
Student Projects using PowerPoint

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<http://www.eclipse.net/~pankuch/Newsletter/NewsHP/HPNewsCCE.html>

Abstract

Past professional leave experiences exposed me to courses that had a group project as a big component of the final grade. My experience working on my own projects has been positive, so I decided to experiment by having my students work on projects. My students choose the topic and check it with me. I usually find they've chosen a very broad topic which needs some focusing.

My students work with partners, who are usually people in their own study group. Study groups are formed during the first week of class. Presentations typically include models, graphics, live chemistry demos, documents used with an Elmo and PowerPoint.

A schedule helps the students keep themselves organized. It is important to get started early enough to do substantial work.

- I. My experiences on professional leaves exposed me to courses that had a big component of the final grade as a group project.** The form of the project depends on the course. Computer programming courses require a finished interactive program (games were popular), engineering a interaction with local research firms and a report, liberal arts type courses-written reports, and chemistry courses a group presentation with their material on the Internet. (The latter is done in conjunction with Columbia College whose students are specifically studying using video to enhance learning in science)

My own experience was positive working on projects, I felt I had the time and incentive to explore and learn in an atmosphere where significant projects of personal interest were expected and supported. Taking the new principles and ideas you are learning and applying them to something you are personally interested in is an effective way of learning. I found that students I interacted with felt they learned a lot.

For me it has been a natural evolution of experimenting with student projects, incorporating PowerPoint, animations, movies into my own lectures.

- II. **At my home institution I present the group project to students by asking if they would like the next test as an open book test.** Generally everyone is positive, then I ask, would they like to take the exam home? Now a few students who have had challenging take home tests start asking how hard it will be. I tell them they can choose the topics to be explored and discussed, decide what questions they want to answer, have classmates help answer the questions, use any help, source, person, Internet, etc., as long as the sources are listed in a bibliography. In other words if you have to be tested it sounds like a good situation. I generally answer a few questions and ask for the topic and who will be on the team in a week or so.

They choose the topic but check with me on suitability. I usually find they've chosen a very broad topic that needs some focusing. Everyone is required to hand in a group project, all have the option to give a class presentation. I haven't made the class presentation mandatory because many of my students are not yet fluent in English. The class presentation counts extra toward the final grade. Those people who are working for an A in the course are required to give a class presentation.

When I first started using projects few students chose to give an oral report. In fact so few students were giving a class presentation that I required people working for an A to give a report. This last semester all except one group chose to give a class presentation. I believe this is partially due to the students seeing how much fun I have creating and using multimedia in my presentations.

I'm interested in having a wide selection of topics, but there must be a strong chemistry component.

- III. **My students choose partners for the project, who are usually people in their study group. We set up the study groups the first week of class.** They have some experience working together, but a few opt to find someone else. Projects can be on a wide range of topics, but must be chemistry related. Over the years I've found that groups of 2-3 students work best together. It's easier to meet together, agree on topics, and apportion the work. Students can use any source, usually it is a combination of internet, books, magazines. Though on occasion students have gone out seeking interviews with researchers.
- IV. **Presentations typically include models, graphics, live chemistry demos, documents used with an Elmo, students started asking to use PowerPoint several years ago.** This year every group but one gave a class presentation and most used PowerPoint. It is getting time consuming since students frequently have a poor sense of how long it will take to do their presentation.

Some students really get into it and give very interesting presentations, but there is a finite amount of time available so I have to call time on them to allow others their fair time. We extend the time available since the class seems willing to let their mates run until the next class is knocking on the door.

I frequently get two different reports. Students hand in the typed project and the PowerPoint lecture as two separate packets- two approaches or reports. They are of course related, but students frequently emphasize parts of the report they can illustrate with pictures, animations and movies in the PowerPoint.

V. A schedule helps the students organize themselves.

It is important to get started early enough to do substantial work but after preliminary drops so you don't have to keep reshuffling teams to account for lost members. Everything handed in must be typed.

1. A preliminary statement of topic, members of the group, and whether they plan on giving a presentation
2. A detailed list of topics with a preliminary bibliography. Occasionally a student will actually try to come up with a solution to a problem contacting local drug firms for direct research info.
3. A specific due date for project and presentation.
I have tried more 'milestones' it is not obvious it helps, but it surely creates more busywork.

VI. An alternative method is putting projects [online](#) and using a browser as a presentation medium. This method is easy to follow student progress, and milestones are a lot easier to check. Assuming of course that students are making progress. It has been my experience that students require a lot more help in putting a project up on the Internet than putting together a PowerPoint presentation.

VII. Some of the topics this last year:

Environmental hazards, fuel cells, buckyballs and medicine, alternative E, testing for glucose in diabetics, energy sources, swimming pool care, vitamins and supplements for health, nanotechnology, chemistry of camping, explosives, energy transfer in molecules, designing molecules, H bomb, health uses of Nuclear energy.
