

Scaffolding Project Management Best Practices through Experiential Learning in a Large Enrolment Online Course

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Abstract:

Experiential learning is most often associated with small group face-to-face learning. This paper focuses on a second year undergraduate course in which Kolb's experiential learning cycle scaffolds three weeks of a large enrolment online course. The instructor discusses how the project management course, which is open to all second year and higher students at the university, draws on students' own project experiences. Elaborated step-by-step is the course's experiential learning arc in which small teams of students complete an online collaborative task, generate data about the experience, reflect on the experience, and then apply lessons learned to a second collaborative task.

Key Words:

online learning; experiential learning; large class teaching; project management.

Introduction

Project experiences in which students collaborate together on the development of a product for course credit are becoming increasingly common in schools and universities (Brooks and Holmes, 2014). This is especially true of capstone courses in the upper undergraduate years, as well as graduate programs. So too, field based co-ops/internships and university-based entrepreneurial incubators often incorporate project experiences that lead to concrete, publicly disseminated outcomes. Perhaps most importantly, university students are preparing for the world of work where project collaborations are increasingly becoming the norm across many industry sectors (Davidson, 2014).

In order to be successful, collaborative student projects are ideally scaffolded by focused training in project management best practices (PMIEF, 2014; Hutchison, 2016). As a certified Project Management Professional (PMP), I recently developed and taught (twice so far) an online foundations of project management course which is open to any

second year and higher undergraduate student at Brock University. This teaching report begins by introducing IASC 2P01 plus a few of the course components. The balance of the paper then focuses on how experiential learning theory informs a major activity arc which spans three weeks of the twelve week course. I discuss the challenges of integrating experiential learning into an online course which draws its 100+ enrolments from a diversity of academic disciplines.

Foundations of Project Management Course

I am the Director of the Centre for Digital Humanities at Brock University which prepares students for careers in the interactive media industry through its four-year Interactive Arts and Science (IASC) undergraduate program. In 2014, the IASC program governance committee identified a significant gap in the training students were receiving related to project management best practices. Up until then, project management training was largely embedded in our capstone fourth year course in which students collaborated on the development of a video game or other interactive media product. However, we were finding that it was too ambitious a goal to introduce project management theory at the same time that students were completing a high stakes project, such as a video game that might be entered into competition.

The Centre decided to scaffold the development of project management skills over all four years of the IASC program. (We also incorporated project management learning outcomes directly into the IASC program's degree level expectations.) In Year 1, students would be introduced to a targeted selection of project management best practices as they completed small scale individualized interactive media projects in our program orientation course. In Year 2, students would complete 36 hours of formalized project management training (which is the focus of this paper). In Year 3, students would augment the generic project management training they received in Year 2 with more specialized project management training related to the interactive media industry. In Year 4, they would apply all they had learned to the development of an interactive media product, working collaboratively as a team.

As we began to think more deeply about the second year foundations of project management course, we realized that it would be of benefit to other students across the university. For this reason, the Centre elected to develop the course as a large enrolment online offering in order to attract as many students as possible. As I am a certified project manager, I took the lead in developing¹ and teaching the new course. Below is the course description²:

IASC 2P01: Foundations of Project Management

Professional strategies for planning and managing projects from inception to closure. Managing risks and constraints. Promoting collaboration and communication. Time management strategies for individuals and project teams.

¹ The time management content in the course was developed in partnership with the Manager for Brock University's Learning Services unit which provides learning support services to students.

² The course outline, the final assignment template, and a project management inventory which is completed by students in the course can be downloaded from:
http://eduproject.org/pbl_handbook/index.html

Solutions to common project management challenges. Introduction to project management software and organizers.

Reflection on Experience

In general, project management courses tend to be either business or engineering focused. However, our new course needed to connect to a broad audience of students who belong to a diversity of disciplines. I made a decision early on that in order to make the course as meaningful as possible for students it would be important for the course to draw directly on students' own individual project experiences (as leaders or participants) across diverse contexts (e.g., school, work/volunteer, and/or leisure), rather than business-centric case studies as is the norm. Throughout the course, students would be asked to reflect directly on their personal project experiences in unique ways. For example, below are two forum questions from Weeks 2 and 4 of the course:

"In meetings with employers or clients, project managers are often asked to briefly summarize a project they have worked on. In 150 to 200 words, summarize a project (of any kind) you have led or participated in. Use professional language. Imagine you are answering this question during a job interview. Think about the essential information you would like to share that will provide other students in the course with a good understanding about the project you were involved in and the role you played."

"Reflecting on your own time management experiences, list three things you do on a routine basis that help you manage your time."

Reflection on experience also extends to the assignments for the course. Early on, students are asked to write a 400 to 500 word personal statement in which they address their project management strengths, challenges, and goals, citing specific examples from their academic, work, and/or life experiences and connecting them to the project management standards, as discussed below.

The Project Management Standards

Although the foundations of project management course draws on the experiences of students, it is also closely aligned with the professional project management standards which are maintained by the Project Management Institute (2013), the leading certification body for professional project managers in North America. (The required course textbook (Horine, 2017) is also directly aligned with the project management standards.)

More specifically, the course is organized around seven of the ten project management knowledge areas which frame the readings, activities, and assignments in the course. The course outline excerpt below shows how the knowledge areas are contextualized for students within the course:

- scope management (e.g., delineating the requirements for a project);
- human resources management (e.g., leading or working with a project team);
- communications management (e.g., keeping everyone informed about a project's progress);

- time management (e.g., managing time and/or creating schedules);
- quality management (e.g., ensuring the excellent quality of a project);
- risk management (e.g., planning for and managing risks to a project);
- stakeholder management (e.g., working with a project client or sponsor).

Taking a page from project-based learning, the weekly topics for the course are expressed as driving questions which directly connect the learning for that week to each student's personal experiences and professional development as a project manager:

- Week 1: What are my project management learning goals?
- Week 2: What is project management and why is it important?
- Week 3: What are the components of a project plan?
- Week 4: What are some best practices when it comes to time management?
- Week 5: How can I build a realistic schedule for all the work that needs to be accomplished on a project?
- Week 6: What steps can I take to ensure a quality outcome for a project?
- Week 7: How can I use organizers to effectively manage a project's progress and quality?
- Week 8: How should I plan for the risks that may jeopardize a project?
- Week 9: What project management leadership qualities I should endeavour to develop?
- Week 10: What communication strategies should I employ in order to ensure everyone stays connected?
- Week 11: How can I build a project team that gets along and is productive?
- Week 12: How should I handle the most common project management challenges?

Experiential Learning

Throughout the course, students complete textbook and other readings (including one written by the instructor (Hutchison, 2015)), view videos, and interact with one another in the online forums. Such tasks are fairly typical of online courses. However, in order to provide students with in-course opportunities to practically apply what they are learning theoretically about project management, the course includes an experiential learning activity arc through which students reflect on the experience of applying theory to practice in collaboration with other students in the course. This activity arc is aligned to David Kolb's (1984) experiential learning cycle, a staple of adult education theory for several decades.

In brief, Kolb posits four distinct stages of learning which together constitute the experiential learning cycle. Although meaningful learning can begin at any of the four stages, learning most often begins with a *concrete experience* of some kind. This experience is then reflected upon at personal (and often shared) levels in the *reflective observation* stage. Drawing out from and identifying generalizations related to the

experience constitute the *abstract conceptualization* stage. Applying what is learned to a new experience or challenge constitutes the *active experimentation* stage of the experiential learning cycle.

A number of philosophical principles inform experiential learning theory. The following are particularly key to the foundations of project management course:

- the experiential and participatory nature of learning;
- reflection-on-experience as a central learning process;
- the importance of applying learning to real-world contexts;
- the importance of reflecting on personal learning within the contexts of professional bodies of knowledge and the advice of experts.

With reference to the last bullet point above, the decision to both privilege student experience *and* align the foundations of project management course to the project management standards is key. The requirement that students familiarize themselves with the project management standards (abstract conceptualization) serves as a kind of 'corrective measure' in grounding students' reflections-on-experience within the context of the project management literature. Throughout the course, students are prompted to reflect on their project management experiences within the contexts of professional project management best practices and the advice of experts.

Integrating Experiential Learning into a Large Enrolment Online Course

Integrating experiential learning into online and distance education can be challenging due to the lack of a real-world situated face-to-face learning context which a regular classroom setting affords (Richmond and Cummings, 2005). However, a shared online experience can nevertheless serve as a rich educative experience in which experiential education is experienced virtually by students, ideally within a Community of Inquiry context in which students feel invested (Dunlap et al, 2016).

The experiential learning activity arc in the foundations of project management course runs from Weeks 7 to 9. During Week 7 the students are grouped into online forum teams of six. Each small forum team is tasked with using online tools alone to collaboratively design a checklist organizer for monitoring the progress of a project.

Below are the instructions for Week 7 (with some of the technical details omitted):

1. In your small project forum teams, brainstorm the list of 'look fors' a project manager needs to track during the execution phase of a generic project. Think of this task as a 'mini project.' Use your project management skills to complete this task to the quality standards your forum team will be proud to share publicly. Hint: Your forum team may wish to appoint a project manager for this week to facilitate the 'mini project.'
2. Work together in your forum team to sort and organize the 'look fors' into categories of your choosing.
3. Once you have a completed list, create a master checklist using the "Organizer Template.doc" document in the online resources folder for this week.

4. Once your forum team has finalized its organizer, name it following this example:
Forum 1 - Team 1 Organizer.doc.
5. No later than Sunday, have one member of your forum team send its organizer to the instructor with the subject line: IASC 2P01 Organizer. The organizer will be posted online for other forum teams to view and compare with their own.
6. After your forum team has submitted its organizer, complete the online poll for this week.

The anonymous poll the full class of students complete after having submitted their forum team's organizer asks each student to reflect on the experience of collaborating online with other students:

I became confident that our forum team's checklist organizer would be successful:

- a) Early on in the week
- b) At the mid-point of the week
- c) Later in the week
- d) I never felt confident

The following week, students are asked to consider the following question in the online forums:

"Reflecting on the poll results for last week and the experience of your small forum team in collaboratively designing its organizer, discuss as a full forum group the experience of working together on small project teams to accomplish an online task. Consider what went well and what could have gone better. Then suggest specific things that your small forum team might do the same or differently for next week's collaborative online task."

The above activity arc guides students through each stage of Kolb's experiential learning cycle:

1. During Week 7, small teams of students collaborate on a goal-oriented task that is disseminated publicly to other students. (Concrete Experience)
2. The full class of students generate collated data about their collaborative experiences via an online poll. (Abstract Conceptualization)
3. During Week 8, the students reflect on i) the poll results; and ii) their collaborative experiences the previous week via a forum question. (Reflective Observation)
4. During Week 9, the small forum teams complete a second collaborative task (i.e., drafting a job posting for a project manager position), applying what they learned from their previous collaborations. (Active Experimentation)

In addition to guiding students through the experiential learning cycle, the above activity arc also reinforces a number of project management best practices which are referenced throughout the course, e.g., collaborating productively with others, reflecting on the success of a project, and applying lessons learned to a new project.

Instructor's Reflections on the Experience

The foundations of project management course has been well received by students. (The most recent offering received a 92% student satisfaction rating on the global question, "Would you recommend this course to others?") The three-week experiential activity arc has also been received positively by students who enjoy the opportunity to collaborate directly with their peers on meaningful tasks that will be shared publicly.

Nonetheless, some students have expressed their frustration with the challenge of completing a group project online. Specifically, they have raised concerns related to the challenge of communicating with other students in an asynchronous online course in which students often log into the forums at different times throughout the week. As well, some students express frustration with the online collaborative tools that are directly available to them through the university's learning management system, even though forum teams are expressly invited to use other online tools which are not part of the course (e.g., Google Docs). (In my experience, about three quarters of the forum teams take advantage of this option.)

In both of the above respects, my experience is consistent with the online experiential learning challenges which Baasanjav (2013, p. 587) experienced in "building a community through virtual classes...[and] accounting for differences in access to technology, technological skills, and confidence among students." A technology which I am currently experimenting with in the course is called Bluepulse. This technology allows students in an online class to have anonymous exchanges with the instructor who is able to converse with individual students about the course content, without the need for students to reveal their identities. As well, Bluepulse includes tools for creating anonymous surveys. Again, an instructor can respond to an individual student's survey responses whilst retaining the anonymity of the student.

The anonymous responses to the online poll are interesting as they provide a helpful quantitative measure of the students' growing confidence level in their small forum teams as they complete a second online collaborative task together, applying lessons learned from their first collaborative task. Below, for the most recent iteration of the course, are the poll results for both the first and second collaborative tasks which are separated by a week of reflection:

Task 1: Project Management Checklist Organizer

I became confident that our forum team's checklist organizer would be successful:

- a) Early on in the week - 11%
- b) At the mid-point of the week - 22%
- c) Later in the week - 58%
- d) I never felt confident - 9%

Task 2: Project Manager Job Posting

I became confident that our forum team's checklist organizer would be successful:

- a) Early on in the week - 26%
- b) At the mid-point of the week - 34%

- c) Later in the week - 37%
- d) I never felt confident - 3%

Returning to Kolb's experiential learning cycle, it is clearly helpful to the foundations of project management course's experiential learning arc that students are able to apply lessons learned from their first collaborative task to a second collaborative task. In doing so, the active experimentation phase of the experiential learning cycle feeds directly into a new concrete experience which then leads students a second time through the experiential learning cycle, this time equipped with lessons learned from their first journey through the experiential learning cycle. Judging by the poll results above, this experience builds confidence in the forum teams' collaborative work together. Ideally, it also builds confidence in each student's sense of self-efficacy as a project manager - the confidence that each successive project management experience they become involved in has the potential to be a better experience than the last.

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