

1-2009

## AMCIS 2008 Panel Summary: Managing Student Projects - Learning from the Past

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### Recommended Citation

Lane, Peggy L.; Alshare, Khaled A.; Nickels, David W.; Armstrong, Deborah J.; and Rodriguez-Abitia, Guillermo (2009) "AMCIS 2008 Panel Summary: Managing Student Projects - Learning from the Past," *Communications of the Association for Information Systems*: Vol. 24 , Article 1.

DOI: 10.17705/1CAIS.02401

Available at: <https://aisel.aisnet.org/cais/vol24/iss1/1>

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# Communications of the Association for Information Systems

CAIS 

## AMCIS 2008 Panel Summary: Managing Student Projects - Learning from the Past

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### Abstract:

This paper is the summary of a panel presentation at the Americas Conference on Information Systems (AMCIS) 2008. We examine methods to employ in managing student projects. With the underlying assumption that we all want students to learn from their projects and become successful in the workplace while minimizing our micromanaging as instructors, we will share what we have learned from our (and our students') successes and failures. Another assumption is that if you have taught classes in which you have used student group projects, you are not 100 percent pleased with the results and would not do everything the exact same way again. In our discussion, we examine successful methods for managing the aspects of forming groups, managing teams, and the project assignment itself including guidelines, deliverables, evaluation, and presentation.

Volume 24. Article 1. pp. 1-6. Januarv 2009

## I. INTRODUCTION

This paper contains notes made from a panel presentation at Americas Conference on Information Systems (AMCIS) on August 15, 2008, in Toronto, Canada. The moderator was Peggy Lane. The panelists were Khaled Al-Share, David W. Nickels, Deborah J. Armstrong, and Guillermo Rodriguez-Abitia. With the underlying assumption that we all want students to learn from their projects and become successful in the workplace while minimizing our micromanaging as instructors, we will share what we have learned from our (and our students') successes and failures. Another assumption is that if you have taught classes in which you have used student group projects, you are not 100 percent pleased with the results and would not do everything the exact same way again.

In our panel discussion (and in this paper), we examine the following aspects of managing a project: forming groups, managing teams, and the project itself, including guidelines, deliverables, evaluation, and presentation. In our conclusion, we come to a consensus that there is no perfect method of managing student projects that fits all classes. Experience with successes and failures will assist the instructor in knowing what might work and how to adjust as the semester progresses. In some cases, the same course at the same university two semesters in a row requires different methods and management of groups.

## II. FORMING GROUPS

With the assumptions in the introduction in mind, we begin our discussion with the activity of forming groups. The strategies discussed here are the same with virtual teams as well as face-to-face teams. One way in which groups can be formed is to allow students to self-select their groups. This generally results in groups that are formed based on friendships and often results in a lack of group diversity. In many of these situations, students are no longer friends at the end of the project. It was pointed out that in the work environment, groups are not self-selected, so not allowing students to pick their teammates is more realistic and might help students be better prepared for the workplace. One of the panel members allows self-selection but also includes a method for firing a team member. This option (firing a team member) will be explored in another section.

The panel explored group formation strategies that would maximize diversity. Randomization, such as a count-off method, was explored briefly. A method of grouping through the use of a selected variable was suggested. Ideas for the grouping variable included student background, student major, diversity, self-identified experience level (expert to novice), learning style, and personality temperament assessment. The idea is that the variable (or variables) would be used to help the instructor form groups that were not all the same. The concept of using different temperaments, as measured through a personality test, as a way to form groups, was discussed. A free test can be found at [www.keirsey.com](http://www.keirsey.com). Students are able to determine which one of four temperament types they are—guardian, idealist, artisan, or rational. Students are then placed into a group with students of different temperaments. Students explore their similarities and differences and ways of operating and learning based on temperament types. As a result, they are able to better understand themselves and each other.

In some groups, one student will not pull his or her own weight in the project—this is referred to as *social loafing*, and the person is typically referred to as a “free rider.” Group size can be a factor in contributing to the free-rider situation. From the panel members' various experiences, it was agreed that the best size of a group is four or, in some cases, five students, which better accommodates member attrition. Groups of six or more were considered too large (possible social loafing), and groups with only three people were considered too small.

## III. MANAGING TEAMS

Once the groups are formed, what can an instructor do to assist in the process of transforming the group into a team and promoting the team concept? The ideas presented here address that question as well as the objective of deterring free riders.

Teams could develop a contract with each other. The team contract should include the name and logo of the team, the ways they will communicate (Blackboard, e-mail, cell phones, and so on), procedures to handle miscommunications, the best way to decide to meet, the best way (and time and place) to meet, the role and obligations of each team member, and what to do if team members do not fulfill their obligations.

In the project assignment or syllabus, instructors can include procedures for firing a group member (including the timeframe in which this is allowed) and what the fired member can do – the possibility of joining another group or being forced to complete the project on his or her own for a penalty. At the same time, some students may request that they be allowed to complete the project alone. They should not be allowed to do so; they should be told that more than likely they will have to work in groups in their work environment. Part of the objective of the class and the project is to prepare them for the work environment.

The instructor role should be that of mentor, intervening only as absolutely needed. Holding periodic project review meetings with group project team members where the instructor role is facilitator and not manager/project leader can help the students be more successful. The instructor does not have to have the solutions to all of the problems that arise in a group. The instructor should turn the problem back on the students and ask, “What are you going to do about it?” or “What are your options?” Peer evaluations conducted and shared throughout the semester can help deter some of the issues that can occur with groups. To help the students develop a sense of team, the instructor can encourage students to engage in social activities together outside class.

Some students will argue that they cannot work on the project due to their work schedules. However, the university sees them as students who have to meet the requirements of the class. As in the work environment when people live in different time zones, virtual teams may be employed.

### Promoting Ownership of the Project

One of the secrets to success is to help all of the students take ownership of the entire project. The tendency for a group is to adopt the “divide and conquer” strategy. Allowing the groups to work on the project during class time can help. One instructor created teams of individuals from different disciplines and called them companies. They were given situations in class that required a solution on the board during class. Requiring individual project journals that discuss how the project is going is another method that can be used. The journals do not have specific deadlines but can be requested for instructor viewing (and grading) at any time. With the journals, more focus is placed on the interpersonal aspect as opposed to the technical.

A related concept is that, much as a supervisor would do, the instructor can ask anyone in the group at any time anything about the project. The point to the students is that they are responsible for knowing about every part of the project. The response “I don’t know; it’s not my part (or job)” should be regarded as unacceptable.

Another idea that promotes accountability is to require the students to use Microsoft Project with deliverables due at specified intervals throughout the semester for the project. In the software package, the students are required to specify who spent how much time on which activity. This can be documented for milestones past and for milestones in the future (a plan).

A suggestion was made to include a question on the final exam about the project so that the instructor could determine how much the students knew about their projects. Some instructors gave advance notice of such a question; others did not.

### Promoting Communication

Many problems or issues that arise within a team can be attributed to a lack of communication. Devoting some class time for ice-breaker sessions and encouraging outside class activities such as going to restaurants together can help the students get to know one another. To promote communication, throughout the semester, students could be required to submit meeting agendas and minutes with the attendees listed.

## IV. THE PROJECT

Regardless of how the project is selected or assigned, the project should be challenging and relevant to the students. It was felt that if students are able to select the project, then they take ownership, and the overall project is better. Project definition should include structured guidelines while allowing freedom for creativity. One option is to provide the students with a description of a baseline for a “C” grade and require the students to justify enhancements and explain how they added value to the project (and therefore the grade).

Students can be provided with projects that are artificial or real. If an instructor has access to a large dataset, it is possible to create multiple projects from that one dataset so that different teams can have a different project. Similarly, students can use different perspectives on the same data (e.g., develop systems based on the same data but use different value disciplines). Projects can be arranged with an organization, university (although the sensitivity of data can preclude this in many cases), or nonprofits. A side-benefit of working with an organization is

the potential to be offered a job by that organization. A side-benefit of the nonprofit project is that students can become involved with the nonprofit and choose to continue to volunteer with them once the project has ended.

Another option is for students to be provided with outlines and guidelines for the project. The student groups are then required to find a project with an organization (not owned by a relative) in the first three or four weeks of the class. As part of the assignment they should be reminded that they should not promise what they are not able to deliver. As this is a bit riskier, the instructor and students should keep the reputation of the university in mind with this approach.

### **Guidelines**

Guidelines should be clear and specific but include some flexibility to allow for creativity. Five to ten percent of the project should be on the use of new ideas or innovations. It was agreed that the entire project should not have only one deadline and only one deliverable at the end of the semester. There are too many horror stories of students trying to start and complete a semester-long project in the last week or days of the semester. Milestones with specific deadlines should be included, as should routine progress reports. Each milestone could have a percentage of the project grade attached to it and should be graded for content. At the next milestone, corrections on deliverables in the previous milestones should have been made.

### **Deliverables**

As part of the guidelines, students should clearly understand what the deliverables are at each of the milestones and for the final project. Items required in the list of deliverables can include documentation of the project, a user's guide, meeting minutes, how to access and run the project, the results of the project, lessons learned, and what would be done differently if they were to start the project over tomorrow. The instructor should provide a detailed grading rubric and be sure to keep the criteria consistent throughout the semester (do not change midstream).

### **Evaluation**

Panel members had a lot of different ideas on peer evaluations, but everyone agreed that peer evaluations should be required. If they are not turned in, penalties can range from a zero on the peer evaluation portion of the grade to no project grade at all. One thought is to not mention peer evaluations during the term and to include a form as part of the final exam. At the other end of the spectrum was the thought of preparing and distributing a rubric which explains exactly how the students should evaluate each other. It was suggested that evaluation should occur throughout the project and not just at the end of the project. This includes peer evaluations. With each milestone, intermediate peer evaluations that are compiled and shared with the students can prevent a student from receiving a low score at the end of the project. If the instructor sees that one student has received a zero percent from his or her peers, the instructor can intervene and work with the student (and perhaps the team as well). In some cases, the peer evaluation "score" is considered a raw score and is converted to another scale to be used as part of the students' project grade. In one course, peer evaluations conducted only at the end of the semester resulted in all of the students who did not do much of the work conspiring against the one student who had completed all of the work. The instructor should watch out for "free rider" collusion, where students sabotage one person in the group. In addition, the instructor may add points for "innovation."

Near mid-term, a state of the course report could be required from each of the students. The students could be asked to list what is going right or wrong with the course. This should be conducted anonymously and then posted and discussed for solutions.

If a course management product is available (e.g., Blackboard, WebCT) and used for group communication, statistics on group participation as recorded in the course management product can be used to determine a portion of students' individual grades.

If all teams complete the same project, a competition could be held and a trophy could be awarded to the team with the best project. Another motivator could be to ask each team to select a "hero" of the team. That person would receive a certificate and perhaps extra points in the class.

### **Presentation of Projects**

At the beginning of the class, instructors can conduct mock presentations to give the students practice and also to allow them to ask questions.

Instructors can also have the groups present to the class at the different milestones. This will promote several things. It will allow the students to have practice presenting. It will also allow the groups to see where they are in relation to the other groups. The group that is trailing the others generally steps up their efforts and performs at a

higher level. Outsiders (colleagues or business executives) should be invited to the final presentations. They should be provided with rubrics or feedback sheets before the day of the presentation so that they can provide feedback following the presentation. Outsiders could provide oral feedback to the students at the end of their presentations.

During the presentations, all group members should have to speak. As mentioned earlier, any student should be able to answer any question about the project and not just about the part they are presenting. It is often during the presentation that the instructor (and audience) figures out which student did most of the work, as that is the person everyone in the group will turn to when a question is asked. In their presentations, the students should address "Lessons Learned" and "Take Aways" from the project.

Students in the audience can be required to ask questions of the other groups. One suggestion was for the students who ask questions to be given extra points. If the students do not ask, then the instructor will. Students could be required to grade the presentations and give feedback to the groups.

All projects and presentation documentation are due on the same day even if the actual presentations are not made all on the same day. The actual presentation must then match the presentation documentation turned in.

## V. SUMMARY

Student projects can be a horrible experience for everyone involved, or they can be one of the best learning experiences a student can encounter. There is not a one-size-fits-all methodology for managing student projects. Based on prior experience and lessons learned, the panel discussed some ideas an instructor can use to facilitate the learning experience of student projects. This paper summarizes the panel's discussion and suggests strategies an instructor can use and follow in forming groups, managing teams, assigning the project, and evaluating the teams and project. We hope that these strategies can help instructors in the future. Thank you!



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