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Assessing metacognitive knowledge in web-based CALL: a neural network approach.

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The assessment of learners' metacognitive knowledge level is crucial when developing computer-assisted language learning systems. Currently, many systems assess learners' metacognitive knowledge level with pre-instructional questionnaires or metacognitive interviews. However, learners with limited language proficiency may be at a disadvantage in responding to verbal-report interview or questionnaire probes. The goal of this study is to present a neural network model that assesses automatically the learner's metacognitive knowledge level by observing his/her online browsing behavior. The model is implemented through a multi-layer feed forward neural network. An experiment was conducted to examine the suitability of this model in different Web page structures. One hundred and forty-six college students were categorized into three groups according to three Web page structures: networked, hierarchical, and linear. The experiment results verified the suitability of the proposed model, and the MSEs of assessment of the three groups showed no significant differences with respect to the Web page structures.

Classification: D50 U50

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