Integrating IRT to Clustering Student's Ability with K-Means

張文智,陳聖麟,李茂帆,邱瑞宇
Information Management
Computer Science and Informatics
earnest@chu.edu.tw

Abstract

Examination plays a role to judge learner's learning behavior and achievement in evaluation. In most cases, good grade means good learner. Teachers do not realize what learners know and how much they understand. Learners with poor grades are becoming giving up them easily. Modern evaluation, diagnoses students with learning ability not grade. There are two assumptions. First, the difficulty level of materials is suitable for the students. Second, the difficulty level of question matches the teaching material. The main purpose is diagnosing the student's ability. This research calculates the student's ability from online-test system with Item Response Theory (IRT). We integrate K-means to cluster learner's ability which is calculated from item response theory. Teachers can modify the learning material adaptively and teach students in accordance with their aptitude in their courses.

Keyword：Item Response Theory, K-means, Cluster