

Cognitive-behaviour intervention in developing an adaptive learning model for students with dyslexia

ABSTRACT

Cognitive-Behaviour Intervention (CBI) is designed as a suitable intervention for students by identifying cognitive as well as behaviour conditions. Through CBI, the students' learning goals are easier to establish, and the skills related to particular conditions can be developed. Current dyslexia's learning interventions were mostly developed to tackle cognitive or behaviour conditions separately. Whereas, the students with dyslexia suffer from cognitive deficiencies as well as behaviour challenges, both the conditions are interrelatedly. As a result, students with dyslexia reportedly underperform, lazy, ignorance and stupid due to the inappropriate learning style. In addition, there are very limited works that allow for adaptability in addressing the dynamic states of the student's learning process such as engagement. A study has shown that students' engagement could be a predictor of good academic performance. Therefore, in this paper, we present the approach to combine both cognitive and behaviour conditions of the students with dyslexia as well as the intervention in our proposed adaptive learning model. The cognitive model senses the student's difficulties through exercise given while the behaviour model utilises the machine learning model to address the engagement states of the students. Finally, the model intervene by praising effort, hints and changing activity based on the student's state. The results showed that a promising new way to assists students with dyslexia in their learning.

Keyword: Cognitive; Behaviour; Intervention, Dyslexia; Adaptive; Learning model