





User Experience and Gamification: Understanding Effective Game Mechanics and the Flow State Within Digital Experiences

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Introduction

Gamification is the use of game-like features to enhance participation in digital experiences. Previous research found gamification can support a flow state, but its effect on engagement, satisfaction, and information retention in e-learning is unknown. This research examines how different game mechanics can influence a flow state in digital experiences, and which elements drive user motivation.

Methods

-  8 participants ages 18-24, randomly assigned to Duolingo (gamified), or Khan Academy (non-gamified).
-  Participants used their assigned platform 15-minutes a day, for 10 days, learning math.
-  Data collection through pre-study test, diary logs, and post-study test.
-  Analyzed data through numerical coding and thematic analysis.

Previous Research

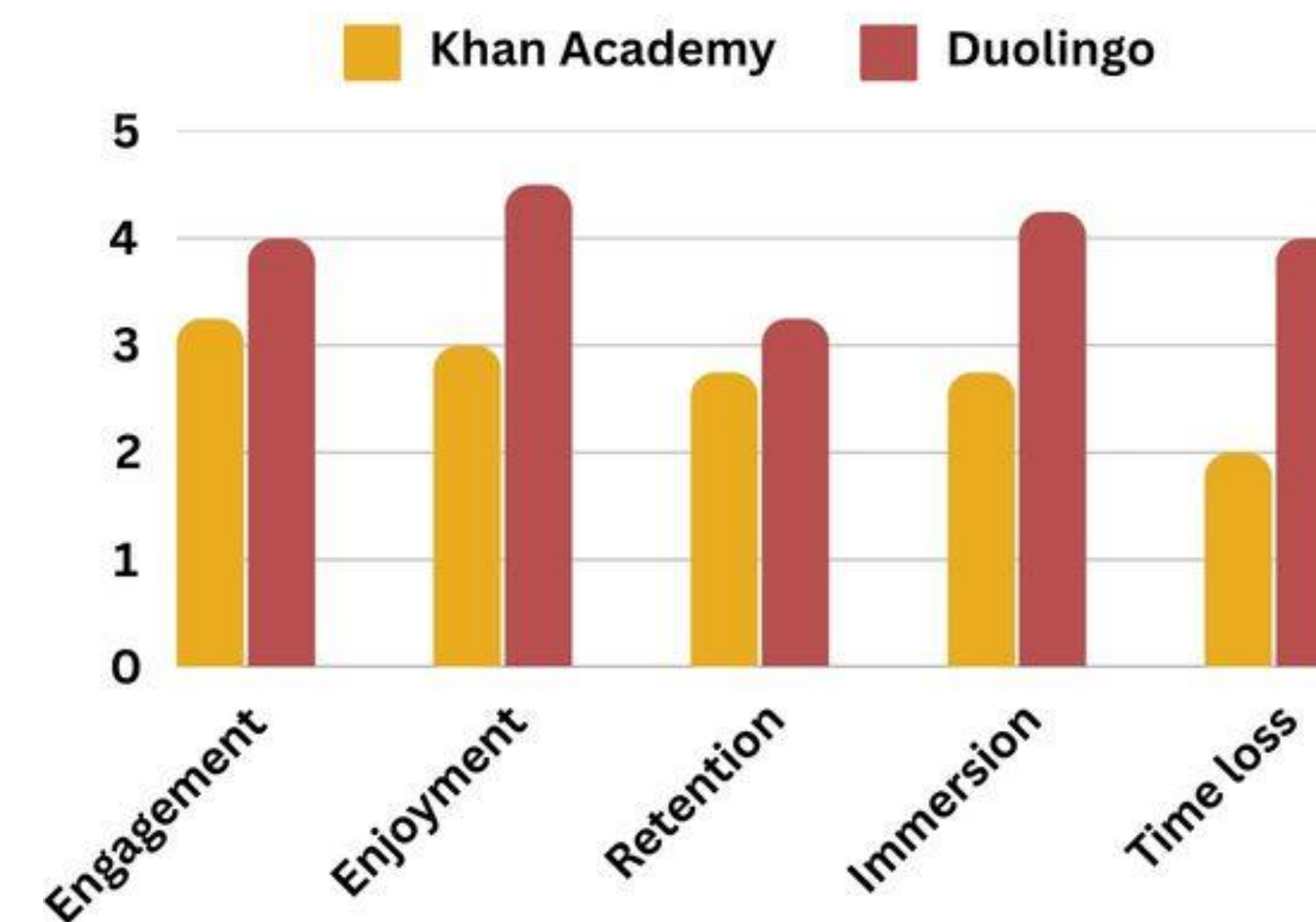
Flow state enhances immersion and reduces external distractions (Csikszentmihalyi, 2008). Gamification in e-learning improves motivation (Strmečki et al., 2015). Studies show gamification supports flow state, increasing focus (Oliveira et al., 2021).

Research Questions

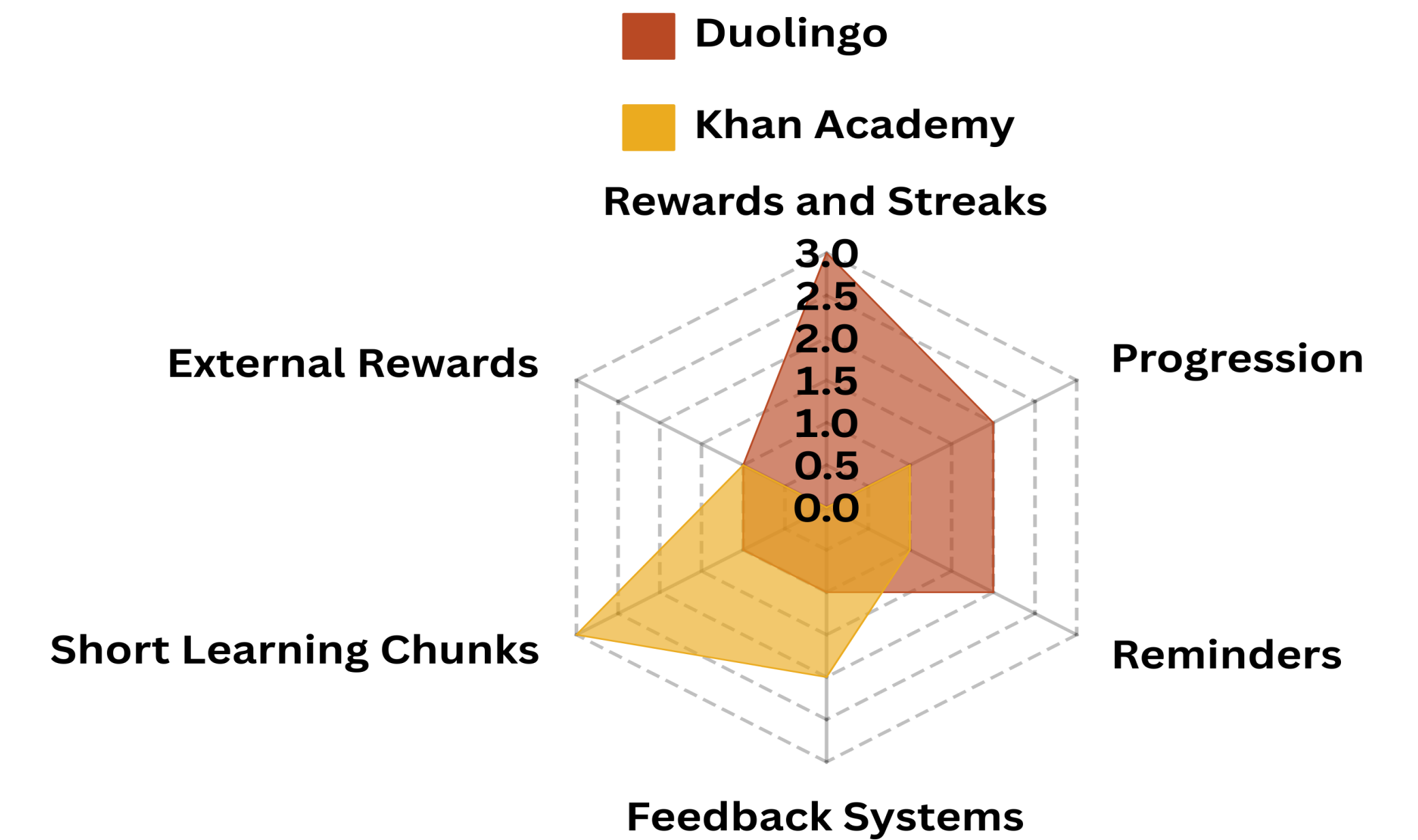
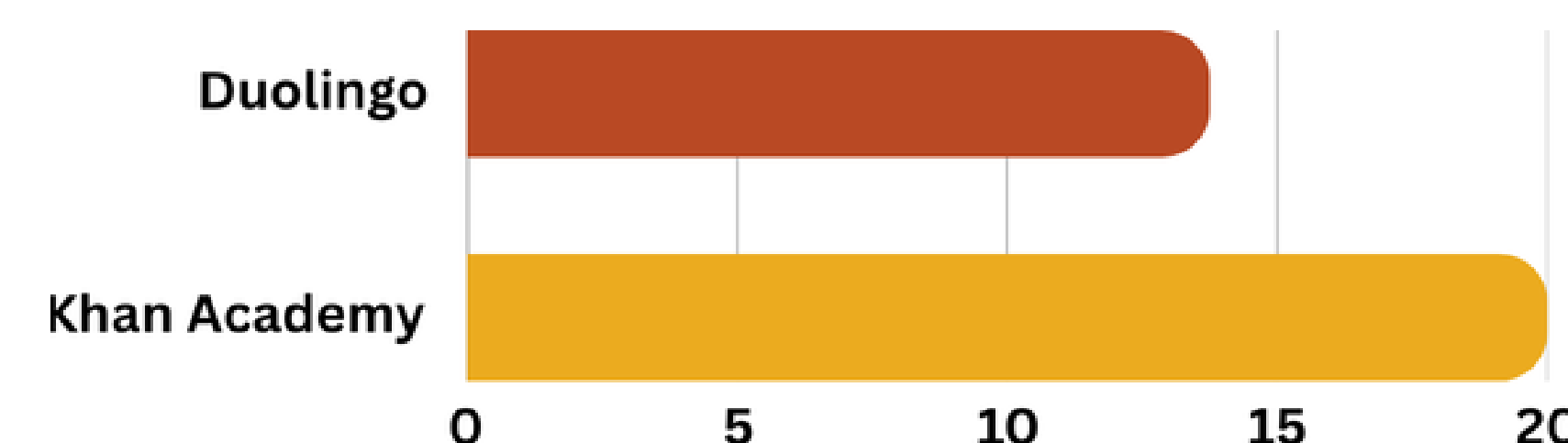
- 1 What are the design principles and game mechanics that support people who get into a flow state?
- 2 How do we keep users engaged with a digital experience?
- 3 How does one know they are in a flow state?

Results

Duolingo users reported higher engagement, motivation, and immersion, often losing track of time; an indicator of a flow state.



The average days for Duolingo to finish the diary-study was 13.75 days, and the Khan Academy average days was 20.



Duolingo users were motivated by rewards and streaks, while Khan Academy users relied on short learning clusters, highlighting gamification's role in engagement.

Conclusion

This study shows that gamification boosts engagement, consistency, and flow state, making learning more interactive. Findings highlight the importance of challenge, feedback, and motivation in digital education.

References

- Csikszentmihalyi (2008).
- Strmečki, Bernik, & Radošević (2015).
- Oliveira, Hamari, & Shmorgun (2021).