

## 1. Objectives

IPRO 329 entitled Edutainment attempts to entertain as well as educate simultaneously. For the past two semesters, this was done with Scholars of the Lost Exhibit, a computer game written for fourth graders which attempts to teach science, math, social studies, and language skills. In the game, each of the four topics represents a wing in a museum. The player must traverse each wing, playing several mini-games in each wing. In these mini-games, the player will encounter many interesting facts about each game. Several fun concepts will be added to the game as incentive for the children to play. These fun concepts include an entertaining story, dynamic characters, and many surprises.

In addition to implementing students with our game, we hope to help the education system in general. There are many problems within the school system, currently. Illinois is ranked 32<sup>nd</sup> in a nation wide ranking of schools. It is obvious that there are problems. We are not positive that our game will be the difference in changing this statistic. However, we do believe that the research we do will help to identify the problem. We will be going into schools to test our game. Although we will be focusing on the utility of our game when in schools, we also be testing hypotheses that test classic learning with children. This semester we will draw our attention to whether or not a child learns best with extra help. The extra help will be an administrator reading the text that appears on the screen while it appears on the screen. The control group will only receive the written word on the screen. This study will be explained more in depth, including results, at IPRO day.

IPRO 329 takes great pride in our achievements. We hope to get recognition not only from the IPRO office, but also from interested companies. We believe that the work we do is important to the future of the children of our great nation. We hope to help the leaders of tomorrow achieve more than we can even imagine.

## 2. Results To Date

Development on the game had continued throughout the first half of the semester. The usability team conducted usability tests on students to get feedback from students not familiar with the game. The user experience team has drawn conclusions about the constellation game from observations. Furthermore, the user experience has finished the IRB application with all its supplementary information. The team members are all currently working on further user testing at other elementary schools.

The Design team has started to develop new science game: the water cycle. Recently the design team has learned that instead of making tutorials for the math games, they now have to make a whole new science game in a month. There will be three levels of difficulty for the water cycle game questions: easy, medium, and hard. A flow chart has been developed for the water cycle game and there is a time constraint for game which is about 30 seconds per question. The design team has started to brainstorm the rules and methodology for the water cycle game.

The development team has been working and fixing on the constellation game for any errors and bugs. The new members have been familiarizing with the source code from last semester and becoming acquainted with Flash, Action Script(AS), and XML code. They have played the game looking for bugs and errors and have documented bugs and announced them to the team. Recently the assigned task of completing the main menu bar by creating buttons and events for the constellation game. The development team has lately commented code, and cleaned-up & organized my code for readability. Furthermore, the development team has also been working on the planet game. Some extraneous code that only hindered the development of the game has been removed and there progress within the game is moving steadily.

The management team in the beginning finished the Project Plan. Also began looking at companies to invite them to IPRO day. A way to manage the project progress dealing with hours spent on certain topics was created. Furthermore, peer evaluations were distributed and graded. A grading system has been reworked in order to motivate students to turn in paper work on time. Finally, we planned our course of action in organizing a presentation. Overall team members important parts to the IPRO.

### 3. Revised Schedule of Events / Tasks

Event	Date
Begin User Testing	Feb. 28
Complete Science Wing	March 10
Abstract, Presentation, Website and Poster Due	April 29
Company Presentation	April 4
IPRO Day	May 5
Final Report and CD-Rom Due	May 5

Tasks and Goals	Team
Create prototype of <i>Scholars of the Lost Exhibit</i>	Programming / All
Finish Business Cards, T-shirts and other marketables	Usability / Marketing
Compile all documentation of <i>Scholars of the Lost Exhibit</i>	All
Compile all weekly reports and complete final report	All
IPRO Poster	Marketing
IPRO Website	Development
Compile and Practice Presentation	All

### 4. Updated Individual Assignments and Team Organization

**Management***Adrienne Chin-Perez*

Adrienne Chin-Perez is a returning member and a great help to the IPRO. This semester there are only two members on the management team. This means that Adrienne must help catch up the newest member of the group, Sonia Goyal, and continue to do her share of the work. She has been very instrumental in the new grading system and new marketing ideas. She has done research on possible companies that may be interested in our IPRO. We plan to invite these companies for a special day to present our progress and ideas to them. Adrienne also helped develop a new grading system that is now reliant on a point system. In addition she has been helpful in the user experience group. She has entered all the data in SPSS (a data analyses program) and run all the analyses.

*Sonia Goyal*

Sonia has been a great addition to the management team. For the past few weeks, she has been working on writing a letter to many different companies regarding the constellation game, and inviting them to come to a special presentation in order to experience the game. Furthermore, she has worked on the website and is slowly starting to put it together. She has kept in close communication with Javier, another team member helping with the website, regarding the changes that need to be made to the website. She has also looked into business cards and the design that should be on them. In the near future, she will help to design and order the T-shirts for IPRO day. Finally, she has helped with the midterm report.

**Design***Lauren Joyce*

Lauren Joyce is the IPRO leader and has now become the leader of the design team. As IPRO group leader she has successfully introduced everyone to the IPRO and divided them into groups. The first couple of days Lauren taught the Design team the basics, such as story boards. She was involved in researching the academic standings of Illinois compared at a national level. She found that not only was Vermont the number one state, but also that Illinois was 32<sup>nd</sup>. She then took part in a discussion with her group on what the last science game should be. The team decided on the water cycle and Lauren was in charge of developing the menu buttons for the game. She is also responsible for working closely with the development team. In recent weeks she has done much research about a Vermont child's curriculum. This includes acquiring various statistics and testing booklets.

*Matthew Furukawa*

Matthew Furukawa is a new member to the Design Team. He began his work by contacting Judith Lederman, director of Math and Science Education, in order to get a better idea about a child's cognitive ability. He also did research on the internet for additional sources. He has completed a flow chart of the new water cycle game, as well. He has been instrumental in brainstorming questions for the water cycle

game. This included creating hints for the questions. He has been revising his initial flow chart and revising flow charts from previous semesters. Finally he has been helpful in drawings for the new game and text that will go into the game.

#### *Jeff Cecil*

Jeff Cecil is another new member to the Design Team. He has been in contact with numerous professors from Loyola University. He inquired about the teaching strategies for fourth graders so that the Design Team could develop more games around the professors' advice. In addition, he did research for literature on fourth graders' cognitive ability. His tasks on the water cycle game were to research evaporation and transpiration. After finishing the research he created ten multiple choice questions to test a student's knowledge. He then generated visual sketches of hints for the questions and then put them into Paint. He got first hand observations of children's interests when he visited the Children's Museum on Navy Pier. His observations will not only help the Design Team, but also the User Experience Team.

#### *Callie Johnson*

Callie Johnson is yet another new member to this IPRO. She has been appointed to taking minutes for each meeting and has been doing a very good job of staying current. She did research in order to find out why certain teaching methods are better than others. She helped put together a rough idea of the flow chart for the water cycle game. She also did research on the water cycle game. Her researched focused on the storage stage of the water cycle. She developed questions and hints for this section of the game. Furthermore, she developed rough mock-ups for the water cycle game. Finally, she helped the User Experience team by going into the schools to user test.

#### *Carlos Ceballos*

Carlos Ceballos is new to the IPRO group. He has been quite helpful since the beginning. He began the semester by arranging a meeting with a local fourth grade teacher to gain insight on teaching methods. He researched the Vermont school system as well. He was able to gain even more knowledge about a child's cognitive ability when he went to the Children's Museum on Navy Pier. He then met with our faculty advisor, Dr. Susan Fienberg, to discuss his findings. He was also in charge of creating sketches for the new water cycle game. Lastly, as an effort to promote diversity, our IPRO has decided to incorporate different languages into our game. Carlos was helpful in translating various documents into Spanish.

#### *Javier Martinez*

Javier Martinez was the last member to join the Design Team. Initially, he was on the Development Team but decided that the Design Team was a better fit for him. However, he is still helping Sonia update the website. He has helped research the educational system in Vermont. He has also been helpful in creating the flow chart for the water cycle game. His focus for the new game was the stage of condensation. After that was completed, he constructed ten questions. To supplement these questions,

he drew eight sketches that are to be used as hints throughout the game. He is also one of the members who attended the Children's Museum at Navy Pier. He also contributed to the many observations. Finally he has started to develop sketches that will be used as the wall paper for the game.

### **User Experience**

#### *Sachin Jain*

Sachin Jain is a team member of the user experience group. He has done quite a bit of work on the IRB application as well as the supplementary documents. Sachin began contacting the different elementary schools that had been assigned every day of the week. He established contact with an appropriate authority and helped to set up a user test at Mark Sheridan Math and Science Academy. He was also able to set up a tentative date with Soloman elementary school. He started preparing a list of all the various forms he would need before visiting the school. At the Mark Sheridan Math and Science Academy, Sachin personally met with the contact person at the school, and was able to see the room where we would be user-testing, and dropped of parent and principal consent forms. Sachin has worked on developing the debriefing form, the questionnaire, and the user profile and performed the user testing for the Constellation game.

#### *Yagna Pathak*

Yagna Pathak is a team member of the user experience group. She is a new member to the IPRO 329 group. In the first weeks in the user experience group, she became comfortable with the idea of the e-game. Yagna started filing documents that needed to be kept from last year. Also, she started working on a methodology to test the constellation game. Furthermore, she has worked on Pre-test and Post Test. She is currently working on the summary of the observations. Looking at the constellation game the user experience group has come up with the three levels of testing based on constructivism from the learning theory of psychology.

#### *Prateek Sanan*

Prateek Sanan is the team leader of the user experience group. This is his second semester in IPRO 329. Recently, Prateek has been getting in touch with some Chicago Public Schools to make sure that we can get in to user test as soon as possible. Furthermore, Prateek has finished up the IRB Documents and got them ready for delivery. Also, he has planned out what areas of the constellation game he would like to emphasize on and how he would like to build upon it. Prateek went to the Children's Museum and explored all of the exhibits. In addition, he talked with some of the directors at the Children's Museum and tried to improve IIT's affiliation with them.

#### *Vishal Pandya*

Vishal Pandya is a new member to the user experience group. He has been familiarizing himself with the goal of the IPRO mainly through discussions with Dr. Feinberg and my fellow group members. He has taken the online test which enabled him to become licensed by the NIH and now allowed him to test the game concept on children. Yagna and Vishal have been working together to brainstorm ideas on how to test the constellation game. In addition, Vishal has been in contact with the National Teachers Academy regarding user testing in their school. He has also been working on developing a pretest/posttest.

## **Development**

### *Deborah Kimnach*

Deborah Kimnach is a new member to the development team. She has been familiarizing with the source code from last semester. She became acquainted with Flash, Action Script(AS), and XML code. Deborah has played game looking for bugs and errors and has documented bugs and announced them to the team. Recently she was assigned task of completing the main menu bar by creating buttons and events for the constellation game. She has finished button transitions and effects of toolbar buttons. Deborah has lately commented code, and cleaned-up & organized my code for readability.

### *Richard D. Thompson II*

Richard D. Thompson II is a new member to the development team. Richard has been working on the Planet game. Initially he began trying to understand the code that was already written. Richard removed some extraneous code that only hindered the development of the game. He also removed the bug that would display the picture of Orion that was left over from the Constellation game. Richard has reordered the planets so that they will not hide each other. Currently he is working on adding overlap recognition to be used to detect when a planet is on the correct orbit.

### *Konrad Branicki*

Konrad Branicki is a member of the development team. Initially when Konrad started he received source code from last semester to start with and slowly got acquainted with Flash, Action Script(AS), and XML code. Then he started to play the game looking for bugs and errors and documented bugs and announced to team. Recently, Konrad has been working on the wall structure of the Science wing. From this there seem to be complications over code in the wall structure. Recently Konrad has noted that there are problems with wall manipulation. The walls have a hard time displaying the images on the wall.

## **5. Barriers and Obstacles**

At this point, our biggest obstacle is communication between sub-groups. We originally created these sub-teams in order to increase production. We definitely increased our productivity. However, there are certain aspects that need work, communication being one of them. The management team will now be

observing this and making sure that communication will be flowing well. Otherwise our team seems to be a cohesive group that will yield very substantial results this semester.