

Significance of Assessment in Learning: The Role of Educational Assessment Tools

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“Assessment is today's means of modifying tomorrow's instruction.”

–Carol Ann Tomlinson

IT has been widely acknowledged that assessment is an integral part of any effective educational system. It involves a wide variety of methods or tools that educators use to evaluate, measure, and document the academic readiness, learning progress, skill acquisition, and academic results of students. In his Dictionary of Education Evaluation, Tao (1998) defines educational assessment as a process in which educators make objective evaluation of educational activities, processes, and outcomes through systematic information collection and analysis by using practical, scientific methods, with the purpose of supporting students' continuous improvement and providing evidence for educational decision-making.

Assessment of student achievement plays a vital role in instruction, and its main goal is to improve learning (Gronlund, 1998). It is used to diagnose students' cognitive development as well as verifying or modifying the established learning architecture. Essentially, achievement assessment points to promoting student learning outcomes, allowing them a better understanding of their academic levels, and aiding teachers in adjusting instructional strategies to improve class efficacy (Li & Wang, 2022). To optimizing student evaluation, it is imperative to develop effective, workable achievement assessment tools based on specific educational objectives.

In recent years, the combination of summative and formative assessment is well-accepted as a comprehensive, scientific means for evaluating student learning performance and competence development. Formative assessment (carried out at various points during an educational course) is intended to stimulate and evaluate student learning engagement and to provide them with marks of progress and development in the learning process. The primary purpose of summative assessment (carried out at the end of a course) is to record or report an estimate of students' achievements (Morgan & O'Reilly, 2020).

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In the context of Chinese education evaluation, the classification of assessment forms is generally based on the time it occurs. Summative assessment is equal to the final examination; formative assessment refers to regular minor tests and assignments such as quizzes, group work, journals, and theme-based debate, which also focus on students' cognitive outcomes (Chen et al., 2012). Despite the intensifying call for a more comprehensive evaluation framework, it is unattainable without appropriate evaluation tools (Zheng et al., 2016). In formative assessment, traditional forms of test may be suitable for the evaluation of content knowledge and basic skills. On the other hand, the evaluation of sophisticated, higher-order competencies necessitates more demanding situational assignments. Generally, the evaluation of students' higher-order skills requires performance assessment, while reactive test questions can only evaluate basic knowledge and skills but can hardly assess students' emotional capability, thinking ability, or learning process. (Shao et al., 2023).

There are two articles addressing the development of assessment tools in this issue. *Developing an Achievement Test on the Subject of "Basic Compounds in the Structure of Living Things"* seeks to create a multiple-choice achievement test with tested validity and reliability for a biology course (Yalinkilic & Gul, 2023). *Development of a Teacher Attitude Scale on Activities Related to Biology and Nature for Mentally Disabled Students* is a study meant to develop a 5-point Likert scale for evaluating the attitudes of pre-service special education teachers towards activities for a mentally retarded group on subjects of biology and nature (Gul et al., 2023). Both assessment tools were validated by empirical data.

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