

# Using S-P Chart and Bloom Taxonomy to Develop Intelligent Formative Assessment Tool

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## Abstract

E-learning provides a convenient and efficient way for learning. Formative assessment not only guides student in instruction and learning, diagnose skill or knowledge gaps, but also measures progress and evaluation. An efficient and convenient e-learning formative assessment system is the key character for e-learning. However, most e-learning systems didn't provide methods for assessing learners' abilities but true-score mode. In this paper, Sato's Student-Problem Chart (SP Chart) is applied to integrate with our proposed on-line assessment system. Teachers are able to analyze each learner easily and efficiently. In addition, the Bloom Taxonomy of Educational Objective supports each item in our assessment management system during the authoring time. In our proposed system, it provides groups of function for student, teacher, and system administrator. According to the SP Chart analysis and Bloom taxonomy of items, we can divide all items into four types, and students into six types. With these types of diagnosis analysis chart, teacher can modify or delete the items which are not proper. With diagnosis analysis chart of students, teachers can realize learners' learning situation easily and efficiently.

Keyword : SP chart, e-learning, Bloom taxonomy, formative assessment.