Abstract

As students learn about logic circuit design, they come across understanding concepts of Boolean Algebra. For some students, dealing with complex logical expressions could be a
frustrating experience that may obstruct understanding as well as the development of the
required design skills. Intelligent Tutoring Systems (ITS) could provide an excellent one-on-one
support to improve conceptual and procedural understanding needed to overcome that problem.
In addition, the use of Bayesian Networks has been found to be a reliable technique in dealing
with different uncertainties encountered during student knowledge assessment. Therefore
students’ misunderstanding is identified as precise as possible, and hence proper feedback is
provided. Correcting such misunderstanding is anticipated to improve students’ overall
conceptual understanding thereby leading to improving their achievement in logic design
courses.

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Index Terms

Computer Science
Circuits

Keywords

Intelligent Tutoring Systems
Logic Circuit Design
Boolean Algebra
Bayesian Networks