

INTERNATIONAL RESEARCHERS

**EFFECT OF FORMATIVE ASSESSMENT ON THE ACADEMIC
ACHIEVEMENT OF SSC LEVEL STUDENTS IN THE SUBJECT
OF URDU IN DISTRICT SAWABI, PAKISTAN**

Muhammad Junaid, Dr Muhammad Shuaib, Ayesha Kanwal

Volume No.9 Issue No.2 June 2020

WWW.IRESEARCHER.ORG

ISSN 2227-7471

THE INTERNATIONAL RESEARCH JOURNAL "INTERNATIONAL RESEARCHERS"

www.iresearcher.org

© 2020 (individual papers), the author(s)

© 2020 (selection and editorial matter)

This publication is subject to that author (s) is (are) responsible for Plagiarism, the accuracy of citations, quotations, diagrams, tables and maps. Corresponding author is responsible for the consent of other authors.

All rights reserved. Apart from fair dealing for the purposes of study, research, criticism or review as permitted under the applicable copyright legislation, no part of this work may be reproduced by any process without written permission from the publisher. For permissions and other inquiries, please contact

editor@iresearcher.org

INTERNATIONAL RESEARCHERS is peer-reviewed, supported by rigorous processes of criterion-referenced article ranking and qualitative commentary, ensuring that only intellectual work of the greatest substance and highest significance is published.

INTERNATIONAL RESEARCHERS is indexed in wellknown indexing diectories



with ICV value 5.90



Directory of Research Journals Indexing

Under consideration of



EFFECT OF FORMATIVE ASSESSMENT ON THE ACADEMIC ACHIEVEMENT OF SSC LEVEL STUDENTS IN THE SUBJECT OF URDU IN DISTRICT SAWABI, PAKISTAN

Muhammad Junaid¹, Dr. Muhammad Shuaib², Ayesha Kanwal³

^{1,3}Ph.D. Scholar UOW

²Assistant Professor, Northern University Nowshera
(PAKISTAN)

netcomdagi@gmail.com¹, dr.Shuaib1983@gmail.com² ayeshakanwal2013@hotmail.com³

ABSTRACT

The present study aimed at investigating the formative assessment practice in secondary schools and its effect on the academic achievements of students. Design of this study was experimental. The population of this study comprised public sector's students of high schools in district Swabi. One school was selected through convenient sampling. Eighty students were selected as sample of the study through simple random sampling. The study was experimental in nature. Pre-test post-test equivalent group design was used. Control and experimental groups were formed by administering pre-test. These groups were equated on the basis of marks obtained in pre-test. Test was developed as a tool from lesson numbers 3, 4, 5 and 6 from prose (nasar) and lesson numbers 15, 16, 19 & 20 from poetry of SSC-II Urdu Text Book. Test was validated by three Urdu teachers. Apart from it eight tests for formative assessment were developed which were administered after the end of each lesson to the experimental group. Control group was only taught the same lessons and no formative assessment tests were administered. T-test was applied to find significance difference on the score of post-test. Significant difference was found on the scores of post-test of experimental and control group. On the basis of findings and conclusions It was recommended that formative assessment should be used by the teachers in the subject of Urdu for enhancing students' academic achievement.

Keywords: Formative assessment, Academic achievement, Experimental design. Control and Experimental groups.

1. INTRODUCTION

Education is a vital investment for human and economic development and is influenced by the environment within which it exists. Changes in technology, labour market patterns and general global environment, all require policy responses. Traditions, culture and faith all reflect upon the education system and at the same time are also affected by them. The element of continuity and change remains perpetual and it is up to the society to determine its pace and direction (Government of Pakistan, 2009). Education plays a vital role in the development of a nation. It raises the productivity, efficiency of individual and produces skilled manpower, capable of leading the economy towards economic development. It is observed that western countries are advanced because of development in quality education. Quality education is the result of factors of which assessment is considered to be the basic one (Memon, 2007).

2. ASSESSMENT

Assessment can be defined as the systematic collection, interpretation and use of information about learning. It gives teachers a better awareness of what pupils know and understand, what their learning experiences enable them to do and what their skills and personal capabilities are (Mansell & James, 2009). Assessment is a huge topic that encompasses everything from statewide accountability tests to district benchmark or interim tests to everyday classroom tests. In order to grapple with what seems to be an overuse of testing, educators should frame their views of testing as assessment and that assessment is information. The more information we have about students, the clearer the picture we have about achievement or where gaps may occur. Assessment is not a one-time event. Assessment is a continuous activity that should be an integral and integrated part of your program activities. Well designed, thoughtful and carefully executed assessments can provide important information to document the results of your program and point you toward areas where improvements may be needed. It is a valuable resource for informing yourself and others about your program. A good assessment is one that is used by you and others to make necessary changes and improvements in the quality of service you provide your students (Granello & Wheaton, 2004).

Assessment is central to effective and successful teaching and learning. To determine the effectiveness of a sequence of instruction, teachers need to gauge pupils' progress in understanding what they want them to learn. Assessment is the link between teaching and learning. It is important because without it there is no way to anticipate what pupils will actually take from their classroom experiences and this might be quite different from what was intended. Assessment helps teachers find out what has actually taken place in pupils' developing understanding during a sequence of teaching and learning (Mansell & James, 2009).

2.1 Assessment and Measurement

It's important to emphasize that the assessment is not synonymous with measurement. The varieties of assessment that are useful in an educational context will sometimes include aspects of measurement in terms of scores, grades and results. However, the range of approaches that teachers use in their everyday work to monitor how well their classes are doing will be equally prevalent. Assessment plays a crucial role in improving learning and raising standards. It's a key to professional competence for teachers that enable them to make learning and teaching more effective.

3. TYPES OF ASSESSMENT

A range of assessment approaches can be used for different reasons at various stages in the learning sequence. Formative assessment is a range of formal and informal assessment procedures used by teachers during the learning process so they can modify teaching and learning activities to improve pupil attainment. Summative **assessment** comes at the end of a learning sequence and is used to acknowledge record and report on pupils' achievement at a given point. Diagnostic assessment is used to identify individual strengths, areas for improvement and to inform about next steps. Evaluative assessment is concerned with the central performance of arrangements in a department, school or system (Mansell & James, 2009).

3.1 Formative Assessment

Formative assessment focuses on improving learning while summative assessment captures a record of learning at the end of a period of study. However, formative and summative assessments are not in opposition; they are interrelated and complementary. The information from formative assessment, supplemented by class tests or tasks, helps to ensure dependable summative assessment. The quality of assessment is based on the teacher's professional ability to use a range of assessment methods that produce accurate results. Good assessment practice involves teachers applying the five principles to every assessment approach they choose (Mansell & James, 2009). The effects of the formative assessment process on student learning are even more dramatic. Students not only learn content but also learn how to learn. Students learn more, learn smarter, and grow into self-aware learners who can tell you exactly what they did to get to exactly where they are. In other words, students become self-regulated learners and assessment-capable, data-driven decision makers. They learn to gather evidence about their own learning and to use that information to choose from a growing collection of strategies for success. And in addition to learning how to take ownership of their learning, students increasingly view themselves as autonomous, confident, and capable. This combination of learning factors—ownership, autonomy, confidence, and capability—fortifies students with increased levels of resilience. Raising student resilience can derail a dangerous cycle for many students who attribute their failure to perform well on classroom tasks to a lack of academic ability. Judging themselves to be incapable of achieving and powerless to change things, they become discouraged and quit trying (Boston, 2002; McMillan, 2017).

Assessment for learning is any assessment for which the first priority in its design and practice is to serve the purpose of promoting pupils' learning. It thus differs from assessment designed primarily to serve the purposes of accountability, or of ranking, or of certifying competence. An assessment activity can help to learn if it provides information to be used as feedback by teachers and by their pupils in assessing themselves and each other, to modify the teaching and learning activities in which they are engaged. Such assessment becomes 'formative assessment' when the evidence is actually used to adapt the teaching work to meet learning needs (Black *et al.*, 2004).

Formative assessment is part of the instructional process. When incorporated into classroom practice, it provides the information needed to adjust teaching and learning while they are happening. In this sense, formative assessment informs both teachers and students about students' understanding at a point when timely adjustments can be made. These adjustments help to ensure students achieve targeted standards-based learning goals within a set time frame. Although formative assessment strategies appear in a variety of formats, there are some distinct ways to distinguish them from summative assessments. One distinction is to think of formative assessment as "practice."

We do not hold students accountable in “grade book fashion” for skills and concepts they have just been introduced to or are learning. We must allow for practice. Formative assessment helps teachers determine next steps during the learning process as the instruction approaches the summative assessment of student learning (Black & Harrison, 2003).

Formative Assessment of the plants is equivalent to feeding and watering them, according to their needs, which directly affects their growth. On the other hand, summative assessment is the process of simply measuring them. It might be interesting to compare and analyze measurement but, in themselves, these do not affect the growth of the plants (Stiggins & Chappius, 2006).

The three steps that form the foundation of formative assessment have remained the same over the last 30 years, knowing:

1. Where the learner needs to be,
2. Where the learner is and
3. What needs to be done to get him or her there (Brookhart, 2007; Hattie & Timperley, 2007; William, 2010).

The first step entails a clear understanding of learning goals and the identification of criteria that demonstrate the achievement of learning goals. In the second step, evidence of current understanding is elicited through instructional activity or assessment. In the final step, the elicited information is then used to determine whether learning has occurred, what needs to be done and which strategies and correctives are required to close the learning gap. This three-step process may be spontaneous or planned, formal or informal, include oral or written communication, conducted at the individual or group level and supported by a teacher, peer, or computer. In any classroom setting, teachers may employ, deliberately or otherwise, a combination of formative assessment strategies. Therefore, formative assessment characteristics in practice have been described in several ways. Black and Leahy (2007) characterized five strategies of formative assessment.

1. Sharing learning objectives with learners;
2. Eliciting evidence of learning through discourse;
3. Providing feedback;
4. Activating peer assessment; and
5. Activating self-assessment.

Formative assessment, according to this framework, is an ongoing process that includes daily instructional practices in the classroom. Similarly, McManus (2008) defined formative assessment as a process where evidence of learning “is used by instructors and learners informing instruction then knowledge during the teaching-learning process”.

McManus provided a list of five attributes of effective formative assessment:

Instruction should be firmly based on learning progressions or learning trajectories as established by content domains. This enables teachers and students to work on clear gaps to inform feedback and instructional correctives. Learning goals and criteria for successful learning are articulated and communicated to students since it is important for students to know the end objective as they regulate their learning.

Specific, timely and descriptive feedback on student performance should be given to enable students to identify learning gaps as well as know how to close the gap.

Instruction should utilize peer and self-assessment as tools to encourage students to think about their learning or metacognition. Providing and receiving feedback can support student reflection and improve his or her understanding of the criteria used to evaluate the work and the quality of work expected. Similarly, self-assessment promotes students’ perceptions of their learning and fosters self-regulation.

Students and teachers act as collaborative partners in learning. Formative assessment has also been interpreted along a continuum based on the extent to which these three steps are implemented in an assessment activity (McMillan, 2010).

Formative assessment has also been described in relation to evidence from formal assessments used to inform instruction (William & Thompson, 2007). Short cycle formative assessments occur within lessons on a daily basis in the classroom. Medium cycle formative assessments occur between instructional units and are designed to provide evidence of student understanding and inform instructional decisions. Long cycle assessments occur across multiple units, or at the end of a semester or year (Brookhart, 2007). The question of how the use of this assessment improves learning is critical to this interpretation of formative assessments. Brookhart (2013) provided a framework to understand the function of assessments along the dimensions of administration (classroom-based to large scale) and the purpose of assessment (formative to summative). The closer assessments are to classroom-based administration with a formative purpose, the more likely they are to be used to support learning and make instructional adjustments (Brookhart, 2007).

The broad range of interpretations of formative assessment has led to a diverse body of literature on the subject. Diverse perspectives have called into question the extent to which such vast empirical research collectively contributes to our understanding of formative assessment (Bennett, 2011; Dunn & Mulvenon, 2009). Another distinction that underpins formative assessment is student involvement. If students are not involved in the assessment process, formative assessment is not practiced or implemented to its full effectiveness. Students need to be involved both as assessors of their own learning and as resources to other students. There are numerous strategies teachers can implement to engage students. In fact, research shows that the involvement in and ownership of their work increases students' motivation to learn. This does not mean the absence of teacher involvement. To the contrary, teachers are critical in identifying learning goals, setting clear criteria for success and designing assessment tasks that provide evidence of student learning. One of the key components of engaging students in the assessment of their own learning is providing them with descriptive feedback as they learn. In fact, research shows descriptive feedback to be the most significant instructional strategy to move students forward in their learning. Descriptive feedback provides students with an understanding of what they are doing well, links to classroom learning and gives specific input on how to reach the next step in the learning progression. In other words, descriptive feedback is not a grade, a sticker, or "good job!" A significant body of research indicates that such limited feedback does not lead to improved student learning. There are many classroom instructional strategies that are part of the repertoire of good teaching. When teachers use sound instructional practice for the purpose of gathering information on student learning, they are applying this information in a formative way. In this sense, formative assessment is pedagogy and clearly cannot be separated from instruction. It is what good teachers do. The distinction lies in what teachers actually do with the information they gather. How is it being used to inform instruction? How is it being shared with and engaging students? It's not teachers just collecting information/data on student learning; it's what they do with the information they collect (Black *et al.*, 2003).

4. THEORIES OF FORMATIVE ASSESSMENT

Formative assessment developed from traditional views of educational assessment that focused on the development and administration of periodic formal tests, which were labeled "formative." In the study of formative assessment, researchers neglected the process elements of teachers using assessment information, modifying instruction and noting changes in students' learning. Shepard (2000) argued that "if instructional goals include developing students' metacognitive abilities, fostering important dispositions and socializing students into the discourse and practices of academic disciplines, then it is essential that classroom routines and corresponding assessments reflect these goals as well". Learning is a cultural-historical activity, where students' learning takes place in the context of cultural expectations (Elwood, 2006). The relationship between a student's culture and expectations and a school's is important for student success and assessments should be interpreted bearing in mind the context formed by the backgrounds and experiences of students and teachers who are part of it. Any study of formative assessment practices or interventions must take these sociocultural influences into account. Such a view holds important implications for designing studies that include multiple methods (qualitative and quantitative) and multiple data sources (students, teachers, curriculum and policy-related documents, etc.) and are aimed at providing a context-based interpretation of even specific formative assessment practices (Schoen, 2011).

5. IMPORTANCE OF FEEDBACK IN STUDENTS' LEARNING

Feedback is an important aspect of assessment to support learning. Feedback can take many forms, from written comments in the form of notes or oral responses or gestures of students. Feedback is often embedded in the teaching/learning process. Teachers can either plan feedback to students or it can be a spontaneous process. It is an important element in the assessment of the learning process for both teachers and students (Bell & Cowie, 2001; Sadler 2009 & 2010). According to research by Hattie & Timperley (2007), feedback in the formative function can reduce the gap between students' current understanding of their performance and the goals they are trying to achieve. As mentioned, teachers' comments in a traditional context, which is a one-way communication, have been criticized because students become dependent on teachers, so in the current design, feedback is considered to be interactive. Ideally, effective feedback allows learners to self-assess, self-reflect and self-regulate their learning (Nicol & Dick, 2006). Self-regulated learning is defined as the process by which learners set their own goals for learning and then monitor and regulate their motivation, behavior and cognition to achieve their goals (Pintrich, 2000). During this process, facilitative feedback from teachers is considered important for success.

Formative assessment and feedback are designed to enable students to self-assess, reflect and monitor their learning in order to progress as lifelong learners. According to the studies, feedback is important to influence learning (Hattie, 2009; Sadler, 2010). The feedback loop informs teachers about the knowledge or skills acquired or to be achieved by the student, aim to help learners identify and correct a gap and help teachers to think about and select appropriate tasks and activities, to modify/adapt their teaching to fill the gap. Ideally, teachers would use

evidence from the formative assessment to make changes to teaching, while students would receive feedback to improve their learning. As part of the learning assessment, information about learners' current / desired performance is then integrated into a formative design of feedback. Students also have knowledge of the desired quality for their work and are able to self-control and improve their learning (Dixon, 2011).

In VJ Shute's review (2008) "formative feedback" was defined as "the information communicated to the learner that aims to modify his / her thinking or behavior in order to improve learning". Attention is drawn to the fact that feedback has a positive impact on student learning, as opposed to the feedback that has had a negative impact on student learning. Irons (2008) adds that formative feedback is obtained not only by the information given but by the process or activity that uses this information to enable or accelerate learning. Therefore, effective formative feedback is a process or activity that provides information to learners to change thinking and behavior in a way that enhances learning and performance.

Nicol and Macfarlane-Dick (2006) argue that feedback should clarify to students what good performance is, in order to facilitate self-assessment. Students' information about their learning helps to promote teacher/student interaction, as well as fostering motivational beliefs and student self-esteem. The feedback should also provide students with the opportunity to bridge the gap between their current and desired performances, helping them to become self-monitoring while informing teachers of students' learning. This follows the concept that formative assessment and feedback should inform teachers about students' knowledge and skills so that they can identify gaps between what they have learned and what they still have to learn. As Nicol and Macfarlane-Dick (2006) argue, when feedback works formally and effectively, teachers should be able to think and select tasks and activities that are appropriate for their students and modify or adapt their teaching to their own students.

- Teacher learns formative assessment and feedback
- Current / desired performance
- Knowledge of quality
- Become self-monitoring
- Knowledge and skills of students
- Identify gaps in learning
- Reflect and select tasks/activities

The distinction between formative and summative assessment focuses on the quality of inquiry, type of feedback, the timing of feedback, self-assessment and peer review (Thompson, 2008). In addition, this style of feedback requires teachers to provide feedback through notes and notes only. This, have supported the theorists, creates students who depend on the teacher. The form of effective feedback proposed by current education theory recognizes the role of students in their own learning and is generally described as co-constructed by the teacher/student partnership (Hattie & Timperley, 2007; Wiliam & Thompson, 2008).

6. SOME PRACTICES OF FORMATIVE ASSESSMENT

Those might be utilized as a part of the classroom assessment to gather confirmation of students' learning. In formative assessment, instructors set learning targets, as often as possible check their students' growth and understanding identified with those objectives and change their direction to enable students to achieve the objectives. Instructors should figure out how to join an accumulation of instructing hones that assume a double part in enhancing students' learning. In the first place, the practices give teachers knowing about how (not simply whether) students are to understand the material they are learning. Second, the practices enable students to wind up more proactively associated with assessing and checking their own particular learning. Actually, this last result of these practices—building drew in and effective learners— has seemingly turned into the more vital result (National Research Council, 2001).

Following is the table showing some practices of formative assessment.

<i>SOME PRACTICES OF FORMATIVE ASSESSMENT</i>			
1	OBSERVING: (ANECDOTAL NOTES; ANECDOTAL NOTEBOOK; ANECDOTAL NOTE CARDS; LABELS OR STICKY NOTES)		
2	ASKING QUESTIONS	10	VISUAL REPRESENTATIONS
3	PROCESS OF DISCUSSING	11	KINESTHETIC EVALUATIONS
4	EXIT SLIPS	12	INDIVIDUAL WHITEBOARDS
5	LEARNING LOGS	13	LAUNDRY DAY
6	ANSWER LOGS	14	FOUR CORNERS
7	GRAPHIC ORGANIZERS	15	CONSTRUCTIVE QUIZZES
8	PEER/SELF ASSESSMENTS	16	APPOINTMENT CLOCK
9	PRESENTATIONS		

Quality education is based on a proper assessment. Assessment is the tool used by institutes to judge the performance of their student. Developmental or formative assessment is the assessment processes and activities that support program, project, product, personnel and organizational development. The evaluator is part of a team whose members collaborate to conceptualize, design and test new approaches in a long-term, on-going process of continuous improvement, adaptation and intentional change. The evaluator's primary function in the team is to elucidate team discussions with evaluative data and logic and to facilitate data-based decision-making in the developmental process (Patton, 2009). "When the cook tastes the soup that is a formative assessment; when the customer tastes the soup that is a summative assessment" (Paul Black, 2012). For example, "To decide where students are in their studies, where to go and how to achieve the target" has sometimes been interpreted as an exhortation to teachers to test their students frequently to assess the levels they attain on prescribed national/state scales in order to fix their failings and target the next level. In this scenario, scores, which are intended to be indicators of or proxies for, learning become the goals themselves. Real and sustained learning is sacrificed to performance on a test. In contrast, the primary aim of Assessment for Learning is to contribute to learning itself. This follows from the logic that when true learning has occurred, it will manifest itself in performance. The converse does not hold: mere performance on a test does not necessarily mean that learning has occurred. Learners can be taught how to score well on tests without much underlying learning (Klenowski, 2009).

Assessment for Learning is the process of identifying aspects of learning as it is developing, using whatever informal and formal processes best help that identification, primarily so that learning itself can be enhanced. This focuses directly on the learner's developing capabilities, while these are in the process of being developed. Assessment for learning seeks out, analyses and reflects on information from students themselves, teachers and the learner's peers as it is expressed in dialogue, learner responses to tasks and questions and observation. Assessment for learning is part of everyday teaching, in everyday classrooms. A great deal of it occurs in real time, but some of it is derived through more formal assessment events or episodes. What is distinctive about assessment for learning is not the form of the information or the circumstances in which it is generated, but the positive effect it has for the learners. Properly embedded into teaching-learning contexts, assessment for learning sets learners up for wide, lifelong learning (Klenowski, 2009).

Formative assessment pinpoints difficulties being faced by weak learners. Its result can't be used for grading or placement purposes. It helps in the modification of instructional strategies including the method of teaching immediately. It motivates learners; as it provides them with knowledge of progress made by them. It is generally teacher made test and does not take much time to construct. Monthly tests, Class tests, Periodical assessment and Teacher's observation are some of the examples of Formative Assessment. "An assessment functions in a formative manner to the extent that evidence about student achievement is elicited, interpreted and used by teachers, learners, or their peers to make decisions about the next steps in instruction that are likely to be better, or better founded, than the decisions they would have made in the absence of that evidence" (Wiliam, 2011).

Formative assessment is not a "silver bullet" that can solve all educational challenges. It offers a powerful mean for meeting goals for high-performance, high-equity of student outcomes and for providing students with knowledge and skills for lifelong learning. Systems that address tensions that prevent the wider practice of formative assessment and that foster cultures of assessment are likely to make much more progress toward these goals (Wasil & Thawani, 2014).

Secondary level education is a crucial stage and terminal point of the education process. On one hand, it is the last step of completion of one tier of the three tiers of education; on the other hand, it provides a base for future studies and education. It plays an important role in the career of a student. As formative assessment is crucial in enhancing students' overall achievement, so this study investigated effect of formative assessment practices on the learning achievements of public secondary schools in Swabi.

7. STATEMENT OF THE PROBLEM

This research was intended to investigate the Effect of Formative assessment on the Academic Achievement of Students of Grade X in the Subject of Urdu.

8. OBJECTIVES OF THE STUDY

The main objectives of the study were

1. To explore Effect of Formative assessment on the academic achievements of the students of grade X, in the subject of Urdu.
2. To explore the mean difference between pre-test and post-test scores of both the control and experimental groups.
3. To investigate Effect of Formative assessment for both the high achievers and low achievers.

9. HYPOTHESES

To achieve the above objectives of the study the following hypotheses were tested:

- Ho¹:** There is no significant difference between the mean score of experimental group and control group on pre-test.
Ho²: There is no significant difference between the mean score of experimental and control group on post-test.
Ho³: There is no significant difference between the mean score of experimental group on pre and post-test.
Ho⁴: There is no significant difference between the mean score of control group on pre and post-test.
Ho⁵: There is no significant difference between the mean score of control group high achievers on pre-test and post-test.
Ho⁶: There is no significant difference between the mean score of experimental group high achievers on pre-test and post-test.
Ho⁷: There is no significant difference between the mean score of control group low achievers on pre-test and post-test.
Ho⁸: There is no significant difference between the mean score of experimental group low achievers on pre-test and post-test.

10. SIGNIFICANCE OF THE STUDY

This research will not only be beneficial for the students but also for the field of Urdu subject, the teachers and the system. On one hand the research will help the students to learn their concepts more clearly and in easiest way through technology while on the other hand it was a best way for teachers too, to explain complicated topics quite simply with the help of formative assessment. A tough subject like Urdu, will become interesting and more attractive for the learners by inculcating technology in it. This research will be significant for the curriculum developers also to consider digital integration on higher level in future.

11. METHOD AND PROCEDURE

This experimental study was conducted to explore the outcomes of Formative Assessment on the students of grade X. The research was conducted on the students of grade X Govt Higher Secondary School Bamkhel Swabi, KPK in the subject of Urdu.

11.1 Population

There were 7654 students of class X in all 93 Schools of district Swabi, Khyber Pakhtunkhwa which was the population of the study.

11.2 Sample

Pair-random sampling technique was used to select the sample. In this study one School in district Swabi KPK was selected as convenient sample, because this branch was easily available in the region of the study. Sample of the study was composed of forty students from two sections of 10th class. A pre-test, composed of 60 items, in the subject of Urdu, selecting from three chapters, was administered to the sample students of two sections. On the basis of score, obtained through pre-test, twenty students were assigned to experimental group and twenty students were assigned to control group. Allocation of the Sample Students According to Their Achievement Level

List of high achievers and low achievers on pre-test

Subjects	E G	C G	Total
HAS	12	13	25
LAS	08	07	15
Total	20	20	40

The above table shows that total sample size was forty, divided into two groups, namely experimental and control group, on the bases of pre-test score. Each of them was composed of twenty students. Experimental group members were further divided into two subgroups, high achieving students and low achieving students. The control group was also formed in the same way. Thus, two equivalent groups were formed.

High Achievers and Low Achievers on Post-Test

Subjects	E G	C G	Total
HAS	13	17	25
LAS	07	03	15
Total	20	20	40

The above table shows that total sample size was forty, divided into two groups, namely experimental and control group, on the bases of post-test score. Each of them was composed of twenty students. Experimental group members were further divided into two subgroups, high achieving students and low achieving students. The control group was also formed in the same way. Thus, two equivalent groups were formed.

11.3 Research Instrument

In order to construct a valid and reliable test, the researcher studied thoroughly the selected 8 lessons of "Urdu" of grade X. For assessing the academic achievement of the sample students, the researcher adopted one of the three assessment methods (selected response, constructed response and performance) "selected response" method for the construction of the tests.

Most of the teachers use this method for assessing cognitive achievements of the learners on different levels. Selected-response item includes "multiple choice" (Linn and Miller, 2005), "true-false and matching columns items (Fisher and Frey, 2007) and "fill-in-the-blanks" (completion type test items). So the researcher first constructed the Pre-test from three selected chapters from Urdu subject of grade X. Pre-Test was consisted of 60 items in which 20 items were "multiple choice", 10 items were "True false", and 2 sets of column match, each consisted 5 items and 2 tables to be filled up. In the same way Post- test was constructed, in which the first three sections included the same response items while the last section consisted a table and a diagram to be labeled. Both tests items were selected unequally from the same chapters, the items differed in nature but the theme remained the same.

11.4 Pilot-Testing

For the valid results of the tests and to confirm the reliability of the tests, Pilot testing was performed by the researcher on 25 students of grade X of GHS Baja, Swabi. Minor modification was performed with the help of pilot tests output.

11.5 Reliability

The reliability of the pre-test was determined through split-half method (Odd-Even). Odd questions were considered as test A and even questions were considered as Test B. This test was given as a whole to twenty students of Grade X of GHS Baja who did not form sample of the study. The researcher used Pearson 'r' formula to calculate reliability for the whole test.

$$r = \frac{\sum XY - \frac{(\sum X)(\sum Y)}{n}}{\sqrt{(\sum X^2 - \frac{(\sum X)^2}{n})(\sum Y^2 - \frac{(\sum Y)^2}{n})}}$$

Where

N= Numbers of pairs of score

$\sum XY$ = Sum of the product of paired score

$\sum X$ = Sum of X (test A) score

$\sum Y$ = Sum of Y (test B) score

$\sum X^2$ = Sum of squared X score

$\sum Y^2$ = Sum of squared Y score

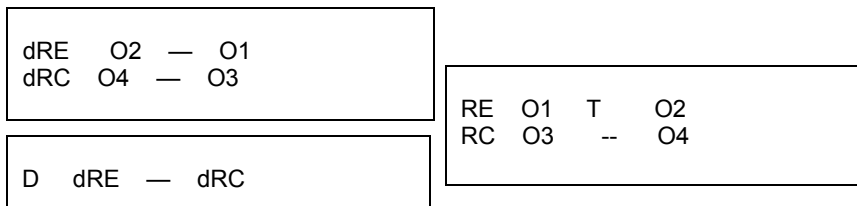
The correlation coefficient for pre-test was found as 0.73 and for post-test it was 0.79 which is considered a satisfactory level of a test because, according to Gay, (2009) a test is considered highly reliable if its correlation coefficient is found close to 1.00 and thus the effect of errors of measurement is small.

11.6 Validity of Pre-Test and Post-Test

The supervisory committee of the researchers and three subject specialists of Urdu subject validated and considered both the pre-test and post-test satisfactory.

12. RESEARCH DESIGN

The researcher, keeping in view the nature of this study, applied pre-test post-test equivalent group design (a subtype of true experimental design) because this design is considered more strong and true (Farooq R.A 2001). Gay, (2000) is of the view that there are two groups in this design, randomly formed on the basis of pre-test. Before the treatment started teacher-made pre-test was administered to both the groups. And post-test was administered after the treatment for data collection. But both the groups were not given the same treatment. After administering the post-test, the obtained score of both the groups were then matched for verifying the effect of given treatment. The figurative illustration of the research design was as under:



Where

RE = Randomly Selected Experimental group

RC = Randomly Selected Control group

O1 and O3 = Pre-test Observations

O2 and O4 = Post-test Observations

dRE= d stands for Difference between mean scores on pre-test and post-test for (R stands for randomly selected) E stands for experimental group

dRC= d stands for Difference between mean scores calculate from pre-test and post-test for (R stands for randomly selected) C stands for control group

D = Net difference

12.1 Treatment of the Study

After forming two sample groups' (control and experimental), on the bases of teacher-made pretest, the experimental group (composed 20 students) was prepared for receiving treatment as Urdu teaching using formative

assessment and the control group was employed to be taught through traditional (lecture) teaching method. The treatment was started on March 20th, 2018 and ended on April 28th, 2018. Thus, total duration of the experiment was six weeks. In order to teach experimental group, lesson plans were developed according to the Formative Assessment Practices for each unit. Each unit was divided in topics in order to make the learning process easy and possible.

12.2 Data Collection

The data was collected personally by the researcher with the help of relevant teachers before the treatment pre-test was conducted and after giving Formative Assessment treatment to experimental group and casual treatment to control group, post-test was conducted to collect data.

12.3 Analyses of Data

The collected data was analyzed through the t-test for which the following formula was used (Book of Introductory Statistics 7th edition).

$$t = \frac{(\sum D)/N}{\sqrt{\frac{\sum D^2 - \frac{(\sum D)^2}{N}}{(N-1)(N)}}$$

13. ANALYSIS AND INTERPRETATION OF DATA

13.1 Quantitative Data Obtained

Following is the complete detail of analysis and interpretation of data collected through pretest and posttest.

H₀₁: There is no significant difference between the mean score of experimental group and control group on pre-test

Table 1 Significant difference between the mean score of experimental group and control group on pre-test

Group	Observations/Tests	N	Mean	SD	df	t-value	
						Calculated	Table
Control	Pre-Test	20	31.60	4.69	38	0.556	1.686
Experimental		20	32.35	3.79			

The table above shows that the calculated t-value was found to be 0.556 which is lower than the table value at 0.05 significance level. Therefore, the null hypothesis H₀₁ (There is no significant difference between the mean score of experimental group and control group on pre-test) is accepted. Before the treatment the mean achievement of both the control and experimental group was approximately the same.

Ho2: There is no significant difference between the mean score of experimental and control group on post-test

Table 2 Significant difference between the mean score of experimental and control group on post-test

Group	Observations/Tests	N	Mean	SD	df	t-value	
						Calculated	Table
Control	Post-Test	20	34.15	9.77	38	2.044	1.686
Experimental		20	39.95	8.10			

From table number 2 it is evident that the calculated t-value is 2.044 which is higher than the table value of 1.686 at significance level 0.05. Therefore, Ho2 (There is no significant difference between the mean score of experimental and control group on post-test) is rejected and alternative hypothesis is accepted. There is a significant difference between the mean achievement score of control and experimental group on post-test. So, the treatment (instructional technology) has a positive effect on the performance of the experimental group.

Ho3: There is no significant difference between the mean score of experimental group on pre and post-test

Group	Observations/Tests	N	Mean	SD	df	t-value	
						Calculated	Table
Experimental	Pre-Test	20	32.35	3.79	19	3.800	1.729
	Post-Test	20	39.95	8.10			

Table 3 Significant difference between the mean score of experimental group on pre and post-test

From table number 3 it is evident that the calculated t-value is 3.800 which is much higher than the table value of 1.729 at 0.05 level. Therefore, the null hypothesis Ho3 (There is no significant difference between the mean score of experimental group on pretest and post-test) is rejected and alternative hypothesis is accepted i.e. there is a significant difference between the mean achievement score of experimental group on pre-test post test. The treatment has a positive effect on the academic achievement of students.

Ho4: There is no significant difference between the mean score of control group on pre and post-test

Table 4 Significant difference between the mean score of control group on pre and post-test

Group	Observations/Tests	N	Mean	SD	df	t-value	
						Calculated	Table
Control	Pre-Test	20	31.60	4.69	19	1.052	1.729
	Post-Test	20	34.15	9.77			

From table number 4 it is clear that the calculated t - value is 1.052 which is smaller than the table value of 1.729 at 0.05 level. Therefore, the null hypothesis Ho4 (There is no significant difference between the mean score of control group on pretest and post-test) is accepted.

Ho 5: There is no significant difference between the mean score of control group high achievers on pre-test and post-test

Table 5 Significant difference between the mean score of control group high achievers on pre-test and post-test

Group	Observations/Tests	N	Mean	SD	df	t-value	
						Calculated	Table
Control	Pre-Test	13	34.15	2.51	29	5.795	1.699
	Post-Test	17	42.71	4.83			

Table number 5 shows that the calculated t-value was found to be 5.795 which was higher than the table value of 1.699 at 0.05 level. Therefore, the null hypothesis H_05 is rejected and alternative hypothesis is accepted.

Ho6: There is no significant difference between the mean score of experimental group high achievers on pre-test and post-test

Table 6 Significant difference between the mean score of experimental group high achievers on pre-test and post-test

Group	Observations/Tests	N	Mean	SD	df	t-value	
						Calculated	Table
Experimental	Pre-Test	12	35.00	2.35	24	8.899	1.711
	Post-Test	13	44.85	3.10			

In table number 6 it is clear that the calculated t-value was found to be 8.899 which was much higher than the table value of 1.711 at 0.05 significance level. Therefore, the null hypothesis "There is no significant difference between the mean score of experimental group high achievers on pre-test and post-test" is rejected and alternative hypothesis is accepted. The treatment has a visible effect on the academic achievement of high achievers of experimental group on pre and post-test.

Ho7: There is no significant difference between the mean score of control group low achievers on pre-test and post-test

Table 7 Significant difference between the mean score of control group low achievers on pre-test and post-test

Group	Observations/Tests	N	Mean	SD	df	t-value	
						Calculated	Table
Control	Pre-Test	07	26.86	4.10	09	0.971	1.833
	Post-Test	03	24.33	2.52			

It is evident from table number 7 that the calculated t value was found to be 0.971 which was less than the table value of 1.833 at 0.05 level. Therefore, the null hypothesis is accepted. It shows that there was no significant difference between the mean score of control group low achievers on pre-test and post-test.

Ho8: There is no significant difference between the mean score of experimental group low achievers on pre-test and post-test.

Table 8 Significant difference between the mean score of experimental group low achievers on pre-test and post-test

Group	Observations/Tests	N	Mean	SD	df	t-value	
						Calculated value	Table value
Experimental	Pre-Test	08	28.63	1.69	14	1.094	1.761
	Post-Test	07	31.29	6.78			

The table shows that the calculated t - value was found to be 1.094 which was lower than the table value of 1.761 at significance level 0.05 therefore Ho8 is accepted. It is evident that there was indeed no significant difference between the mean score of experimental group low achievers on pre-test and post-test.

14. CONCLUSION AND DISCUSSION

The result of the study indicates formative assessment Integrated teaching was found more effective than traditional learning (lecture) method. Similarly, formative assessment Integrated teaching was found equally effective for high achieving students. Furthermore, the use of Formative assessment in the class was also proved useful for low achievers. The researchers investigated that there is positive effect of Formative assessment on the academic achievement of students in the subject of Urdu on both low achievers as well as high achievers. Thus the results reject the null hypotheses that there is no significance difference between the academic achievement of students of control and experimental groups. This study proves that formative assessment is helpful in enhancing students' score. Thus it signifies the importance of using formative assessment during teaching learning process. The study is limited only to Urdu subject, so it provides a base for future researchers to apply it on other subjects and investigate its effectiveness. The results are in lined with studies of Wang et al. (2006). Shavelson et al (2008). Vogelzand and Admiraal (2017) and Mysore (2015)

15. RECOMMENDATIONS

The following recommendations were made on the basis of conclusions:

1. The results of study favor the use of formative assessment in teaching learning process, it was therefore, recommended that teachers should use Formative assessment in teaching Urdu subject at secondary level.
2. As the use of Formative Assessment proved effective in teaching Urdu secondary level, it is recommended public schools of Swabi should extend the use of FA to middle and higher level classes.
3. It is also recommended that proper training should be given to the teachers before integrating FA in teaching.

REFERENCES

- Bell, B., & Cowie, B. (2001). The characteristics of formative assessment in science education. *Science education*, 85(5), 536-553.
- Bennett, R. E. (2011). Formative assessment: A critical review. *Assessment in Education: principles, policy & practice*, 18(1), 5-25.
- Black, P. & Wiliam, D. (2004). *In Praise of Educational Research: Formative Assessment*. British Educational Research Journal, Vol. 29 (5).
- Black, P., Harrison, C., & Lee, C. (2003). *Assessment for learning: Putting it into practice*. McGraw-Hill Education (UK).
- Boston, C. (2002). The concept of formative assessment. *Practical Assessment, Research, and Evaluation*, 8(1), 9.
- Brookhart, S., Moss, C., & Long, B. (2008). Formative assessment that empowers. *Educational Leadership*, 66(3), 52-57.
- Cauley, K. M., & McMillan, J. H. (2010). Formative assessment techniques to support student motivation and achievement. *The Clearing House: A Journal of Educational Strategies, Issues and Ideas*, 83(1), 1-6.
- Dixon, H. R., Hawe, E., & Parr, J. (2011). Enacting assessment for learning: The beliefs practice nexus. *Assessment in Education: Principles, Policy & Practice*, 18(4), 365-379.

- Dunn, K. E., & Mulvenon, S. W. (2009). Let's Talk Formative Assessment... and Evaluation?. *Online Submission*.
- Elwood, J. (2006). Formative assessment: possibilities, boundaries and limitations. *Assessment in Education: Principles, Policy & Practice*, 13(2), 215-232.
- Farooq, R.A. (2001). *Understanding Research in Education*, Rawalpindi; University of Arid Agriculture.
- Fisher, D., & Frey, N. (2007). *Formative assessment techniques for your classroom Checking for understanding*, Alexandria, Association for Supervision and Curriculum Development
- Gay, L. R., Mills, G. E., & Airasian, P. W. (2009). *Educational research: Competencies for analysis and applications*. Merrill/Pearson.
- Gay, L. R. (2000). *Educational Research Competencies for Analysis and Application*. Islamabad, National Book Foundation.
- Government of Pakistan. (2009). National education policy 2009.
- Granello, D. H., & Wheaton, J. E. (2004). Online data collection: Strategies for research. *Journal of Counseling & Development*, 82(4), 387-393.
- Hattie, J., & Timperley, H. (2007). The power of feedback. *Review of educational research*, 77(1), 81-112.
- Klenowski, V. (2009). *Assessment for learning revisited: An Asia-Pacific perspective*. Abingdon: Routledge.
- Linn, R.L. and Miller, M.D. (2005). *Measurement and assessment in teaching* (9th ed.) Upper Saddle River, NJ: Merrill, Prentice Hall.
- Mansell, W., & James, M. the Assessment Reform Group.(2009). *Assessment in schools. Fit for purpose? A Commentary by the Teaching and Learning Research Programme*.
- McMillan, J. H. (2017). *Classroom assessment: Principles and practice that enhance student learning and motivation*. Pearson.
- Memon, G. R. (2007). Education in Pakistan: The key issues, problems and the new challenges. *Journal of Management and Social Sciences*, 3(1), 47-55.
- National Research Council. (2001). *Classroom assessment and the national science education standards*. National Academies Press.
- Nicol, D. J., & MacFarlane-Dick, D. (2006). Formative assessment and self-regulated learning: A model and seven principles of good feedback practice. *Studies in Higher Education*, 31(2), 199- 218.
- Patton, M. Q. (2009). *Qualitative research & evaluation methods*. Thousand Oaks, CA: Sage.
- Paul Black. (2012). Paul Black's Masterclass in Assessment: The Whole Spectrum. Retrieved October 14, 2017, from <https://www.youtube.com/watch?v=h0j7xSS9pm4>
- Sadler, R. D. (2009b). Transforming holistic assessment and grading into a vehicle for 233 complex learning. In G. Joughin, *Assessment, learning and judgement in higher education* (pp. 45-64). New Jersey: Springer.
- Sadler, R. D. (2010). Beyond feedback: developing student capability in complex appraisal. *Assessment & Evaluation in Higher Education*, 35(5), 535-550.
- Schoen, L.T. (2011). Conceptual and methodological issues in sociocultural research and theory development in Education. In G.M. McInerney, R.A.Walker, & A.D. Liam *Sociocultural theories of learning and motivation* Charlotte, NC: Information Age Publishing.
- Shepard, L. A. (2000). The role of assessment in a learning culture. *Educational researcher*, 29(7), 4-14.
- Stiggins, R. & Chappuis, J. (2006). What a difference a word makes: Assessment FOR learning rather than assessment OF learning helps student succeed. *Journal of staff development*.
- Wasil, F. A., & Thawani, H. (2014). *Pedagogy*. VK Global Publications.
- William, D., & Leahy, S. (2007). A theoretical foundation for formative assessment. In *American Educational Research Association annual meeting, San Francisco, CA*.
- William, D. & Thompson, M. (2008). Integrating assessment with instruction: What will it take to make it work? In C. A. Dwyer, *The future of assessment: Shaping teaching and learning* (pp. 53–82). Mahwah, NJ: Lawrence Erlbaum Associates