Unity VR

Dear Max and Farbod,

As you know, our group is formed by Carla, Thekla, Juwi, Friederich and Gürhan. Our aim was to accomplish the tasks that you want us to do. In that sense, we want to develop an experiment designed by Unity, aiming to test the capacity of working memory depending on our previously conducted literature review.

To be able to get our experiment started, we were in need of some theoretical background knowledge. The first thing we had to figure out was how many seconds or milliseconds we were ought to wait after the representation of the digits. In an experiment conducted by Norris(2017), the waiting time was only 1s after the representation of the digits.

Delay time after the representation of stimulus depends also what kind of results one expects from the results of the experiment. The more you wait, the more you remember the stimuli (Cowan, 2001).

Since our experiment was related to working memory, we came across the importance of "chunking" which implies the capacity of working memory. According to Cowan(2004), working memory capacity is approximately four items, which means that we are able to save 4 items and by rehearsal, we can make it to 6 items.

We aimed to find out the flexibility of the working memory capacity by increasing the items up to 8. In the following, you can find the experimental design we used in order to develop our experiment.

Experimental Design:
- In our experiment, we used the digits to see the capacity of working memory up to 8 items.
- Basically, Random numbers were displayed in the middle of a circle formed by numbers from 0 to 9.
- We start with 5 digits and end with 8 digits.
- We had 4 blocks
- Every block had 2 tasks
- The representation of the stimulus and the time for answering was 3s.

As a result, we are happy with our experiment. Since we were asked to grade ourselves, we would like to mention the following points:

No one in this group was an expert for Unity or any other programming. So, we started from scratch and tried our best. Every participant of this group came to the lecture regularly and followed the courses very carefully. At this point, we would like to say a special "thank you two", since you always helped patiently, even if we pushed you too much with our questions during the lectures / courses or afterwards. Back to our group, via our Whatsapp group, we were always in touch and tried to help each other anytime and anywhere. Because of the reasons, we counted above, we really would like to be graded by one of best your notes.

References

1- Cowan, N. The Magical Number 4 in Short-Term Memory: A Reconsideration of Mental Storage Capacity. March 2001 Behavioral and Brain Sciences 24(1):87-114; discussion 114-85 DOI: 10.1017/S0140525X01003922.

2- Cowan, N. Educ Psychol Rev (2014) 26: 197. https://doi.org/10.1007/s10648-013-9246-y

3- Norris, D. (2017). Short-term memory and long-term memory are still different. *Psychological Bulletin, 143*(9), 992-1009. http://dx.doi.org/10.1037/bul0000108