

FINAL REPORT

Evaluation of game-based assessment

This report presents the results of the evaluation of the game-based assessment qualities on the Infinity board game which took place between October and December 2022.

Environment & Setup

The study took place at a facility as designated by each partner which had a clear secluded area which only contained the people involved in the experiment: the players, a gamemaster/moderator, a person that explains the game, interacts with the participants and guides them during gameplay, and an observer, a person that does not interact with the players but makes observations and takes notes as to how the game is progressing. Each experiment session was recorded with a video camera to allow the moderator and partner to revisit the session during evaluation.

A total of 69 older adults participated in the study (20 male, 49 female) with an average age of 58.27 years. Each partner used the same number of players in each experiment session, which depending on local circumstances could be 2, 3 or 4 players. On average a single experiment session lasted approximately 52 minutes.

Results

The results retrieved from the observation and analysis of gameplay as well as the post-game interviews can be divided into two parts: TECHNICAL, related to the physical aspect of the game and GAMEPLAY, related mostly to the rules of the game. The results of the Gameplay Questionnaire are presented separately.

Technical Issues

Loop direction - Playing the game on a loop board was distracting. These distractions occurred always at the beginning of the game and sometimes during the game as a participant would ask where to go now while approaching the center field. It was noted that they expected to play in linear directions as all board games that they ever played had this feature. A notable story example was when a granddad explained playing Snakes and Ladders with his grandson which is a game that moves pieces all over the board, but the direction is always implied.

Positive/negative placeholders - There were two issues noted with the placeholders for positive/negative cards on the board.

- The first observed issue was that after one positive and negative card would be placed in their spot, it was not easy to figure out where to place the next card as the signifiers were now covered.
- The second issue was the sequence of the positive/negative placeholders as they are different on the left side of the board vs the right side of the board. Instead of having

one on the left and one on the right we have the positive on the outside and the negative on the inside of the board.

Attack/conquer cards labels - When the cards are placed in their positions, players on one side of the board cannot understand what cards are Attack and what cards are Conquer as the label is obscured by the cards. They were also looking for a label on the card itself, just like there is a label on the other two card types.

Board size - As the printed size of the board was not predetermined, during gameplay with 3 and 4 users it was discovered that smaller board sizes are inconvenient as they influence comfortability during gameplay.

Teleport field - The original "no purpose" idea as a feature for the Teleport field turned out to be purposeless as participants were expecting some sort of action to be initiated on each field.

Debug zone - This field was disliked by most users as they found it difficult to count the rounds of absence.

Gameplay Issues

Complexity - In general the game rules were seen as complex. Most gameplay issues were related to the game rules which were either not remembered or misunderstood. The complexity issues are further supported by the significance of the game master role. While initially planned only as an experiment-only role, the results showed that the game would not be playable without the presence of such a person.

Score keeping - There was some confusion in keeping score. While the number of pieces on the board is an indicator of who is winning, the participants were wondering how that relates to the positive/negative card slots on the board.

Question length - Participants identified questions to be overly long as most had to reread multiple times before they could be answered. This does not include the questions with icons which were found to be most effective.

Question ratio - The ratio of questions across difficulties was not well suited to actual gameplay as it was distributed at a ratio of 70:20:10 between levels 1, 2 and 3.

Knowledge vs skill - In this game the knowledge player will always dominate and win. While winning/losing is not the important aspect for us as observers, the losing player would easily lose motivation to play the game as it would be almost immediately obvious who is going to win. The element of chance should be more present, thus allowing the concept of luck to have a more significant influence on gameplay.

Icon board - Having a separate board with icons was awkward for participants. They were wondering why there were no icons on the cards.

Game Play Questionnaire

The mixed results of the Gameplay Questionnaire (GPQ) reflect the findings in the observation and post-game interview results. The GPQ is a subjective gameplay experience measure based on the theoretical framework of self-regulated learning which identifies four factors that might influence players' enjoyment in video games: enjoyment, autonomy, competence, and intuitive controls.

The score was lowest for competence (3.17), as players did not feel overly confident and capable of solving problems within the game, thus indicating that the game was not only challenging, but also overwhelming. Regarding autonomy, the score of 3.94 indicates that the players' perceived degrees of freedom or number of choices in the game was somewhat restricted. The players also had issues with the ease of which they can learn to play the game intuitively, as the score for Intuitive control was 3.63. All of these scores affect game enjoyment which is a strong indicator of how likely are the users to engage into future play of the game.

Conclusion

In its current form, the Infinity board game presents a solid base for further iterations. The significant amount of user tests discovered a myriad of issues, which, when addressed, could provide an improved version that is easier to play, more enjoyable and addresses assessment more closely.

This project has been funded with support from the European Commission. This document reflects the views only of the project partners, and the Commission cannot be held responsible for any use which may be made of the information contained therein.

This work is licensed under a Creative Commons license.



Dieses Werk ist lizenziert unter einer [Creative Commons Namensnennung 4.0 International Lizenz](https://creativecommons.org/licenses/by/4.0/).