

Intelligent Scaffolding Diagnostic Tutoring Systems to Enhance Students' Academic Reading Skills

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Abstract : The first year is usually the most critical year for university students. Generally, a considerable number of first-year students worldwide drop out of university every year. One of the major reasons for dropping out is failing. Although they are supposed to have mastered sufficient English proficiency upon completing their high school education, most first-year students are still novices in academic reading. Due to their lack of experience in academic reading, first-year students need significant support from teachers to help develop their academic reading skills. Reading strategies training is thus a necessity and plays a crucial role in classroom instruction. However, individual differences in both students, as well as teachers, are the main factors contributing to the failure in not responding to each individual student's needs. For this reason, reading strategies training inevitably needs a diagnosis of students' academic reading skills levels before, during, and after learning, in order to respond to their different needs. To further support reading strategies training, scaffolding is proposed to facilitate students in understanding and practicing using reading strategies under the teachers' guidance. The use of the Intelligent Tutoring Systems (ITSs) as a tool for diagnosing students' reading problems will be very beneficial to both students and their teachers. The ITSs consist of four major modules: the Expert module, the Student module, the Diagnostic module, and the User Interface module. The application of Artificial Intelligence (AI) enables the systems to perform diagnosis consistently and appropriately for each individual student. Thus, it is essential to develop the Intelligent Scaffolding Diagnostic Reading Strategies Tutoring Systems to enhance first-year students' academic reading skills. The systems proposed will contribute to resolving classroom reading strategies training problems, developing students' academic reading skills, and facilitating teachers.

Keywords : academic reading, intelligent tutoring systems, scaffolding, university students

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