

Initial Plan

Project Title: Exploring Nonverbal Negotiations in Multiplayer Games

Project Description

Online multiplayer games are a fantastic way for people to connect and work with other people towards a common goal, whether they be friends or total strangers^[1]. However, a problem with online multiplayer games is that of easy communication verbally between participants of a game in certain situations^[2]. This is usually due to communication methods not being universal, language wise, and also not being accessible to everyone^[2]. This project aims to explore ways of addressing these problems by creating a video game that allows for people to communicate and negotiate nonverbally. Negotiation in video games is when multiple participants communicate with each other until they reach a solution or decision to a problem. Nonverbal communication and negotiation would solve the problem of people not speaking the same language as it provides a means of communication that does not rely on an understanding of different languages. The project will also endeavour to allow people who can not communicate verbally easily to participate.

The first aim of my project is to investigate and design different non-verbal communication methods. For example, one could allow the user of the video game to place symbols on the screen that have meanings within the game and they can draw arrows to or from these symbols to give meaning to certain objects. Another example would be to make the screen drawable and allow users to draw on it. I plan to conduct a preliminary study using an online questionnaire to evaluate how people would react to certain elements of the communication method. After this the next aim of my project would be to design a video game that would require communication and negotiation between the participants.

The next aim would be to then, using the results from the preliminary study, finish off the design of the non-verbal communication method so that it would be most effective within the game situation I design. I would then begin to develop the game and implement the communication method into it. Once the game has finished development and testing I aim to evaluate it with the use of virtual observations of how participants play the game. They would be observed in three different scenarios, one where they have to cooperate with each other, another when one player will be working to disadvantage the group, and finally a scenario where it could be either of the previous two scenarios but the participants will not be informed of which one. I will also use a custom online gameplay questionnaire to gather direct feedback from the participants about the game.

In conclusion this project will aim to create a video game with non-verbal communication and elements of negotiation. It will also evaluate how people use and adapt this form of communication while playing the video game in different scenarios. The development and research in this project could be applicable in the future for bridging the gap in communication in lots of online platforms, say if companies could communicate easily without the need of speaking the same language then that would be particularly advantageous for them and speed up business negotiations and communication^[3]. Or it

could be applied to provide people who struggle with verbal communication an alternative means that other people can understand without much prior knowledge^[4].

References

- [1] Thorsten Quandt and Sonja Krger. 2013. Multiplayer: The Social Aspects of Digital Gaming. Routledge, USA.
- [2] Serdar Sali, Noah Wardrip-Fruin, Steven Dow, Michael Mateas, Sri Kurniawan, Aaron A. Reed, and Ronald Liu. 2010. Playing with words: from intuition to evaluation of game dialogue interfaces. In Proceedings of the Fifth International Conference on the Foundations of Digital Games (FDG '10). Association for Computing Machinery, New York, NY, USA, 179–186. DOI:<https://doi.org/10.1145/1822348.1822372>
- [3] Al Tawil, R. 2019. Nonverbal Communication in Text-Based, Asynchronous Online Education. The International Review of Research in Open and Distributed Learning, Canada.
- [4] Simpson, R., Koester, H.H. and LoPresti, E. 2010. Research in Computer Access Assessment and Intervention. Physical Medicine and Rehabilitation Clinics of North America, USA.

Project Aims and Objectives

This is the aim of my project as well as the objectives required to achieve this aim.

Aim:

- Explore the use of non-verbal communication during negotiations in the context of a multiplayer video game.

Objectives:

- Research different forms of non-verbal communication in the real world. Examples:
 - Body Language.
 - Sign Language.
- Explore how people can communicate non-verbally in a game setting.
- Design and develop a video game that has an element of negotiation in it.
 - Make the game multiplayer.
 - Make the game support online play.
- Design a few options for non-verbal communication.
 - Use an online questionnaire to gather information on how people will respond to certain elements of my proposals.
- Independently test these different ways of communication and decide which one is the most effective in the context of the video game.
- Implement this form of non-verbal communication into the game.
- Evaluate the game using observations of participants playing the game in different scenarios and questionnaires given to the participants about gameplay experience.

Reflection on Task Prioritisation

In this section I will lay out what needs to be completed in my project, and their prospective importance to the project using the MoSCoW system.

Must

- The project must create a video game with negotiation in it.
- The project must implement a form of non-verbal communication in said video game.
- The project must create a video game that supports multiplayer.
- The project must virtually observe participants playing the video game.
- The project must use an online gameplay questionnaire to gather feedback on participant feedback with the video game.

Should

- The project should make the video game have online multiplayer.
- The project should use an online questionnaire to gather feedback on aspects of non-verbal communication while developing them.
- The project should create a video game that can implement multiple different scenarios.

Could

- The project could make the video game have changeable settings, such as number of players or playing conditions.
- The project could allow the video game's non-verbal communication method to have customisable settings.

Will Not

- The project will not allow for different forms of non-verbal communication in the video game settings.
- The project will not allow for text chat in the video game.
- The project will not allow for video and/or voice chat in the video game.

Preliminary Video Game Idea Brainstorming

This is my current video game idea, in a very early stage:

5 people trapped in a Jungle Temple, they have to escape! They are presented with a series of rooms that all have multiple exits from them, they as a group have to work out which of the exits is the safe one. Each member of the group is presented with a piece of information about one of the doors and they have to convey the information they have received to the rest of the group non-verbally. Any player can call a vote after 1 minute of being in the room and the group has to vote on which door to enter, a simple majority of people who voted is

needed. If there is a tie then the vote is cancelled and the players either make further non-verbal discussions, or another vote is called by the players.

Ethics

In my project I will be conducting research that will require approval from Cardiff University Ethics committee. The items are as follows that have been mentioned above:

1. An online questionnaire during the development of my non-verbal communication methods to gather how people react to certain elements of them.
2. Virtual observations of how participants play the video game that I will have developed in multiple different scenarios.
3. An online gameplay questionnaire about participants' experience with the game and non-verbal communication.

Work Plan

Week	Plan	Milestones	Review Meeting
Before Week 1	<ul style="list-style-type: none">• Supervisor Meeting (11/01/21)• Supervisor Meeting (18/01/21)• Supervisor Meeting (28/01/21)• Begin drafting initial plan• Create plan for the videogame		
Week 1 (W/C 01/02/21)	<ul style="list-style-type: none">• Supervisor Meeting• Continue Preparing initial Plan• Finish initial Plan		
Week 2 (W/C 08/02/21)	<ul style="list-style-type: none">• Supervisor Meeting• Submit Initial Plan (Due 08/02/21 at 11:00pm)• Begin Background research on -<ul style="list-style-type: none">◦ Different ways of non verbal communication◦ How to use unity effectively◦ How to use C# effectively as well• Preliminary Ethics Application sent off.	Initial Plan Finished and submitted	
Week 3 (W/C 15/02/21)	<ul style="list-style-type: none">• Supervisor Meeting• Finish research started last week• Create test cases to test the game with• Begin work on creating video game -		

	<ul style="list-style-type: none"> ○ Develop Game Framework ○ Create a text based working basic prototype 		
Week 4 (W/C 22/02/21)	<ul style="list-style-type: none"> ● Supervisor Meeting ● Continue work on video game - <ul style="list-style-type: none"> ○ Start to implement visual assets into the game ● Start work on nonverbal communication method - <ul style="list-style-type: none"> ○ Develop alongside video game development ● Online questionnaire to aid the development of the nonverbal communication method released. 		
Week 5 (W/C 01/03/21)	<ul style="list-style-type: none"> ● Supervisor Meeting (Review Meeting) ● Continue Working on the video game - <ul style="list-style-type: none"> ○ Implement non-verbal communication fully ○ Create menus and quality of life features 		Yes
Week 6 (W/C 08/03/21)	<ul style="list-style-type: none"> ● Supervisor Meeting ● Finish work on the video game and begin testing - <ul style="list-style-type: none"> ○ Polish up game ○ Use test cases to see if objectives complete ○ Discover faults with the game ● Modified Ethics Application sent off. 		
Week 7 (W/C 15/03/21)	<ul style="list-style-type: none"> ● Supervisor Meeting ● Finish testing the video game - <ul style="list-style-type: none"> ○ Implement fixes for any faults found during testing ○ Make sure all test cases are successful ● Prepare for observations ● Create questionnaire for participants after observations 	Video Game Finished	

Week 8 (W/C 22/03/21)	<ul style="list-style-type: none"> • Supervisor Meeting (Review Meeting) • Observations of participants in study • Questionnaire provided to participants after study • Record Results 	Observations Complete	Yes
Easter Recess (27/03/21 - 18/04/21)	<ul style="list-style-type: none"> • Start work on the final report - <ul style="list-style-type: none"> ◦ Introduction ◦ Background ◦ Approach 		
Week 9 (W/C 19/04/21)	<ul style="list-style-type: none"> • Supervisor Meeting • Continue Working on the Final Report - <ul style="list-style-type: none"> ◦ Implementation ◦ Results and Evaluation ◦ Future Work 		
Week 10 (W/C 26/04/21)	<ul style="list-style-type: none"> • Supervisor Meeting • Finish first draft of Final Report - <ul style="list-style-type: none"> ◦ Conclusions ◦ Reflection on Learning ◦ Abstract ◦ Report Structure 		
Week 11 (W/C 03/05/21)	<ul style="list-style-type: none"> • Supervisor Meeting • Redraft the Final Report until it is up to standard • Complete First readover of the Final Report 		
Week 12 (W/C 10/05/21)	<ul style="list-style-type: none"> • Supervisor Meeting • Complete final readover of Final Report • Submit the final Report • Final Report Due 14/05/21 at 11pm 	Final Report Complete and Submitted	

CM3203 Individual Project
40 Credits

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Gantt Chart

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