



# **AN EXPLORATION OF ASSESSMENT PRACTICES OF PRIMARY AND SECONDARY SCHOOL TEACHERS IN PUNJAB, PAKISTAN**

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# ABSTRACT

- The prime objectives of this study were to investigate the assessment practices of in-service teachers and to compare the assessment practices of teachers in different subject areas, teaching levels and teaching experience. Altogether 406 in-service teachers responded to the Teacher Assessment Practice Inventory. Rasch's model was used to analyse the characteristics of the assessment practices adopted by the teachers. Differential item functioning was performed in an outright manner to compare the assessment practices. In-service teachers were found to often use traditional types of assessment. The assessment practices differed between language teachers and science and mathematics teachers, primary school teachers and secondary school teachers and experienced teachers with inexperienced teachers.
- **Key Words:** Assessment practice, Rasch's model, differential item functioning



# INTRODUCTION

- Assessment of student learning is an indispensable component of school activities. Research indicates that a sizable amount of classroom time must be devoted to the assessment of student learning. Teachers spend approximately 10% to 50% of classroom time in assessment related activities (MacBeath & Galton, 2004; Stiggins, 2001).
- Information from assessment is used for several purposes: to grade students, to group students, to diagnose student needs, to bolster up students' motivation to learn, and to evaluate instruction (Brookhart, 1999). Assessing student performance is one of the most critical aspects of the job of a school teacher. Most of the assessment activities in the school are conducted by teachers. This underscores the need for a high level of assessment competency among in-service teachers.

# RESEARCH QUESTIONS

- What are the common assessment practices of in-service teachers?
- What are the differences embedded in teacher assessment practices between secondary and primary school teachers?
- Are there any differences in teacher assessment practices between language and science and mathematics teachers?
- Are there any differences in teacher assessment practices based on years of teaching experience?

# LITERATURE ON CLASSROOM ASSESSMENT

Classroom assessment serves plenty of purposes for teachers, which includes grading, identification of student special needs, student motivation, and monitoring of instructional effectiveness (Ohlsen, 2007). The main purpose of classroom assessment, however, is to gather information about a student's learning (Abu Bakar Nordin, 1986; Airasian, 2001; Desforges, 1989; Jacobs & Chase, 1992; McMillan, 2008). Conducting of classroom assessment is not a simple task as it entails a broad spectrum of activities which include constructing paper-and-pencil tests and performance measures, grading, interpreting test scores, communicating assessment results and using assessment results in decision-making.

While selecting a test format, teachers should be cognizant about the strengths and weaknesses of the various assessment methods, and choose the one that best fits the different achievement targets (Stiggins, 1992). Only then teachers can use the appropriate assessment terminology and communication techniques to communicate the assessment results effectively to the target group (Stiggins, 1997). Teachers should be able to use the test scores appropriately and identify diagnostic information from the test results about instruction and student learning (Airasian, 2001). In Pakistani education system, teachers are also expected to make decisions about students' educational placement, promotion, and graduation based on the assessment results.

# TEACHER ASSESMENT PRACTICES

- Studies which focused on classroom assessment showed that teacher assessment practices have been affected by subject areas (Bol, Stephenson, & O'Connell, 1998; Marso & Pigge, 1987, 1988; McMorris & Boothroyd, 1993; Zhang & Burry-Stock, 2003), school level (Bol, et al., 1998; Marso & Pigge, 1987, 1988; Mertler, 1998; Trepanier-Street, McNair, & Donegan, 2001; Zhang & Burry-Stock, 2003) and years of teaching experience (Bol, et al., 1998; Mertler, 1998). As expected, mathematics teachers tend to use more problem-solving items (Marso & Pigge, 1987, 1988) and calculation items (McMorris & Boothroyd, 1993). Marso and Pigge (1988) found that science teachers relied more on paper-and-pencil tests rather than informal assessment procedures in contrast to the mathematics teachers. In the case of item format, language teachers used more essay items to assess student learning (Marso & Pigge, 1987, 1988) while science teachers preferred multiple-choice questions (MCQs) items (McMorris & Boothroyd, 1993). Teachers of all subject areas commonly used paper-and-pencil tests (Zhang & Burry-Stock, 2003).

# RASCH MODEL

- The Rasch model is in the family of the item response theory (IRT) models. This model describes the relationship between the probability of endorsing an item and the person's ability (Bejar, 1983). The Rasch model assumes that item difficulty is the only item characteristic affecting an individual's performance on an item (Baker & Kim, 2004). The Rasch model provides appraisals of item difficulty, estimates of a person's ability and a standard error of measurement for each item. The item difficulty and person's ability parameters are estimated jointly to yield estimates that are reported in the unit of "logit". In this study, the Rasch model was used to investigate and compare the assessment practices of in-service teachers in Punjab, Pakistan.

# METHOD

## • INSTRUMENTATION

The instrument used in this study was the Teacher Assessment Practices Inventory (TAPI) which was developed specifically for this research. TAPI comprises of 57 items which describe assessment practices. For each item, the respondents were asked to report their assessment practices on a 5-point rating scale ranging from “NOT USED AT ALL” to “HIGHLY USED”. Demographic information concerning gender, school level, subject areas and years of teaching experience were also collected.

**Table 1.** Constructs and subscales of TAPI

Constructs	Subscales	Number of items
Constructing test	Test development	5
	Sources of constructing test	6
	Cognitive level	6
Types of assessment	Traditional assessment	6
	Alternative assessment	5
	Informal assessment	5
Use of assessment	Formative assessment	7
	Summative assessment	3
Grading & scoring	-	10
Communicating assessment results	-	4



# SAMPLE AND DATA COLLECTION

- Altogether 406 in-service teachers of primary and secondary schools from the eastern districts of Punjab responded to TAPI. Almost two-thirds (68%) of the teachers were females and 32% were males. Nearly half (41.3%) of the teachers were language teachers and 58.7% were teaching Science, Mathematics and social sciences. There were 64.3% of them teaching at the secondary level while only 35.7% were teaching at the primary level. As for the teaching experience, 45.4% of the teachers have had more than ten years of teaching experience and 54.6% with less than ten years of teaching experience.
- Data was collected during the month of February 2015. TAPI were distributed to the in-service teachers with the assistance of graduates of the University who are school teachers. The respondents answered TAPI during their free time. Even few respondents were reluctant for response.

# FINDINGS

- **CONSTRUCTING TEST**

While developing an assessment, the matching of assessment to instruction has the lowest item parameter index (-1.02 logit), which indicates that the in-service teachers hinged more on alignment between assessment and their teaching. However, the highest item value for preparation of a table of specifications (0.35 logit) as shown in Table 2 implied that teachers seldom set up a table of specifications when constructing tests. Revising a test based on item analysis has a slightly below average item parameter value (-0.29 logit) which means the teachers item information to construct classroom tests.

# FINDINGS

- **Table 3.** Item Parameter Estimates for Cognitive Level of items

Items	Item parameter estimates (Logit)	Standard error
Comprehension	-0.59	0.09
Application	-0.58	0.07
Knowledge	-0.40	0.08
Analysis	-0.32	0.07
Evaluation	-0.20	0.07
Synthesis	0.24	0.07

# TYPE OF ASSESMENT

- **Table 5.** Item Parameter Estimates of the Traditional Assessment Item Format

Items	Item parameter estimates (Logit)	Standard error
Multiple-choice questions	-0.14	0.06
Short answer questions	0.09	0.06
Essay questions	0.20	0.05
Fill in the blanks questions	0.50	0.05
True/false questions	0.89	0.05
Matching questions	0.91	0.05

# DIFFERENCES IN TEACHER ASSESSMENT PRACTICES ACCORDING TO SUBJECT AREAS

**Table 13.** DIF between Language and Science & Mathematics Teachers

Measure of Language Teachers	Measure of Science & Maths Teachers	DIF Contrast (Logit)	Welch t-value	Prob. (p<0.05)	Items
0.01	-0.28	0.29	2.10	0.0365	Select test questions from textbook or revision book
0.08	-0.31	0.40	3.20	0.0015	Using questions from the public examination
0.08	0.36	-0.28	-2.67	0.0079	Essay questions
1.09	0.73	0.35	3.71	0.0002	Practical work
0.05	-0.31	0.37	3.09	0.0020	Homework
-0.28	0.19	-0.46	-3.93	0.00001	Using letter grades
-0.24	0.02	-0.27	-2.11	0.0355	Using numerical scores

# CONCLUSION

Teachers' assessment practices differed according to the school level, subject areas and also teaching experience. These results imply that teacher training programs for assessment cannot be of a standard type for all teachers. Assessment training needs to be diverse to cater to the different needs of different teachers. Since several differences were found between teachers at different levels of education (secondary and primary schools) and different subject areas (language and Science and Mathematics), wherever possible the content of the teacher training programs should be modified to cater to the needs of the level at which the pre-service teachers will be teaching in the future.

Teacher training programs need to address the actual needs of school teachers; only then can the teachers be considered to have been adequately prepared to assess students' performance. In addition, more emphasis on techniques of alternative assessment should be given to teachers to ensure accurate and effective assessment.

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