

Sesame Culture Buddy: Interactive Educational Application

Group Project for Experience Design II Project

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Introduction

This report provides a critical evaluation of our project, briefly describing the concept, analysing the execution, and providing recommendations for future development. The challenge was to create an interactive experience that engaged the five senses. We also wanted to deliver an innovative design that used new technology. We chose to focus on cultural education as the context for our design. More specifically, we wanted to develop something that helped children to understand what life is like in other countries.

The Concept

The Sesame Culture Buddy is an interactive tool for teaching children aged 6-10 on subjects of cultural significance. Our target audience includes teachers and children. We conducted some research amongst primary school teachers to explore the tools they use and gauge their first reactions to our idea. Appendix A outlines the Personas created based on the primary research. The teachers we spoke to responded positively and supplemental research shows students' desire for more interactive tools for the classroom (Project Tomorrow, 2011). Therefore, we assumed there was a need for a new educational tool. We brainstormed how each of the five senses could be engaged through content suitable for children (Chen, 2011). The content was then assigned to categories, which formed the basic structure for our design. We decided that the interaction should start with a globe, then the user would select a country and view different types of content about the country. A teaching pack featuring supporting material would also be available (Appendix B).

The Execution

We decided to create the application in Adobe Flash CS5¹ after an introductory lecture to ActionScript 3². With little earlier experience of using Flash, it was very challenging to learn the language and be able to create an application that would show our design ideas. The first step was to create a globe in FlashDevelop³, a code-oriented environment, and apply a map created in Flash, an object-oriented environment. We had to decide whether it was possible to include external Flash files the working file, and map them around objects created in FlashDevelop, whilst keeping the interactivity created in Flash. The design examples were all of a 2D interaction with the globe inserted into it, however we wanted it to feel 3D so we modified those examples to meet this.

¹ Retrieved from: Adobe Flash CS5 - <http://www.adobe.com/products/flash.html>

² Additional information on Action Script 3 available at http://www.adobe.com/devnet/actionsript/articles/actionsript3_overview.html

³ Retrieved from: FlashDevelop - http://www.flashdevelop.org/wikidocs/index.php?title=Main_Page

For the interaction we used a Nintendo Wii Remote, connected it to some extra software, and an infrared pen to allow the user to interact directly with a projected image, as an alternative to running the application on a computer screen. The software, called Wiimote Whiteboard (Schmidt, 2008) is a cross-platform program that allowed us to create an interactive display on any surface we wanted, using a link to a computer, the Wii Remote, and an inexpensive infrared pen.

The design style included inspirations from popular characters and illustrative styles, which would appeal to the target audience of 6-10 year old children. Some informal user testing showed that this type of look and feel resonated with the children. (Appendix C)

Successes and Challenges

Using a projector and a Wii Remote, we have been able to effectively create a different experience for teachers and students, which is also affordable and flexible. The application itself is not limited to a projection on a wall, setup can include a group sitting around a table, or even projected on the floor. Simply varying the method of engagement takes students outside of the mode of being “lectured to” and allows them to become a part of the learning experience.

Each member of the group brought different skills to the project including research, information architecture, design, and programming. This was great overall, however there were times when each group member was working independently, and communication suffered as a result. There were learning curves, and technical limitations, specifically with Flash, that made it difficult as the deadline approached. In the end, the group agreed that more face to face meeting times and a project plan would have helped to ease some of these challenges.

Future Development

Potential future steps are to fine tune the basic interactions then focus on a prioritised list of new enhancements. Also, integrating quizzes, and the teaching pack tutorials into the product, user testing it with children, doing more formal research and taking it to educational organisations and local authorities to try to get the idea integrated into teaching curriculum as a central part of learning about other cultures. We have already been in touch with Gemin-i⁴, an educational charity to see if we can integrate this in with their existing online product.

The group believes there is potential for development with the application. As a teaching tool, it allows teachers to leverage resources on the Internet to teach more effectively drawing upon resources like Wikipedia, YouTube, and Google to support curriculum teaching with the most up-to-date and informative content. For children, it allows them to learn about other cultures, but more importantly, to socially connect with other children and learn how they live in their local surroundings. Adding social features also opens opportunities for the students to create meaningful relationships and new friendships with students from all over the world.

⁴ Retrieved from: Gemin-i - <http://www.gemin-i.org>

Appendix A – Personas

Caroline

English teacher



“The software has to be entertaining, with little games and questionnaires, otherwise it will not appeal to the children”

Caroline teaches English to French school children. She uses flashcards, songs, pictures and everyday objects, getting the children to repeat sentences after her. As well as spoken language, she has to teach the children about British culture. Classroom topics might be the Royal family, identifying British Islands on a map, or learning about capitals, flags, landmarks, food, or celebrities. Religion is a sensitive topic as the children come from different religious backgrounds.

The school does not have access to very sophisticated technology. Although each school has a computer room, the network at Caroline’s school does not work at times.

Caroline likes the idea of our educational tool and thinks the content themes are appropriate. The children need to be able to find the countries on the map to help them remember where places are. Quizzes and games would help to keep it engaging for them. Instructions need to be simple and spoken instructions would be useful for any children with reading difficulties.

Teaching: English

Age group of children: 8-9

Location: Near Paris, France

Teaching tools: CDs, flashcards, posters, books, pictures and songs

User goals:

- Help her to teach children about other countries, particularly Britain (Primary)
- Entertain the children (Primary)
- Test how much children have learnt through quizzes (Secondary)
- Help her teach spoken language with verbal instructions and phrases (Secondary)

James

Primary school teacher



“The children would really enjoy finding out about different cultures”

James teaches year two at a primary school in a large village on the outskirts of a council estate. Children are taught about other countries and cultures in geography lessons and sometimes during literacy lessons. The school has links with a school in Africa and the founder comes to take assemblies and tell the children about life in his country. One challenge is that there are very few children from ethnic minorities in the school.

The school has interactive whiteboards and computers for use in class. James likes the idea of our educational tool. Factors that would affect whether his school would adopt it are the cost, number of different cultures included, whether it includes different levels of difficulty, worksheets, teaching notes, and quizzes. Linking it to the National Curriculum would also be very useful.

Teaching: All subjects

Age group of children: 6-7

Location: Near Manchester, England

Teaching tools: Books, interactive whiteboards, interactive stories, artefacts from different cultures, people coming in to talk, music and dance

User goals:

- Broaden the children’s awareness and understanding of other cultures (Primary)
- Fit into scheduled lessons such as Geography (Primary)
- Link with the National Curriculum (Secondary)

Appendix B - Sesame Teachers' Pack



Lesson 1 : Mexico



- What do you know?
 - Ask students to share any knowledge they have
- Touch and taste
 - Experience Mexico in the classroom
- Sesame interaction
 - Use Sesame to explore content about Mexico
- Quick quiz
 - Test learning with quiz questions

Touch and taste



Simple Recipe: Make your own tortilla strips

Heat oven to 200C/fan 180C/gas 6. Cut 6 corn tortilla wraps into thin slices. Place on a baking tray and spray or brush lightly with a little olive oil. Season, then bake for 4-5 mins until golden.

Source: www.bbcgoodfood.com

Sesame interaction

STEP 1: Ask students to locate Mexico using the globe

STEP 2: Ask students to name different countries shown on the continents map by recognising their flag and position

STEP 3: Allow students to select Mexico and play the different types of content available



Quick quiz

1. What 3 colours are on the Mexican flag?
2. Name 3 foods that are eaten in Mexico.
3. What is the capital city of Mexico?
4. What language is spoken in Mexico?
5. What is Mexico's longest river?
6. Name an animal commonly found in Mexico.
7. What is the climate of Mexico like?
8. What continent is Mexico on?

Appendix C - Design Concept



References

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