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Literature Review

Can listening to music make you type better?

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The impact of background music on typing performance and experience has been a topic of interest in human-computer interaction. Several studies have investigated the relationship between music and typing performance. They have shown that different dimensions of music, such as tempo, volume, and style, can affect performance differently. This literature review will discuss the findings of four relevant studies on this topic.

The study "Can Listening to Music Make you Type Better? The Effect of Music Style, Vocals and Volume on Typing Performance" highlights the importance of considering typing skill level when investigating the impact of music on typing performance. The study found that different dimensions of background music had varying effects on typing performance depending on the typing skill level of the participant. The study also showed that vocals can have a negative impact on transcription typing performance and that high-volume music can decrease typing speed. However, for skilled users, loud, instrumental music may improve performance, whereas low-volume music is recommended for complex tasks to maintain high levels of performance.

Another study, "The Effects of Music on Computer-Based Tasks", investigated the effect of background music on cognitive tasks and found that instrumental music can have a positive impact on attention and memory tasks, but vocal music can have a negative effect. The study suggests that different types of music can influence cognitive tasks differently.

The study titled "Proposal and development of a system that accelerates task processing speed by fast tempo stimulation" developed a system that accelerates task processing speed by fast tempo stimulation. The study found that the task processing speed became faster by using this system. However, the authors also noted that additional experiments are necessary to determine whether it is due to the synergistic effect of audiovisual stimuli. The study suggests that this system is best suited for tasks that require speed, such as skim-reading news articles and papers.

A Project by Joseph E. Colona titled ‘How does Music affect typing speed?’ seeks to find out the genre and tempo of music that produces the fastest typing speed. He hypothesises that fast rock would produce the fastest typing speeds. However, this hypothesis is disproved since it is found that the fast rap genre produces the fastest typing speed in the experiment. In fact, the fast rock produced the slowest typing speeds in the experiment.

The results say that fast rap produced the fastest typing speeds at 13.54 words per minute. Slow rock produced the second-fastest typing speed at 12.21 words per minute. Slow blues, fast blues and no music got the same, slow blues at 11.83 words per minute, fast blues at 11.94 words per minute and no music at 11.39 words per minute. Fast rock and slow rap produced the slowest results at around ten words per minute.

The possible reason for deviation from the assumed hypothesis given by the author is that fast rock was possibly too fast to keep up with while typing, while fast rap was fast enough but not too fast since it is seen that in terms of tempo alone, fast tempo produced faster typing speeds in the experiment.

A Paper by Arijit K. Sengupta and Xiaopeng Xiang titled ‘Effect of background music in a computer word processing task’ evaluates the effect of music and induced mental load on a typing task in terms of accuracy, typing force, variability of typing force and EMG of extensor digitorum muscle. The participants were asked to bring their preferred pieces of music to listen to while performing the task. The participants were given an IQ test preceding the typing task to induce mental load. A 2×2 repeated measure design was used with and without background music and with and without induced mental load. A computer algorithm was used to detect the shift, drift and fidget patterns of finger and hand movements. The variability of typing force was calculated using these values.

The study showed that music decreased the accuracy and no. of correct strokes; however, mental load induction produced negligible changes. Music decreased overall productivity by about 3.1%. However, the study found that music decreased the variability of typing force due to smoother hand motions, which may reduce the risk of musculoskeletal disorders relating to typing tasks. Background music’s stress reduction properties indicate a positive report of music in reducing work stress for computer workers.

In the thesis titled “Music while you work: The effect of music on typing performance and experience”, the author investigated the effects of music on typing performance and experience. The study found that participants who listened to music reported higher enjoyment

but did not show any significant difference in typing speed or accuracy. However, the participants did experience a more positive mood while listening to music.

In conclusion, the impact of background music on typing performance and experience is a complex topic that requires careful consideration of different dimensions of music, the skill level of the typist and the nature of the task. The studies reviewed in this literature review provide valuable insights into the effects of music on cognitive tasks and suggest that different types of music can have varying results depending on the nature of the task. Future research should investigate the mechanisms underlying the effects of music on typing performance and experience and design music-based systems that can optimise performance and experience in different work environments.