

Online Reflective Interactions on Social Network Sites in Design Studio Course

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Abstract: This study focuses on the reflective social environment within design studio course education. Studio critique, through which teachers and students reflect, is the medium of interaction and communication. In order to address issues related to communication and reflective interactions, a supplemental online environment is proposed to be used parallel to studio. To form an engaging online environment, social network sites are taken as a model, showing similarities with design studio and being the predominant online communication media. For testing this proposition, online network sites are used parallel to studio courses in an action research programme. Interviews and questionnaires with teachers and students identified five specific limitations in studios; temporal, spatial, archival, relational, hierarchical. Network sites were content analysed to find out if the uses addressed these limitations. Findings showed that the supplemental online platform functioned as an online archive connecting everybody in studio and partially answered temporal, spatial, hierarchical limitations.

Keywords: design studio course; studio critique; reflective interactions; social network sites

1. Introduction

1.1 Background and Problem Definition

Design studio course is the core of design education. In studio classes, teachers assign projects to students and teach them how to design by demonstrating “reflection-in-action” (Schön, 1987). Learning and teaching take place in a reflective social environment, where “students learn to become practitioners through learning-by-doing” (Shao et al., 2007). The basis for such learning-by-doing is interaction and communication, or reflection. Studio critique, the medium through which teachers and students reflect, is the basic unit of interaction and communication (Goldschmidt et al., 2010). Through critiques, teachers



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transmit their design knowledge to students and students communicate their ideas to teachers and students.

Literature states issues in the generation of reflective interactions. These issues includes topics such as teachers' and students' access to project processes of students, free exchange of ideas between students and reflection among teachers. Personal relationships among studio people can obstruct interaction and reflection (Ashton and Durling, 2000), as well as competition among students for better grades (Craig and Zimring, 2000). The structure of studio classes does not encourage reflection among teachers, who often do not have pedagogical training and learn teaching-by-doing (Goldschmidt et al., 2010). These obstacles can prevent teachers and students from having access to processes of students, which is vital in design education (Aytaç et al., 2008).

Aiming to address these issues, an online environment is proposed to be used parallel to studio, to supplement interaction and communication. Previous studies show that forming an online social environment, where teachers and students get into free exchange of ideas is a challenge. Craig and Zimring (2000) point out the importance of casual interaction for design learning, and to facilitate such interactions, they test an online environment parallel to studio. On the basis of their findings, they suggest that such an online platform should focus on the nature of the studio processes and social relations (Craig and Zimring, 2000).

In order to engage teachers and students in an online environment for exchanging ideas, a supplemental online platform, which corresponds to studio processes and is easy-to-use, is proposed. Social network sites, showing similarities with studio processes and being the predominant media for online communication, are taken as examples. They are virtual environments, where a group of connected people interact online via their "public profiles" and make their social circles "visible" and "articulate" (boyd and Ellison, 2008). The aim of the proposed platform is to create a network of connected teachers and students, where they interact, or reflect, and follow each others' "visible" reflections. Also content in social network sites is created and shared, mutually by all users, a structure that can encourage teachers and students to engage in reflective interactions.

It is proposed that social network sites can be taken as a model in forming an engaging supplemental online platform and to address the issues related to reflective interactions. To test this proposition, an implementation is held, where existing social network sites are used parallel to a number of industrial design studio courses. One of the aims is to test and document how teachers and students use social network sites to supplement interaction and communication. It is also intended to test whether the supplemental use of social network sites addresses the identified issues.

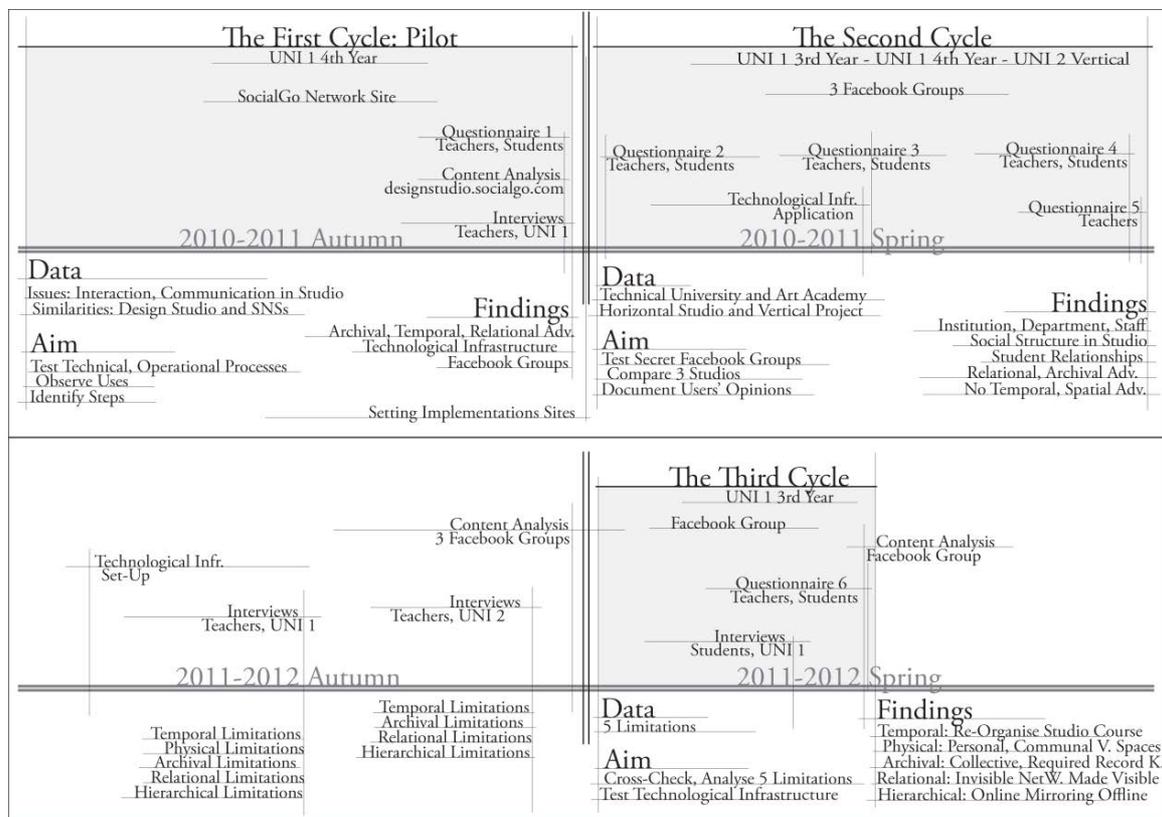
1.2 Methodology

The research constitutes of three stages. Firstly, preliminary issues are identified and a proposition is generated. Secondly, a three-cycle action research plan is implemented in

studio courses which covers interviews, questionnaires and content analysis. Thirdly, findings are interpreted in relation to the identified issues.

The action research plan is carried out as a “systematic intervention” in real-life social environments of studios, where the researcher and the supervisor, work with “practitioners”, namely studio teachers (Somekh, 2006). It is held in three “cycles”, each consisting of four steps; “planning”, “implementing”, “observation”, “reflection” (Zuber-Skerritt, 2001).

Content analysis, defined by Krippendorff (1989) as “making replicable and valid inferences from data to their context” and by Neuendorf (2002) as the “summarising, quantitative analysis of messages that relies on the scientific method”, is used to analyse the social



network sites, the scheduled standardised interviews and the questionnaires (Denzin, 2009).

Figure 1 The 3-cycle action research plan.

2. How your paper will be published

At first, preliminary data gathered from literature review is used to enter the first cycle. An action scheme is planned, conducted and the acquired data is interpreted to enter the second cycle. A new plan is held in the second cycle and the data gathered is used for the third cycle. Data from the third cycle constitutes the final outcome of the research.

2.1 The First Cycle

The first cycle was held in Autumn of 2010-2011 academic year, in the 4th year studio course, in the Department of Industrial Product Design at University 1, where the research was conducted. This was a studio of low population, with seven students and three teachers, and the supervisor of the research was one of the teachers. Preliminary data consisted of issues related to interaction and communication, the use of online environments in studio and similarities between studio and social network sites. The aims were to test the technical and operational processes of such an implementation, to observe how teachers and students use social network sites in studio, to test if and how the use addresses the identified issues, and to find out the benefits and failures.

The social network site was a template on SocialGO which was a secure and private network platform. It contained the basic features of a typical social network site, namely profiles, friends lists, public commenting tools, stream-based updates (boyd and Ellison, 2008). The site aimed to provide a protected, enclosed online platform and an easy-to-use structure.

The use of the site and answers to questionnaires with teachers and students, constituted the data, which was content analysed. The questionnaires were answered by six students and 1 teacher. The questions aimed to learn the opinions of teachers and student, whose answers suggested that the site functioned as a collective archive of projects and critiques, provided temporal flexibility, facilitated interaction, communication and the sharing of material. The site was insufficient in storage, navigation system and interface design, sharing of certain types of documents, and its connection to other online platforms. Questionnaires showed that Facebook was the most commonly used social network site, and it answered technical and operational shortcomings. A mutual decision was made to use Facebook as the network platform for the second cycle.

2.2 Setting the Implementation Sites

The selection of industrial design departments for the second cycle was based on the two types of universities in the country; state and foundation universities. State universities were sampled as they are based on an older tradition and have older design departments with better-established studio courses. Third and fourth year studios were selected on the basis that students in higher year studios are more experienced in studio processes and it is relatively easier for them to use additional tools. Two industrial design departments in two state universities agreed to take part, which will be referred to as University 1 (same university mentioned above) and University 2. Third and fourth year horizontal studios in University 1 and a vertical studio in University 2 were agreed on.

There were three differences between these three studios which would effect the use. Firstly, University 1 is a technical university where digital and online technologies are commonly used. University 2 is the former art academy, where face-to-face interaction is preferred. As the tendencies of educational institutions may effect the use of online environments (Heiberger and Harper, 2008), a more intense use was expected in University 1. Secondly, University 1 has horizontal studio system, where class-based studio courses are

taken by 30-40 students, who share the same class throughout their education and know each other well. 5-6 studio teachers give each studio creating a multi-directional network of students and teachers. University 2 has vertical studios, where studios are taken by randomly gathered 12-15 students from different semesters and led by one teacher. Students are less bonded and there is a one-directional network. When students know and trust each other, they tend to exchange ideas more freely (Heiberger and Harper, 2008). Also, in a multi-directional environment, students would be encouraged to express their ideas. Consequently, students in University 2 could be more reserved in sharing. Thirdly, the 3rd year studio in University 1 and the studio in University 2 were held twice a week, whereas the 4th year studio in University 1 met only in juries. Routines in offline social environments are reflected in online networks (boyd and Ellison, 2008), thus the use in the 4th year studio was expected to be less active.

2.3 The Second Cycle

The second cycle was conducted in Spring of 2010-2011 academic year in the three studio courses in University 1 and 2. Preliminary data were the findings of the first cycle and the differences between the three studios. The aims were to test the use of secret Facebook groups, to compare the uses in three different studios, to test if and how the use of the online supplement addresses the issues and to document the opinions of teachers and students.

An individual secret Facebook group was used in each studio, separately. In all three studios, all activities were automatically recorded in the groups, which were content analysed. Teachers and students of all courses were given three similar sets of questionnaires in the beginning, middle, end of the semester, to record their opinions and any changes in them.

Table 1 Numbers of students and teachers in each studio and who participated in each questionnaire.

	Uni 1 Year 3	Uni 1 Year 4	Uni 2 Vertical
Students in Studio	45	23	13
Teachers in Studio	8	3	1
Students Questionnaire 1	36	22	10
Teachers Questionnaire 1	4	3	1
Students Questionnaire 2	20	21	6
Teachers Questionnaire 2	6	2	0
Students Questionnaire 3	17	18	1
Teachers Questionnaire 3	6	3	0

Using the groups was made a requirement in studios in University 1, whereas in University 2 it was left optional. In University 1 the uses were relatively regular, while in University 2 participation was very low. In horizontal studios of University 1 students shared their projects and ideas, though in the vertical studio of University 2, none of them shared such material. The weekly routine of the 3rd year studio in University 1 was reflected in the frequent use. However, the weekly studio classes in University 2 was not reflected, as this group was used the least. Tendencies of the institutions had a stronger effect than studio schedules.

Questionnaires in University 1 revealed a common opinion that groups functioned as archives of projects, critiques, exemplary material and announcements, accessible to all. Fewer teachers and students thought that sites supplemented temporal and physical shortcomings. The lack of a tool for students to create their personal project spaces was emphasised. In University 2, participation in questionnaires was not sufficient.

2.4 Interviews

After the second cycle scheduled standardised interviews were held with six staff members and four students in University 1 and with two staff members in University 2, to find out the relevant issues in physical studios of these universities. In University 1 the six staff members had different academic titles which were professor, associate professor, assistant professor, lecturer, research assistant, all of whom participated in one or more of the implementation cycles except one of them. The four students were all from the second cycle of the implementation. The interviews were held until the answers posited a consistent pattern and repetition. In University 2 one of the interviewees was the teacher in the implementation. All interviewees were asked the same open-ended questions in the same order, to reveal the processes of interaction and communication in studios and to identify the issues the interviewees encounter. When gathered together, the stated issues posed certain themes indicating five limitations; temporal, physical, archival, relational, hierarchical.

2.5 The Third Cycle

The third cycle was conducted in Spring of 2011-2012 academic year in the 3rd year studio at University 1, with 31 students and six teachers. A secret Facebook group was used during one project. Preliminary data were findings of the second cycle and the five limitations. The aims were to cross-check the five limitations, to test if and how the use addressed these limitations and to test the use of the newly added Photo Album feature.

The group was content analysed and questionnaires were held with teachers and students. By using a second projector, critiques written in the group during presentations were projected in real-time. According to questionnaires, which were answered by 24 students and five teachers, this set-up helped follow critiques and presentations, simultaneously. It was emphasised that the jury atmosphere was calmer, as some teachers wrote their comments rather than telling them. Some students mentioned that using the same set-up in

weekly presentations and juries helped overcome jury stress, while others said it caused loss of time in weekly presentations. Representatives from the collaborating firm attended the juries and joined the group. They did not make any posts, however, they mentioned that they reviewed projects and critiques in the group prior to juries. They also followed the projected critiques during juries.

In questionnaires, in relation to temporal limitations, it was found out that some students took critique from teachers outside studio hours. Concerns on short durations of critique situations were mentioned. Related to physical limitations, both teachers and students emphasised shortcomings of studio classrooms. In terms of archival limitations, teachers and students indicated that they could not keep regular records. On relational limitations, answers showed that there were communication gaps, accessibility issues and lack of systematic connections. Related to hierarchical limitations, it was found out that social relationships and roles obstructed reflective interactions.

3. Findings and conclusion

3.1 Findings of Using a Supplemental Online Social Network to Address the Limitations of the Physical Studio

The five limitations constituted the basis for the analysis of second and third cycles, which revealed if and how, the use of Facebook groups addressed the limitations. The groups and questionnaire answers were analysed in terms of these limitations. Below the structure and findings of the analysis are presented.

A. Temporal Flexibility to Address Temporal Limitations:

Facebook group was proposed as an online platform accessible to everyone 24/7. Temporal flexibility was tested under two sub-topics.

(a) Limited Hours of Studio vs 24/7 Design Process: Posts made outside studio hours were identified. (b) Limited Hours of Studio vs Duration of Critique Situations: Posts made outside critique situation time intervals were identified.

In all studios, most teachers and students posted verbal critiques and project submissions within studio hours or close to submission deadlines. However, the groups and questionnaires showed that some teachers used the groups to give critiques outside studio times. Some teachers preferred to write their critiques in the group after juries. Teachers, who could not attend some juries, added their critiques afterwards. Some teachers mentioned that they reviewed projects and critiques outside studio hours, in their own times. Project submissions in groups before the juries saved everybody time during juries. Teachers and students mentioned that, when projects were submitted before juries, they had time to review them in detail. Most visual critiques such as exemplary images were posted outside studio hours. Groups were used outside studio hours mostly to share noncritique content like announcements.

Negative comments included some teachers mentioning that they did not prefer to use the group outside studio or working hours. Some students wrote that time was lost using the group for routine wall critiques. Groups created an expectation among students to receive extra critiques from teachers. Students criticised that teachers only wrote critiques during juries.

There were active and passive ways of making use of temporal flexibility. The active posts were made with less use of temporal flexibility, while the passive viewings of these posts were often made using it. Each activity being recorded by date and time, and the live-updated stream of all activities on news-feed were useful and crucial.



Figure 2 Use of temporal flexibility.

B. Virtual Space to Address Physical Limitations:

The group was aimed to function as a virtual space completing the shortcomings of physical studios. This function was analysed under two sub-topics.

- (a) Facilities in Studio Classrooms: Individual areas available to students in groups were identified.
- (b) Physical vs. Virtual Space: Posts addressing everyone were identified.

Using Facebook groups limited creating a fully-functional virtual space for studio. Teachers and students could not create personal profiles or sub-groups and, in the second cycle, students could not create individual project folders. In the third cycle, when the Photo Album feature was introduced, some students used single folders to post all their assignment work, thus making it possible to follow their complete processes in chronological order, including the critiques. When students were given the tools and asked to submit all their work, they created personal project spaces.

Some students created smaller, more intimate groups to share their projects and ideas, which showed their need for semicommunal areas.

Teachers and students used the mutual homepage to address everyone, sharing example material, announcements, etc. The questionnaires showed that being able to share material with everyone, addressing everyone and accessing to the shared material were advantages.

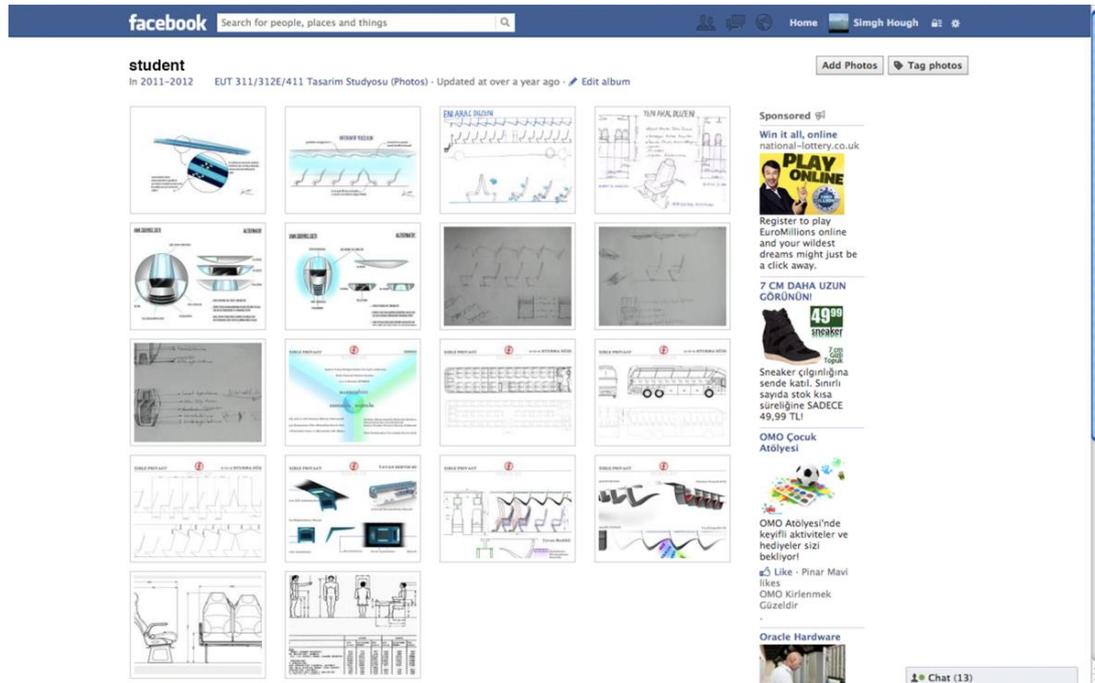


Figure 3 Use of virtual space.

C. Online Record Keeping to Address Archival Limitations:

The group was proposed as an online archive of project processes, critique exchanges, studio processes. To test the record keeping properties three sub-topics were used.

- (a) Project Processes: Records of students' project works for all submissions were identified.
- (b) Critiques: Records of all types of critiques were identified.
- (c) Studio Course Process: Records of course-related material were identified.

Making submitting projects in groups a requirement played a fundamental role in keeping records of project processes. In University 2, it was not a requirement, thus nobody uploaded any project material in the group. In the 4th year studio in University 1, even though it was announced that students were required to make submissions in the group, they did not do so until the requirement was pursued. When the requirement was systematically put in use, advantages of having an online record of project processes became one of the most important aspects of the groups. Some teachers suggested that students needed to archive more information on projects, such as captions for posts or resources used.

Keeping records of critiques required a big effort from teachers. In all studios, most critiques were recorded during juries or on the works submitted for juries. Teachers had positive and negative opinions on recording written critiques. Talking to students and writing in the group, simultaneously, was very difficult. Some teachers suggested that preset criteria to be ranked during juries could be used. For some, writing instead of talking to students was a better method in juries. Juries were defined by many as chaotic, where teachers talked all together trying to comment within a limited time. With the groups, some teachers tended to talk less and write more during juries. Teachers and students mentioned the advantages of online records of critiques. One teacher wrote that having the complex design principles mentioned during juries recorded in the group helped students learn them better. One teacher wrote that more information should be recorded, such as jury dialogues. The permanence factor was an advantage for many teachers and students. A few students wrote that they could not remember everything teachers said during juries and having teachers' comments recorded in their own words was very useful.

Studio course processes were recorded effectively in the 3rd year studios in the second and third cycles. The more teachers and students got engaged in using the groups, the more frequently and periodically they tended to use them for all course affairs. Such use resulted in online records which enabled detailed review of projects, clearer communication of critiques and announcements. Having the brief, assignment, jury requirements, verbal and visual announcements recorded in groups was found useful. Teachers mentioned that written, recorded announcements were understood better. One wrote that the group was an archive in a departmental level, as a record of studio courses throughout semesters and years. Another mentioned that s/he could go back and view the archives of previous cycles. Groups answered archival limitations on the basis that all content by everyone was recorded chronologically and permanently, though a well-categorised archive was necessary, as well as offline versions of the records. Among many advantages mentioned were students being able to compare their processes with others' and seeing the assignment from all students' points of view, motivating and encouraging students in creativity and in making better projects by seeing good and bad examples together, teachers being able to review all project material when evaluating the projects.

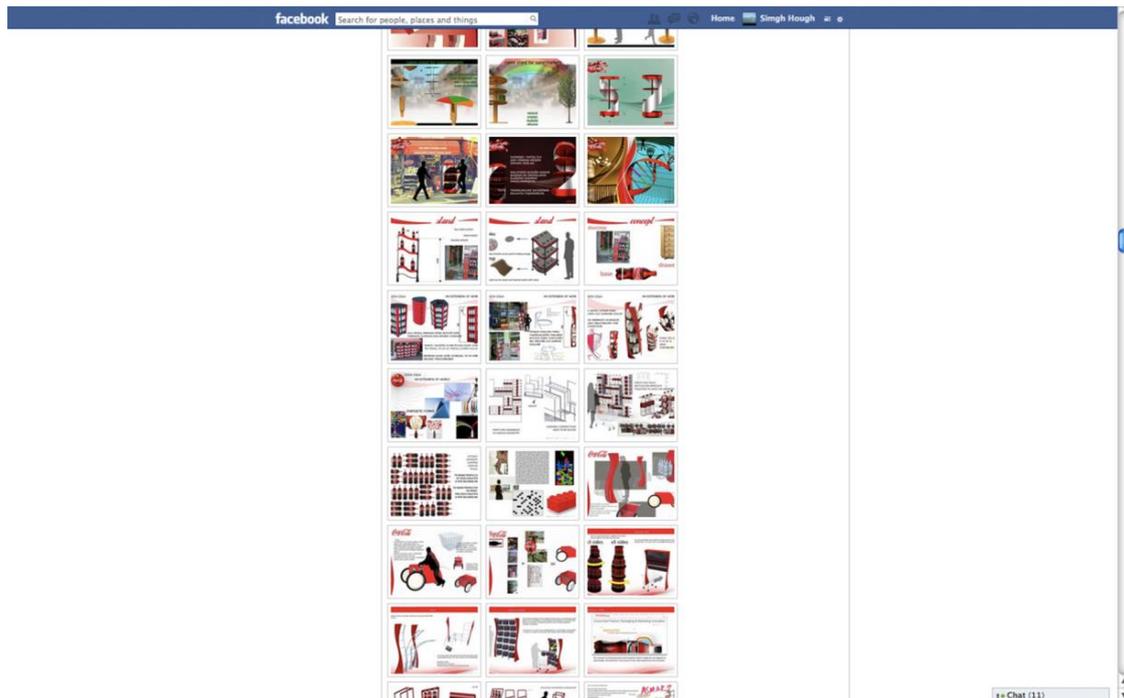


Figure 4 Use of online record keeping.

D. Social Connectivity to Address Relational Limitations:

The group was suggested to be a network of social connections where all teachers, students and their reflections were directly visible and accessible to all. This was tested on the basis of three sub-topics.

- (a) Teachers and Students: One-to-one connections between teachers and students were identified.
- (b) Teachers: One-to-one connections among teachers were identified.
- (c) Students: One-to-one connections among students were identified.

The analysis showed that groups functioned as networks where teachers, students, their verbal and visual ideas were connected to each other. In critique threads, teachers and students were most connected during juries, and among jury types, in preliminary more than final juries. In noncritique threads, most connections were in general connections, where all studio people were involved. Teachers and students mentioned that the chaotic atmosphere in juries and the jury stress of students were obstacles in hearing and understanding the critiques. Related to this, one teacher mentioned that by making critiques accessible to everyone, the group provided transparency. Another wrote that all project processes being accessible to all students triggered creativity and diversity. Teachers and students mentioned that groups made all projects and all critiques by everyone accessible to all. Students wrote that by having access to all projects they could position themselves within the general studio process. This function is similar to “ambient awareness” suggested by Schadewitz and Zamenopoulos (2008), who wrote that using Facebook groups in distance design learning created an awareness. Even students, who were sceptical about the group, thought that the only function of it was enabling students to

see each other's projects. Students also mentioned the connection the groups provided to research material and resources each student shared. The importance of having access to project processes of students was emphasised by previous studies (Aytaç et al., 2008; Ashton and Durling, 2000). Here, it is suggested that the connectivity provided by groups is important for the possibilities of reflections generated. Especially in connecting students to teachers and to other students the *like* feature was a simple, functional, effective tool used frequently by most students. Students, who were relatively passive in writing comments or posting visuals, still used *like* to express their opinions and tendencies.



Figure 5 Use of social connectivity.

E. Uniform Social Roles to Address Hierarchical Limitations:

The group was proposed as a social environment of uniform social roles, where everybody were users employing the same tools. This function was tested in terms of two sub-topics.

- (a) Studio as a Classroom of Teachers and Students: Voluntary activities by students, students' reflections on others' activities, informal interactions and teachers' reflections on each others' activities were identified.
- (b) Studio as a Consistent Social Setting of People: One-to-one interactions between all group members were identified.



Figure 6 Use of uniform social roles.

In groups, the social roles and relationships among teachers and students in physical studio environment were reflected. Such similarity between actual social relationships and the relations in online social networks is emphasised in previous studies (Heiberger and Harper, 2000; boyd and Ellison, 2008). The social environment of the 3rd year studio in University 1 in the second cycle was described as diversely connected. Students of the class were described as acting together as a group, working and sharing their ideas all together. Worries about sharing their original ideas with certain students or projects and ideas being copied were not issues. Similarly, the group in this course was used by a higher proportion of students for more types of voluntary posts and in more number of informal interactions, compared to all other groups. In questionnaires, one teacher emphasised the diversity and richness of the ideas generated by these students. In relation to this, one of the interviewees in University 2 mentioned a previous studio class, where all students developed successful projects. S/he connected this success to the friendly, close relationships in the class, among students and her/himself. Such examples coincide with “background learning” suggested by Schön (1985), and also, with the propositions that many design ideas are generated not in formal design talks but during informal conversations (Craig and Zimring, 2000) and in the breaks within the design process (Cross, 2011). Some students wrote that the presence of teachers in groups could be discouraging for students in sharing their ideas. Some suggested that there could be sub-groups or parallel groups where students could share their ideas amongst themselves. In relation to teachers’ reflections on their own and other teachers’ critiques, the groups showed which teachers were inclined to reflect and be

reflected on and which were not, also because using the groups was a not requirement for teachers. Some teachers thought the group increased the quality of verbal critiques and it provided transparency in terms of the critiques exchanged by teachers.

3.2 Conclusion

The online platform provided an online studio environment accessible to everybody 24 hours, 7 days; thus temporal flexibility within studio process. Consequently, such an online supplement adds extra time to studio course, though it also requires extra time from users. In order to benefit the temporal advantages, studio course schedule and workload of teachers and students need to be organised, accordingly.

The virtual space of the network was used on the basis of communal, semi-communal and personal areas. The communal space, homepage or wall, was functional; however, groups failed to answer the need for semi-communal and personal areas, such as discussion groups or individual project spaces. Users, especially students, expected to be able to create sub-spaces.

Online record keeping within such a social network requires time and effort and is achieved bit-by-bit by all members. As literature points out, “content” in social media is created collectively by individual contribution of each member within the network (boyd, 2010; O’Reilly, 2005). The collective effort of teachers and students of recording their activities resulted in a unique visible online archive of studio processes. This online archive was used for reflection within each studio course, and also in next semesters, to reflect on the proceses of previous studios. Such recorded content also represents the collective (design) knowledge created by all contributions by all teachers and students in a given design studio course. By using one single platform for the complete studio process, a single archive of all projects, critiques exchanged, exemplary material shared, and the studio course content including briefs, requirements and assessments as a unique collective information can be visible and accessible. In other words, a body of reflective interactions, and also, the subjects and objects of these interactions can be recorded chronologically, and be accessible to the studio people, and to anybody outside studio, if necessary.

Such an online platform created an invisible, structured network of people and reflections, which were made visible by certain tools. It was evident that everybody could access all members and their posts. Within this network, the comment tools, such as verbal comments and *like*, made connections visible, creating transparency and awareness. In creating one-to-one connections, the *like* feature was observed to be a simple, effective tool, used frequently by most students, generating peripheral ties between less-connected teachers and students, thus a richer network of reflective interactions (Ashton and Durling, 2000). By *liking* posts, teachers and students showed their ideas, tendencies and joined the threads they wished to be a part of. Such connections could be a way of facilitating the chance encounters which are defined as vital in design process and design learning (Cross, 2011; Buchanan, 1992). Similar tools could also be a way to create profiles on the basis of

personal preferences, tendencies, likes and dislikes on the ongoing design assignment, in specific, and also, on design, in general.

The social environment within the online platform mirrored the offline social dynamics. Social roles and relationships in physical studios were reflected in the groups. When diverse and close relationships in physical studios are projected in the online social environment, the use of the online environment gets more effective in supplementing reflective interactions and communication. Using an online network as Facebook, which is part of the personal social networks of studio people, provided an informal atmosphere, which had both positive and negative aspects. Such an online platform could generate relatively uniform social roles by being an extension of the social environment outside the educational circle, though connections with these outside circles need to be organised to prevent unintended exposures of the personal lives of teachers and students.

As Somekh (2006) points out, new technologies in educational settings may receive negative, opposing reactions from teachers and students. In relation to more sceptical views of teachers and students about using an online social network site in studio, changes in opinions and uses were observed throughout the implementation. It takes long periods for teachers and students to get used to such new technologies in educational processes (Somekh, 2006). Thus, it was not an aim in this research to observe changes in teachers' and students' attitudes and tendencies; however, there were clues about teachers and students getting used to the tools of the online platform.

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