

Study: Measuring effects of input lag in high-speed videogames

Script & Questions

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Hi _____. Thanks for coming. In this study you will be playing a game for 45 minutes where you must click on the white circles as quickly as you can after they appear. Occasionally you will be asked a few questions, during which you may rest your hand for as long as you like. The game will get harder as you play, and both moving and clicking with the cursor may become delayed. After finishing several rounds, you will repeat the exact same gameplay, but with a different input device. The input devices are: mouse, touchscreen, drawing tablet and controller. This study is completely voluntary, and you will be able to withdraw at any time for any reason. If you'd like to see the results of this study, please email michael.long@usask.ca two months after this session. Please read this consent form before we proceed. Feel free to move the screen/input devices to make using them more comfortable

Questions asked before playing the game:

- How old are you?
- Gender?
- Occupation?
- Left or right-handed? Ambidextrous?
- What hand do you use a computer mouse with?
- On a scale of 1 to 5, with 1 none, being and 5 being expert, how do you rate your proficiency with...
 - a mouse – a touchscreen – a controller – a drawing tablet
- On an average week, how many hours do you spend using...
 - a mouse – a touchscreen – a controller – a drawing tablet
- On an average week, how many hours of videogames do you play?
- If they do play videogames...
 - What genres of games do you play?
 - Do you play any games involving controllers? (console games, PC games /w controllers)
 - Do you play any games requiring a quick reaction time, such as first-person shooters?
- Have you experienced lag when playing videogames? (Such as online gaming, using a slow computer, etc.)
- In what situations has lag been a problem?
- How do you deal with lag when you play with videogames?

Have them perform <https://www.humanbenchmark.com/tests/reactiontime> 10 times, recording the end/overall avg.

Boot up experiment program. Enter participant ID, and device ordering. Tell them to click on the white circles as quickly and accurately as they can. They can rest their hands as long as they like when answering questions, or when it says 'click on circle to start round'. The game will add delay as you go, and when a block of trials has been completed you will switch to a different input device. Click on circle in screen center to start.

Questions asked after each round of gameplay (all answered on a 5-point Likert scale)

- Since the last survey, I felt capable and effective when playing.
- Since the last survey, using the current input device was fun.
- Since the last survey, I put a lot of effort into those rounds.
- Since the last survey, how well I did was completely due to me.
- Since the last survey, I was frustrated by the task.
- Since the last survey, the cursor movement was responsive.

Questions asked after playing the game:

- Overall, which device did you prefer using?
- Overall, which device do you think you performed the best with?
- Overall, which device do you think was most resilient to the delay/lag you experienced?
- Did you have strategies for playing the game in general?
- Did you have any strategies for when the lag when moving your player become too high?

Record any noteworthy/strange behaviour, or if anything went wrong.