

2-2018

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Citation

PAN, Gary; SEOW, Poh Sun; and KOH, Su-Fen Grace. Bridging academic and practice: Benefits, challenges and lessons learnt from establishing a university wide experiential learning initiative. (2018). *International Conference on Teaching, Education & Learning 3rd ICTEL 2018, Dubai, UAE, February 18-19*. Research Collection School Of Accountancy.

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Bridging Academic and Practice: Benefits, Challenges and Lessons learnt from establishing a university wide experiential learning initiative

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Abstract

The scale and complexity of challenges facing the world today are unprecedented. It is paramount that universities identify and equip students with relevant skills to meet the needs of the changing economy. Recognizing this need, Singapore Management University launched a new initiative, SMU-X.

In this paper we will describe SMU-X which is a paradigm shift focusing on experiential learning as opposed to teaching, characterized by 4 principles: (i) inter-disciplinary content and activities, (ii) project-based learning via an actual problem/issue faced by an organization, (iii) active student-mentoring by faculty and industry, and (iv) creating a tripartite learning loop between faculty, student and industry partner. Every SMU-X course lets students collaborate to tackle multi-disciplinary issues faced by partner organizations that even faculty may not have a solution to.

This paper will also discuss the challenges, benefits and lessons learned of establishing such an innovative learning initiative within a traditional University.

Keywords: innovative teaching, learning methodologies, innovative and effective teaching, experiential learning

1. Introduction

The world is changing rapidly as we experience more complex issues. Often, solutions do not come from any single discipline, but from the collaboration between innovators from various disciplines. It is crucial for Universities to acknowledge that transformative education and learning, moving away from 'just teaching', is critical in order to equip graduates with skills and the right attitude for life. Therefore, effective education must provide an active experience and intentional intellectual progression.

In the 'Future Work Skills 2020' report released by the *Institute for the Future*, 'multi-disciplinarity', and 'novel & adaptive thinking' skills were identified as skills important to future workforce as well as skills such as 'real world work exposure' and '*managing collaboration with industry partners*'. This means that a curriculum that integrates industry experience with learning in classroom is required.

To prepare its students with these future work skills, Singapore Management University (SMU) launched a new pedagogy called 'SMU-X' for all our undergraduates (UG) in 2015.

2. SMU-X: Key Innovative Features

SMU-X strives for strong linkages between the university and its community and industry partners; deliver impactful research to the community, as well as expose students to real world learning. The letter 'X' represents many things: experimentation, experiential, excitement, cross-interaction, collaboration and the unknown. There are three parts to SMU-X consists of 3 parts: i) a collaborative mindset, ii) an experiential curriculum and iii) flexible learning space to work together.

2.1. Mindset

SMU-X is a mind-set shift to get SMU members to collaborate both internally and with external stakeholders. This allows the university to step out of their current silos.

2.2. Curriculum and Pedagogy

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SMU-X pedagogy comprises four principles: i) project-based learning tackling real, unresolved problems; ii) inter-disciplinary learning; iii) active mentoring and; iv) enhanced relationships between faculty, student and industry partner.

An SMU-X (for credit) elective starts with corporate, non-profit and government-sector organisations bringing in issues and work problems into class. Our undergraduates work in interdisciplinary teams mentored by faculty and the partners to solve problems faced by the partner organizations. By deep-diving into real situations, SMU-X courses accelerate students' learning to go beyond hypothetical classroom exercises.

Substantive in-class knowledge is taught to build a strong foundation essential for contribution in the real situations. These theories teach students to respond to the most pressing challenges thrown at them. The real opportunities teach students to work effectively in teams under complex and dynamic circumstances. Students from various disciplines bring in the diversity in perspective.

To ensure that the solutions proposed are implementable, our partners and our faculty are involved in active mentoring and students benefit greatly out of this deep relationship. This collaboration becomes a learning loop for the tripartite: our students get a better understanding of what it means to apply theory outside the classroom; our faculty learns how real world adapts theory and our partners embark on lifelong learning inculcating in students and our partners the value of continuing education crucial given our rapidly changing economic conditions.

2.3. Flexible Learning Space

As we believe that non-traditional pedagogy should be supported by active spaces, SMU-X teaches these elective in a flexible learning environment (that is open 24/7) designed for collaborative work.

3. Project-based Experiential Learning

The SMU-X pedagogy is based on the following two approaches: project-based learning (PjBL) and experiential learning. The new focus is less on content teaching (e.g. lectures) but more on student-centred and learning-focused methodologies [1]. This came about after an internal study which highlighted the need to enhance our teaching methodology to better prepare students for the rising volatility, uncertainty, complex and ambiguity of the future business environment.

3.1 Project-based learning

The PjBL framework organizes learning around doing projects. Projects are complex tasks based on challenging questions or problems faced by industry partners, and involve students in designing solutions, problem-solving and decision making that will prepare them with skills for the future. Buck Institute for Education states that PjBL is an inquiry-based instructional approach to learning where *“students gain knowledge and skills by working for an extended period of time to investigate and respond to an engaging and complex question, problem, or challenge.”*

3.2. Experiential learning

Kolb's Experiential Learning Theory (ELT) is widely recognized as an important framework for learning-focused curriculum development and instructional design [2]. According to ELT, experiential learning is “the process whereby knowledge is created through transformation of experience, where knowledge results from the combination of grasping and transforming experience” [3]. These 4 modes of ELT form an idealized learning process together. Concrete Experience and Abstract Conceptualization serve to grasp experiences while Reflective Observation and Active Experimentation transfer them [4] and the learner will likely learn the most when all 4 baseds are covered. The learner learns through encounters, reflects on these experiences, and subsequently assimilates them into abstract concepts. These novel implications are then actively experimented which completes the loop and serves to create new experiences.

4. Outcomes and Impact

As of today, SMU has 26 SMU-X courses distributed across 6 schools, with 1,900 UG students having completed a SMU-X course, with 250 industry partners signing up to work with SMU on their current



issues and problem sets. The electives are grouped into several themes, including strategic change, analytics, risk management, innovation, sustainability and financial leadership. Our innovative pedagogy has also been lauded by global accreditation body AACSB International as an *'innovation that inspires'* in 2016. In particular, AACSB recognised SMU's exemplary efforts for innovations in the 'pedagogy and learning' category.

5. Monitoring and Evaluation.

SMU monitors the electives to ensure that the learning objectives are met and that the corporate partners benefit from our collaboration. Feedback surveys and interviews are conducted with students, faculty and our partners. The Figure 1 and 2 below shows survey results from students (in 2015 and 2016).

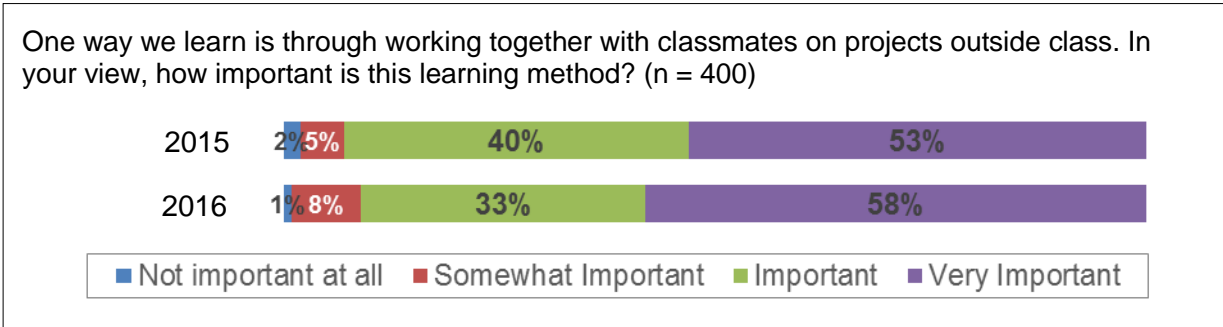


Figure 1: Survey results on project based learning 2015 and 2016

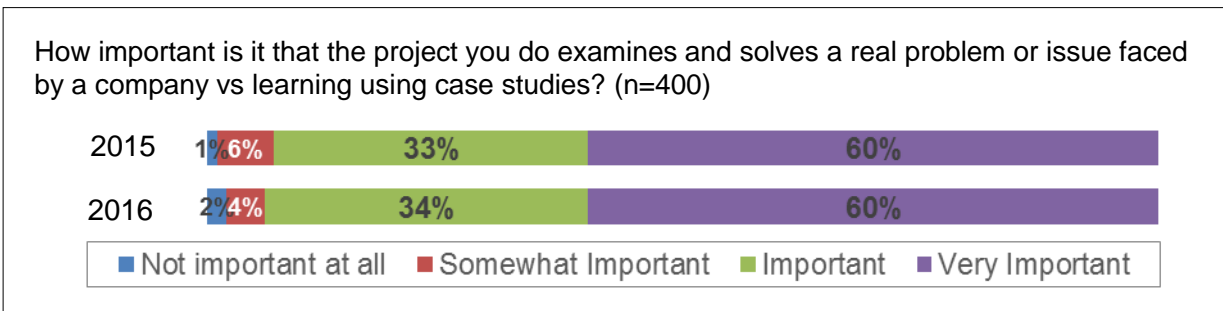


Figure 2: Survey results on project based learning 2015 and 2016

>90% of the students were that it was important and was satisfied with the opportunity to apply what they have learned in class to a real project sponsored by the industry. The results were consistent over the 2 years. Similarly, almost all students (>93%) felt that working on real issues and problems are important elements of learning.

On learning outcomes, a 2-part question first asked students to identify what they took away from such courses. Students reported picking up cognitive, interpersonal and intrapersonal competencies. (Cognitive competencies reported relate directly to mastery of core content and include subject matter; application of subject matter; problem solving skills; critical thinking skills and Creativity. Interpersonal Competencies reported include: Teamwork; Leadership skills; Cultural sensitivity; Importance of communication/ feedback and the ability to manage expectations of different stakeholders. Intrapersonal Competencies reported are increased resilience; dealing with complexity and changes.)

The follow up question asked students to rate how much they felt that these skills were enhanced. Table 1 below shows the key takeaways and learning outcomes reported.

	2015	2016
To what extent do you agree with the following statements? <Course name> enhance my _____.	Agreed/Strongly Agreed	Agreed/Strongly Agreed

Cognitive Competencies	Analytical Skills	87%	88%
	Reasoning Skills	87%	85%
	Problem Solving Skills	87%	85%
	Ability to better apply concepts	77%	77%
Interpersonal Competencies	Communication skills	85%	83%
Intrapersonal Competencies	Preparedness for the working world	77%	77%
	View problems holistically	70%	69%

Table 1: Survey results on learning outcomes of SMU-X courses in 2015 and 2016

The positive impact of this pedagogy to students is apparent. >80% of the students indicated that the experiential learning approach enhanced their problem-solving, analytical, reasoning and communication skills - key cognitive competencies employers look for when hiring as well those identified by the 'Future Work Skills 2020' report. Students also felt that SMU-X courses helped them better understand the practical constraints that corporations faced, equipped them with technical skills and honed their soft skills such that they are more prepared for the working world.

Partner organizations are also very supportive of SMU-X courses and provided very encouraging feedback on the outcomes of the project and how the student teams conducted themselves. Interviews show that the collaboration benefits partner companies as they obtain solutions to a business problem and the interaction with students gives them fresh perspectives and new ideas. An example is provided below.

"The ideas and recommendations presented by SMU students were very innovative and enabled UOB to consider banking challenges from the perspective of millennials. We now have better insight into what our customers of tomorrow desire and will be using the students' recommendations to bolster our products and services to meet the banking needs of the professional, managers and executives of the future. We are also delighted that students benefitted from the real life examples and business challenges that were shared by our colleagues during the programme" ~ Ms Janet Young, Head of Group Channels and Digitisation, United Overseas Bank

Last but not least, faculty too, learnt the constraints of the industry and gained rich data and research insights which helped in their publishing and case writing.

6. Challenges

However, embarking on such a journey is not an easy one. It was a systematic approach to change the mindset of all the stakeholders in the university. A hands-on approach is more resource intensive for the university and top-management buy-in had to be obtained. The faculty was not used to collaborating with partners and had anxiety for not having the answers all the time. Just-in-time teaching had to be employed as situations change along the course of the project and class. Students had to put in more effort and did not have a precedent to refer to (or a right answer) and very often with the complexity of the problem required more guidance from faculty and even the partners.

Significant time commitment from faculty and project sponsors was necessary to develop a solution which is practical, workable. Perfect solutions are not always found given the complexity of the problems as well as the constraints surrounding them. All parties needed a lot of self-initiative, communication and to do research on their own

To guide faculty, SMU had to develop a toolkit to upskill them on good facilitation, relationship management and another for students to help them deal with uncertainty and ambiguity. For partners, it was a challenge at first to find those with the right mindset that were willing to experiment and embark on this learning journey. Scoping a project properly became crucial and time-consuming but a well scoped project lead to better results.



7. Conclusion and Future Plans

We believe that such an initiative is scalable and adaptable. In fact SMU is in the midst of creating more modules using the SMU-X pedagogy and provide all undergraduate students with an opportunity to take such courses as well as employing this method to postgraduate programmes and working on global projects.

In sum, SMU thinks that SMU-X provides an alternative way of learning which supplements traditional teaching methods as well as internships to help bridge the gap between academic and industry and prepare our students for the workplace.

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