



EXPLORE MMO

**A Massively Multiplayer Online Game
Facilitating Communication Skill
Development**

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Main Motivations

- Video games are a huge industry, and even overtaken the entertainment industry in revenue [1].
- Barr (2017) showed video games can develop skills which would benefit employability and workplace performance, with a focus communication skills [2].
- Universities are currently failing to provide a method to develop such skills [3].

Aims

- Create a multiplayer browser game that facilitates students development of communication
- Evaluate the usability and playability of the game
- Investigate if student participants believe Explore MMO develops communication skills
- Investigate students attitudes towards Explore MMO being implemented into their curriculum

Requirements

- MosCoW method of prioritization
- Created based of background research and supervisor meetings
- 29 requirements created in total
- Core requirements:
 - Users must be able to complete quests which require communication
 - Users must be able to complete quests which encourage communication
 - Users must have the ability to communicate using a text-based chat
 - Users must be able to see other players' movements in real time
 - Users must be able to explore a virtual world

Design

- The game went through a detailed design process
- Designing different user interfaces and the map prior to implementation
- More information can be seen in Chapter 4 of the dissertation

Quest Design

- Designed using background research
- Two types of quest derived:
 1. Quests which force communication to succeed
 2. Quests that encourage communication to succeed
- Keep Talking and Nobody Explodes forces player to communicate and has been shown to develop communication skills [4].
- Harder a task is in a video game the more likely people are to work together [5].
- Five quests created in total

A pixel art map of a village. In the center is a square with a blue pond and a small building with a green roof. Surrounding the square are several small houses with blue roofs and white walls. A river flows through the village, and a path leads to a large building with a grey roof and a central tower. The landscape is green with many small trees.

Demo

Key Implementation Details Summary

- Game chat as shown in demo
- Continuous data streaming handles real-time movement with web sockets
- Players can complete quests together
- Phaser game framework used for implementation
- Node.js and Express to handle the backend and send games files straight to client
- Copyright free game assets
- NoSQL MongoDB database

Alpha Testing Evaluation

- Carried out early in the development
- Student participants played game with a random other participants
- System Usability Scale survey given to participants to measure usability of early prototype and scored an average of 80/100
- Semi-structured interview were then carried out to investigate:
 - If any bugs were identified
 - Potential improvement to add
- Helped identify bugs early and gather more requirements

Beta Testing Evaluation

- Carried out at the end of the project
- They were asked to play through the completed game for a minimum of 30 minutes
- All students played longer, suggesting the game is engaging
- System Usability Scale survey saw an increase of 9.5 from the Alpha evaluation meaning a score of 89.5/100.
- Online form used instead of interview:
 - Participants believed the game was fun
 - Only trivial bugs identified
 - Students believed that Explore MMO was developing their communication skills
 - Students were positive about the idea of Explore MMO being used in their curriculum

Future Work

- Implement rewards for completing quests
- Implement procedurally generated quests
- Carry out beta evaluation study with random participants and a larger participant sample size and see if results still hold true
- Carry out a longitudinal study to see if Explore MMO develops communication skills

Conclusion

- Explore MMO is a fun, engaging and highly usable prototype which facilitates communication development between players
- Evaluation showed participants believed their communication skill was developed using the application
- Evaluation also showed participants were positive about using Explore MMO in their curriculum

Questions?

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