Integrating IRT to estimate learning ability with S-P Chart in web based learning environment

張文智,楊宣哲,施國琛,李茂帆
Information Management
Computer Science and Informatics
earnest@chu.edu.tw

Abstract

E-learning provides people a convenient and efficient way for learning things. But is no appropriate way to estimate and diagnose students in elearning

environment. Sato's student-problem chart is one of the analysis methods for diagnosing students learning conditions. For learning ability estimation

issue, Item Response Theory which plays an important role in modern mental test theory is applied. We integrate these two theories to propose a combination

methodology try to solve the estimation and diagnostic issues in e-learning environment.

A web-based assist system is provided as well. Experimental data is collected with forty sophomore students studying "Business Data Communication"

class in Taiwan. We illustrated the method to observe and estimate the variation of learner's ability. This methodology and system could make some

valuable contribution in e-learning environment.

Keyword：web based learning, Item response Theory, learning ability