Perceptions of Thai Aviation Students on Consumer Grade Virtual Reality Flight Experiences

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CONTENTS

Introduction

- Interested in Thai aviation student perspectives
- Consumer grade VR experiences (PS4/PSVR)
- Pre-existing flight software (Ultrawings)

Ultrawings Software

Methods

- Three third year aeronautical engineering and commercial pilot program international students recruited from Ladkrabang district of Bangkok, Thailand.
- Disclosure briefing on study and VR safety
- 15 minute seated PS4/PSVR Ultrawings virtual reality flight experience
- In-depth qualitative interview follow-up
- Recorded via Otter application and field notes
- Analyzed with thematic coding procedure

Results

Seven emergent themes from respondents:

1) Head mounted device (HMD)
2) Controls and Controllers (CC)
3) Plausibility Illusion (PsI)*
4) Place Illusion (PI)*
5) Embodiment Illusion (EI)*
6) Academic Value (AV)
7) Entertainment Value (EV)

*PsI, PI, and EI as defined by M. Slater, K. Kilteni, & R. Groten

Discussion

Pros	Cons
• Simple and easy to use controls • Plausible experience that "felt like flying" • Inexpensive equipment setup • Suitable for a classroom experience • Preferable to a 3-monitor simulation setup • Interesting and impressive experience overall • Good predecessor to Redbird flight simulator	• Limited resolution and Screen Door Effect* • Controls not realistic enough • Lack of haptic feedback* • Lack of virtual body (hands to push buttons)* • Blacked out peripheral vision/delay* • Cartoonish graphics/aesthetic style*

*Known limitations of the study

Conclusion

Researchers recommend future research utilizing different hardware and software combinations to pursue higher resolution and reduced SDE, realistic physical or virtual controls, inclusion of virtual embodiment, improved haptic feedback, better peripheral vision without delay, and more realistic graphics.

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Thank you

Q & A