Abstract

Computer-Supported Collaborative Learning (CSCL) is a form of Collaborative learning using Computer as a support. CSCL utilize computer-based technology on many aspects, whether to improve interaction, share knowledge, or break down tasks within the group members. CSCL can not be made without Computer-Supported Group Formation.

In this research, the author analyze and design a suitable CSGF with the implementation of a Performance Factor Analysis algorithm. Implementation, system testing, and determining parameters are all based on bounded approach. The CSGF system is consisted of a stereotype model which use student's knowledge base and average performance as stereotypes. Stereotype model is constructed using K-means clustering. The group which formed has the feature of an ability group and consist of 3 person for each group.

Performance Factor Analysis parameters, which is β, γ, and ρ respectively, has an influence towards the homogeneity of the constructed groups. These parameters is inversely proportional and has little influence compared to the centroid initialization done in the K-means process . The initialization could make a significant change in the resulted group, included its homogeneity. Whereas some initialization produced a good homogeneity, but some others do not.

Keyword: *stereotype model, user model, performance factor analysis, K-means clustering, knowledge base, average performance, group*