

Motion Sickness Susceptibility in Software Developers

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Motion Sickness Susceptibility in Software Developers

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ABSTRACT

This technical report extends our prior work comparing video game development to software development. Here, we describe a short survey we conducted designed to assess whether software engineers who develop video games are more susceptible to motion sickness than those who develop other types of software. The results suggest that both groups are equally susceptible. Respondents who marked working in “user interface/experience” were significantly more likely to report being motion sick than the other respondents.

Categories and Subject Descriptors

D.2.0 [Software Engineering]: General – Standards. K.8.0 [Personal Computing]: General – Games.

General Terms

Human Factors, Management

Keywords

Motion sickness, software engineering, games

1. THE STUDY

In a previous study [1], an interviewee noted that an “occupational hazard” that is “unique to gaming” is that most developers at one company had “acquired motion sickness.” According to P2, in the course of testing game via play-through, developers are exposed to suboptimal game experiences, such as low frame rates and unresponsive controls:

If [developers] do it for a long time... they actually can't stand to look at games anymore because that makes them ill. So what happens is that they learn to feel motion sickness by looking at laggy stuff all the time. Now the reason that this doesn't appear in the general populace [is because] by the time you're done [with the game] and you ship, the performance is tuned and optimized.

We found this story interesting, so we conducted a short study to determine whether game developers are more susceptible to motion sickness.

We picked a location at Microsoft where employees, including game and non-game software developers, get off buses to walk to their offices (Figure 1). We gave each person who walked by a survey that asked how motion sick they felt during the commute on a 4-point scale, their age, their role (for example, engineer), what product they work on (for example, games), and for how long they

have worked on that product (Figure 2). We collected 165 surveys over a two-hour period. Of those, 30 people were game engineers (age 21–48, median=28) and 54 were non-game engineers (age 20–64, median=28).

Our hypotheses were that (a) there is a positive relationship between motion sickness and length of experience developing games, and (b) that game engineers were more motion sick than non-engineers.

Our hypotheses were not confirmed; using a logistic regression, there was no significant relationship between the dependent variable motion sickness and the independent variables years of game experience and product (game versus non-game engineers).

Interestingly, respondents who marked working in “user interface/experience” were significantly more motion sick ($p<.01$).

One threat to this bus study was that, if game engineers are indeed prone to motion sickness, they might be less likely to ride the bus in the first place. To check this, we analyzed Microsoft’s human resources and commute databases to determine what proportion of game engineers ride the bus versus how many do not. Although our methodology was imperfect (for example, we only had data for the corporate buses, not the public buses), the results suggest that game engineers ride the bus about as much as non-game engineers; for example, 23.5% of game engineers take the bus versus 23.5% of Microsoft Windows engineers.

2. ACKNOWLEDGMENTS

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3. REFERENCES

- [1] Murphy-Hill, E., Zimmermann, T., and Nagappan, N. Cowboys, Ankle Sprains, and Keepers of Quality: How is Video Game Development Different from Software Development. In *International Conference on Software Engineering* (2014).



Figure 1. Survey about to be administered.

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This survey is anonymous.

? What best describes the **product area** you currently work on? (select one or more)

<input type="checkbox"/> Mobile	<input type="checkbox"/> Games
<input type="checkbox"/> Productivity	<input type="checkbox"/> Other _____

? About how many **years experience** do you have in **this product area**? (decimals okay)

? What's your **age**? (in years)

? What best describes your **primary work area**? (select one or more)

<input type="checkbox"/> Engineering	<input type="checkbox"/> Management
<input type="checkbox"/> UI/UX	<input type="checkbox"/> Other _____

? **How motion sick** were you on your commute to work today? (select one)

☐ not at all
☐ slightly
☐ moderately
☐ extremely

Please return this survey, clipboard, and pen to one of the people with red 'ESE' shirts.

----- If you wish, tear here and keep the sheet below

Questions? Concerns? Interested in the results? Visit:
<http://aka.ms/MotionSickness>

Figure 2. Blank survey.