

## Making the Leap from Traditional Input Devices: An Evaluation of Leap Motion

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The Leap Motion is a recently developed, touch-free gesture device that allows for natural interaction between a computer and a user. Currently, many research projects have explored the usability of Leap Motion compared to traditional-style mice (among other devices) using a standard Fitts' tapping test. However, these studies only offer a basic Fitts' analysis on throughput, movement time, and errors. The purpose of the current study was to conduct an exhaustive usability assessment of the Leap Motion, compared to a baseline traditional mouse, for point-and-click tasks using a basic Fitts' analysis, as well as the MacKenzie, Kauppinen, and Silfverberg's (2001) seven movement accuracy measures. Results suggest that Leap Motion is a viable device for point-and-click tasks, but generally inferior to the more familiar baseline device on standard Fitts' assessment measures. However, for specific cursor events, users with Leap Motion reentered targets less often and the two devices showed no differences on continuous navigation paths between on-screen targets. Based on the results, this study suggests that the Leap Motion is best used with targets in the upper 2/3 of a computer screen and with target sizes larger than typical computer icons. Since this study was conducted with a highly controlled and basic point-and-click task, further research must be conducted to better understand the advantages