ABSTRACT

Undergraduate students applied experiential learning through a case-based business model to assist a company in receiving Benefits Corporation certification. This advanced project management course allowed students to apply project management to a hypothetical situation. The faculty champion provided minimal guidance while students achieved success for this innovative pedagogical approach.

Keywords: Innovative education, project management, student competition, pedagogy

INTRODUCTION

Operations and systems management majors at Michigan Tech were invited to participate in a pilot competition featuring the development of a case study followed by a project plan, which was the main focus of the competition. The pilot program was run by the Western Michigan Chapter of the Project Management Institute (WMPMI). This chapter is a part of the Project Management Institute, an international organization promoting the standards and practices of sound project management approaches and techniques.

For the 2011-2012, the WMPMI developed a competition for undergraduate students. The intent of the program was to increase interest in the project management profession. This encourages student team participants to consider project management as a profession. The growing adoption of project management practices by public and private entities has led to an increased need for trained professionals in this area.

The purpose of this discussion is to outline the pedagogy associated with the competition as opposed to describe the competition itself. The course information is outlined. The discussion is wrapped up with the lessons learned from an educational perspective as opposed to a competition process perspective. The latter will be addressed by the competition organizers.

WESTERN MICHIGAN CHAPTER OF PMI OBJECTIVES

The WMPMI formulated a set of objectives which were the basis for further development of the course learning objectives presented in the About the Course section. “Students will…

- Receive an intern like opportunity in Project Management.
- Experience a great opportunity to work on real business problems and create a real project plan for a business.
- Enjoy a networking opportunity to interact with business leaders.
- Gain real life world opportunity to showcase leadership and interpersonal skills.
- Represent their school in a collegiate competition.
- Develop career focused skills which will translate to career opportunities.
- Participate in “hands-on” learning in a team environment. (Talsma, WMPMI, 2011)”

These objectives laid the foundation for the Project Management Collegiate Competition, known as the THE Project 2012.
ABOUT THE COURSE

The details about the course include the course description, prerequisites/co-requisites, team composition, why participate, course objectives, special course features, instructional methods, skills, team/peer evaluation, mentors evaluation, and project plan assignments (corresponding to deliverables outlined in the competition information).

Course Description
The project is intended to extend the basic project management concepts, tools, and techniques to an advanced level of application through engagement in the Project Management Institute (PMI) project management plan competition. Students will also use advanced MS Project applications in the development of their plans. The course will use an interdisciplinary approach in the application of advanced project management concepts.

Course Prerequisites/Co-requisites
Student must have completed or be concurrently enrolled in OSM3200 Project Management (or other comparable project management course). Students should have strong analytical and computer aptitudes. For next year, it will be a requirement for students to have completed a project management course prior to competing in the competition. All but one of the students had completed a project management course.

Team Composition
It was anticipated that students at Michigan Tech majoring in operations and systems management would be the primary team participants. There are a few management majors. Students self-selected to participate in this project. Incidentally, they were all top students and were willing to work through a pilot program that may have some bumps along the way. Since the participation on a competition team has gained increasing interest from students, there will be an application process for students interested in participating in the 2012-2013 competition. Team size was limited to four to six participants. Each of the two Michigan Tech teams had four students. There were five female and three male participants.

Why Participate?
The major attraction for participating in THE Project competition was to have a recruiting tool for operations and system management majors. The faculty champion was not compensated for the time spent in working with the teams and it was conducted as an unpaid overload. Even fielding two teams required more time than initially anticipated. This was likely because there were changes that were unanticipated and not documented in the initial information provided regarding the competition.

Course Objectives
At Michigan Tech it was decided that there was sufficient enough work to create a separate course for students to enroll. When students are going to receive a grade for their efforts, they tend to spend more time and the quality of the output is much better. As indicated earlier, the students that self-selected and did want to earn course credit. They felt it would enhance their marketability upon graduation. Other participating universities did not take this approach.

Because this was a credit course, learning objectives were created to extend the introductory course topics and application. After completing this course, students will be able to:

- Develop a case study using a selected company as a prospective company to implement practices to achieve B-Corp certification.
Link project management objectives with organizational strategies.
Formulate a well-developed project plan that can be used for project implementation.
Develop a comprehensive project plan applying PMI concepts, tools, and techniques.
Used advanced project management techniques such as risk management, communication plan development, and other quantitative tools.

The case study topical area was chosen by the WMPMI and is likely to change in subsequent years. Therefore, the first learning objective will need to be modified to reflect this change.

Special Course Features
This course is unique from other course offerings in the Michigan Tech School of Business and Economics. The special course features include the following:

- Students will gain an understanding of a new business form referred to as a Benefits Corporation (B Corp). The strategically aligns with Michigan Tech’s Strategic Plan by applying a triple pronged approach to long-term sustainability by focusing on economics, environmental, and societal dimensions. In addition to focuses on an organization’s shareholders, it extends the value concept to the additional dimensions of environment and society.
- Students will learn about the third-party assessment process associated with this new legal classification. Some students may be exposed to audits in their course work but may not have known about third-party assessments to achieve certification.
- Students will interact with one or more project mentors from the Western Michigan Project Management Institute Chapter. These mentors will work in conjunction with the team and the instructor. The students will be working with real life companies.
- The assignments will be submitted for grading by the instructor, review by the mentors, and judging by the panelists.
- There is a high level of exposure for Michigan Tech School of Business and Economics to gain recognition for the students and increase the career opportunities after graduation.

Instructional Methods
A variety of methods will be used to transfer the knowledge and skills of operations management to you as a student. The following methods will be used:

- Instructor Facilitation
- Targeted Readings and Discussions
- Team Activities and Exercises
- Case Study Analysis
- Video of Sample Company

Skills
You will be using many different skills in this course. There are several prerequisites prior to taking this course, which serve as the foundation for topics covered. It is important to have completed the prerequisites prior to taking this course. You will use the following skills:

- Problem solving skills
- Critical thinking skills
- Analytical skills
- Presentation skills
- Statistical skills
- Computer application skills
- Team interaction skills
**Teams**

Teams are the primary basis of this course. Each team will be required to provide two peer evaluations during the semester. One will occur mid-semester and the second will occur at the end of the semester. The evaluation forms will be created by each of the teams to evaluate peers.

**Mentors**

Mentors serve an important role in the process of completing the deliverables. They will also play a role in determining your final grade in the course. Each team will create a form that will be used by mentors for mid-term and end-of-semester feedback and grading. You may collaborate with your mentors in the development of the evaluation form. Each mentor team will be required to provide two team evaluations during the semester. One will occur mid-semester and the second will occur at the end of the semester. These evaluations will be submitted to the instructor and then the feedback forwarded to the team. In addition to the written feedback, point values will be assigned.

**Project Plan and Related Assignments**

The primary basis for this course is to develop a detailed project plan and related assignments to successfully fulfill the requirements for the PMI competition. At the end of the semester, each student will be required to identify what they specifically contributed to their team's project plan through the use of the team developed peer evaluation form. Just attending team meetings is not sufficient enough to be considered as a contributing member. It is important to make sure that you submit the assignment BEFORE the deadline. It is estimated that you will need to spend approximately, on average, 5-9 hours per week to complete the recommended assignments. It is possible in some weeks that it will be more and other weeks it will be less.

**Course Grading Structure**

Below outlines the grading policy:

<table>
<thead>
<tr>
<th>Grading Category</th>
<th>Points</th>
</tr>
</thead>
<tbody>
<tr>
<td>Peer and Mentor Evaluation Forms</td>
<td>100</td>
</tr>
<tr>
<td>Mentor Evaluations (2 x 100 points each)</td>
<td>200</td>
</tr>
<tr>
<td>Peer Evaluations (2 x 100 points each)</td>
<td>200</td>
</tr>
<tr>
<td>Project Plan Deliverables and Related Assignments</td>
<td>600</td>
</tr>
<tr>
<td>Final Presentation and Overall Placement in Competition</td>
<td>100</td>
</tr>
<tr>
<td><strong>TOTAL POINTS</strong></td>
<td><strong>1,200</strong></td>
</tr>
</tbody>
</table>

This appeared to be appropriate at the inception of the competition. However, there was a modification to the competition that added another deliverable that had not been initially documented and was not factored into the grades.

**A BRIEF ABOUT THE COMPETITION**

The competition was designed and developed by the Western Michigan Chapter of the Project Management Institute. It is designed for undergraduate business students with the goal of furthering the project management profession. Student teams were overseen by faculty champions at each of the six universities. The student teams were each assigned two company mentors who generally had a conference call with their teams each week throughout the competition. At the inception, there were three defined deliverables for the students that were based on developing a project plan. The three deliverables and change control were developed to form the final project notebook. The performance criteria for the deliverables were based on the Project Management Institute (PMI)
Project Management Body of Knowledge (PMBOK). Additionally, the students were judged on the basis of their business case. Each student was to select an actual company or to use a fictitious company desiring B Corporation certification. Each of the eight student teams gave presentations to a set of astute business professions. The presentations and the deliverables were assessed to identify a top team. The competition has garnered national and international attention and it is expected to grow even more next year.

**CRITICAL THINKING – BLOOM’S TAXONOMY**

The course was designed like a senior level capstone course. The future intent for this experiential learning experience is for students to have an option to select THE Project completion for the capstone experience for those students majoring in Operations and Systems Management.

Bloom’s Taxonomy provides guidance to ensure higher order cognitive development. In the perspective of this course, the students applied metacognition which requires students to focus on abstraction to transfer them from one context to another through application of prior learning (Putnam, 2000). They were given vague requirements for developing a case study for a hypothetical company who would be pursuing B corporation certification. The students came to the course with substantial knowledge, comprehension, and application of project management concepts and tools along with the basics of Microsoft Project 2010. As a result of their participation in THE Project 2012, they were able to extend their application to allow for analysis evidenced by breaking down the project, categorizing and classifying tasks in the work breakdown structure (Athanassiou and McNett, 2003). As they further developed their project plan, they were able to create new ideas and structures through synthesis (Athanassiou and McNett, 2003). Finally, the teams exhibited the highest level of cognitive development through their ability to judge the value of the material for a given purpose based on definite criteria and rationale which included decision-making and selection to achieve this highest level domain of evaluation (Athanassiou and McNett, 2003).

**LESSONS LEARNED**

As with any course or endeavor, capturing the lessons learned from an instructional viewpoint and in the spirit of continuous improvement, implement the changes for the next offering. Although most students had already completed project management, it was clear the one student who was taking the course concurrently may have not received the full benefit nor clearly understood the building block nature of the two course sequence. When the solicitation for students was sent out, it was a requirement for the students to be majoring in one of the business disciplines. In the future it would be advantageous to offer it on a competitive application basis to all students who have completed project management. Similar application processes are used for team selection for other business competitions in the Michigan Tech School of Business and Economics.

Lessons learned for the competition process will be provided to the organizers. These lessons include documenting upfront what the roles and responsibilities are for the faculty champions and the company mentors. It was unclear for both. Additionally, having championed two teams, the level of mentor support differed. The time commitment should be well communicated upfront. As a faculty champion, I would take a greater role in participating in the project mentor/student team project meetings. There was too much emphasis on earning points and team placement after each deliverable. This took from the educational emphasis to a point in which it was distracting. The points were also unevenly distributed and did not appear to be a strong correlation between points to be earned and effort required to complete the deliverables. The publication of standings if a team was not near the top early on really was a disincentive to excel. Finally, the cash prizes appeared to be out of line with what most student competitions of this nature present. A traveling
trophies for the winning school with the students' names and individual plaques for first, second, and third place may be more appropriate.

The peer and mentor evaluation process will be standardized. This will allow for consistent information for multiple teams from the same university. Each team designed their own forms this year. It is a good starting point to develop a single form for the team peer evaluation and the project mentor evaluation. Fewer points will be allocated toward evaluations and more points given towards deliverables.

**SUMMARY AND CONCLUSION**

This was a great educational experience for students using discovery-based learning in an unstructured forum that allowed for high cognitive development and a thorough application of all of Bloom’s taxonomy of educational objectives. It stressed the importance of project management in the implementation of major change initiatives such as B-Corp certification. It was an advanced project management course emphasizing real-life application and allowed for an integration of business skills and knowledge obtained in the students' chosen curriculum. Emphasis on the triple bottom line of economic, environmental, and societal dimensions aligned with what companies seek to achieve beyond the traditional shareholder value. Finally, students are well prepared to hit the ground running either for internships or career opportunities where free form learning and application occur to solve business problems and make well informed decisions.

**ACKNOWLEDGEMENT**

Special thanks to Kelly Talsma, VP of Education for the Western Michigan Chapter of the Project Management, for the chapter’s invitation to participate in this year pilot competition. We are the only university that was not in close proximity to Grand Rapids, MI. Michigan Tech is located in Houghton, MI. It is about 500 miles and close to a 10 hour drive from Houghton to Grand Rapids. Michigan Tech has alumni throughout the State of Michigan and also has active members in the WMPMI. This was a great opportunity for Michigan Tech students to gain exposure for well-educated and top-notch students. It also provides Michigan Tech with future opportunities with employers in the southwestern region of the state of Michigan. The students and faculty are grateful for this opportunity and look forward to participating in future years.

**REFERENCES**

