

Role of Formative Assessment in the Improvement of the Process of Teaching and Learning: at Higher Education in Sindh, Pakistan

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Abstract

This research focused to find out the relationship between formative assessment and teaching and learning process at higher education in Sindh, Pakistan and to suggest the measures to improve the formative assessment practices in order to enhance the quality in education. The scope of the study is limited to all faculty members of education in the universities in Sindh; province of Pakistan. The survey design, research strategy, was adopted for the study. The target population for the study was 256 faculty members of education in the universities (public and private) in the province of Sindh (Pakistan). Simple Random Sampling (SRS) design was adopted to select the universities as a unit of sampling and the all faculty members of the same universities were the sample size. In this process 111 faculty members were selected as sample size from different Nine (9) universities. The questionnaire was adopted as research instrument. Data was analyzed and it was found that the formative assessment and teaching and learning are interlinked and it is also statically proved that good practices of formative assessment lead to effective teaching of teacher and better learning performance of students as well. In the light of findings concrete recommendations were made.

Key words: Formative Assessment, Teaching and Learning, Higher Education, Sindh, Pakistan

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Introduction

Literally, the meaning of 'assessment' is evaluation, judgment, measurement, appraisal, review. The span of 'assessment' is wide spread in every sphere of daily life. Like; Doctor assesses the patients, we assess the quality and cost of the things when we want to buy them from market, a teacher assesses his/her students for placement, achievement of learning outcomes and grading or promotion to next grades. Interestingly, as an evaluator/researcher, right now, you are assessing this research work to evaluate the quality of the research.

The impact of education depends on its quality, and assessment could be a very effective tool to regulate the quality of the same. General purpose of assessment is to judge/ rank the learning outcomes/achievements of the students, but it could play a vital role in the improvement of quality terms of improvement in teaching and learning process.

In the context of Pakistan, examination/assessment system is one of the root causes of malfunction in our education system. Our educational assessment system relay on annual/ final examination (summative assessment), that is an instrument to test the end product either it is good (pass) or bad (fail). Our current examination system is based on to assess factual knowledge rather than to assess the comprehension, application, analytical skills and critical thinking. While there should be a proper mechanism to test the process through which end product is to be finalized. In other words we have to assess the process of teaching and learning throughout the session. We never emphasized to assess instructional strategies whether they are effective or ineffective (Bhatti 1987 & Mirza 1999). Assessment regulates the process of teaching and learning. Experts of the field mentioned that assessment never used for the ideal purpose of the same (Black & Willium, 1998 & Stiggins, 2009).

Research confirmed that currently implemented examination system in Pakistan leads rote learning and dictate teaching and learning approaches instead of improve the quality of education. This practice could not help to develop problem solving, high order thinking skills and understanding of holistic approach rather than atomizing knowledge. (ANTRIEP, Vol. 8, No. 1, January – June, 2003).

The relation of assessment and learning is acknowledgeable and highly significant because it meets the needs of students, teachers, institutions, and communities in order to indicate the

learning progress and the effectiveness of teaching in order to achieve the learning goals (Nightingale et al., 1996).

Research has proven that in teaching and learning the formative assessment most effectively reflects and improves the instructional practices to address learning objectives (Black & William, 1998, 2004). It is also observed that formative assessment shifts classroom practices towards learning culture (Black & William, 1998).

The collected information through formative assessment in classroom setup may be utilized to fill up the learning and instructional gaps of the students and teachers respectively. Formative assessment enables the teachers and students to adjust their teaching and learning while it is taking place (Heritage, 2010).

Literature Review

Through review of related literature it is revealed that formative assessment is a systematic process to gather proofs continuously and provide feedback on learning of students while teaching is in process. Teachers and students as well use the formative assessment as a process when instructions is going on for the provision of feedback to modify their teaching strategies and learning outcomes respectively in order to meet the instructional goals (Heritage, 2010 and 2011; Dunn and Sean, 2008). The relation of assessment and learning is acknowledgeable and highly significant because it meets the needs of students, teachers, institutions, and communities in order to indicate the learning progress and the effectiveness of teaching in order to achieve the learning goals (Nightingale et al., 1996).

Research has proven that during instruction the formative assessment most effectively reflects and improves the instructional practices to address learning objectives (Black and William, 1998, 2004). Formative assessment helps teachers to modify their instructions to meet the learning goals, enhance students' performance, monitor the learning progress and achievement, identify the weaknesses and strengths of students, know about students' misconceptions, evaluate the effectiveness of instructional strategies and plans and re-engineering of curriculum (Gallagher and Worth, 2008).

According to Black and William (1998), and other experts of the field, Formative assessment should not be treated as tool or event, but it is collective features which improve the quality of instruction and learning. Formative assessment is curtail feedback for teacher and, as well as, for students what have been acquired the knowledge and skills and to determine the way

forward (Ramaprasad, 1983; Harlen & James, 1997). It is an intended practice that enables the teacher and students to know the level of learning after teaching. It also helps the teacher to modify his/her teaching (Heritage, 2010 & Clark, 2011).

Research Design

The survey research design was adopted to collect the data through research instrument (Questionnaire). The survey is most commonly used in educational research. This design of research deals to measure the attitude, opinions and achievement in the natural settings. There are two types of survey research; longitudinal and cross sectional. In this study the survey research with cross sectional design was used. The Simple Random Sampling (SRS) design was adopted for sampling. The research instruments questionnaire and interview protocol was administered through personal survey. The critical analysis and evaluation of related literature was a part of this study.

The faculty members (256) of education, universities (public and private) in the province of Sindh (Pakistan) was the target population for this study, and 111 faculty members were selected as sample from Nine (9) different universities.

Result and Findings

Chi square (χ^2) was applied to analyze the Null Hypothesis (H_0), ‘There is no significant impact of formative assessment on teaching and learning at higher education in Sindh, Pakistan’.

Table 4.1: Application of χ^2 for Testing the Significance of H_0

Steps	Frequency	Strongly Favorable	Mildly Favorable	Un Favorable	Total
Step 1	Fo	59	52	0	111
Step 2	Fe	37	37	37	111
Step 3	fo – fe	22	15	-37	–
Step 4	(fo – fe) ²	484	225	1369	–
Step 5	$\frac{(fo - fe)^2}{fe}$	13.08	6.08	37.00	–
Step 6	$\chi^2 = \Sigma \frac{(fo - fe)^2}{fe}$	13.08	6.08	37.00	56.16

Step 7 Find the degree of freedom (df)

$$df = K - 1 = 3 - 1 = 2$$

Step 8 Conclusion

It is found that the tabulated $\chi^2=5.99$ with $df=2$ at $\alpha = 0.05$ is smaller than the computed $\chi^2=56.16$. Hence, the H_0 is rejected and it is concluded that there is a significant impact of formative assessment on teaching and learning at university level in Sindh.

From the inspection of the table, it is revealed that most of the faculty members strongly believed that the formative assessment has positive significant impact on teaching and learning in other words formative assessment improves the process of teaching and learning.

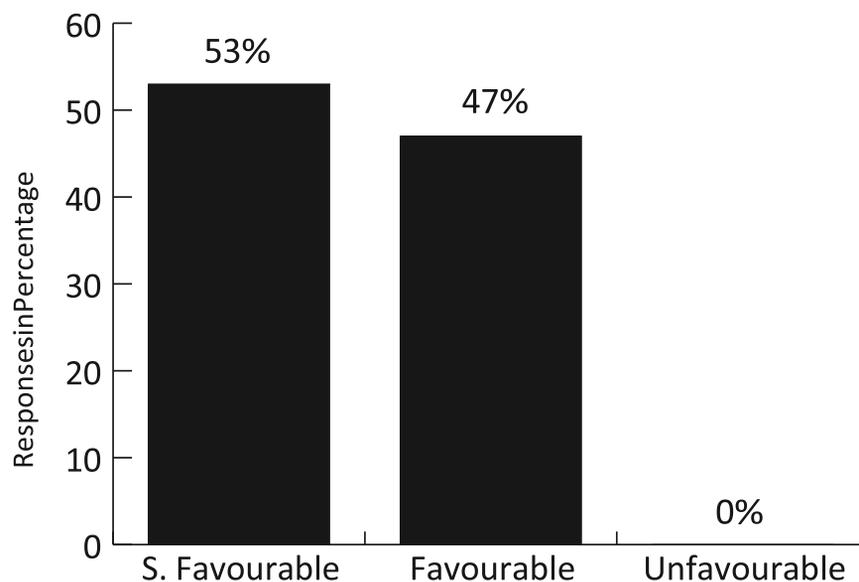


Figure 4.1: Formative Assessment Improves the Process of Teaching and Learning 53% respondents strongly in favour that 'the formative assessment improves the process of teaching and learning', 47% faculty members are also in favour of the same, while non is disagree with the statement.

Discussion and Conclusion

In present research it is found that the formative assessment has a statically significant impact on teaching and learning at university level and this impact is positive in nature, it means formative assessment improves the process of teaching and learning.

Similar findings were furnished in the most research studies in field of assessment that the formative assessment is very effective tool which enables the teacher to improve his/her teaching strategies accordingly when the process of teaching and learning is going on (Organisation of Economic Cooperation and Development (OECD), 2009; Chappius & Chappius, 2007; Stiggins, 2005; Black & William, 2004; Stiggins, 2002 and Black & William, 1998).

Dunn and Mulvenon (2009) differ that the formative assessment significantly improves the academic achievements. They argue that the poor evidences are in the support of the statement that ‘formative assessment improves the process of teaching and learning in order to higher achievements’.

The findings of William (2006) confirm the results of this study as he stated that number of studies investigated and proved that different techniques of formative assessment had the learning benefits in academia and further concluded by him that those techniques were support the teacher to bridge up the students’ achievement gaps.

Madison-Haris, Mouneke and Times (2012), Gallagher and Worth (2008), are on the same wave length as the researcher of present study is, according to them ‘formative assessment helps the teacher towards targeted instruction that might achieve the set learning goals, it supports students’ learning and it gets know the current learning achievements’.

The result of this research also revealed that Formative Assessment enables the teacher to realize the deficiencies in his/her teaching and it also helps the teacher to modify his/her teaching strategies accordingly, so that the teaching efficiency may be ensured. It is also concluded that formative assessment develops the interest and motivation among the students in order to improve their learning performance.

Findings of Gallagher and Worth (2008) support the findings of this research, according to their findings, formative assessment helps teachers to modify their instructions to meet the learning goals, enhance students’ performance, monitor the learning progress and achievement, identify the weaknesses and strengths of students, know about students’ misconceptions, evaluate the effectiveness of instructional strategies and plans and re-engineering of curriculum. According to Black & Wiliam (1998) the research of several decades proved that formative assessment increases students learning.

The findings of Hattie & Timperley (2007), Marshall, & Wiliam (2002) and Black & Wiliam (1998) also confirm the findings of present study, they concluded after the review of hundreds of research studies in the field that the positive impact of formative assessment on the learning performance of students was observed and the same works as a motivating factor in students towards their studies, as well.

The concluding remarks of Black & William (1998a), Geisler-Brenstein & Schmeck (1996), Vispoel and Austin (1995) and Schunk & Swartz (1993), about the impact of formative assessment are similar as the findings of the present research are. According to their conclusions the formative assessment bridges up the gaps between students' current status, in terms of what have been learnt and targeted learning. Formative assessment emphasises on the learning outcomes of the students and it also encourages students towards self-regulated learning that is why the confidence level of students boosts up.

The findings of research reviews done by Crooks (1998) and Natriello (1987), are in support in the findings of the present study, according to their findings the formative assessment has a significantly positive impact on the attitudes and achievements of the students.

It is concluded that Formative Assessment has a significantly positive impact on teaching and learning in higher education, in other words, Formative Assessment improves the process of teaching and learning.

Recommendations

On the basis of findings of the study the following recommendations have been made for the improvement in the field of formative assessment in order to improve the quality in education:

- Management of educational institutions should arrange the capacity building programs for teachers to introduce the formative assessment and ensure its proper implementation in the context of teaching and learning.
- The formative assessment may be incorporated in the National Education Policy and the National Curriculum accordingly.
- Frequent use of Formative assessment should be ensured at classroom level.
- The policy and effective tools for the implementation of formative assessment may be designed.

- The impact of formative assessment should be on grading of the students and the worth of formative assessment reports should be around 50% of the total marks.

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