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# Library and Experiential Learning: Taking Collaboration to the Next Level

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## LIBRARY & EXPERIENTIAL LEARNING: TAKING COLLABORATION TO THE NEXT LEVEL

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To demonstrate the value of academic library, it is imperative to align library's role and outcomes with the parent institution's vision and mission (Cottrell, 2011). This paper discusses Singapore Management University Libraries' initiatives, to tie up library's instructional services with the university's vision, especially through collaboration with schools and other departments within the university.

Singapore Management University has a ten-year vision to be an iconic university that provides transformative education for a new generation of graduates. The transformative education translates into an active learning which consists of 3 components: mindset for collaboration, curriculum based on experiential learning, and spaces for group work.

One of library's first attempts in experiential learning was through collaboration with Business School. The Business School offers a course in Managing Process Improvement (MGMT317) which assigns real process issues for students to analyze, using six-sigma project-based approach. Library joined as one of the clients that presented real operational issues. Library put forward a seat-hogging issue that was causing problem to library's seating capacity, and diverting library manpower from its main operation. A group of six students were assigned to analyze and propose improvement. Two Business Faculty guided the group in project management framework and thought them in using process improvement tools. One Librarian and one Library Team Lead were representing Library as the business client.

The 16-week process was remarkable, as librarians were shifting their teaching role into a client/advisor role with lots of face to face time with students, and plenty of teachable moments. It also pushed all parties involved to look beyond internal boundaries for best practices, and possible collaboration to resolve certain issues.

The key takeaway was that experiential learning takes far more effort and commitment from librarians as compare to regular instructional classes. The results, however, were very promising as a) the learning outcomes were achieved, b) the business solution was usable and c) deeper engagement with students and Business School Faculty was established.

Since then, library has rolled out several more initiatives. All has the marking of collaborative mindset and willingness to delve into experiential learning.

**Keywords:** *Experiential learning, business process improvement, library seat hogging*

## **Background**

Back in 2015, The Singapore Management University (SMU) crafted a bold vision titled SMU Vision 2025. The ten-year vision saw the university as a great and iconic global-city university in Asia that excels in tackling the world's complexities and impacting humanity positively and producing leaders of tomorrow through its transformative education and multi-disciplinary research to provide insights in solving these problems (Singapore Management University, 2015). The transformative education translated into an active learning which consists of three components: mindset for collaboration, curriculum based on experiential learning, and spaces for group work. An initiative called SMU-X was established to champion the 3 components and to dive into the "experimental, experiential, excitement, x-collaboration and the unknown".

As an active partner in the learning, teaching and research ecosystem, SMU Libraries needed to align library's role and outcomes with the parent institution's vision and mission. The alignment was important to showcase library's values and contribution to the university (Cottrell, 2011). Of the three components of active learning, the 'spaces for group work' was probably the most obvious component that library could relate to. The 'mindset for collaboration' required SMU community to collaborate, using both disciplinary knowledge and multi-perspective approach, and step out of their current silo. SMU Librarians have somewhat achieved this collaborative mindset as we have been working together with faculty in designing and delivering information literacy sessions. The 'experiential learning curriculum' was a rather challenging bit, since teaching and learning happened through real-world projects instead of seminars and lecturers – how could library contribute and align its support in the experiential learning curriculum?

## **Starting the Collaboration**

SMU-X started its initiative by identifying six courses that were characterized by; inter-disciplinary content and activities, project-based learning via actual problem/issue, active student-mentoring by faculty and industry-partner, and three-way learning by faculty, student and client (SMU-X, 2015). One of the identified courses was Managing Process Improvement (MPI) course. In this course, students would develop a practical understanding of appropriate tools and project management skills to effectively change and improve important processes.

Banking on the good working relationship and previous collaborations between Library and Faculty, a Business Librarian approached Faculty who were teaching the MPI course to discuss the support that Library could provide for this experiential course. The discussion resulted in a surprising, yet challenging, outcome! Library was invited as one of the industry-partners (clients), to work together with a group of students.

First, Librarian needed to identify what was the process that needed improvement, then defined the problem statement, worked out the project objectives, and scoped the boundaries. This resulted in a Project Charter (Fig. 1) that would guide the entire project. Beyond the paper, the Charter showed mutual respect and trust between Library and Faculty (and eventually the students) which was imperative for collaboration.

<b>Project Name</b>	SMU Library Seat Utilisation	<b>Date &amp; Version</b>	22/4/2015, V5
<b>Green Belt Candidates</b>	Jo Lee Xin Eileen Tan Yi Lin Lee Shu Wei Joshua Lim ThioW Ern Aldred Lau Wen Yang	<b>Contacts</b>	joxin.lee.2011@business.smu.edu.sg; 9297 3297 eileen.tan.2012@business.smu.edu.sg; 9236 1993 shuwei.lee.2011@business.smu.edu.sg; 9179 1343 telim.2012@business.smu.edu.sg; 9170 7481 aldred.lau.2012@business.smu.edu.sg; 9178 1198
<b>Process Owner</b>	Yuyun Wirawati Ishak Vincent Ong	<b>Business Impact (\$)</b>	Opportunity cost of \$1,240 per semester
<b>Executive Champion</b>		<b>Business Unit</b>	
<b>Start Date</b>	7-Jan-15	<b>Target Completion</b>	23-Apr-15

Element	Description	Team Charter				
1. <b>Process Definition</b>	The work process in which opportunity exists.	User: Student visits the library. If he cannot find a seat, he has to leave the library and look for alternative study spaces.  Library Staff: When seat hogging happens, library receives a complaint (email/face-to-face). Library staff addresses the complaint and proceeds to take action. At regular intervals, a library staff will patrol around Levels 2,3,4 and distribute 'hogging slips'. The hogger is expected to remove his belonging (or be at his seat) within 30 minutes. 30 minutes later, a library staff will do another round of patrol to check if seats are still hogged. If it is, items are stored in a trashbag and deposited at the security. To claim their items back, students have to visit the security. This process is done twice a day.				
2. <b>Business Case</b>	Describe the opportunity as it relates to business goals.	Instances of students finding alternatives in face of the lack of seats is misaligned with the library's mission of providing adequate learning space for the SMU community. Complaints arising from the lack of seats increase required manpower to address and take action. In addition, current solution of distributing 'hogging slips' and removing of belongings greatly increases unnecessary required manpower, and further generates more complaints. As a result, both library space and manpower are not utilised effectively to improve the core service the library seeks to provide.				
3. <b>Problem Statement</b>	State the significant issue the team wants to improve. Where is the pain?	From Weeks 11-14 of the academic semester, the Library sees a surge in the percentage of hogged seats to up to 31% of its capacity, which diverts manpower from its main operations to deal with both the problem and the complaints from users that ensue.				
4. <b>Project Objective</b>	What improvement is targeted and what will be the impact?  Quality metrics (Detailed calculations shown below):  Counter metric:  Productivity Improvement:  Financial Benefits:	Y: Library Seat Utilisation  Y1: Percentage of Hogged Seats to Total Seat Capacity  Y2: Number of Complaints Related to Seat Hogging  Y3: Number of Man Hours Taken to Clear Hogged Seats  User Satisfaction (Measured by SMU Library Quality Survey "Library as Place")  Number of complaints related to control measure  Financial Cost  Manhours  Cost of manhours library can put to better use	<b>Baseline</b>	<b>Goal</b>	<b>Entitlement</b>	<b>Units</b>
			31%	<20%	0%	-
			13	6	0	Per Semester
			100 hours	50 hours	0 hour	Per Semester
			7.3	≥7.3	10	-
			N.A	Minimize	0	-
			2,000 (100h X \$20)	Minimize	0	\$
5. <b>Benefit Impact (in 2015 Dollars)</b>	What is the improvement in business performance (Operating Income, Working Capital) anticipated and when? (Detailed calculations shown below)	Cost of implementation will breakeven after 3.5 semesters. The library will see a cost saving of \$1,240 per semester. Refer to 'Breakeven Analysis' tab for detailed calculations.				
6. <b>Scope &amp; Boundaries</b>	Describe the project's scope and boundaries. Describe what is in and outside the scope.	In scope: - % of hogged seats to total seat capacity in Level 2-4. - Complaints related to seat hogging Outside scope: - Project rooms and post graduate spaces (level 5) - Complaints due to capacity constraints (i.e. library too small)				
7. <b>Schedule &amp; Milestones</b>	List the key milestone activities with dates. Consider DMAIC.	<b>DMAIC Phases</b> Define Measure Analyse Improve Control	<b>Due Date</b> 14-Jan-15 21-Jan-15 21-Jan-15 28-Jan-15 09-Feb-15 28-Jan-15 16-Feb-15 25-Feb-15 11-Mar-15 7-Apr-15 19-Apr-15	<b>Activity</b> Initial Project Chartering Initial Process Mapping Initial KJ analysis with client Refine Process Map and KJ Analysis Measurement System Analysis Initial C&E Matrix Failure Mode and Effects Analysis Pugh Matrix Design of Experiment Design of Experiment 2 Control Plan		
8. <b>Benefit to company and/or customers</b>	Who are the internal/external customers, what benefit will they see and what are their most critical requirements?	Internal Customers: SMU Students, graduates, faculty Less complaints from library users and more productive manhours for library staff.				
9. <b>Support Required</b>	Will you need any special capabilities, hardware, etc?	Seat hogging data, manpower for observation & experiments & implementation, surveys, booking systems, gantries				
10. <b>Core Team Members</b>	Who are the full-time members? Who is the Process Owner?	Full time Members: Yuyun (Process Owner) and Vincent (Manager In Charge of handling complaints)				

Figure 1 Project Charter

## Project Milestones

The group of students assigned to work with Library consisted of five students from Business School. They were in their year 3 and year 4. The course would trained them in Six Sigma and project management tools to the level of Green Belt status, and introduced DMAIC (Design, Measure, Analyse, Improve, Control) methodology to manage small to medium-size process improvement projects.

A Business Research Librarian and Access Services Team Lead acted as Client/Process Owners. They were not only industry-partner/client who worked closely with the students but they also acted as active-mentor who gave feedback to both students and faculty. The project lasted for 1 semester (16 weeks, Jan-Apr 2015) in which the students needed to applied the theory to the project and worked together with the client (Library) to complete the project. A weekly meeting was scheduled for the student group to meet the client.

### ***Define (14-21 Jan)***

The project allocated to the group is to analyze and improve Library Seat Utilisation. The problem statement was defined as follow:

“From Weeks 11-14 of the academic semester, the Library sees a surge in the percentage of hogged seats to up to 31% of its capacity, which diverts manpower from its main operations to deal with both the problem and the complaints from users that ensue.”

The improvement target was set:

	<b>Baseline</b>	<b>Goal</b>
Y1: Percentage of Hogged Seats to Total Seat Capacity	31%	<20%
Y2: Number of Complaints Related to Seat Hogging	13	6
Y3: Number of Man Hours Taken to Clear Hogged Seats	100 hours	50 hours

Table 1 Library Seat Utilisation: Improvement Target

#### *Client's role:*

To critically review the target set by the team.

### ***Measure (21 Jan – 9 Feb)***

Once the project has been defined, the team (students and client) identified root-causes by using KJ-Analysis and measured the current practice using Process Capability.

#### *Client's role:*

To explain the current situation clearly and exhaustively so that root-causes can be identified.

### **Analysis (28 Jan – 16 Feb)**

The team continued to narrow down the most influential factors contributing to seat hogging and remove the statistically low-association-factors. During this milestone, students learnt to use Cause & Effect Matrix, Failure Modes and Effects Analysis (FMEA), and Multi-Vari Analysis.

*Client's role:*

To review the matrix and analysis and provide feedback.

### **Improve (25 Feb – 7 Apr)**

This stage was full of experiments! The team started to benchmark similar situations and possible solutions from other places. The students explored various literature and news articles, and managed to pull out several potential solutions from the benchmark study. Interestingly, there were many establishments that faced similar issues, ranging from library to coffee shops/cafés. The students even dug up concepts such as third-space and made connections to the current issue.

Pugh Matrix was used to determine which potential solutions were more important or 'better' than others. Design of Experiments were crafted and implemented based on three highest potential solutions:

*Concept #3: Seat booking system*

*Concept #8: Seat booking system with limited hours*

*Concept #11: Provide spare chairs with tables*

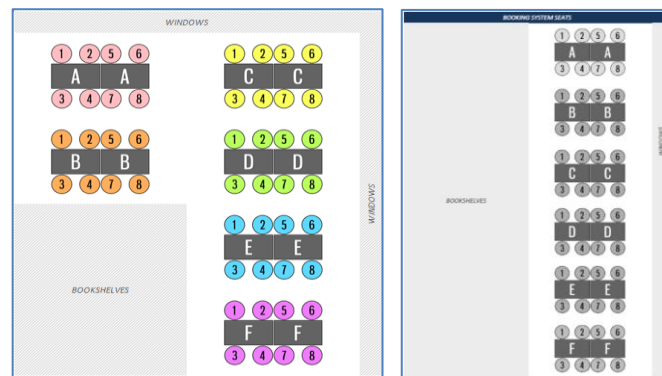


Figure 2 Design of Experiments: Seat Booking System and Spare Chairs

Measurements were again conducted to the experiments and feedback was gathered from library users. The findings showed that the experimental solutions statistically did not improve the seat hogging situation.

*Client's role:*

To point out best practices from literature or other sources, to provide avenue for the experiments, to coach the students when they need to communicate their project experiments to library users who got affected by the experiments.

## Control (19-24 Apr)

The team had to quickly review their experimental solutions and come out with Revamped Solutions and Design of Experiments 2. The team proposed two solutions by tweaking their initial solutions and taking into account all the feedback from library users:

1. Ensure Fair Seating  
**How?** Instant seat booking system with gantry control  
**Where?** Level 4 individual study cubicles
2. Promote Graciousness  
**How?** Education and Raise Awareness

As a final assessment, the students crafted a poster that described their DMAIC milestones and presented the poster to their class, industry-partners and SMU Community.

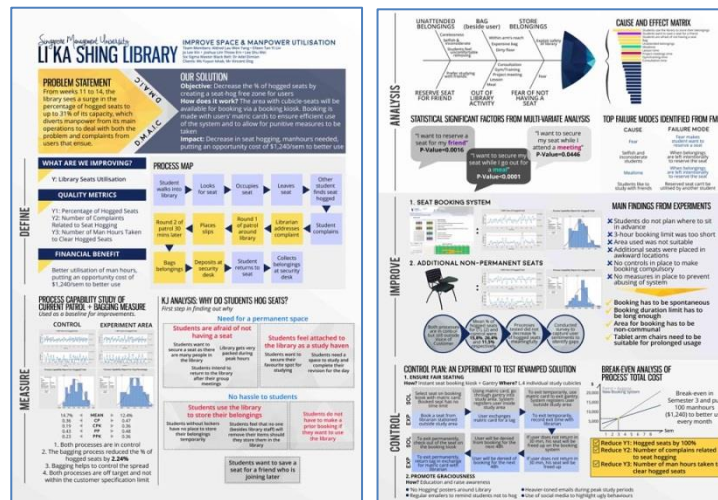


Figure 3 Poster Presentation

*Client's role:*

To give final feedback to the students and to celebrate with them.

## Experiential Journey: What did we learn?

We started this experiential journey with clear objectives. It was a 16-weeks full of activities and we managed to achieve the expected learning loop for the tripartite: students get a better understanding of what it means to use theory learnt outside the classroom, faculty learns how real world adapts theory, and librarians have deepen their own learning.

The students' learning outcomes were noteworthy. Not only they grasped the process improvement concept, which they applied in library seat utilization issue, but they could see the extension of the concept; other places and situations that could benefit from process improvement.

From information literacy's point of view, there were some IL concepts that Business Librarian managed to impart to students. While looking for best practice and benchmark information, students learnt to find authoritative sources in different format (people/tacit knowledge, news articles, books/articles) and they maintained an open mind when facing different/contradicting viewpoints. They also learnt to appreciate a question that might seem simple but in actuality

more complex to investigate. And finally, they recognized the limitations of experiments and the needs to perform further research or investigations.

For Librarians, we learnt that collaboration between library and faculty required meaningful conversation and contribution from both sides. We also concluded that library can indeed support and contribute to experiential learning. The experiential learning process took more time and longer commitment, compare to typical in-class instructional sessions, but it generated a simple positive emotional experience, which, according to Becker (2012), engaged students in a collaborative relationship, empowered both librarians and students, and made librarian an integral part of learning.

Thank you for giving us the opportunity to work with the Library and believing in our work! This project is definitely one of the more meaningful projects I have done and delivering the project today was a great way to conclude my 4 years in SMU – Lee Shu Wei, Year 4 Student, Project Member

Thank you so much for all the assistance and support throughout our project. It was very interesting exploring a problem so close to heart. We learnt a lot and it has been an awesome 16 weeks! Think this is a really great project to end our SMU journey - Lee Jo Xin, Year 4 Student, Project Member

Figure 4 Students' Final Feedback to Library

### **Final Thoughts**

There were three significant outcomes from this project: the learning objectives were achieved, the business solution from the project was usable (postscript: library implemented the modified solution in Mar 2016) and a deeper engagement with students and Business School Faculty was established.

The collaboration on MPI Project has opened up many possibilities. It showed that not only library contributed positively to the experiential curriculum, but also established the value of library in the learning environment. Several other experiential/project-based courses (iBeacon project, occupancy detector, proxy log as big data) had collaborated with Library, by either engaging Library as client, consultant, or data owner.

The collaboration also displayed Library's involvement in building bridges between academia and the real-world, where the students "won't need the discourse conventions of their major but will still need to interpret, use, and create information" (Fister, 2015).

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