

## **Study of Gaps between Intended and Enacted Formative Assessment Techniques: National Curriculum 2006 Perspective**

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### **Abstract**

Assessment is primary component of curriculum that provides information about teaching learning process. Formative assessment provides feedback of improving learning and teaching for both students and teachers during classroom practices. Classroom tests, checking workbooks, portfolio, projects, homework, assignments, quizzes and peer work are common formative assessment techniques of curriculum. The current study was planned to study gaps between intended curriculum and enacted curriculum regarding formative assessment. The sample of a study consisted of 361 teachers working in public sector schools of Punjab. The researchers used stratified multistage proportionate sampling technique to collect the data from the respondents. The data were collected by administering self-developed questionnaire nine items having the mode of dichotomous and 5-point Likert type rating scale. Reliability of the instrument was confirmed by calculating Cronbach's Alpha scores; .846. Collected data were entered in SPSS and the researchers calculated mean, percentage, standard deviation and applied independent sample t-test to find out significant difference among urban and rural teachers gap of formative assessment techniques. The results of current study showed that 60% formative assessment techniques were used and 40% gap was existed between intended and enacted formative assessment techniques of national curriculum. Results further declared no significant difference between usage of assessment techniques by teachers' locality; urban teachers used more formative assessment techniques as compared to rural teachers for curriculum implementation. On the basis of results, present study recommended that teachers provided training with formative assessment techniques and head teachers ensure enactment of national curriculum based formative assessment techniques.

**Key words:** Enacted formative assessment techniques, intended formative assessment techniques, physics curriculum implementation

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## **Introduction**

Students, teachers and assessment are connected through curriculum. Curriculum is plan for providing set of learning experiences guided by school (Oliva, 2008; Walker, 2003). Curriculum is totality of experiences provided to learner in a school (Marsh & Willis, 2007). There are two basic types of curriculum; intended curriculum and enacted curriculum, intended curriculum is written curriculum comprised of standards, benchmarks, students learning outcomes, content, teaching strategies and assessment techniques developed by government to gain educational objectives (Oliva, 2008; Van den Akker, 2003). Classroom practices according to intended curriculum guidelines refer to enacted curriculum (Zhang & Hu, 2010). Intended curriculum is government guidelines and enacted curriculum is actual classroom experiences (Remillard, 2005). Essential elements of curriculum enactment are: teachers' professional development, channeling infrastructural resources and instructional materials, use of teaching strategies and assessment techniques in actual classroom practices (Fullan, 2007; Yorke, 2003; Zhang & Hu, 2010). Students learning is gauged through assessment. Assessment mode provides information about educational policy, curriculum and its implementation for decisions making about students' learning and teachers' teaching strategies (James, 2003; Linn & Miller, 2005; Mikre, 2010). According to Struyven, Dochy and Janssens (2005) objectives of assessment are planning teaching learning strategies for students to improve their learning, certification and accountability of teacher effort. An assessment plays significant role in designing student learning techniques and instructional strategies based on curriculum (Cohen & Hill, 2000).

Summative and formative assessments are two basic modes of assessment. Summative assessment is taken at the end of session that facilitates policy makers and curriculum planners for curriculum improvement. Summative assessment involves certification, progression and accountability for evaluating curriculum (Black, 1998a; Bulter & McMunn, 2006).

Formative assessment is used to obtain understanding of what students know to enhance students learning (Black, 1998a; Clark, 2010; Pellegrino & Goldman, 2008). It is implemented prior to summative assessment to allow learns to obtained feedback to improve performance (Rushton, 2005).It is feedback of students' work that promotes learning and facilitates improvement (Clark, 2010; Johannesen, 2013). Formative assessment is used by teachers to adjust their instructional strategies and students to modify their learning techniques (Popham, 2013). It is used for students' current learning understanding and to identify learning needs to teaching.

Formative assessment is diagnostic, feedback and improvement in nature to improve teaching learning by providing information about students learning to students'

and teachers to teaching (Brookhart, 2001). Formative assessment is central to effective learning and performance of students (Gibbs & Simpson, 2004; Ramsdem, 2003; Yorke, 2003). It supports instructional modification and students' improvement (Cauley & McMillan, 2010). Formative assessment allows learners to become familiar with learning process, assessment procedure and standards to evaluate work (Drew, 2001; Taras, 2002), helpful for learns (Bound, 2000; Irons, 2008; MacMillan, 2007; Taras, 2002) and beneficial for teachers (Chaube, 2010; Popham, 2014). Teachers use formative assessment feedback information to improve their teaching techniques and to enhance students learning performance. Formative assessment enhances students, understanding about learning performance, promote higher order thinking skills, meta-cognition learning and providing feedback for teaching learning process (Black & William, 1998; Bound, 2000; Bulter & McMunn, 2006; Mikre, 2010; Rehmani, 2003). Motivation, engagement, learning feedback and learning progression are aspects of formative assessment (Cauley & McMillan, 2010).

Formative assessment techniques encourage and develop scientific process skills. Intended curriculum helps teachers to align their formative assessment techniques with classroom (Cowie & Bell, 1999). Successful implementation of formative assessment required; ownership of assessment, clarity of teaching learning aligned with learning targets stated in curriculum, involvement of teachers and students and students' assessment opportunities (Black & William, 1998b; Bulter & McMunn, 2006; Stiggins, 2001). Hondrich, Hertel, Adl-Amini and Kliem (2016) structured study to evaluate teachers' use of formative assessment techniques. Findings revealed that pedagogical skills and formative assessment techniques were associated with enactment of curriculum and teachers were less implementing. Plybour (2015) planned study to investigate the effect of formative and summative modes during instructional modules in USA. Results established that learning gain were higher for using formative assessment techniques for curriculum implementation. For implementing formative assessment techniques teachers' needs:

- Classroom management in terms of space availability for classroom activities
- Supportive environment from management and colleagues to implement innovation.
- Teacher self-efficiency, new role and practices (Black, 1998 a)
- Relevant teacher pedagogical content knowledge
- Quality of feedback

Role of teacher in formative assessment is to;

- Provide students with an opportunity to use process and skills knowledge,

- Encourage them to engage critically in their work (Harlen, 1999)
- Give students feedback in their work (William, 1998)
- Engage students in metacognitive investigation procedure (Bulter & McMunn, 2006)
- Provide students with scaffolding techniques.

Formative assessment helps students in developing variety of abilities, posing question, viability of knowledge and reflection on knowledge (Etkina, 2002). Formative assessment, bridge the gap between students' current learning performance and what need to be done to achieve required standard (Black & William, 1998). Teachers use less student-centered formative assessment techniques (Cowie & Bell, 1999; McMillan, 2007).

Literature reported that portfolio, surprise test, diagnostic assessment, self-assessment, homework, practical work, questioning, classroom discussion, written assignments, project work, oral presentation and setting task modes of formative assessment (Bound, 2000; Harlen, 1999; Segers & Dochy, 2001; Menjo, 2013; McMillan, 2007). Formative assessment techniques; terms wise exams, classroom test, homework assessment, portfolio assessment, quiz, practical work assessment, peer assessment and assignments are also stated in national curriculum 2006 and national educational policy (Government of Pakistan, 2006, 2009). Current formative assessment practices; individual feedback, group feedback, model answers, demonstrations and peer feedback are also in practice (Irons, 2008).

Herrera, Murry and Cabral (2007) stated that portfolio is cumulative work used for record collection of students work to improve their learning performance that provides longitudinal information about students' proficiency level performance. It promotes students higher order thinking skills (Kotsopoulos, Lee Cordy, & Bruyns, 2014), cognitive abilities, scientific attitudes, procedural inquiry and manipulation skills in learners (Abraham, 2005; Hofstein & Lunetta, 2004; Millar, 2010). Questioning and classroom discussion provides opportunities among students to increase knowledge and understanding (Black & Wiliam, 1998b). Diagnostic view of formative assessment provides information about learning difficulties of learners and offers its remedies which they have to face in learning process (Harlen, 1999; William, 2011). Peer work assessment provides opportunities to learners to recognize learning objectives (Chappuis & Stiggins, 2004). Students assess their peer performance and provide opportunity of critical reflection that develops confidence and competitive skills among peers. In peer assessment each students assess peer work using set criteria (Falchikov & Blythman, 2002), teacher provide rubric and clarify criteria for assessing homework (Murthy, 2007).

Homework assessment prepares students for next lesson (Motswiri, 2004). Homework peer assessment improves learning students' abilities (Murthy, 2007).

Feedback is aspect of formative assessment process (Carless, 2006; Gibbs & Simpson, 2004; Ramsden, 2003; Rushton, 2005). Feedback to students assessed work is a way that promotes learning and facilitates improvement. Feedback on test and homework provides comments about errors/ mistakes and suggestions for improvements and encourage learners to focus on improvement learning performance (Bangert-Drowns, Kulick & Morgan, 1991; Carless, 2006; Black & Wiliam, 1998b). Assessment is essential component of curriculum that provides feedback about teaching learning process.

Pakistani public sector schools are bound to follow national curriculum. Curriculum based formative assessment techniques are stated in curriculum document. Researchers are eager to explore the current educational dilemma happening in public sector school in Punjab. Limited studies are conducted about formative assessment techniques; classroom tests, checking workbooks, portfolio, projects, homework, assignments, quizzes and peer work stated in national curriculum for grade IX-X 2006. The purpose of the current study is to investigate gaps between intended and enacted formative assessment techniques; terms wise exams, portfolio, homework, quiz, assignments, peer assessment, practical work notebooks assessment and classroom written tests stated in national curriculum in the Punjab.

### **Objectives of the Study**

The objectives of the study were;

1. To examine classrooms formative assessments techniques stated in intended and enacted physics curriculum
2. To find out significant difference between urban and rural teachers use of formative assessment techniques stated in national for physics curriculum

### **Research Methodology**

The current study was descriptive in nature and quantitative research design was used to examine gaps between intended and enacted formative assessment techniques of curriculum in the Punjab. Sample of the study consisted of 361 teachers selected through stratified multistage proportionate sampling technique. Instrument for teachers about use of intended formative assessment techniques; terms wise exams, quizzes, portfolio, homework, assignments, peer assessment, practical work notebook and classroom written test based on Likert type scale was developed (Etkina, 2002; Gillham, 2000; Motswiri, 2004; Government of Pakistan, 2006, 2014). Self-developed questionnaire consisted of 9-items at 5-point Likert type rating scale and dichotomous mode was used to collect data

regarding formative assessment techniques. Questionnaire was validated from educational assessment experts. They omitted and added some items. Reliability of the questionnaire was established by pilot testing on small scale of 70 teachers; 35 urban and 35 rural, selected sample of district Kasure. Reliability was ensured by calculating Cronbach Alpha scores; .846. The data were collected in December-January 2017 by ensuring ethical considerations from head teachers and teachers currently working in public sector schools of the Punjab. The study was delimited to male public sector school teachers of Punjab province. The collected data were entered in SPSS and the researchers calculated percentage, mean, median and standard deviation. Moreover, the researchers applied an independent sample t-test to explore significant difference between urban and rural teachers' use of formative assessment techniques as reported in other studies (Berger, 2002; Casella & Driscoll, Lecky & Crosby, 2002; Cronk, 2012; Norusis, 2008).

### Data Analysis and Interpretation

The data were analyzed in SPSS by means of statistical techniques for the sake of smooth analysis. There were nine items in Likert type and dichotomous options in questionnaire.

### Research Objective 1

To examine classroom formative assessments techniques stated in intended and enacted physics curriculum

Table 1

*Formative Assessment Techniques for Physics Curriculum Implementation*

Sr.#	Statements	Locality				Overall	
		Urban		Rural		M	SD
		M	SD	M	SD		
1	I know formative assessment techniques	1.34	.47	1.25	.43	1.29	.45
2	Terms wise exams are conducted in school	1.84	.37	1.75	.43	1.81	.39
3	I assess students through quizzes	4.19	.89	4.16	1.02	4.18	.94
4	I assess students through portfolio	2.31	1.35	2.07	1.29	2.19	1.33
5	I assess students through homework	3.90	.98	3.79	1.09	3.86	1.03
6	I assess students through assignments	3.36	1.12	3.37	1.15	3.36	1.13
7	I use peer assessment technique	3.13	1.24	3.14	1.24	3.13	1.24
8	I check physics practical note books	3.66	.77	3.79	.66	3.72	.73
9	I assess students through written tests	2.89	.96	2.82	.98	2.86	.96
	Overall mean score	2.96		2.91		2.94	

Note = 1-1.5 = 100% use, 1.6-2.5 = 80% use, 2.6-3.5, 60% use, 3.6-4.5, 40% use, 4.6-5, less than 20% use

As delineated in Table 1, there were existed 100% use of teachers know formative assessment techniques given in national curriculum 2006 document. There were existed 80% use for terms wise exams were conducted in school and teachers assess students through portfolio, there were existed 60% use of teachers assess students through assignments, teachers use peer assessment technique and teachers assess students through written tests, and there existed 40% use of teachers assess students through quizzes, teachers assess students through homework and teachers check physics practical note books. There were 60% use for urban and rural schools' formative assessment techniques. Overall, there were existed 60% use of formative assessment techniques stated in physic curriculum implementation.

## Research Objective 2

To find out significant difference between urban and rural teachers use of formative assessment techniques stated in national for physics curriculum

Table 2

*Independent Sample T-Test about Curriculum Implementation in Terms of Teachers'*

*Locality*

<i>Name of factor</i>	<i>Location</i>	<i>N</i>	<i>M</i>	<i>SD</i>	<i>df</i>	<i>T</i>	<i>p</i>
Formative assessment techniques	Urban	203	26.631	3.849	359	1.15	0.38
	Rural	158	26.165	3.745			

As revealed in Table 2, independent sample t-test was applied to compare curriculum implementation practices in terms of formative assessment techniques used by teachers' locality. Results show no significant difference between teachers' curriculum implementations in account of teachers usage of formative assessment techniques,  $t(359) = 1.15, p > .01$ ; urban schools' teachers used same formative assessment techniques ( $M = 26.631, SD = 3.849$ ) as compared to rural schools' teachers ( $M = 26.165, SD = 3.745$ ) for curriculum implementation.

## Discussion

Continuous assessment modes stated in national curriculum support implementation. Findings of present study indicated that 60% formative assessment techniques are in use and no significant difference exist between urban and rural teachers' usage of formative assessment techniques for curriculum implementation. The results of present study have established that there is existed 40% gap between intended curriculum and enacted curriculum for regarding formative assessment techniques that consistent with the results of doctoral dissertation framed by Motswiri (2004) in Botswana to investigate formative assessment, supported with the results of study structured by Yildirm (1997), consistent with the results of study structured by Nsibande

and Modiba (2012) in Swaziland to explore implementation of continuous assessment. Results of the current study are similar with the study of Tarr, Chávez, Reys, and Reys (2006) stated gap between written curriculum and enacted curriculum. Results of the current study inconsistent with results of the studies (Ní Chróinín & Cosgrave, 2013; Hondrich et al., 2016) which show that teachers less regularly in practiced formative assessment techniques in their classes during science curriculum enactment due to limited resources and training. Results of the current study show that terms wise exams, portfolio assessment and classroom written tests are less in use by teachers to increase students' confidence in competition of task. Checking of students' workbooks during academic session is limited.

### **Conclusion**

Current study was conducted to investigate gaps between intended and enacted formative assessment techniques of national curriculum 2006 in the Punjab. Terms wise exams, homework, quizzes, portfolio, assignments, peer assessment, checking students practical work notebook and classroom written tests are formative assessment techniques for stated in intended national curriculum 2006. Study concludes that 60 % formative assessment techniques are in use and 40% gaps exists between intended and enacted formative assessment techniques for curriculum enactment, urban teachers were using more formative assessment techniques as compare to rural teacher, no significant difference between usage of assessment techniques by teachers' locality; urban schools' teachers used more formative assessment techniques as compare to rural schools' teachers for curriculum implementation. Results of the study concluded that teachers needed professional support for implementing curriculum based formative assessment techniques to help students in improving their learning.

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