Computer and Information Technology Students and Organizational Leadership and Supervision Students Learn How to "Play Well" in Interdisciplinary Project Management Course

Julie A. Phillips
Associate Professor OLS
(812) 348-7207
phillip4@purdue.edu

Dewey A. Swanson
Associate Professor CIT
Purdue University College of Technology
4601 Central Avenue
Columbus, IN 47203
(812) 348-7238
dswanson@purdue.edu

Universities graduate thousands of students every semester. These students then go out in the "real" world and pursue careers in their major field of study. While at work, many will be assigned to cross-functional projects, each employee bringing to the team their particular area of expertise. For some, this is the first time they have truly worked on a project. Don't misunderstand. Students have worked on a myriad of team projects through their academic career. However, very few truly know how to manage a project. Most are assigned a project, put into a homogeneous team (all from the same major), given the assignment, and told, "Go". Little, if no, instruction is given on project management, team development, team leadership, team management, etc. Also, most lack the ability to work in heterogeneous teams (different disciplines) because upper-level core-curriculum courses are usually not open to other majors.

At Purdue University's College of Technology, the Columbus, IN campus, the senior level Computer and Information Technology (CIT)/CIT 480 and Organizational Leadership and Supervision (OLS)/OLS 450 Project Management courses combine both these populations of students. The professors from these two disciplines team teach this class.

Approximately three years ago both the CIT and OLS curriculums were updated and a project management class was added. Both disciplines taught the basic theories and fundamentals of project management, utilized Microsoft Project as the coursework tool, and assigned a team project focused around the discipline. CIT students worked on a computer related project and OLS worked on a leadership project. As one would suspect, only CIT students were allowed to enroll in their CIT project management course and only OLS students were allowed to enroll in their OLS project management course. The two professors who taught in these disciplines met and discussed that team teaching these classes would greatly benefit the students by placing them in a cross functional team which is more applicable to real life.

The spring semester of 2005 was the first time that this co-listed project management class was offered. The course material was divided between the two professors, with the CIT professor focusing more on teaching Microsoft Project as the tool to be used for the project and the OLS professor teaching the theory and fundamentals of project management and team development.

The Director of the Business department at our local campus was made aware of this course and asked if the senior level Business students (Bus) could enroll. We definitely said yes, since this would make the project teams more diverse.

Since the course focused on not only learning the material but applying the material through an actual project, we hit the ground running by assigning the project teams during week one of the class. We divided the OLS, CIT, and Bus students into equal teams. As suspected, the students weren't thrilled with being separated and taken out of their comfort zone. Once the teams were assigned we had them meet, during class, and exchange basic information: name, major, work experience, email, phone numbers, schedules, etc. We also had them share some generic information: favorite M&M, what music you would take along with you if you were stranded on an island, something interesting about you that most people don't know, etc. The latter information was used to promote team building.

During week two of the class, the teams met and determined the following: project, project manager, assistant project manager, and other roles and responsibilities of the team members. This was then documented and handed into the instructors.

As the semester progressed the nuts and bolts of project management were taught. We covered the following topics:

- The Triple Constraint
- Project Management Knowledge Areas
- Project Phases and Project Life Cycle

Each of the above topics was detailed through lectures, practical application of using Microsoft Project, and team activities. Every time that we did a breakout activity with a team, we utilized the original project team that was assigned during week one. We wanted to allow these diverse groups of people ample time to get to know each other, through actual work/team activities.

The class utilized quizzes, exams, Microsoft Project labs, and team activities. These were used to reinforce the above topics. The Microsoft Project labs and the team activities were "trial runs" for using the tools and techniques for the main team project. Because of this, completion of the exercise earned total points possible. The professors provided valuable feedback on the labs and team activities, so the teams knew how to utilize the tools and techniques for the actual team project.

The team project was broken into 4-phases with a deliverable at the end of each phase. A sample phase is as follows:

Phase 1 – Management Review (M-Review) by Project Sponsors

- Design a Project Book Cover
- Charter
- Stakeholder Analysis
- Preliminary Work Breakdown Structure, 2-levels, tabular form (no Gantt Chart)
- Scope Statement
- Team Contract

The phases were submitted by the project manager of each team. The professors, during the project phases, became the Sponsors of the project (in project management terms this is the person who is responsible for the funding, direction, and support of the project). When the phases were submitted, the review by the Sponsors, was considered an M-Review. An M-Review is a management review between the project manager and the Sponsor. During this M-Review the Sponsor could make changes, ask for clarification, or kill the project. We as Sponsors did make a significant change to each project after phase two. One project's budget was cut in half, one was given additional funding, one's due date for completion was moved up 1 month, and one team had a student drop the course during the semester, who took all the documentation with him. Because of this, we as Sponsors did not have to create a dilemma; this team experience a "real" dilemma. We purposefully created this drama to simulate the "real-world". A project doesn't run smoothly from start to finish, things happen, and when things happen, the team needs to learn how to pull together and create a new plan.

Once each project phase was graded (by the professors), we them became the Sponsors and reviewed comments/corrections with the project manager. The project manager's job was to then call a meeting with the project team, present the findings, and make corrections to the project that were suggested by the Sponsors. We as Sponsors kept copies of the corrections that we suggested and looked for evidence of these corrections when subsequent phases were submitted for an M-Review.

As stated above in Phase 1 the teams had to create a Team Contract. The purpose of this was to get the teams focused not just on the deliverables, but how to effectively work as a team. And, that working effectively as a team doesn't just happen, it has to be created and managed. This contract consisted of the following:

- Code of Conduct
- Participation
- Communication
- Problem Solving
- Meeting Guidelines

The teams had to fill in under each category how they specifically would work as a team. An example under Meeting Guidelines might read, "Meet weekly during class, Judy will take the notes and post them within 24 hours". Each member of the team signed the contract. We as professors knew that the teams would copy what was in the textbook, but change the names, dates, and times to reflect their team. Because of this, we "messed" with the teams during one in class assignment, which forced them to revisit their team contract and make corrections, based on how they were really performing as a team. The lecture material reinforced this concept and really got the teams thinking about how important it is to work effectively as a team. We also used the team contract when team members complained about another team member. We told them to approach the team member and use the team contract as a tool.

The final deliverable for the team project was a detailed report and presentation. The detailed report consisted of the following:

- Cover page (Team Logo, Project Name, Team Members, Date)
- Table of Contents
- Executive Summary

- Charter
- Scope Statement
- Stakeholder Analysis
- Team Contract
- Project Cost Estimate Worksheet for Personnel
- Materials Cost Budget
- Quality Assurance Statement
- Stakeholder Communication Analysis
- Risk Assessment/Management Plan
- Procurement Analysis
- Expanded Work Breakdown Structure
- Expanded Gantt Chart
- Lessons Learned

The presentation consisted of an executive summary, scope statement, lessons learned, and Q&A. Each member had to dress professionally and present a portion of the project. The presentations were 25 minutes in length.

We have completed teaching five sections of this class. Based on input from the students and professors we have made changes to the course. Some of those changes are listed below.

- Students pick their own projects
- In-class time to work with teams
- In-class time to use Microsoft Project
- Individual assignments using Microsoft Project
- Keep cross functional teams
- Assign teams early in the semester
- Do team building exercises throughout the semester

The future for this class it to continue to have a diverse group of people and to open this class to other majors as requested. Project management is a valuable skill that students will utilize in the work place. However, just learning the "pieces part" of project management and Microsoft Project will not make a project successful. It is the people side of project management that makes a project succeed or fail. At Purdue University College of Technology we simulated this real-world work experience in our project management course. We hope to continue to offer this class and make refinements as we proceed into the future.

Reference

Schwalbe, Kathy (2006). *Information technology project management* (4th ed.). Massachusetts: Thomson Course Technolgy.