

# DESIGN & UNDERSTAND NETWORKED KNOWLEDGE CONSTRUCTIONS THROUGH BUILDING REAL TIME ASSESSMENTS FOR LEARNING



## INTRODUCTION

In our internet-connected world, there is easy access to both truthful and misinforming information. It can be difficult to evaluate online information, especially detecting fake news, which constitutes Media and Information Literacy (MIL). Proficiency in this skill allows individuals to reduce the spreading of false news and become conscious of their internet responsibility. Games may help develop MIL because immersing learners in a stimulated online setting demands practicing critical thinking and strategies to navigate inaccurate contexts.

## OBJECTIVE

The project aims to emulate settings where learners evaluate online news to strengthen their MIL with the following goals:

1. Create a game-based learning environment where learners can employ MIL
2. Explore and identify how game situations assist learners' strategies in reporting fake news
3. Assess the effectiveness of game-based learning on learner's MIL abilities

Hypothesis: Learners' awareness, critical knowledge, and evaluation strategies related to fake news will increase after playing the game.



## METHODS

We designed a game intended to for players to develop MIL. To examine this, players completed pre- and post-game assessments where they had to deploy MIL when reading news pieces.

Instruments:

We observed the players and recorded the game with cameras (for future record and analysis) to assess how they determined true news and interacted with others. A MIL survey including information evaluation tasks, where players rated credibility levels, served as our pre-game and post-game test.

Sample size:

~5-8 players per game with around 5 rounds for each game to ensure all data has been saturated, i.e. all data has been examined thoroughly. ~40 participants in total. This sample size was derived from power analysis, suggesting a paired-sample t-test with sample size 34 gives a medium effect size of  $= .5$  (as in Basol et al., 2021) with  $\alpha = .05$ , and the power,  $1 - \beta = .8$ .



## RESULTS & CONCLUSION

[Research still ongoing. The following shows our research design and development and current data collection.]

*Research design and development:*

The project was divided into two phases.

Phase 1's aim was to curate the game with user testing. Researchers explained the study purpose and game rules before observing players' in-game behaviours, interactions, and game-play highlights. The deliverable is a finalised game design for Phase 2's analysis.

Phase 2 assesses Phase 1's efficacy for MIL development. 45 additional recruited participants will play along with pre- and post-game tests to examine their awareness and proficiency. Data analysis will evaluate if players have changed in their abilities to detect misinformation.

*Trial game experience:*

Due to time constraints, we recruited 9 players to only play Phase 1 and participate in the focus group interview. The following were points of concern for future improvement in the game design:

- confusion about the rules and how to play
- too time-consuming
- minimal engagement from some players
- lack of a "game" feel