A Study of Adaptive Difficulty in Games

Abstract

This study looks to find different ways of applying adaptive difficulty in games with a focus on maximising player engagement and enjoyment. Looking at online journals and finding similarities and links between and qualitatively looking at how effective and useful adaptive difficulty in games is in terms of engagement and enjoyment. We hope to find a link between adaptive difficulty in games and player engagement and enjoyment as implementing these systems can be difficult and time consuming but could show a large increase in player enjoyment. This study will be used for future projects and will help in identifying potential uses of adaptive difficulty in games.

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What is your research problem statement?

The purpose of this research is to find ways of applying adaptive difficulty in games to tailor a challenging but fair experience to players.

Why your research is important?

It is important for video-games to stay fair but also to provide players with a challenge to keep them interested in the game. One of the ways to do this is to allow the game to change its difficulty while the game is running to provide the player either more or less challenges while playing.

What is the existing research literature in the area?

There is a large number of papers that show different methods of achieving a dynamic difficulty. One of the papers found shows that there is a large increase in player enjoyment when there is an adaptive AI that challenges the player(Hagelback et al., 2009),

What is your proposed research methodology?

Using existing knowledge from online journals and quantitatively finding links and similarities between them.

What resources will you need to carry out the research?

Internet connection, computer access and generally free to access research articles and books.

Will your research need approval from an ethics committee?

As this is a study of other journals there will be no ethical issues .

References

1. Hagelback J. and Johansson S. (2009). Measuring player experience on runtime dynamic difficulty scaling in an RTS game. 2009 IEEE Symposium on Computational Intelligence and Games, , 46-52. Retrieved from https://www.diva-portal.org/smash/get/diva2:835638/FULLTEXT01.pdf