

Curriculum Development in Industrial Design Education in transition: Challenges and issues in a Thai university

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Abstract

In Thailand, it is widely accepted that development in education is lagging behind the progress of the economy and industries. During the 2018 Transition Discussion in KMUTT, Industrial Design (ID) education received a call to reconsider reforming the traditional teaching style. Discussion among international scholars from the field formed the direction of ID curriculum development study. Interviews of design experts from Japan, Singapore, and Thailand, including parents, and students revealed that the present traditional teaching style, where students only complete the tasks assigned by lecturers, is no longer effective and that a holistic view of practice should be implemented. Therefore, the focus of education should not be to produce graduates who serve a single job but to prepare universal persons who can learn new things. It is very challenging for educators in the design field to pioneer a novel course for design education. This study presents three challenging issues. First, Content-Based Learning: integrated content-based learning would replace subject-based learning. Next, Competency Development Visualization: taking on different roles would help students to visually realize the competency development of their peers. Then they can reflect on their development. Finally, Opportunity Provider: the perception of instructors is paramount. Moreover, their role would not be exclusive to teaching and facilitating, but they would systematically study the students' development then classify and provide opportunities to improve their competency. In this scenario, the knowledge ceiling of courses must be varied and dynamic.

Keywords: Curriculum Development, Design Education, Experiential Learning, Soft Skills Development

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Introduction

Students' and Parents' Perception has Changed

It is widely known that technology has had a big impact on education. Specifically in higher education, the source of knowledge is no longer coming from lecturers in the universities. Many students are able to access a variety of academic resources. Technology evolution allows students to be able to learn from whomever they want to learn from; students can easily access knowledge anywhere at any time. Many students report that if they do not understand the lesson in the classroom, they just search another lecturer's lectures from the internet. VDO clips, PowerPoint presentations, and lecturer notes are always available. They just select what they would like to study.

In February 2018, the expert review was conducted as a part of The First International Conference on Design, Innovation, and Creativity in the Environment of Innovation District Bangkok at Knowledge Exchange Building, KMUTT. The discussion among the lecturers of design schools from Japan, India, Singapore, and Thailand suggested that the students' perception towards education has changed. They have realized that knowledge and information imparted by lecturers in front of the classroom can be found elsewhere. Moreover, there are instances that they can even find better explanation from other resources. Some senior students mentioned that they think that they can get a better grasp of some information when they do internship at the company. Relying exclusively on the lecturer or setup project in the classroom cannot make them clearly understand some concepts. The discussion also suggested that soft skills and ability to learn new things would be important for the new generation of students who can access knowledge resources. This is echoed in an article published by Skills Future where they listed the new Critical Core Skills (CCS) with an increased emphasis on soft skills as part of the future work in the digital era. These are thinking critically, interacting with others, and staying relevant (Skills Future, 2021).

Referring to these observations, parent and student interviews were selected as data collection tool to understand their perception of the changes in higher education. Ten parents and 15 students were systematically selected. Parents who are interested in education development and involved in today's industry movement were considered as the right person to present their vision of future education. The parent's expectation plays the role of both influencing and encouraging students to choose their education path, while students' experiences and goals shape a different criteria from parent's one to decide their study plan. Fifteen students graduated from Thai schools, an international school in Thailand, and schools from other countries, such as Canada, New Zealand, and Japan. An unstructured interview was conducted for these groups of samples to encourage open-ended conversation. Interview issues covered studying and working style, life-long learning, and career path development. Parents and students were encouraged to present their opinion toward the future context rather than today's context. All of them agreed that the classroom is not suitable for today's generation of students because the classroom approach does not encourage interaction and high involvement activities. These activities, such as workshops, group discussions, or internships, are more powerful to push students and lecturers to have more interactions. The interactive activities lead the students to share their opinion and also challenge both lecturers and other students to continue their ideas and opinions onward. One student from a school in Canada felt that he was more comfortable presenting his ideas when he studied there than in Thailand. He also expressed that the classroom environment creates the sense of one-man show with the teacher or lecturer standing in front of the classroom; therefore, students feel

that their task is to listen to the person in front of the classroom while workshop or group work seems to invite all participants to share their opinions.

Many parents reflected that people cannot be successful if they depend on just a single discipline for their job. One parent suggested that undergraduate schools should give wider opportunities to students to develop their career paths in the future. Soft skill development is the key success factor for students to learn and work in the inter-disciplinary environment. In the words of Nobel Prize winner James Heckman: "Soft skills predict the success in life (Hyder, 2020)." Parents who have successful careers in the technology industry reflected that whatever students learn in the university will be outdated very soon. Students need good fundamentals to ensure that they are able to learn new things every day. This opinion supports the suggestion from many students. Students mentioned that much of the knowledge they studied in high school is already out of date compared to the knowledge they found from the online platform. A student reported that she spent two months as an intern at one of the research units in Bangkok and felt that she can see the much bigger view of what she was interested in. This experience impacted her study point of view. She realized that she needs to learn more than what she already studied at school. The classroom makes her stop learning when she finished the final examination but working in the professional environment makes her study until the last minute to complete an assigned work. Indeed, education is a life-long process that starts with birth and ends with death.

To Develop Ability to Learn New Things

The interview of parents and students who are interested in education development and have actively considered their study plan shows that knowledge is now all around. Students can easily access the knowledge from a wide variety of quality resources. Technology evolution has allowed people to connect to each other. Students have more choices to learn from the resources they prefer. The lecturers standing in front of the classroom are not the only source of knowledge. Therefore, the perception of students as to the role of university has changed. Instead of providing knowledge, universities should encourage students to access knowledge resources elsewhere. Students should also be encouraged to work with many kinds of people in the business or industry. The analysis shows that the role of the classroom would be transformed into discussion sessions where students, lecturers, and guest experts share their experience of learning.

Another future scenario is the colony development may eliminate many careers and tasks. It means that the knowledge and skill of some professions have to be developed or changed. For example, in industrial design, freehand drawing skill is not important for the presentation because computer rendering is more efficient in the task aspect. However, it is still very important for communication, especially to communicate new ideas. Thinking framework would be considered an important issue for design schools. Many design and innovation firms have suggested that, in the future, the boundary of the profession might disappear. People cannot work in a linear process anymore. Everyone would carry out the work from the start to completion. Designers do not just take care of design while engineers are responsible only for the engineering part. Everyone is a part of the interdisciplinary team. This is especially true in the innovation area where technology has been rapidly and continuously developed, so the team has to deal with the issues. Schools cannot teach all of this knowledge. In this case, it would be nice if schools can train students to be able to learn new things whenever they need. The role of lecturers, in this case, has to change from providing very specific and singular knowledge to enhancing the ability to learn new things for

students. In this scenario, the knowledge ceiling is not limited to the lecturer but the various ceiling of knowledge from outside the classroom are counted as a collective source. This approach also encourages sustainable life-long learning ability of students.

Discussion

Soft Skills Development

Basically, university has focused to develop hard skill. However, the technology development allows all people, especially students to access unlimited knowledge resource. The public review and open resource system play the major role to screen and correct the information and knowledge. Many universities, institutions and also private sectors have provided their resources and learning material to the public through online platform. The number of both free and subscribed online classes are rapidly enhanced. As a result, many students decide to ignore classroom in the university and pay attention to anywhere/anytime contents. Many lecturers have adapted their teaching method to fit to the situation and students' study style. However, the working process in the business and industry has been developed as well. Hard skill and knowledge are easier to be accessed. Adult education and non-degree programs give more opportunity to the people who would like to continue their education and also who would like to gain more knowledge and skill set for their career growth. Many parents showed very significant point of training in the university. Knowledge and hard skills are not as important as before. In fact, Hyder claims that near-future employment entirely relies on soft skills and hard skills are comparatively being blue-penciled off daily (2020). Soft skill would be much more important for students to be able to explore their career in the future. The communication skill is needed to be trained in the university. Thinking framework may be needed for students understand the changes and work with other people in the complex situation. Ability to learn the new things is a significant qualification of people who work in the creative industries.

Universities, therefore, should turn to focus developing students' soft skill. Thinking frameworks such as critical thinking and logical thinking can support students to explore and practice the right knowledge and hard skill in the online world. Soft skills development still needs to be trained by person. Online program can help and support soft skill development in some way but it would be efficient to be trained in person. Higher education should provide platform for students to be able to explore the world as much as possible. The set up project and situation that lecturers and students usually deal with in the part may not create the sense of learning because today they are all able to study the real case situation real-time. The opinion and knowledge given by the lecturer is not the absolute truth anymore. The cooperation with business and industries and real project would be brought to the workshop or working environment. Students would be challenged to work with other people outside the university. They can learn from working in the professional environment and also facilities. This can make students realize the result of what they have learnt. To practice and develop desirable soft skills is helped when students have the opportunity to work in real-time-real-world situational contexts and working in internships and other experiential practices helps reduce this type of gap (MacDermott & Ortiz, 2017). This current scenario shows that universities could create a high involvement learning environment. It changes the learning and teaching approaches. Soft skills would be trained during their cooperation and working process. In the working situation, students should be able to realize what knowledge and skill set they lack. Interestingly, this coincides with the report of a 2015 Hart Research survey of 613 college students, where 74% of the students indicated that their higher education

institution had done an effective job preparing them to have the soft skills necessary for workplace success. It is only after entering the workforce that they recognize the importance of acquiring these critical soft skills and once in the workforce, they may find their organization offering minimal or no training for developing these soft skills (Martin). This is the moment that they can actually realize what they should learn more by themselves. It is different from when they study in the classroom where lecturer gives the knowledge first without assessing the students' needs.

Experiential Learning Platform

The analysis also recommends that students should have a chance to work in a real situation before graduation. Internship usually provides 1-6 months for students to work in the industries before graduation. Experiential learning platform (ELP) is the platform grounded from this study. It is the cooperation platform that universities and industries have worked together to encourage students to have working experience parallel in study time. Instead of dealing with the set up project in the classroom, students in ELP would get the opportunity to improve their soft skills, communication, thinking skills, etc. Then they are strongly encouraged to learn by working in the professional environment.

Conclusion

To recap, the market scenario is changing very fast and this calls for educational institutions to quickly adapt to the times. Before, students who had a brilliant academic record with added work experience were well sought after by most of the corporate institutions. But today hard skills and experience are not sufficient for the ingress and escalation in the corporate world. Employers prefer to hire and promote those persons who are resourceful, ethical, and self-directed with good communication/ soft skills. The data from the interview supports this and strongly recommends that the ability to learn new things is crucial for the future scenario. Moreover, the rapid development in technology made students realize that knowledge is constantly updated and replaced with new ones. This calls for a change in the classroom dynamics where lecturers should encourage active involvement through workshops or internships instead of relying solely on traditional lectures. Universities should provide opportunities to improve the now vital soft skills and this is where ELP's would be effective. This paper then hopes to encourage lecturers and educational institutions to re-evaluate their practices and incorporate the suggestions earlier made.

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