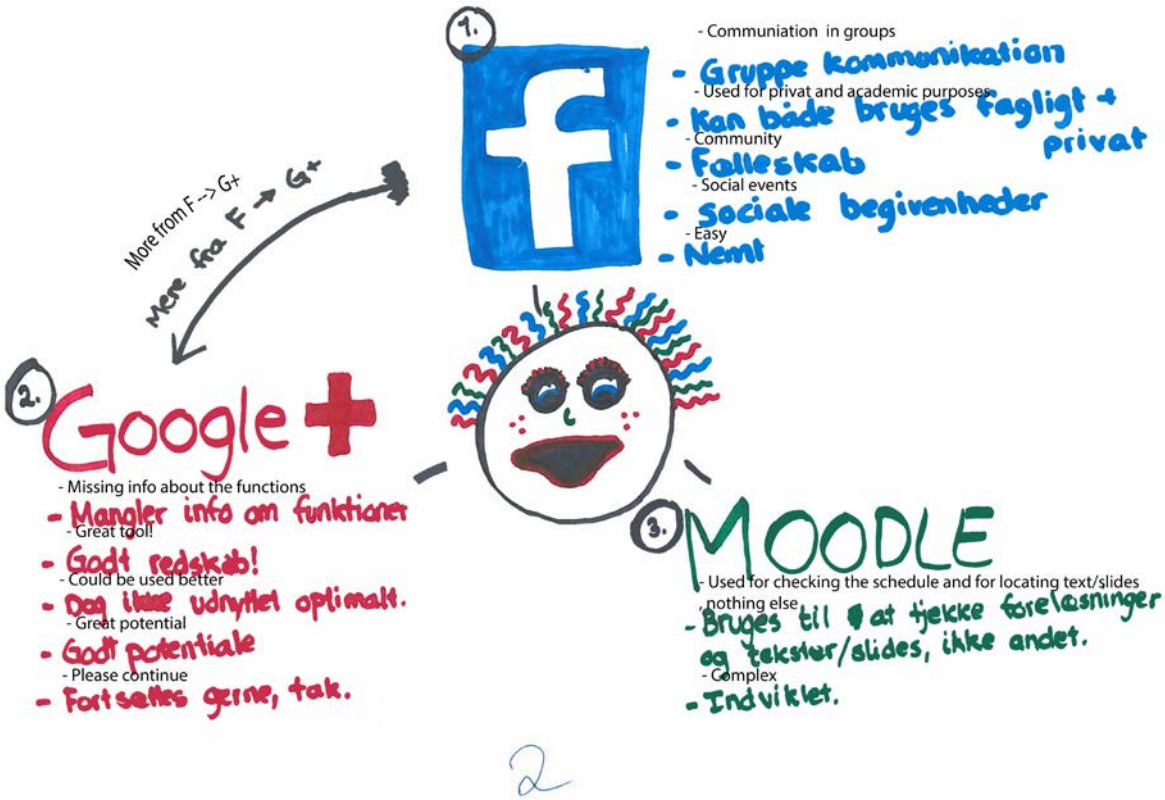

Figure 2 – Student drawing of the relationship between Moodle, Facebok and Google +

Even though the students indicate that Moodle is the most important study-wise/subject-related, Moodle is described as 'complicated' and mainly used for: 'Checking lectures and texts/slides, nothing else', whereas Google+ and Facebook to a higher degree seem to support community and interaction from the students' perspectives. This pattern was also visible from another study of 5th semester students in the same programme. In this study, Moodle came across as 'a necessary evil', and something that students had to attend to rather than something they wanted to attend to (Thomsen et al., 2016). There is an interesting tension here between what the students highlight as valuable 'subject and study-wise' and what systems they benefit most from or prefer. If we understand learning as emerging from social interaction and dialogue, then in principle, the systems better supporting interaction and exchange from a student's perspective, such as Facebook and Google+ should be held in higher regard. However, as suggested by Manca and Ranieri (2013) students are often conservative in their understanding of education:

> "In a way, it seems that most students have a rather traditional vision of schooling. Their implicit pedagogies still make precise distinctions between spaces and time of learning and spaces and time for socialization and entertainment. These traditional visions of schooling and formal education tend to separate 'life' from 'studying' and 'home' from 'lectures', and students' use of Facebook consequently 'appeared to be (un)consciously replicating and reinforcing roles developed in their previous phases'" (Manca & Ranieri, 2013, p. 495)

This, they argue, also often lead students to desire more controlled and instructor led environments, and we shall return to these tensions in the final discussion.

The drawing in Figure 2 further illustrates that Google+ holds a potential, but that Facebook to an even higher degree support students' sense of community, particularly regarding the social aspects. In the focus groups one of the students express that perhaps a more thorough introduction to Google+ could have changed the use of the technology:

> "I think it would have helped quite a lot if we had had a small course in the beginning to become better in using this Google+ thing. For example I had difficulties navigation. It was a bit confusing, how it worked" (Student 5, Focus group 2)

Even though the current generation of students are often portrayed as 'digital natives' both in existing research and our own experiences suggest that there is a need for introductions to new platforms and a sustained scaffolding of the use, as many students are not necessarily very adept in using un-familiar technologies (Heilesen & Davidsen, 2016; Ryberg & Wentzer, 2011). Whereas we thought we had provided sufficient introduction and ongoing support some students, as the quote suggests, did feel the platform was confusing and difficult.

Interestingly, the introduction video activity that was intended as a small 'fun' ice-breaker activity was not received positively by all students. Some expressed concerns with doing the activity and did not seem too keen to 'put themselves online'. Considering the popularity of Facebook, Instagram and Snapchat this could seem somewhat puzzling, but it should remind us that study life (and particularly the first semester) is a socially sensitive situation where students have a lot at stake. That we as lecturers or institutions incorporate technologies that are the same or mimic what students use for social and informal purposes does not mean that the educational context suddenly becomes an informal and social space where students have less at stake. In fact, we did take this into consideration in designing the activity and if there were students who were uncomfortable with the video introduction, we did not chase them down or force them to do it. In the end 53 videos were uploaded (several with more than one student) and it resulted in many funny and well produced videos. Also, as videos started to emerge within Google+ reservations and concerns from other students also seemed to diminish.

Inspiration and Knowledge Exchange Amongst the Students

In the survey, we were particularly interested in understanding how much the students had accessed and was inspired by reading other groups' assignments. We therefore asked to which degree other group's assignments had inspired them or triggered reflections (Diagram 3).

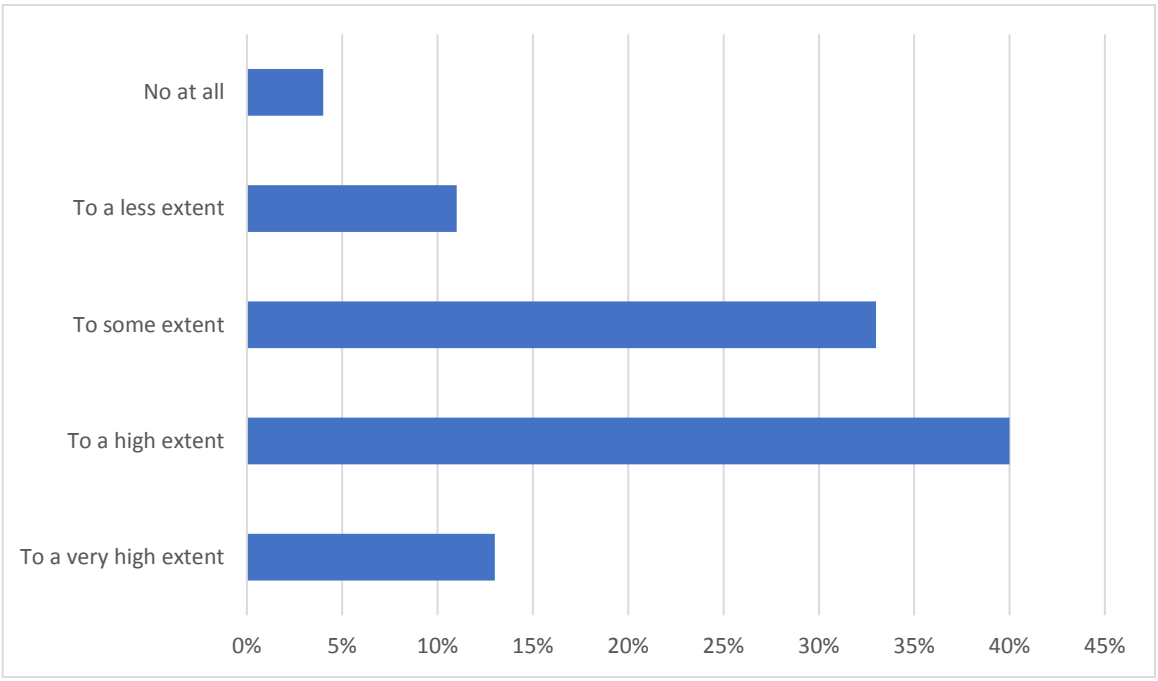

Diagram 3 – To what extent have the assignments shared by other groups led to inspiration and reflection on your own work?

It is quite positive that, for a majority of the students, reading other groups' work resulted in inspiration and reflections (53%) to a very high or to a high degree, and (33%) to some degree had been inspired by or had reflected on their own assignment when reading the work of other groups. This suggests that the publicly available assignments did have an impact on the individual group's work. In the interview one of the students explain how they used other groups' assignments:

> "We did it in a way where we finished our own, and then we looked at the other's (*authors: assignments*) to see if it was the same we arrived at, or like do we agree and then discussed it. Why do we do it? Why do they do it? It has been a good way just having something to compare with, and then as a point for further discussion" (Student 3, focus group interview 1)

So, some of the students have used other groups' assignments as a stepping stone for further reflection and discussion of their own work, and in general they seem to have been inspired by each other's work (but we do not know, to the level of detail described above, how they all worked with the assignments, as not all the students were part of the interviews).

We also queried into how other groups' activities had impacted on their own activities in Google+. In relation to this (16%) state that they to a very high and (42%) to a high degree have been influenced by other groups' level of activity (e.g. questions and posts). Also (31%) report being impacted to some degree and (9%) to a lesser degree. Finally, (2%) indicated that other groups' activities had no impact on them (Diagram 4).

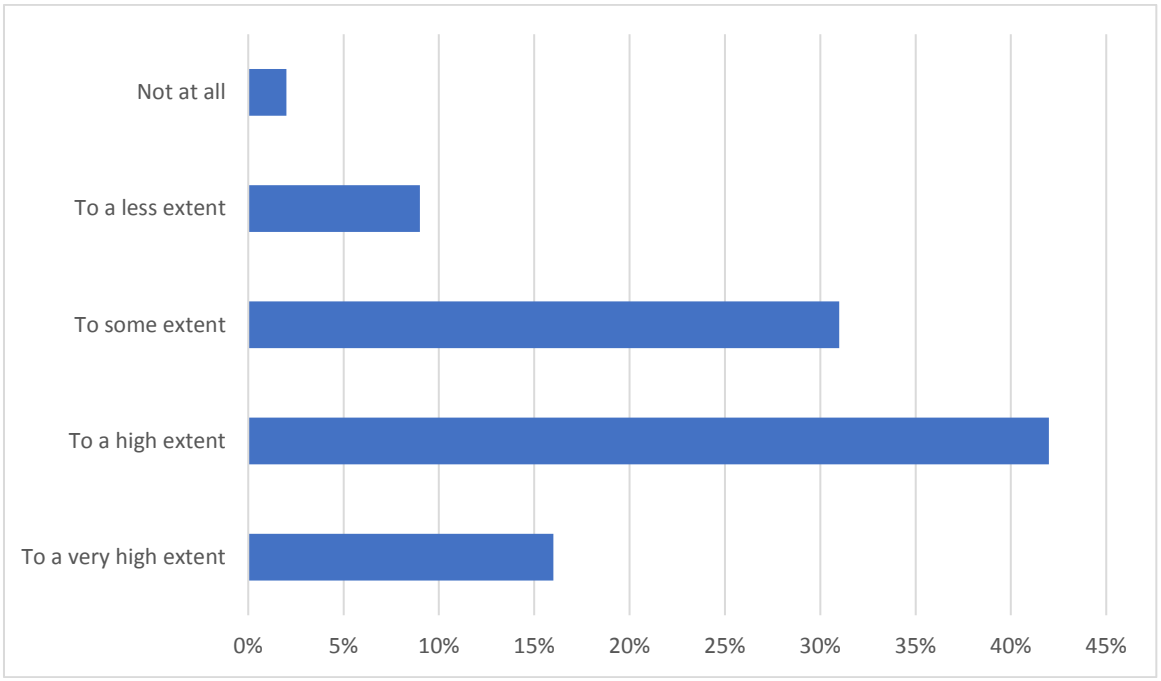

Diagram 4 – To what extent have posts or questions from other groups influenced your groups activity on Google +?

Even though these numbers seem to suggest a relatively positive attitude towards the open sharing of the assignments, the following narrative from one of the students also suggest a certain initial ambivalence towards the open sharing of assignments; an attitude, however, that changed over time:

> "Why should I put it out there, if then nobody uses it or maybe give negative feedback. It depends a bit on how one wants to use it, I think. But I have used it a lot. I have read quite a lot of what the others wrote. I think that is one of the major changes by being here (authors: in the CDM programme) compared to what I have tried previously. It is that you are more willing to share." (Student 4, focus group 2)

This student seemed to have changed his attitude to the open sharing over the course of the experiment. From an initial skepticism towards an increased openness and willingness to share. Another student points out an alternative positive aspect of the open sharing, namely that:

> "[…] you don't just sit in your own bubble with a Word document" (Student 2, Focus Group 1)

These quotes indicate that students may have changed their attitude towards sharing and being part of an online scholarly community through participation in the Google+ group – and in general the numbers from the survey suggest a positive impact in terms of becoming inspired and reflect on the work of others in relation to groups' own work. However, what is difficult for us to establish is whether this behaviour has carried over into their wider project work i.e. have the semester cohort at large developed a stronger affinity for sharing amongst each other, and amongst the project groups.

Discussion and Conclusion

The purpose of this pedagogical experiment and development project was to create a stronger collective awareness amongst the students that they can and should be important resources for each other. Even though there is a strong focus on collaboration within the project groups at AAU, our aim was to create a more supporting community at the level of the semester cohort i.e. that students would create stronger ties and potentially develop a stronger knowledge exchange culture within the entire cohort. Further, the aim was to establish a common scholarly space between the students and the lecturers. This we wished to do by designing a third space in-between the formal Moodle environment and the informal semester groups that students establish on their own on Facebook. A space that should help build a sense of community, interaction and knowledge exchange.

The experiment does indicate that it is possible to create a third space that can support the three pedagogical goals. From the survey and the analysis of Google+ participation we can see that the students have been relatively engaged and

active in the Google+ community. In interviews and posts it is also highlighted as an environment the students would like to keep. It is, in our view, a very positive finding that the students found inspiration in each other's work. This was not manifest throughout the course of the experiment, as they seldom commented directly on each other's posts and work (which is something we plan to strengthen in the future by adding peer-commenting and discussion into the pedagogical activities).

Thus, we believe that we have to some degree succeeded in creating a third space for a scholarly exchange and a space that exists between the formal, institutional LMS and the informal, self-driven Facebook groups initiated by the students. However, while students seem to be positive towards the sharing and can find inspiration in each other's work, it is, as mentioned in the previous section, difficult for us to establish whether this behaviour has carried over e.g. into the students' project work. Are they more amenable than previous cohorts to share, and do they continue this behaviour in spaces that are not regulated by us, and where sharing is not required? In the present project, we have been unable to track or attempt to follow the cohort's behaviour outside the frame of the course and the Google+ community, so whether this behaviour extend beyond the reach of the particular intervention is difficult to establish at present.

Compared to the LMS the Google+-community has some architectural and interface-wise advantages as it resembles to a higher degree the social media students use in their everyday life, and it does offer a more immediate, smoother and easier way of posting e.g. multimodal content. Thus, much in line with the experiences reported by Manca & Ranieri (2013) there have been more interactions and posts than we experience normally in a course in Moodle. This, though, is difficult to compare, as we have not run the course with similar focus on online activities in our Moodle environment. However, this does not mean that there is no need for support or introduction to the environment. Nor does it mean that the space becomes informal, a-hierarchical or collegial by adopting technologies that are more often used for informal purposes. In fact, it is important to remain attentive to the fact that students have something at stake in these social spaces; in relation to each other, as well as in relation to the lecturers. Even though we as lecturers perceive uploading an introduction video as a non-threatening ice-breaker, this might appear differently to the students. To them it might be an anxiety-inducing leap to upload a video of themselves in a semi-formal context and participate in an online community, but this is a leap we must insist that they take.

Furthermore, there are other challenges. From the experiment, it is also quite clear that the interaction and level of activity are heavily dependent on the engagement of the lecturers, and the lecturers' design of activities and spaces. As one of the students commented about their engagement with and the continuation of the Google+ space:

> "It depends on them (authors: the lecturers), if they don't use it, then we don't use it either. But if they use it and say it is there we run a course through or the like, then we use it." (Student 1, Focus Group 2)

As we highlighted previously, there is a tension here. While our pedagogical intention was to encourage students to see the value of each other's work and that learning from each other is important, the students do seem to expect a level of teacher presence and teacher initiated activities as required for them to engage with the environment and the activities.

The students do simultaneously use Facebook for communication about their studies, the programme etc. and the students do need such private spaces, that are also room for mutual help, support and knowledge exchange. However, not quite at the level of sharing their assignments or moderated dialogues on subject related matters or assignments (Thomsen et al., 2016).

This also means that a challenge remains in creating and sustaining spaces that offer scholarly knowledge exchange and sharing i.e. to develop a culture where students feel a sense of community, interact with each other and exchange knowledge. A challenge lies in developing an environment that support such a culture of sharing and interacting between the students, and between the students and the lecturers. We hope that we have sown a seed in this development project, where the students will take further initiative to maintain and support a sense of community, interaction and knowledge exchange in their semester cohort - a culture that develops beyond the primarily social and practical support they have in their Facebook groups and extends to include also a greater focus on subject related matters, and helps them see that they can meaningfully act as learning resource to each other.

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