Group Modelling Method in Web-Based Collaborative Learning Environment

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Abstract

Collaborative learning (Damon, 1984; Gabbert et al. 1986; Johnson and Johnson, 1989; Johnson et al. 1991; Kadell and Keehner, 1994; Kaye, 1991; Klemm, 1994; Webb, 1982) is the idea that small, interdependent groups of students work together as a team to help each other learn. So small learning group plays a very important role in collaborative learning process, especially in web-based collaborative learning environment. Many collaborative learning methods were explored and introduced by some researchers (Slavin, R., Sharan, S., Lazarowitz, R. H., Webb, C., and Schmuck, R., 1985; Slavin, R. E., 1995). To utilize collaborative learning approach in classroom-based environment also got a considerable success. But how to find an optimal approach to simulate collaborative learning process in web-based learning environment already became a question. Some researchers (Aiken, M. W., 1993; Klemm, W. R. & Snell, J. R., 1996; Dillenbourg, P., 1999; Tsoi, M. F., Goh, N. K. and Chia, L. S., 2000) already did a lot of work for it. The purpose of this research was focused on how to find an approach to simulate learning groups in web-based collaborative learning environments.

In this poster we mainly introduce how to simulate the procedure of small learning groups in web-based learning environments based on different collaborative learning methods. We try to find one common approach, which can be modelled and abstracted, to realize this objective. This method can be used to simulate small learning groups based on different web-based collaborative learning purposes. The ideal situation is any small learning group can be simulated, but it is quite difficult to realize. The sophisticated approach is that the user can compile and edit the procedure of small learning groups, that is, some special collaborative learning methods also can be utilized by some tools in relevant environment.

To achieve this objective described above, two approaches were introduced to realize group modeling methods in web-based collaborative learning environment. The first is to simulate some procedures for existing small-learning-group-based collaborative learning methods. Collaborative learning methods we would choose to simulate include STAD (Student Teams-Achievement Divisions) (Slavin, R. E., 1978, 1986), TGT (Teams Games tournaments) (DeVries and Slavin, 1978; Slavin, 1986), TAI (Team Assisted Individualization) (Slavin, Leavey, and Madden, 1986), CIRC (Cooperative Integrated Reading and Composition) (Madden, Slavin, and Styevens, 1986; Stevens, Madden, Slavin, and Farnish, 1987), Jigsaw (Aronson, E., 1978), GI (Group Investigation) (Sharan, and Sharan, 1976), and Jigsaw II (Slavin, 1986). For clearly to introduce how to simulate collaborative learning methods, STAD method could be chosen as an example.

The second is to provide a compile and edit tool, which the user can use to create some new procedures based on some special collaborative learning methods. It can be considered as an authoring tool, which it is a component-based environment. The components which the system provides for user to organize the new procedure of small learning group are the basis of collaborative learning methods. They can be got from existing and efficient collaborative learning methods. In this poster, we also describe a framework to explain how to design and model this authoring environment.

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