

The Problems and Implications of Online Collaborative Design Learning Projects

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Summary

Designers often collaborate with different specialists in their field, especially in the industrial design domain. Collaborative design is also considered a useful teaching strategy in design education. Students cultivate the attitude of team work and learn skills of communication through the collaborative design process. With the rapid development and availability of the Internet and information technology, many researchers began trying to use the Internet to mediate or to process design projects in order to understand the pros and cons. There have been some educators who use Internet to conduct collaboration design learning projects.

The purpose of this paper is to discuss the influences and problems in using the Internet to mediate design studio course. Two collaborative design learning projects conducted between industrial design departments of two universities in Taiwan were exemplified. Opinions of the students collected by a questionnaire survey were analyzed and discussed to supplement the observations and subjective reflections of the instructors (experimenters). The study focuses on finding answers to the following questions:

1. Is there difference in the performance between the Internet mediated inter-university and traditional on-campus collaborative design learning projects?
2. What are the influences of using the Internet to mediate the inter-university

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collaborative design learning projects?

3.What are the benefits of learning professional design practice with Internet mediated inter-university collaborative learning projects?

4.What are the problems faced in inter-university collaborative design learning projects?

The main results are as follows:

1.The performances (final grades) of the Internet mediated inter-university collaborative design teams were not significantly different to the traditional on-campus teams. In other words, it seems that using the Internet mediated inter-university collaborative design learning project can achieve the learning performance at a level same as the traditional collaborative design learning on campus with the face-to-face team-work technique. However, since many variables may affect the learning performance in the experiment projects, further research and more evidences are required to prove the results.

2.The responses of students and instructors showed that using the Internet mediated inter-university collaborative design projects has its benefits on design professional learning and teaching. Students regarded this mode of learning has the following features: a) the Internet provides abundant resources and convenient communication; b) the Internet removes restrictions of time and space for team-work and interaction; c) there are role models and examples of best practice for the design learning on the Internet; d) the Internet and information technology are new tools for design learning, it brings new experiences; e) comparing with the face-to-face communication, the computer mediated communication lacks emotion; and f) the quality of the network infrastructure has a great influence on communication and interaction.

3.Students stated that using the Internet to mediate the inter-university collaborative design project has many benefits: a) stimulating thought and encouraging creativity; b) being able to learn something from someone; c) enhancing knowledge and social relationships; d) training in teamwork and learning communication skills.

4.Although using the Internet to mediate inter-university collaborative design learning offered many benefits, many problems were still encountered. The problems include: a) communication obstacles and conflict; b) difficult coordination of work and

decision making; c) patience and tolerance towards slower participants d) teamwork problems; and e) Operational function problems in the online learning platform.

Considering these results, some suggestions are proposed:

1. Internet and information technology has many benefits and great potential on design education. It is good to use the Internet and information technology to mediate the learning and teaching of professional design practice.
2. Although there are still problems of using Internet to mediate inter-university collaborative design learning, it can expose students to different design cultures (students, instructors, and universities), open design horizons, and provide opportunities to enhance communication skills. Hence, it is worthy to adopt the inter-university collaborative design learning projects with the Internet.
3. The results show that the learning process was influenced and difficulties were encountered due to both technological and human factors. Therefore, an efficient network infrastructure and technical support is essential. When confronted with new technology and teaching methods, most instructors and students need time to adapt and to adjust. A thorough planning of the course and the preparation of the students and instructors is necessary to lower the workload caused by the digital/ network working environments, and increase the students' and instructors' motivation and willingness to participate.
4. Although the Internet and information technology has a great potential in design education, there are inevitable risks in its application. For example, students may use inappropriate information without thinking or rely excessively on the form-making functions provided by digital tools to create many novel but unreasonable designs.

The results of this study show that the Internet mediated inter-university collaborative design has positive influences for design professional learning. Future research and evidence are needed to provide a more conclusive proof.

Keywords: internet, design learning, collaborative design, design studio

