

This research assessed whether a webcam-based eye tracker can measure mind-wandering. There have been studies in which commercially available eye trackers measured a change in gaze behavior, namely longer and fewer fixations, longer and fewer saccades and smaller saccade amplitudes (Benedek et al., 2017; Jang, Yang & Kim, 2020; Faber et al., 2017 and Ballenghein et al., 2020). This is not the case for webcam-based eye-tracking. Therefore it could be interesting to measure mind-wandering with a webcam-based eye tracker, since it is cost-effective and accessible. In the first part of the study, to test the feasibility of webcam-based eye tracking, an eye-tracking comparison study was conducted. 31 Participants pointed their gaze, while they were being monitored by commercially available eye tracker and a webcam-based eye tracker. This part of the study revealed that the commercially available eye tracker was significantly more accurate than webcam-based eye tracking. Additionally, throughout the entire study, more gaze data was lost with the webcam-based eye tracker compared to the commercially available eye tracker. For the second part of the study, the goal was to capture the gaze behavior of participants. The participants performed a simple task, designed to provoke mind-wandering. Additionally, mind-wandering was measured using thought probes, which are short pop-up notifications that ask a participant about mind-wandering. This part of the study demonstrated that the commercially available eye tracker could capture differences in gaze behavior when participants' minds wandered. Beyond this, the webcam-based eye tracker was able to capture differences in gaze behavior as well. The results of this study tells us that it is important to choose the right eye tracker for the right context. The webcam-based eye tracker has proven to notice a difference between fixations and saccades. However, while this is achieved with an accessible and cost-effective eye tracker, the measured accuracy and data quality is lower. If this is essential in a future study, a screen-based eye tracker could be considered as an (expensive) alternative.