

# Teaching-assessment Integration and its Alignment

## -- Issues and Methods

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### Abstract

Teaching-assessment integration is the process of achieving Teaching-assessment alignment in the classroom with teaching objectives as the core. It generally goes through practical steps such as determining learning objectives, designing assessment tasks based on the objectives, carrying out learning-Teaching-assessment activities around the objectives, and examining the achievement of objectives based on assessment results. When observing classroom teaching according to the practice procedure, teachers often encounter the following dilemmas in the process of practice: insufficient overall care, inaccurate target positioning, and unskilled assessment techniques. Therefore, we can consider three strategies to break through the dilemma: first, reassessing the impact of testing and evaluation system on classroom teaching, second, reshaping teachers' conceptions of teaching and evaluation, and third, rebuilding the evaluation technology system to support teaching and testing.

### Keywords

Teaching-assessment Alignment; Integration; Formative Assessment.

### 1. Introduction

In recent years, a series of studies have been conducted by experts and scholars in the testing community at home and abroad on the consistency of instructional assessment. The concept of consistency, i.e., the definition of "consistency" given by researchers, is the basis of consistency research. The American philosopher of education, I. Scheffler, in his book "The Language of Education", gives three types of definitions, namely "prescriptive definition", "descriptive definition" and "programmatic definition". Cohen (1984a), in his study of alignment between instruction and assessment, suggests that Instructional Alignment refers to the degree to which the stimulus conditions in instruction match the intended outcomes, processes, and assessments. F.W. English, one of the most prominent proponents of curriculum alignment, argues that alignment includes consistency between written materials, teaching processes, and assessments (F.W. English, 1992a). He defined two types of curricular alignment: design alignment and delivery alignment.) Curriculum design alignment refers to the degree of alignment between curriculum and assessment. Delivery alignment refers to the degree to which the content taught in the classroom is aligned with the curriculum and the assessment. Currently, Webb, a leading researcher on curriculum standards and academic assessment, is the most commonly cited definition in the field of alignment research. Webb (1997) sees coherence as the interaction and coordination of curriculum standards, academic assessment, and other elements of the educational system in a direction that points to the desired learning goals of students. What is remarkable is that Webb, as an expert in the study of the consistency of curriculum standards and academic assessment, defines alignment not with the intention of the government or teachers but with the intention of students, and not only clarifies the basic concept of consistency but also puts forward the direction of research efforts: the achievement of learning goals expected by students.

## 2. Theoretical Construction of Alignment between Teaching and Assessment

Standards-based teaching reform is a hot issue in current curriculum research, and standards-based reform requires teachers to think about goals, teaching and assessment in a consistent way. The alignment of teaching and assessment requires teaching and evaluation based on curriculum standards to promote teaching and learning with tests.

### 1) Standards-based teaching and evaluation

In the late 1980s, the standards-based education reform movement was launched in the United States, requiring that instructional assessment be aligned with and ultimately implement curriculum standards. Professor Andrew Porter of the University of Pennsylvania gave a detailed presentation of the history and current status of the standards-based education reform movement in the United States, emphasizing that alignment is an important guiding idea in standards-based education reform. Professor Porter pointed out that the U.S. has been implementing standards-based education reform for more than thirty years, but this educational reform is still being refined and changed. Researchers have gradually moved from focusing only on what to teach to considering what teaching methods should be used, what policies should guide them, and what assessment methods should be used to put the curriculum standards into practice.

### 2) Promoting teaching and learning with evaluation

The implementation of effective classroom assessment is important for improving the quality of teaching and learning in schools and the academic achievement of students.

## 3. Classroom Research from the Perspective of Teaching-assessment Alignment

Under the theoretical perspective of Teaching-assessment alignment, researchers have begun to consciously adopt the analytical frameworks of "curriculum-based standards" and "assessment for teaching" to conduct classroom research, and the research paradigm has gradually moved from philosophical discourse to empirical evidence. The research methods include Large-scale surveys and classroom observations, covering issues from theoretical validation to pedagogical improvement.

### 3.1. Attempts to Use Large-scale Survey Data

Few researchers have transformed information about classroom teaching into Large-scale data and used Large-scale data to identify problems in classroom teaching. Some researchers have tried to use Large-scale survey data as evidence to verify the theoretical framework of Teaching-assessment alignment and to examine whether classroom teaching implements Teaching-assessment alignment by using a particular teaching behavior as an entry point. Professor Yun-Cuo Cui outlined the three-factor structure of Teaching-assessment alignment from the perspective of theoretical analysis and used the item database to validate the theoretical model. At present, the research on Teaching-assessment alignment in China is mainly focused on the conceptual level, and there are few relevant empirical studies. Therefore, more research is needed to take evaluation information processing as the entry point, discover problems and solve them through big data analysis.

### 3.2. Making Full Use of Classroom Observation Data

Classroom observation has long been commonly used in classroom research, and its widespread use in research has led to the development of classroom observation methods themselves. Some researchers have shared how classroom observations have been used to help

teachers implement Teaching-assessment alignment at the classroom level. The observation method is used to obtain evidence of student academic performance, from which inferences can be made about where students are in their developmental stages of learning, and to develop instructional programs based on the evidence. The study makes full use of computer and web-based technologies to form electronic files of observations to provide useful information for students and teachers. Developing instructional programs and making instructional decisions based on student learning is an important way to implement consistency in instruction and assessment.

#### **4. Implementing Strategies Related to Classroom Technology**

In the actual classroom teaching, the following implementation strategies are proposed in this study to better realize the function of classroom technology in which teaching and assessment to be integrated.

##### **4.1. Selecting Appropriate Assessment Classroom Technology in Accord with Context-specific Properties**

Not all technology is applicable to any situation, and using it blindly without selection will not only fail to promote learning, but also waste valuable classroom time. To select appropriate classroom techniques that combine instruction and assessment, three aspects can be considered. First, instructional goals. Choosing a technology that fits with the instructional goals can help teachers stimulate students' interest, promote discussion and communication in the classroom, monitor students' meaningful learning, and improve teachers' instruction based on students' learning. Secondly, the timing in use. Different assessment classroom techniques have their own feasibility, time demands, and cognitive needs, and they are suitable for different classroom sessions and time periods. Therefore, teachers need to make choices based on actual classroom proceedings and needs, such as considering in detail in which time period of classroom activities the assessment technique is used. Third, student background. Each student has different cultural backgrounds, learning attitudes, learning styles, thinking habits, etc. Applying the same formative assessment classroom technique in the same class will mean different things to each student. Therefore, the selection of formative assessment classroom techniques also needs to take into account the diversity of students, and the following points can be considered. Prior to selection, it is important to be aware of the background knowledge and experiences that students' cultural and social backgrounds and different environments bring to the table, and to establish classroom norms that promote respect for each other's ideas. If students are uncomfortable with sharing their ideas publicly, choose techniques that are conducted in an anonymous format. Involve all students in using formative assessment classroom techniques, and do not give only active students the opportunity to answer questions. Instead of scoring student performance, use formative assessment classroom techniques continuously to increase student confidence and stimulate further thought and discussion. Create a classroom climate that encourages normative argumentation, where students are comfortable debating and defending their ideas, and listening to others' perspectives, acknowledging and evaluating different interpretations.

##### **4.2. Planning and Implementing Formative Assessment Classroom Techniques**

Formative assessment classroom techniques can be used at any point in classroom teacher-student interaction. However, classroom contexts are highly variable, and given the uncertainties, it is necessary for teachers to plan implementation in advance. First try out some formative assessment classroom techniques yourself to see if they are effective in the chosen instructional setting. Introduce and explain to students why they are using formative assessment classroom techniques, and when they experience how formative assessment

classroom techniques can help their learning, they will give more enthusiasm to participate in them. If it is the first time a technology is being used, consider whether students need to be taught how to use it first. Modify formative assessment classroom techniques as appropriate to meet students' needs. Use multiple formative assessment classroom techniques. Because using the same technique over and over again, students tend to get bored and the technique can become ineffective. Be careful not to prematurely imply or direct students to respond after they have responded to a formative assessment classroom technique, or to ignore students' incorrect responses; students' thinking and confusion will help them make progress. Encourage students to fully present their ideas and provide enough time for students to articulate their reasoning or evidence. Ask students for their suggestions for applying formative assessment classroom techniques. The use of technology should never be overwhelming; focusing on a few technologies for a semester and insisting on thorough and careful work will be more desirable and satisfying than using multiple technologies and ending up burnt out and discouraged.

#### **4.3. Careful and thorough Preparation**

Careful and thorough preparation is a guarantee of successful use of teaching and assessment alignment classroom techniques, especially when teachers are using a technique for the first time. Be prepared with the materials needed for the evaluation technique. They may be the product of knowledge that has been thought through and adapted before the class, such as designed questions, background knowledge questionnaires, blank outlines, etc. If a technique requires the use of an investigative activity, the teacher will need to prepare more specific materials for the activity. Be prepared with adequate time and space. The process of conducting technology and collecting and analyzing data can take different amounts of time, and if teachers do not have sufficient control over time, they are likely to exceed the preset time. Therefore, during the use of technology, more time needs to be set aside on top of the preset time to allow for the complete use of technology so that comprehensive information can be collected. If the number of students is large, a wide space is needed, while technologies that require group work require a reasonable arrangement of tables and chairs in the classroom to create a comfortable environment for students to discuss.

### **5. Learner-centered Classroom Activities**

Achieving alignment between instruction and assessment is a major key to improving classroom quality, and formative assessment classroom technology is of great value in promoting alignment between instruction and assessment. With the implementation of formative assessment classroom techniques, a new type of classroom may be formed. In such a classroom, in addition to assessment methods, teachers connect teaching and learning by understanding where students need improvement through the use of formative assessment classroom techniques, providing opportunities for students to correct their misconceptions and ways of thinking, and monitoring student progress. In such a classroom, teachers study students' most recent developmental areas, determine learning goals accordingly, and design holistic instructional and assessment activities. The teacher engages in frequent interactions with students, listens to and encourages students' ideas, and continually thinks about how to help and support students to move from their initial ideas to their desired goals. The teacher is no longer just a provider of knowledge or content, but a facilitator of learning who uses formative assessment classroom techniques to easily and quickly understand and meet students' needs. In such a classroom, students have a basic understanding of what they are learning through a variety of channels before they learn something new. In the process of learning new knowledge, students receive feedback on their learning through formative assessment and come to realize that learning must be done by them and that they need to take greater responsibility for their own learning. In this way, it appears that formative assessment

classroom techniques not only help to achieve consistency between instruction and assessment, but also help to achieve a Learner-centered classroom. In this sense, formative assessment classroom techniques are in urgent need of more in-depth and specific research by scholars in order to play its proper role in our classrooms.

## 6. Discussion

At present, domestic research on the alignment of teaching and assessment mainly focuses on the conceptual level, focusing on the analysis of the concept, connotation and importance of the alignment of teaching and assessment, but less relevant empirical research has been seen. Although this paper has an important significance in combining theoretical and practical perspectives, there are certain limitations, such as the lack of testing the re-test reliability of the three-factor structure questionnaire of Teaching-assessment alignment, which may affect the applicability of the questionnaire. Finally, the comparison between student evaluation and third-party evaluation can be used to find more basis for the three-factor theoretical model, in order to maximize the consensus on the connotation of Teaching-assessment alignment.

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