

Gaze Patterns of Skilled and Unskilled Sight Readers Focusing on the Cognitive Processes Involved in Reading Key and Time Signatures

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Abstract : Expert sight readers rely on their ability to recognize patterns in scores, their inner hearing and prediction skills in order to perform complex sight reading exercises. They also have the ability to observe deviations from expected patterns in musical scores. This increases the "Eye-hand span" (reading ahead of the point of playing) in order to process the elements in the score. The study aims to investigate the gaze patterns of expert and non-expert sight readers focusing on key and time signatures. 20 musicians were tasked with playing 12 sight reading examples composed for one hand and five examples composed for two hands to be performed on a piano keyboard. These examples were composed in different keys and time signatures and included accidentals and changes of time signature to test this theory. Results showed that the experts fixate more and for longer on key and time signatures as well as deviations in examples for two hands than the non-expert group. The inverse was true for the examples for one hand, where expert sight readers showed fewer and shorter fixations on key and time signatures as well as deviations. This seems to suggest that experts focus more on the key and time signatures as well as deviations in complex scores to facilitate sight reading. The examples written for one appeared to be too easy for the expert sight readers, compromising gaze patterns.

Keywords : cognition, eye tracking, musical notation, sight reading

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