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Competence Assessment by Stimulus Matching: An Application of GOMS to Assess Chunks in Memory

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Abstract

It has been shown that in hand-written transcription tasks temporal micro-behavioural chunk signals hold promise as measures of competence in various domains (e.g., Cheng, 2014). But data capture under that an approach requires the use of graphics tablets which are relatively uncommon. In this theoretical paper we propose and explore an alternative method – Competence Assessment by Stimulus Matching (CASM). This new method uses simple mouse-driven interfaces to produce temporal chunk signals as measures of learner's ability. However, it is not obvious what features of CASM will produce effective competence measures and the design space of CASM tasks is large. Thus, this paper uses GOMS modelling in order to explore the design space to find factors that will maximize the discrimination of chunk measures of competence. The modelling results of this paper show that CASM has potential in using chunk signals to measure competence in the domain of English language.