Adaptive E-Learning using Cognitive Scaffolding System

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ABSTRACT

This paper aims to provide main advance in the delivering techniques which are adapting to learner using Cognitive scaffolding. Cognitive scaffolding is the ability of an automated learning system to create a path of assessment from lowest to highest level based on the demonstrated cognitive abilities. However, the effects of adaptation on self-directed learning and the differential contributions of different adaptation models have not been systematically proved. In this paper, we show how personalized scaffolding in the learning process improves learning.

Keywords— Automated learning, Reusability, Proper utilization, Grouping of users, Personalization of links.

I. INTRODUCTION

Cognitive scaffolding represents the works carried out by an instructor does when working with a student to solve a problem, carry out a task, or achieve a goal which would be beyond his unassisted efforts. Generally it is a dynamic process with the student interacting with the tutor. This goal assumes students can learn the cognitive and manipulative methods of science exploration that generate data and evidence. It also assumes that students can use the reasoning and argumentation skills needed for theory development and evaluation that link evidence to explanations. On-line Web-based learning environments with automatic system, such as Web Learning, present questions to the student and evaluate their answers to provide formative and summative assessment. With these tools, formative learning activities such as quizzes and tests are mostly pre-planned, since testing instruments are generated by selecting questions in a pre-specified manner out of question banks created for the purpose.

II. PRE-EXISTING SYSTEM

Metacognitive Scaffolding — Scaffolding is an important part of the educational process, supporting learners in their acquisition of knowledge and developing their learning skills. Scaffolding has been a major topic of research since the pioneering work of Vygotsky and the key work of Bruner and Wood and colleagues. Work on the use of scaffolding with the help of computer-based learning environments has been extensive. Originally, the emphasis was on cognitive scaffolding which has many forms. In the last ten years there has been a move towards research in metacognitive scaffolding as well as in the use of metacognitive scaffolding in adaptive learning environments.

Self-regulated learning — For the evaluation and analysis of self-regulated learning we distinguish between the general learning approach and the metacognitive and specific learning processes in the simulation thereby, learning and metacognitive scaffolding in the simulation may optimally, and on a long-term basis, influence the general learning approach of a learner.

Simulator augmentation — The learning performance refers to the (objective or subjective/perceived) learners’ knowledge/competence acquisition and performance in the learning situation and to the transfer of acquired knowledge to other situations.

Service integration — This refers to the question whether the scaffolding interventions provided during the simulation via the MSS are perceived by learners as appropriate and useful — in terms of their content, context and timing.

III. PROPOSED SYSTEM

Self Learner System — The main aim of this proposed system has the ability to learn by observing and imitating the behaviour of others through observation. As child learns to imitate the gestures and habits of older siblings. Same as
that a self learner system should have an ability to learn new techniques according to the need of users by contacting with other systems.

Here our motive is to design such a system which could learn and observe the problems associated with the queries of user to provide the levelwise solution. As shown in fig. of proposed model a central component is attached to many other systems so, when an user have a query it sends a request to central component and then the central component after analyzing the query contacts with other system attached to central component and chances to have the most suitable answer. Then after analyzing all the connected systems it observes the most suitable answer which is according to the level of users comfort zone, i.e., which is easily understood by user.

IV. CONCLUSION

This paper aims to provide main advance in the delivering techniques which are adapting to learner using Cognitive scaffolding. We have to design a system that has the ability to learn by observing and imitating the behaviour of others through observation. As child learns to imitate the gestures and habits of older siblings.

Which is done only after analyzing all the connected systems it observes the most suitable answer which is according to the level of users comfort zone, i.e., which is easily understood by user. At any time while learning the student should have to consider their cognitive level to generate the next appropriate level of examination from the lower level to highest level.

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