

# Project Management

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*"Not everything that counts can be counted, and not everything that can be counted counts."*  
--Albert Einstein

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## Overview

Learning the numerous principles and concepts of project management is one thing - being a project manager is another. Now, the opportunity to apply project management skills, as a project manager, is here - without the risk of (really) going over budget, or (really) missing schedules, or (really) losing resources, or (really) getting FIRED! How? In the relative safety of a classroom, or at home, students can exercise their project management skills in the Project Management Simulator.

Although outlined in further detail below, this scenario-based simulation puts the student in a project management setting. As the project manager, the student is confronted with project obstacles that require decisions to keep the "project" on track. Project Manager Simulator digests the student's responses, as the scenario plays out.

This one scenario simulation is designed for multiple project teams to play in parallel. However, each team receives different hurdles to overcome. This format promotes in class discussion and reflection within a known context.

## Instructional Objective

During this simulation, the learners will gain experience identifying, mitigating, and eliminating various problems that may arise during the execution phase of a project. The types of problems encountered will include those that affect the budget, schedule, deliverables, and project personnel. Throughout the simulation, the learners will develop strategies for dealing with problems by reflecting upon the chain of events that lead to a particular intermediate or final outcome. The learners will answer the following types of questions:

- Why was a particular choice selected?
- Did it result in a desirable outcome?
- What choices might have resulted in a more desirable outcome?
- If you could play the simulation again, what decisions would you make differently? Why?
- What clearly didn't work?

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## Learners

This game is designed for graduate students enrolled in Educational Technology 684, Project Management. Learners range in age from mid-twenties to mid to late sixties. Learners come from a variety of work settings and areas of expertise with varying years of work experience. No prior knowledge of project management is needed. However, some learners may have some general knowledge of topic due to work experiences. Learners are motivated to learn context because they may want to move into new positions with higher pay, or manage their own business. Learners will have a positive attitude because some will be able to see relevance in their current jobs as well as for their ability to perform jobs in future positions.

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## Context of Use

The game is an online game, designed specifically for SDSU's EDTEC 684 class. It can be played at home, school, the IML, basically anywhere players have access to the Internet. It is being designed for use on both Mac and PCs.

The game is designed to be played once per semester. Prior to the game, the professor will set the scene for it by explaining the basic concept of the game and the student's role. The game can be played individually or in groups, depending on the needs of the professor. After the game, it is possible that they will have a kind of debriefing in the form of group presentations.

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## Scope

The game will encompass an entire semester of information within the confines of a make-believe company. Players will begin the game during the beginning of the semester and use the game to complete assignments such as reports, journal entries, etc.. It is estimated the

game play will last approximately three months.

It is undecided at the moment how many branches the game will take. It will have at least one main story line, that of the project manager, which will include branches for information from superiors, team members, independent contractors, and difficulties they may encounter.

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## Object of the Game

The object of the simulation is twofold: 1) to manage the project with the least number of foreseeable, avoidable pitfalls and, 2) to successfully deal with unavoidable challenges regarding the timeline, budget, personnel, project scope, client needs, etc. Ideally, the simulation will test the skill requirements of a project manager by creating scenarios in which the player(s) must utilize the following project management skills:

- Demonstrated understanding of project management as it relates to instructional design
  - Risk taking and strategizing;
  - Establishment of managerial style;
  - Effective communication techniques within a team;
  - Project goal setting;
  - Proposal writing including outlining the need, proposed work plan, and estimated cost;
  - Creation of project schedule with appropriate milestones; and
  - Creation of a staffing plan. (Marshall, J.M., 2001)
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## Design Details

The need for more effective information in business and education has created a market for multimedia technology. Technology plays a prominent role in determining what we learn and how we learn it (Mc Daniel, 1996). The e-Game for project management is designed to use technology to introduce a project with realistic scenarios that are pitted with circumstances that potentially alter each phase the project. The instructor will introduce the simulation approximately four weeks into the semester or when the students become acclimated with the direction of Ed Tech 684 and course materials. The instructor will launch the simulation by sending an e-mail or a hyperlink to the entire class.

The overall look and feel of the simulation will be similar to that of a computer [screen](#) with access to files, e-mails, voice-mails, video clips, schedules, and the overall project budget. The simulation will run during the next four weeks of the semester. Students can access the project simulation anytime, day or night, during that week, but cannot access that particular week's information after the week has past. This means the student must address each weekly episode much like a real project manager would. The instructor's initial e-mail to the class will have to address the importance of keeping up with the simulation so they do not

miss one of the four episodes within the project lifecycle.

The e-game will be generated and stored on a data base. The data base material can be updated or revised by the instructor if needed, but will not necessarily have to be influenced or driven by the professor. The branching of each episode will be similar to that of Episode I - illustrated below in [Table 1](#).

Each episode will have a description with different options to choose from. The student will listen, watch, and review the data for clues that may help or confuse their decision making. Author Richard Rouse III suggests, that "Good levels give the player choices of how to accomplish goals, just as good gameplay gives the player lost of choices for how she will play the game" (424). After a student selects an option they are faced with consequences that stem from their decision. The student must then review new or updated information in order to accurately address the final options within the episode. After the student selects the final option, they are then required to summarize their rationale for the decisions they selected within option I and option II the episode. The students will then be asked to share this information with the class the following week.

Each episode will provide its own options and consequences. These options and consequences will have no bearing on the other episodes. During the introduction of the e-Game, the instructor will have to inform the students that even though this may deviate from reality, this is the only way to introduce anomalies without overall project malfunctions or failure.

### **Technical Elements**

- The data base will generate basic web pages (.htm format) which can be view by either PC or Macs that are equipped with Internet Explorer 5.0 or higher.
- The budget and overview will be written using Microsoft Word or Excel.
- The resolution will be confined to 800 x 600 pixels because some students may not have video cards or systems which can support greater resolutions.
- The audio and video clips will be very short and compressed so they can be downloaded by students using 56k modems.
- The naming conventions within each episode will have to be reviewed for more consistent and uniform language.

**Genesol**

**NEW Files**      **NEW Email**      **Voice Mail**      **NEW Project Notes**

You notice that there are some files on your desk regarding the project.  
You also see a note.

**In your new office...**

- Files
- Emails
- Voice Mail
- Project Notes

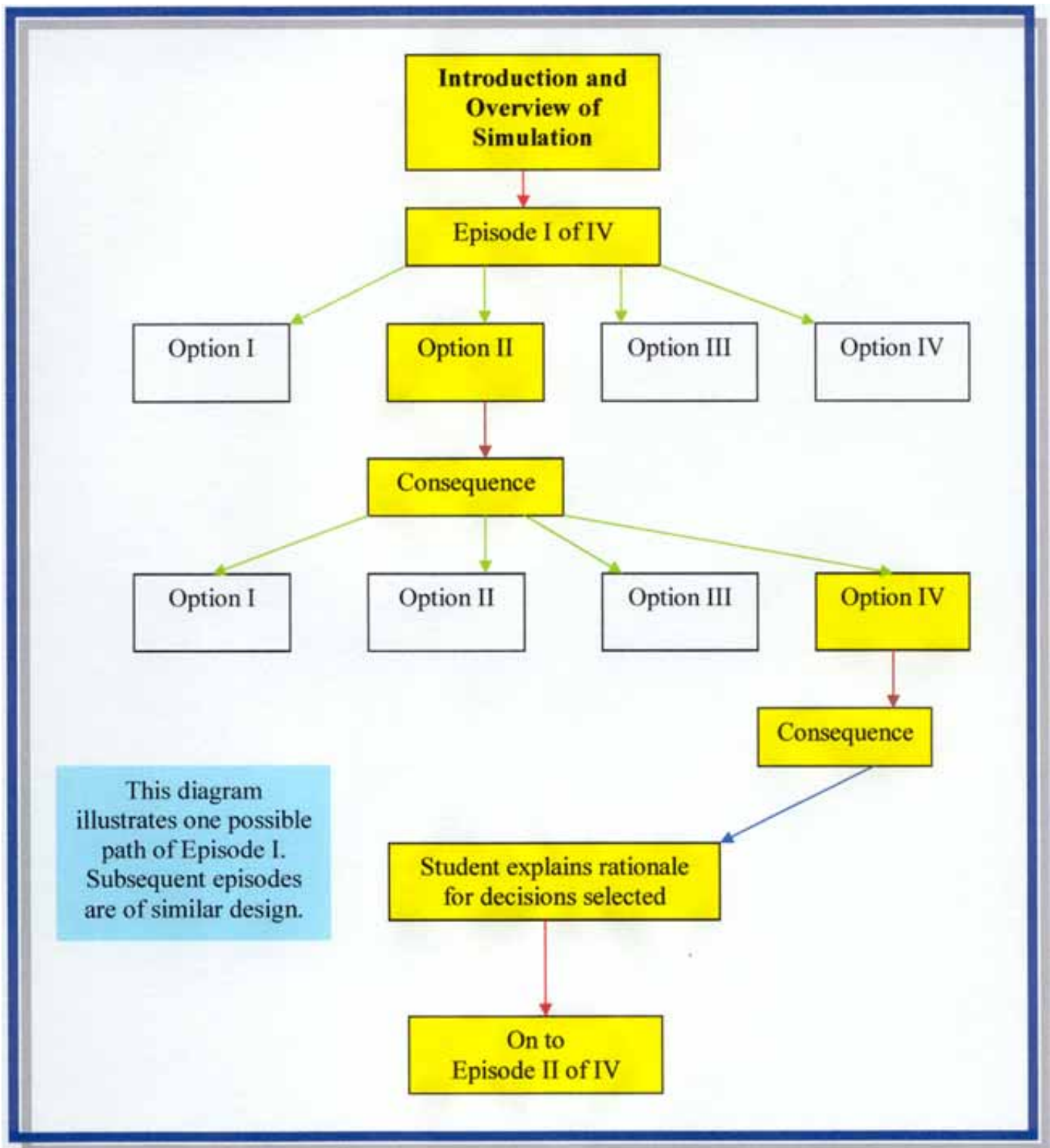
*To the new project manager,*

*I have headed this project for the past three weeks and would hate to see things get messed up. You have a number of good people, loyal people working for this project. For their sakes, I've left a few notes behind on the project that should prove helpful during this transition.*

*I will not be available to answer any questions, so read over those notes carefully. Although we've never met, I do wish you luck on this project and in working for this company.*

*Sincerely,  
Sally Jones*

e-Game Computer Screen Interface ( [Try it out!](#) )



Flowchart of Episode I of IV (Note: All Episodes would have a similar flow of information.)

## Competing Products

There are a variety of Project Management tracking tools available, such as MS Project, Mission Manager, Master Planner, Client Tracks, and Smart Worktime Tracker Pro, among many. However, these programs are not designed as Project Management simulations so much as they are ways to collect and track data on any project. Most are designed to help you break down tasks, budgets and phases of a project, but cannot provide actual strategizing or crisis management functions.

One game that is interesting to look at is the Sims game, where you essentially create a person's life from bodily functions to daily activities and relationships. This game requires that you pay constant attention to a variety of factors that make up the character's life. If you ignore any one factor, you put the health and welfare of the character at risk. Any game designed to represent the complexities of project management and unforeseen risks and constraints could use as a model the Sims game.

Most of the management games currently available are related to the management of sports teams such as [Championship Manager](#) (which puts you in charge of your favorite soccer team) or music bands such as [Music Manger](#). While the project management content of these games parallels some of the themes in our game: controlling marketing, hiring and firing, and determining the ultimate success or failure of the project, our game will incorporate more real-life managerial themes.

Based on reviews, most management games only keep their player's attention during the first few minutes. As our game/simulation will frequently present new twists and situations, it will be less likely to lose their attention. Current management games are short-term, some to be completed in less than 30 minutes. As a management simulation game ours will last weeks and will more closely resemble challenges faced by project managers in the real world.

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## Motivational Issues

According to Malone & Lepper, the most important motivation principle is challenge. A challenge is what one has to overcome or succeed at to reach a goal. In our e-game, the learner will be properly challenged throughout the simulation. As the learner progresses in each episode, he/she will encounter an increasingly difficult new option. As the learner progresses through the option levels, the options get narrower. Thereby, the learner at the end of each episode will see a resolution to the problem they encountered.

Within each episode, random elements are included to create uncertainty. We incorporate randomness in that various random events occur in each episode, such as personnel or SME problems.

Another component of the e-game is feedback. In each episode, once a user selects an option, the user will be given feedback based on their choice of options. It is our intent to motivate the learner by providing feedback that is clear, constructive and encouraging (Malone & Lepper).

Our e-game also includes an element of "fantasy relevance". The learner is immersed in a realistic situation, role-playing as a project manager. The intent is to encourage learners to



envision themselves in the imaginary situation where they can use the information they are learning (Malone & Lepper). This also creates satisfaction in that the learners will be able to apply what they are learning in real and useful ways. In addition, we are creating a safe learning environment. By creating a safe environment (simulation, rather than doing the real activity) learners are encouraged to explore alternative approaches with the knowledge that failure at worst means losing the game.

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## Design Process

In the beginning, our group had a difficult time imagining the overall deliverable. We had different ideas of scenarios that were linked to one another as well as scenarios that were independent. We thought about using a team format where the 684 groups (already determined for the class) would have different circumstances according to the scenario they selected. We opted against this because students in each group would be learning different things at different times. This also meant that in-class discussions would not be as congruent and meaningful because every student would not be familiar with each and every scenario. Therefore we decided on one project overview with four different episodes. Each episode will be independent and not influence the options or outcomes of the following episodes.

After speaking with the current professor for Ed TEC 684, Jim Marshall, we decided to make one overall theme with several different scenarios. He also suggested the future instructor(s) would not want a supplement that requires a lot of time to manage. He further stated it should be self-contained and follow a timeline. If a student could read ahead or skip steps it would not optimize the learning experience. We decided to create a program that was realistic and made student operate very much like a real-life project manager would.

We decided to have the instructor prompt 684 students with a hyperlink to a database. The database interface would look much like a computer screen. The students could access this data base from home using a basic Internet connection. Once inside the database the students would be cued by e-mails, voice-mails, and video clips. These forms of communication would offer information about the episode.

Our group learned that future e-Games will require more time in creating a storyboard. We were trying to manufacture the overall look before we really knew what the instructor(s) would want. Once we defined the deliverable, the project seemed progress more smoothly.

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## References

The Ed Tech 684 and 670 course books and reading were used and resources and references for parallels between Project Management and Game Design.

### Books & Journals

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