Automatic Construction Strategies of Concept Relationship Maps Based on the Information Obtained from Text Books and ...

吳文智、邱瑞山

E-mail: 9607687@mail.dyu.edu.tw

ABSTRACT

The construction of concept maps is complicate, time consuming and subjectively biased by teachers. Thus, approaches of statistics, grey theory, Apriori association rules have been used to simplify and objectify the construction process of concept maps. However, it will take quite a long time to completely form a concept map through the learning history for a student. Therefore, the method of concept maps could afford little help for a novel learner. A new approach of automatically constructing concept relationship maps is proposed and studied by utilizing the content tables, indexes and question item banks of a textbook in the research. In addition, the information obtained from the search engine is also utilized to determine the relationships between concepts. A series of experiments are done on the information obtained from the course “ Database Systems ”. The major differences between concept relationship maps we proposed and the traditional concept maps are: first, the concept relationship map abstractly describes the overall contents of a textbook; on the other hand, the traditional concept map only focuses on the misunderstanding concepts during learning and cannot reflect the relationships of all involved concepts. Second, in addition to inheritance, the relationship within the concept relationship map may imply both the concept precedence and the completeness of relevant concepts during learning.

Keywords : Concept Maps, Concept Inheritance Relationships, Learning Sequence

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