

Building Project Managers for Tomorrow
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Abstract

It does not matter if you are managing a \$10 billion expansion project for a large financial firm or planning a high-school dance, both of these examples require an understanding of the project management process in order to be successful. On that note, it is never too soon to begin learning the principles of Project Management. A group of local Kansas City project managers decided to make sure the educational process started early for some local kids in the inner city. During the 2007/2008 school year, 15 project oriented volunteers participated in the development of a project management course for 7th and 8th graders in the inner city community. The project was designed specifically to cover the fundamentals of project management for a 9-week time frame and to introduce students to the concepts and potential future opportunities in the profession. The volunteers followed PMI's standard methodology for project management to develop the course. This presentation will discuss the process of curriculum development in addition to steps that might be taken to implement programs in your community.

Introduction

In the next five years, our society will move into a stage of economic labor shortage. Within this time period a majority of those in the workforce will be close to age 65 which is approximately 43% of America's workforce (Garten, 2005). In 2011, the first baby-boomers will turn 65 and it is estimated that approximately 35 million jobs will need to be filled (Global Generations Policies Institute, n.d.). It is anticipated that businesses will have a problem filling these jobs due to lack of skilled laborers. In addition to all skilled careers, this problem will also impact future careers in Project Management.

The baby-boomer generation (people born between the years of 1946-1964), encompasses approximately 77 million Americans (one-third of the United States population) and they are starting to retire. The labor shortage will cause a number of issues with businesses and the structure of their corporations. A new generation (X and Y) has joined the workforce with a new mindset along with a highly diverse origin and companies will have to creatively incorporate employee satisfaction approaches to retain good employees. The baby-boomer generation of workers will need to transfer their experience, knowledge and skills to the younger generations and corporations will need to prepare through adequate training programs to facilitate this knowledge transfer. This paper identifies an approach of action that can be taken by project managers everywhere to address this upcoming situation for the project management career.

Dolezalek (2006) refers this upcoming era and phenomenon to the Y2K situation. She asserts that corporations do not believe this is a problem at the current time and will wait until it actually impacts their business before they do something about it; at a cost of millions of dollars. During the Y2K preparation, employers paid millions and millions of dollars to contractors and programming developers to ready their computer systems for the change. In addition to the loss of workers predicted in the future, it is obvious there will be a loss of experience, skills and talent in the business industry. Dolezalek (2006) states:

That's because as the boomers retire, they're going to be taking a lot of knowledge and expertise with them, and the younger employees who have to replace them will need all the training they can get to fill those shoes. Not only that, but when the labor market is tight, employers have to work harder to keep the employees they have, and employees won't hang around if their careers feel stalled and their opportunities limited. (p.19)

Companies will need to deploy adequate training and knowledge transfer techniques while motivating baby-boomers to pass their knowledge and skills to new workers. Training and technology will need to be designed to accommodate both the learning styles and lifestyles of a diverse workforce (Ware, Craft, & Kerschenbaum, 2007). Corporations can work with employees who volunteer to implement project management programs in order to save these careers. The purpose of this paper is to determine what project managers of today can do to build project managers of tomorrow.

The question to consider is: Are teachers in America adequately preparing students for post-secondary education and the future workplace? Business leaders are estimated to spend billions of dollars a year for employee training on basic skills that should have been learned in high school (Shore, 1995). We face the potential of additional job loss to foreign countries where students are more equipped to meet the demanding market for businesses. During a forum at the Education Summit, Pennington (n.d.) suggests that “preparing students for jobs in the 21st century workforce will require more than just tougher curriculum and more tests.” We are at risk for the diminishment of the quality level of work as a result of increased immigration, adequate skill levels, and work experience (Morris, 1997). Economic growth will be impacted and customer services will be degraded.

What Can Be Done in the Project Management Community?

Project Managers can implement volunteer programs in middle and high school to begin building awareness of project management as a career opportunity and planting the seeds of knowledge for project managers of the future. A team of 15 volunteer project managers at DST Systems, Inc., a Kansas City based mutual funds processing company came together to plan, build a curriculum, gain funding and implement a project management program at Lee A. Tolbert Community Academy (LATCA) Charter School (an inner-city school in the Kansas City area). The school is funded through awarded grants by the Gates Foundation and is supported through the Kauffman Foundation and University of Missouri at Kansas City (UMKC). The school curriculum is based on entrepreneurship and is implementing Expeditionary Learning Schools (ELS) Outward Bound in their educational design which is tightly coupled with Project Management.

ELS Outward Bound is a national, non-profit organization that focuses on comprehensive K-12 educational design. The approach combines rigorous academic content and real world projects, learning expeditions, with active teaching and community service. The ELS design focuses on teaching in an engaging way through inquiry-based pedagogy. The ELS approach is project-based and involves students in research with industry experts (ELS, 2008). With programs using similar approaches, students can be adequately prepared to learn basic project management concepts.

Team Development (Roles and Responsibilities)

A request for volunteers was submitted to inform project managers of the potential project via email. A surprising 18 people volunteered to participate on the project, three of which dropped off for other commitments. The team followed the Project Management Institute (PMI) approach to project management, including the nine knowledge areas and concepts. Several project managers accepted the responsibility of various areas such as cost and procurement, human resources, scheduling and so forth.

Committees were formed for curriculum development and funding. Each committee had a chairperson that would be responsible for organizing and managing the activities for the committee, communicating the meeting notes and status updates to the core team, and moderating the meetings to ensure the deliverables of the project was the number one goal. A program manager was assigned to oversee all volunteers and components to ensure the success of the project.

Committee Roles and Responsibilities

Curriculum Committee

A core team of three volunteers facilitated the development of the core curriculum which included the course definition, detailed lesson plans, and assessment tools for a nine-week course. The curriculum included the basic information of each PMI knowledge area and the team developed templates for activities required for students to practice the content. The team developed PowerPoint presentations for each weekly session to provide the instructor with a format to teach the concepts. The instructor lectures were designed to be followed by hands on activities for the students using the activity templates. The course final assessment was the completion of plans and presentations developed by the students to open a school supply store.

Each lesson plan provided the instructor with the following:

- Lesson objectives outlining the expected topics
- Materials needed for the presentation
- Procedures for each class period
- Lesson introduction
- Instruction strategies and learning activities
- Interactive class instruction
- Closure question to assess learning
- Homework assessment

Funding Committee

The success of the program was dependent on gaining funding since LATCA did not have sufficient funding budgeted to implement the program. The funding committee solicited assistance from the Kansas City Mid-America local chapter of PMI to cover the expenses needed to provide students with text and materials for the course. The funding team co-partnered with the curriculum team to understand the requirements and developed a presentation for the board of the local chapter which included the results of the procurement and cost analysis plans to the chapter board. The assigned cost management project manager developed a budget based on input from the curriculum team to determine the cost to run the pilot program which resulted in a total of \$500. This cost included the purchase of student supplies (paper, pencils, binder, etc.) and textbook. The project plan document was submitted to board members at a meeting and the funding was approved.

The committee chair sent a funding request letter to the president of the local chapter and requested an opportunity to present our project at the quarterly board member meeting. After a formal presentation, outlining the scope and cost of the project, the local chapter voted and awarded the team a check to cover materials needed for the pilot program. The team found that it is important to provide the donors with status updates and a final presentation on the overall outcome of the program. The funding team was faced with a tight schedule as many organizations and considered timing to be a crucial factor when requesting funding for a volunteer program.

Implementation

The program plan was designed to implement a pilot program from the first nine weeks of the schools second quarter, followed by lessons learned. The plan was to implement improvements noted in the next class scheduled for third quarter. The principal served as the project sponsor and signed the project charter. A meeting with five middle school teachers followed the program approval. Teachers selected 12 students from their leadership program to participate in the pilot. LATCA teachers requested additional training to introduce their team to the basic project management concepts in order to gain a better understanding of what the students would learn. The teachers felt their knowledge would support the students in allowing them to be able to apply the concepts they learned in student coursework. The principal paid overtime to all teachers to participate in the training performed after school by the volunteer instructor. Over 30 teachers attended training.

The principal and teachers selected the course project (planning for a school supply store) for the students. It was important to give the students real life project management planning experience with something they could relate. Three student teams of four each were assigned the following departmental projects to plan:

- School Supplies
- Uniforms and Accessories
- School Logos

Students followed the planning process as described in the Project Management Body of Knowledge (PMBOK® Guide) by participating in the following activities:

- Development of Scope Statement
- Research of cost of materials required
- Identification of quality standards
- Identification of associated project risk factors
- Identification of human resources required
- Development of communications matrix
- Identification of procurement vendors
- High level milestone scheduling

Team Presentations

The team presentations were employed to determine the assessment of learning. The student was assessed based on communications and presentation skills and ability to work as a team. Some students learned more about using the PowerPoint tool to develop presentations. All team members were required to have an oral part of the presentations. The experience provided the students the opportunity to practice their presentation and communications skills in front of an audience. The UMKC coordinator, Principal and teachers, and several volunteers from the DST project team attended the formal presentations.

The presentation outline included:

- Project Objective
- Project Scope
- Human Resources
- Work Breakdown Structure
- Cost & Procurement

- Quality & Risk
- Closure

Lessons Learned from the Pilot Implementation

A volunteer project of this size requires a complete commitment of a dedicated team. While the plans for the project were detailed and specific, there were lessons to be learned from the pilot. The most significant lesson was the time planned for the pilot classes. Students met once a week for 40 minutes. This was not sufficient time for the students to complete activities in class. This was improved significantly for the implementation classes. The principal and curriculum administrator assigned students to attend class two times per week for one hour per class. Other lessons learned are as follows:

Exhibit 1.

Worked Well	Would Change
Contributions from the entire project team. The volunteers were committed to the project.	The DST team would have liked to have more time to work on the project during working hours.
PMI Volunteer instructors' onsite to facilitate the initial classes. Participation of volunteers in student presentations.	The teacher that was selected to teach the program was not adequately informed about the class and did not fully commit to the program.
Preparation and transition planning was adequate. Interaction with teachers early in the project, teacher training provide, and ongoing support from the principal who served as the project sponsor.	Make sure the school assigns the transition to a teacher who is interested in Project Management, willing to facilitate the course, and motivated to prepare, learn and apply the basics of Project Management to teaching the students.
Student preparation for the project presentations. Students were actively engaged and proud of their accomplishments. Volunteers who attended the presentation were extremely motivating for the students.	When planned, students had little time to meet outside of class to work in teams. To address this issue, the principal and school administrator was able to coordinate study time for students to work on their projects.
Effective communications within the volunteer team, status meetings and project status reporting.	More teacher participation in team meetings to get them more involved in the project.
Curriculum development and scheduling of courses.	Check the school calendar for days the students will not be available and develop curriculum activities around those days.

Future of LATCA Classes

LATCA considered the program a success. Students were enthusiastic about their participation in the program and told other students who expressed a desire to take the project management course. The principal was completely supportive of the program and is seeking to continue the program at the school. In order to address the commitment required for teaching the course, the school is willing to hire a part-time instructor to teach the course. During project closure, the principal indicated the willingness to include the program as part of the standard extra-curricular program to take place two days a week for one hour of class time. The course will be offered second and third quarters each year.

Other Project Related Programs

The project management profession adds value to any business or enterprise that embraces it. Encouraging students to embrace the disciplines of PMI is a natural step for the team developing the project management curriculum. The team implemented a program that introduced the concepts of project management to a local charter school. While there is much to do to foster the ongoing

development and growth of students for the project management profession, the authors have identified other programs currently used in the education system to aid in this endeavor.

Project-Based Learning (PBL)

PBL is being widely adopted across the United States. School reform advocates like the Bill & Melissa Gates foundation encourages the project management disciplines such as:

- problem solving
- decision-making
- time management
- research
- analysis of information
- communication
- conflict resolution
- team building/collaboration

The disciplines of project management are essential skills today and these skills are essential elements of the school reform approach to learning. The project management disciplines and PBL bodes well towards preparing students for real world experiences. The use of PBL as a mainstream teaching method introduces students to the real-world; skills students will need for a successful transition to college as well as their careers. PBL encourages students to learn by applying concepts to real-world scenarios. The student's retention rate increases by applying the PBL methodology (Liegel, 2004). PBL may replace passive learning methods of learning with an active learning methodology using project management disciplines.

There are middle and high schools within the United States that are requiring project portfolios as a pre-requisite to graduation, and colleges will use a student's project work as admission criteria (Liegel, 2004). Schools involved with education reform is growing, most of which have incorporated PBL as a key ingredient to the student's new learning experience.

Philadelphia High School Seniors to Study Project Management

The School District of Philadelphia has partnered with DeVry University, PMI Delaware Valley Chapter and PMI Educational Foundation to underwrite a pilot program to teach project management to high school students. The "Philadelphia PM Project" combines the schools program with project management and other skills. The program addresses the upcoming demand for the Project Management discipline by businesses worldwide. Students are required to be enrolled in the senior class, have a B+ grade average and must have an above average attendance record. The PMI Delaware Valley Chapter will provide classroom mentors and DeVry University will instruct the curriculum ("Philadelphia High School," 2008).

Project Lead the Way (PTLW)

PTLW is a national non-profit educational organization that provides middle and high school students with introductory skills required to develop a solid background in science and engineering. PTLW recognized the need to increase the number of youth required to meet the upcoming demand over 10 years ago and began the work required to establish this program. PTLW partners with schools and businesses to prepare a diverse of students to be successful in this field. PTLW courses engage students by using real-world projects and hands-on learning using activities based and project based learning (PTLW, 2008). PMI Educational foundation is a supporter of this program.

Summary

A group of dedicated individuals set out to introduce the world of project management to a local inner city school by creating a Project Management program for middle school students. With the help of funding from the Mid-America Chapter of PMI, extensive efforts to develop the program and the commitment and persistence of the students at LATCA, the goal was achieved. Teaching students the PMI basic practices and principles in the program have introduced them introduced to concepts that can be practiced not only in schools, but everyday life. In addition, students will know what it means when they hear the terms “project management” and understand the roles of a project manager. Given the success of this program in one school, the opportunity to implement this in more schools is present for current project managers to pursue in an effort to prepare future project managers to replenish the business industry.