The Impact of Auditory Smartphone Notifications on Cognitive Load and Typing Performance in Adolescents

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Smartphones are deeply integrated into students' daily lives, and frequent notifications may interrupt sustained attention during academic tasks. This study examined whether realistic phone notification sounds significantly affect typing performance among high school students. Thirty-four high school students completed two standardized typing trials lasting 3 minutes and 45 seconds. To control for practice effects, the study used a counterbalanced design in which participants completed both conditions: one silent control condition to establish a baseline and one experimental condition in which three realistic phone notification sounds were played at predetermined intervals. Results showed a decrease in performance during the notification condition. Mean typing speed declined from 59.79 words per minute (WPM) in the silent condition to 56.15 WPM when notifications were present, representing a 6.1% reduction. A paired-samples t-test confirmed that this difference was statistically significant ($t(33) = 5.51$, $p < .001$, Cohen's $d = 0.95$). Mean typing accuracy also declined from 92.9% to 90.2%, suggesting that auditory distractions affected both speed and precision. These findings indicate that even brief notification sounds can disrupt focused typing tasks and increase the difficulty of maintaining sustained attention. Overall, the results highlight that digital interruptions can impose a measurable performance cost on student productivity during focused academic work.

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Third Award of $1,200