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[Exploring the Effectiveness of Formative and Summative Assessments in Enhancing Student Learning Outcomes: University Teachers Perspectives]

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ABSTRACT

This study explored the effectiveness of formative and summative assessments in enhancing student learning outcomes from the perspective of university teachers in Karachi, Pakistan. Formative assessments, typically conducted during the learning process, provide ongoing feedback that helps students identify their strengths and weaknesses, fostering continuous improvement and engagement. By contrast, summative assessments evaluate overall learning at the end of a course or unit. The study employs a qualitative approach, utilizing semi-structured interviews with eight purposefully selected university teachers. The findings reveal that teachers perceive formative assessments as crucial for improving learning outcomes by offering timely feedback, encouraging student engagement, and supporting ongoing learning. Summative assessments, while essential for evaluating overall achievement, were less effective in promoting continuous improvement. Technology integration was highlighted as a key factor in enhancing the efficiency of both assessment types, allowing for real-time feedback and more personalized learning experiences. The study suggests the continued use of formative assessments, the integration of technology, and the importance of teacher engagement in both assessment types to optimize learning outcomes.

Keywords: *Type of Assessment, Teacher's Role, Student Engagement, Use of Technology,*

Introduction

Formative and summative assessments are vital in education, as they determine the end performance of students in learning. The two kinds of evaluations have different orientations toward measuring the performance of students, and they help in distinguishing individual and group performances. Formative assessment forms are mostly performed during the learning process and provide guidance to instructions. In contrast, summative assessment is performed at the end of a learning period and gives out the cumulative progress of the students. Together, these contribute to a comprehensive understanding of students' academic development. The distinction between formative and summative assessments is foundational to understanding their respective impacts on student teaching (Ahmad et al., 2025). Formative assessments are designed to monitor student progress and provide continuous feedback to guide learning. These assessments included quizzes, homework, class discussions, and peer evaluations, with the primary aim of identifying areas where students need improvement. By offering frequent, low-stakes evaluations, formative assessments create opportunities for students to revise their understanding before they face high-stake assessments (Black & Wiliam, 1998; Shute, 2008).

Summative exams are meant to test the overall gain of the knowledge and skills developed by students in the course of a certain period of time, and are often administered as a final exam, last time project, or standardized test. The grades are based on these tests, academic progress is measured with them, and instructional strategies and methods are also evaluated with their help. Brown and Knight (1994) add that a summative assessment will enable the students to show an ability of mastering the

Journal of Management & Social Science

VOL-2, ISSUE-3, 2025

subject material thus helping the student's achievement and future success in educational advancement. One of the most important factors which determine the effectiveness of formative and summative assessments is the role of the teacher. Teachers serve more than the administrators of the assessment who play a role in designing, implementing, and interpreting assessment to guide student learning (Pirzada, Tabassum, & Ahmad, 2024). With regard to formative assessments, teachers are prompt and order practical pieces of feedback which inform students of their knowledge and growth. Hattie and Timperley (2007) argued that effective feedback must be clear and specific in terms of how it facilitates students' growth. With regard to summative assessment, teachers' tasks go beyond grading because they have to see that the assessments are relevant to the learning outcomes and offer fair, valid, and reliable indicators of student performance. Instructors are also required to be competent in developing such a setting that the form of assessment methods is viewed as a form of development rather than a form of judgment (Sadler, 1989; Ahmad, Sewani, & Channa, 2025).

The other factor which is relevant to the effectiveness of both formative and summative assessments is the level of student engagement. The active learning of such students is also more likely to engage in the assessment process, use feedback to improve the learning process, and remember the acquired knowledge. With regular feedback opportunities, formative assessments help a great deal of engaging students. They motivate students to claim ownership of their learning since they view their progress and make adjustments on a real-time basis (Nicol & Macfarlane-Dick, 2006). In contrast, people associated with summative assessment may, in some cases, experience anxiety and loss of motivation. Nevertheless, students have a higher probability of accepting summative assessments with a degree of purpose and commitment when they view them as fair and directly related to the course goals (Hughes & Read, 2013).

Rising technologies in learning have transformed the manner in which both formative assessment and summative assessment are administered, thus leading to more effective and efficient assessment in learning processes. Online instruction enables data on the assessment to be collected and analyzed immediately; hence, the teacher can provide an immediate response to the formative assessment and monitor the development of a student over time (Boud & Falchikov, 2007). Technology also allows a more interactive and personalized learning experience with students having the ability to interact with assessments in a manner that works best with their level of learning. Such things as online quizzes may deliver immediate feedback, and learning management systems (LMS) may help the teacher understand how students perform, thereby allowing changes in teaching methods (Akram, Khan, & Ahmad, 2022). Technology provided in the case of summative assessments has not only simplified grading but also facilitated the use of large-scale evaluation, especially in remote or hybrid education (Gikandi, Morrow, & Davis, 2011).

Formative and summative assessments are essential for improving students' learning outcomes. The nature of assessments, teacher and student involvement, and technology are important factors in the effectiveness of these assessments. Thus, the proposed study focuses on investigating the views of teachers in the universities of

Journal of Management & Social Science

VOL-2, ISSUE-3, 2025

Karachi, Pakistan, regarding the role of formative and summative assessments in improving student learning outcomes at the university level. This study will provide fresh insight into the usefulness of formative and summative evaluations in enhancing student learning outcomes.

Related Literature Review

Evaluation is one of the key parts of the effective teaching and learning process that plays the role of a strong improvement driver. It comprises the process by which information on students' knowledge, skills, and attitudes is collected in a systemic manner, analyzed, and interpreted. Assessment is important because it can inform classroom activities, encourage student involvement, and stimulate academic success (Brookhart 2017). Assessment also helps a teacher to draw connections between teaching methods and the learning of students, resulting in the creation of focused methods of teaching, which are specific and relevant to meeting the problems learners have. It is not simply a system of grading students; it is a complex notion, whose idea is to enhance the quality of education. There are different functions of assessments, namely, formative, diagnostic, and summative; they are all different in terms of the role they play in the learning process. Such assessments are important in assisting educators in organizing their lessons according to the personal education needs and backgrounds of students. Black and Wiliam (2018) emphasized that diagnostic tests are useful in determining what students do not know and outline a system of launching the teaching process and building the required skills. These evaluations are especially useful in multicultural classrooms, where formative experiences and educational levels are quite diverse. Some examples of diagnostic assessments are pre-tests, questionnaires, and informal interviews which assist educators in determining the areas that need to be considered during the learning process (Mohan, 2023).

Formative Assessments

Formative assessment is a continuous process which requires monitoring performance among students and whenever it is necessary to provide feedback. These activities form part of the normal teaching and learning activities, whereby it allows the teachers to measure how many the students grasp the main concepts, and therefore enables the teacher to modify their teaching strategies accordingly. Wiliam (2011) views formative assessment as not only timely; in that they are also developmental and that formative assessment provides evaluations of learning in a small scale and that formative assessment is both formative in the teaching and learning process. General questionnaires, peer evaluations, discussions with the entire class, mid-semester tests, and quizzes are among the common methods of formative assessment. The discussed approaches assist in regulating the progress of students and contribute to their self-regulation and motivation with the help of learning management systems (Ali et al., 2024; Ali et al., 2023).

Formative assessment forms the essence of the teaching and learning process because it helps to maintain continuous communication and interaction between teachers and students in a bid to meet instructional goals. According to Black and Wiliam (1998), formative assessments are activities undertaken by teachers and students to accord teaching and learning activities amid other assessment strategies, in which the

Journal of Management & Social Science

VOL-2, ISSUE-3, 2025

ultimate aim of these activities is to improve student attainment (Akram et al., 2024). These tests are deliberately incorporated into the learning process and provide teachers with important information about what the students do not understand, a fact that will enable them to improve their teaching style where necessary. There is significant evidence that asserts the positive effect of formative assessment in enhancing student learning and academic performance.

According to Wiliam (2011), formative assessment allows students to know their progress in learn and adjust their approach. Moreover, formative assessment promotes a partnership culture between teachers and students that concentrates less on performance, but more on learning. The instructional method fits in with constructivist theories as they promote the dynamic participation of learners in the learning process (Black & Wiliam, 2018; Naeem, Ali, & Ahmed, 2022). However, it is difficult to use formative assessments. Educators should be taught how to create both summative and formative assessments that do not interfere with learning in the classroom and promote student progress. In addition, it is vital to ensure that feedback is adequately received by students. This draws attention to the need to plan well when conducting assessments. Wiliam (2011) points out that the practice of formative assessment cannot be improved without the professional development of teachers (Bennett, 2011; Haider, Ahmad, & Ali, 2024).

Summative Assessments

Standard tests, exams, or portfolio assessments are examples of summative assessments that are meant to provide a general overview of how students have performed. Harlen (2014) stated that the use of summative assessment is essential for learning achievement verification, progressive student decisions, and education system accountability. Although the structure of summative assessment achieves a wide spectrum of learning, it has one of its limitations because summative assessments would not be able to feedback and give immediate feedback to a student and fail to help them enhance their knowledge in the course of a lesson (Shah, Ali, & Ahmad, 2024; Ahmed, Ali, & Shah, 2019). In addition to performing these main functions, assessments have other crucial functions, such as accountability in terms of education quality. According to Guskey (2010), assessments play a critical role in making educational institutions accountable to various stakeholders such as students, parents, educators/policymakers, and the general society. Raw data produced in terms of student performance using assessments are good sources of quantitative data that may be used to make decisions and develop policy elections. In addition, assessments enhance communication between educators and other stakeholders, thus contributing to the development of a common picture of educational objectives and performance.

Classroom assessment processes can be divided into traditional and nontraditional methods. Traditional forms of assessment include multiple-choice tasks, essays, official examinations, and standardized assessments. Brookhart (2017) concluded that such assessments are helpful in measuring basic knowledge and verifying prior knowledge acquisition, but they do not typically assess higher levels of learning, critical thinking, problem-solving skills, and creativity. In recent times, the demand for better assessment practices has grown, which requires the measurement of critical thinking,

Journal of Management & Social Science

VOL-2, ISSUE-3, 2025

creativity, and implementation of knowledge in real-life situations (Thomas, Khan, & Ahmad, 2022; Ali et al., 2023). Alternative assessments are meant to evaluate the skills of students in the real world. Such examinations can contain examples of portfolios, performance tasks, and project-based assessments, all of which center on the ability to think, handle issues, and use knowledge.

The use of digital technology has enhanced the assessment procedures by presenting modern methods. Self-check quizzes, intelligent testing, interactive games with immediate feedback and dynamic analysis maps are some of the various digital tools available which enable prompt feedback and data capturing. Bennett (2011) stated that digital assessments are very flexible and possess a characteristic of adjusting the complexity level according to student achievement and hence keeping in mind the individual differences in the learner. Not only does it help students, but teachers can also gain an immediate sense of what students are performing well, which can be reflected during a teaching and curriculum change (Dilshad, Shah, & Ahmad, 2023). In addition, to encourage students, digital tests have been applied, making the learning experience creative, and involving play and other activities to encourage students to approach the learning program and assessments more eagerly. Feedback is a crucial part of the assessment process because it connects evaluation and enhancement (Jabeen, Ali, & Ahmad, 2023). According to the literature, it has been reported that best learning is highly specific, timely, and must be connected with learning results (Hattie & Timperley, 2007). In particular, task-specific feedback is better than personal feedback, because task-specific feedback creates conditions of self-control and a growth mindset (Dweck, 2006).

Teacher's Role in Assessment

The role of teachers in assessment is of vital importance in determining the kind of assessment process and results of education among students. Teachers are not just assessors; they are facilitators in the sense of interpreting, adapting, and implementing assessment outcomes to improve the teaching-learning process. Formative and summative assessments are notable instruments that teachers should work with since they offer important information on the learning levels of students and can be used to guide pedagogical techniques (Ali, Shah, & Ahmad, 2023). Along with designing and administering tests, the teacher helps students in the process of assessment, offers constructive criticism, and uses assessment-based data to refine delivery and student learning. When it comes to formative assessment, which is carried on a daily basis, during the process of learning, the teacher has to observe the students' continuous progress in order to change their teaching philosophy and approaches accordingly. Black and Wiliam (1998), state that the main aim of formative assessment is to give students feedback that would enable them to enhance their learning during the instruction process. Through formative assessment, such as quizzes, peer reviews, and discussions in the classroom, teachers can establish the strengths and limitations of students, and through this, they can modify their teaching strategies to cover students individually. The timely feedback received as a result of the process will help the student to understand the content better because s/he can edit and perfect the information in the content. Specialists in using formative assessments, as proposed by Wiliam (2011), can help develop an atmosphere in

Journal of Management & Social Science

VOL-2, ISSUE-3, 2025

which students are more self-regulated, engaged, and actively striving to develop. Brookhart (2017) considered that summative assessments must not be a simple judgment of final decisions but an excellent piece of information which can be used to assess the efficiency of the teaching process. When teachers build practical summative assessments, they take into consideration the individual learning styles of students and ensure that their assessment is encompassing all students (Ali, Ahmad, & Sewani, 2022). Formative or summative practical assessments depend on the quality of feedback given by the teachers. Feedback can be regarded as one of the most valuable parts of assessment, as it serves not only to notify the students about their improvement but also to tell them how to get better. The capacity of teachers to provide clear, actionable feedback may affect student learning to a large extent and assist students in knowing what they do right and what should be improved. In this regard, teachers have to be educated on how to provide feedback as well as how to ask and use assessment information to understand teaching processes through effective leadership (Sadler, 1989; Khoso, Oad, & Ahmad, 2023).

Student Engagement

Another major issue that determines success of the formative and summative assessment, which is to review learning outcomes well and positively, is the participation of the student in the process of assessment. Engagement is represented by the amount of involvement, attention, and motivation shown by students throughout their learning process, which immensely influences how they perform assessments and react to feedback. The correlation between engagement and assessment has been an issue of interest to researchers, who, after a great idea of getting students actively involved in engagement, not only enhances academic performance but also creates a good knowledge of the tests being undertaken. Fredricks, Blumenfeld, and Paris (2004) explained student engagement as a three-dimensional concept (behavioural, emotional, and cognitive). All of these dimensions are important in the way students approach assessments, and they determine their motivation and level of mastering knowledge. Assessment activities that involve the participation of students, such as assignment undertaking, attending classes, and classroom discussions, are a common characteristic of behavioural engagement and help to assess their well-being (Akram, Ahmad, & Sewani, 2024).

This form of engagement plays a critical role in keeping students on toes in terms of learning activities, so that the assessments are part and parcel of the learning process. According to Skinner and Belmont (1993), behaviorally engaged students perform better in any assessment because they never miss out or take time to understand a topic. In addition, quizzes and continuous assignments or what is known as formative assessments ensure that students do not become passive since they are given periodic opportunities to touch the work. Such frequent summative and formative testing establishes a feedback loop when a student is able to keep track of his progress and is thus motivated and engaged in the learning process because of this feedback mechanism (Nicol & Macfarlane-Dick, 2006; Akram, Sewani, & Ahmad, 2024).

The other important dimension of engagement, emotional engagement, entails the influence of developments during the learning process on the students and how they

react to the environment and the activities occurring in the classroom, their interest, enjoyment, and sense of belonging. Emotional involvement is also an influential factor that influences the way students take up the assessment, since an emotionally involved student is more likely to perceive assessment as a situation of growth other than a stressor (Pekrun et al., 2002). Dweck (2006) explained that a growth mindset may have a positive impact on emotional engagement, since students start viewing difficulties and failure as a part of the learning process. Assessments that promote the growth mindset not only help the student become emotionally invested in the task, but also give him/her the motivation to take chances and delve deep into the material. Formative assessment demands timely feedback which is constructive unless it can make a child become emotionally engaged to keep on learning associate fact they can see that the efforts they put are noted and appreciated, hence the need to continue learning (Hattie & Timperley, 2007; Kolachi et al., 2024).

Use of Technology

Technology has greatly changed the way learning is evaluated in learning institutions because it integrates technology into the assessment. Digital tools incorporated into the assessment process not only contributed to improving their efficiency and accessibility, but also offered an opportunity to introduce new possibilities to make feedback both higher in quality and more strongly focused on creating a personal experience (Ali et al., 2020). Over the past several years, educational technology has been a key to formative and summative assessment, offering teachers and students immediate access to high-quality information and continuous learning. As Bennett (2011) points out, evaluation exercises that involve technology use can help achieve more positive evaluations because of a range of tools that can be used to monitor and assist students. The literature review examines the nature of the role of technology in assessment and its effects on student engagement and prosperity, along with the challenges it poses. Among the benefits of technology use in measurement, one may note that the assessment could be administered more efficiently and at the mass scale. Electronic modes such as the learning management system (LMS), adaptive testing software, and online quiz programs enable instructors to compose, distribute, and mark tests. Such tools not only save time but also ensure that the correctness of the assessments is standardized, which limits the probability of human mistakes in grading. Digital assessments are also automatically graded, and helping students gain immediate feedback is essential for sustaining the level of engagement and encouraging the achievement of consistent improvement (Bennett, 2011). These systems provide customized experiences, thereby allowing them to accommodate various learning capabilities. Moreover, online evaluations may be developed to promote active learning and engage students. Gamified assessments, simulations, and virtual environments allow interactive tools to engage students in ways that paper tests cannot. The tools provide students with the knowledge they have by offering them practice in real-life situations, thus giving the students a chance to improve their critical thinking and problem solving. As an illustration, simulations provide students with an opportunity to perform decision-making activities that mimic real life and enhance their knowledge of complex issues (Johnson et al., 2014). An interactive assessment of this kind has the capability to

Journal of Management & Social Science

VOL-2, ISSUE-3, 2025

promote higher-level thinking because students must be able to think critically and revise their strategies according to feedback (Shute, 2008).

Material and Methods

This study is a qualitative research paper examining how university teachers see the usefulness of formative and summative assessments in improving student learning outcomes. The study participants talked about their views on formative and summative assessments. The best method of obtaining information provided by participants in qualitative research is interviewing (Creswell et al., 2011; Walsham, 1995). Maxwell (2013) advised the development of an interview method based on the use of an open-ended question to focus on and streamline qualitative data. The open-ended questions generated observations regarding the perceptions of the participants. Open-ended statements were used to explore the respondents' perceptions. Probes and prompts were incorporated into brief accounts and answers to the statements. Individual accounts of eight people were collected through individual semi-structured interviews conducted by the researcher; the replies were registered and used as data. The researcher attends to what is said, so that one has more detailed answers to the questions asked during the interview. The transcripts of the interviews were provided to the interviewees by the researcher, who gave them the chance to read them again, verify the words, and correct the content. The participants fully analyzed the teachers' understanding of formative assessment and summative assessment. Fraenkel, Wallen, and Hyun (2012), Cohen, Manion, and Morrison (2007), and Creswell (2014) suggest that interviews should take 25-40 min. Interviews lasted between 25 and 40 minutes to explore teachers' perceptions of formative and summative assessments. This qualitative study used a purposive sampling technique. The study specifically targeted teachers who are currently employed in a university (Creswell & Creswell, 2017). The researcher also deliberately chose ten participants (two in the pilot study and eight in the main study) for the qualitative investigation. In addition, Fraenkel et al. (2012), Cohen et al. (2007), and Creswell (2014), the sample for a qualitative study must consist of 1-20 people. All participants were allowed to provide permission to proceed with the interviews by signing a form.

Findings of the Study

The findings of the study have been described based on the themes which were emerged in the interviews:

Type of Assessment

The nature of assessment is very important to determine student learning outcomes since it identifies the evaluation process of student progress and facilitates it. Formative tests/assessment is carried out in the process and provides continuous checks through which a student is able to know areas where strengths and weaknesses lie, and therefore correct the situation. This helps involve and improve constantly. However, summative ones are those that measure general learning as a course or unit clears in certain cases, ensuring that students gain the intended learning. By striking the appropriate balance between the two types, educators can provide two opportunities: development and final review, promoting the overall approach towards the development of students. According to Participant 4, the viewpoint is as follows:

Journal of Management & Social Science

VOL-2, ISSUE-3, 2025

” Formative assessments present an opportunity to assess the levels of understanding of students prior to the completion of a course. This involves activities, such as quizzes, mini-polls, and interactive assignments. Summative assessments are those at the end of a course or unit during which knowledge and application of students ‘skills are assessed. They are in most cases in the form of final exams or submission of projects”.

Participant 2 described her perspective as follows:

“In my teaching environment, formative assessments are ongoing, and they aim to assist students during the learning process, allowing them to be better positioned to learn. They may not be as formalized as drafts or practice tests, or they may be as casual as class polls. Summative assessment is an official check at the end of a semester or learning unit, for example, midterms, final examinations, or end-of-term presentations. They should be used to analyses the general scoring of learning delineations”.

Teacher’s Role in Assessment

The teacher’s assessment process has become critical for steering students through the learning process. A teacher should develop, execute, and decipher tests to ensure that they address their learning aims. Teachers respond to students according to formative assessments that enable them to improve and remain interested. In the case of summative assessments, teachers make the assessment process unbiased, ambiguous, and not secretive, giving constructive feedback to aid subsequent learning. Through this, teachers create a conducive and reflective assessment environment within which students are able to appreciate their positive attributes, know what needs to be enhanced, and eventually improve their learning experiences, which has a positive effect on them as per their academic progress.

Participant 3 provided her perspective in the following words.

“Formative assessments have helped me as an educator maintains constant talk with students regarding their studies. My job is to point out what students need to learn, provide feedback, and keep them interested and motivated. As for summative assessment, my work is to judge the progress of students fairly and provide them with grades that signify their level of knowledge. Summative tests equip me with details of what I can do better in my teaching design in the event of another course”.

Participant 6 replied,

“I think, in formative assessment the role of the teacher is to become a creative assistant of development and growth of the student. I can interact with students regarding feedback, give them other resources when necessary, and keep asking them to do better as the course progresses. In the issue of summative assessments, I came in as an objective and equitable assessor. I should make sure that these evaluations are well rounded, open, and consistent with the learning targets of the course”.

Students Engagement

The active participation of students in assessments is essential to learning. In situations where students are actively involved in the assessment process, they tend to put more effort and self-reflection as they would want to own up learning. Participation in formative assessment can be implemented through quizzes and discussions that motivate students to provide consistent feedback and enhance their results. Participatory activities enable them to understand the areas of their learning needs and

Journal of Management & Social Science

VOL-2, ISSUE-3, 2025

develop their skills. Overall, in summative assessments, students can learn to engage in careful preparation for the assessment and can see it as a chance to reveal their knowledge. Finally, students become engaged in higher levels in the assessments, which results in a more comprehensive learning process, increased retention rates, and academic progress.

Participant 5 mentioned the following:

“The use of formative assessments keeps learners involved as it creates the environment of active learning. When I regularly assign quizzes or give them the opportunity to engage in discussions, they have more chances of remaining engaged and are encouraged to learn the matter better. Summative assessments are likely to influence engagement in various ways. Students might work harder at the end of the course as they are concentrating on exams or final papers; they might also work less, as the assessment is not considered relevant.”

Participant 8 described her perspective as follows:

“Formative assessments help students remain active as they help disintegrate the learning process into small, meaningful challenges. This provided a feeling of success throughout the course. Summative assessments may become either engaging or disengaging, depending on their design. To ensure that summative assessments are more interesting, I attempted to tie the assessment with the interest of students or the real-life use of the assessment. When students can find a connection between the material and what they study or what they wish to work with in the future, they are more likely to become involved.”

Integration of Technology

Technology integration in assessment helps improve the efficiency and effectiveness of student learning assessments. Online quizzes, automated grading applications, and learning management systems, among other similar tools, provide students with instant feedback and enable them to monitor their progress in real-time. Technology also facilitates the individualized achievement of different learning styles and speeds through the use of flexible learning systems. It also promotes novel forms of assessment, such as multimedia projects or group work on the Internet, which is in a better position to gauge real-life skills. Through technology, teachers will be able to make their assessment process much simpler, more interactive, and give more worthwhile feedback as a result, benefitting their overall learning experiences.

Participant 1 was described as follows:

“The use of technology has largely simplified my assessment strategy. Online quizzes, automated grading methods, and learning management systems can help provide students with immediate feedback. This enhances efficiency and reduces time consumption when making formative assessments. Further, with the help of technology, I have been involved in more types of interactive and engaging ways of assessing, such as utilization of gamified platforms on which students take assessment quizzes to maintain completion and motivation”.

Respondent no 7 discussed in the following:

“The use of technology has streamlined the possibility to respond in time and conduct self-observation. Tools such as Google or any other form and learning management

Journal of Management & Social Science

VOL-2, ISSUE-3, 2025

system can provide students with feedback concerning their work almost immediately. This increases the level of transparency of the assessment process, and students will be more motivated because they will see instant progress. It also assists me in tracking the performance of individual students and provides more specific assistance”.

Effectiveness of Assessments in Improving Student Learning Outcomes

Formative and summative evaluations are important for enhancing students’ learning. Formative assessment feedback provides ongoing guidance to students that allow them to determine what they need to improve on, hence, continuous learning and participation. They also increase motivation and learning by enabling teachers to step back by adjusting teaching according to the progress of students. Summative assessment, even though it is an evaluation of final achievements, keeps students attentive to being able to achieve the intended learning objectives and, as such, acts as a measurement of academic achievement. Formative and summative assessments used together form a balance process when the student is led on his learning process but also the overall summary of what the student knows skills, and academic progression.

Respondent no 4 replied:

“I also notice that formative assessment tools, specifically quizzes and assignments, are more effective in adjusting student learning outcomes since they promote active learning and self-reflections. These assessments will enable me to personalize learning and fill learning gaps in real time. Summative assessments provide a chance to evaluate general results, but it is not guaranteed that they will contribute to the learning process within the course. They are like a final control on the learning of students’.

Participant 8 highlighted the importance of assessment in improving students’ learning.

“I suppose that formative assessments are capable of delivering better learning results amongst students at large due to their ability to give the involved individuals a chance to learn their lessons through their errors, and subsequently correct their behaviours with respect to their future performances in high-stake examinations. Summative assessments are more in the nature of a final test to the students on what they have learned, but they lack the benefits associated with growth and improvement. With the formative tests embedded in every module, students have a chance to develop their learning further, which will result in improved final results”.

Discussion

This research paper on formative and summative testing is an impressive source of information on the roles that the specified types of assessments play in improving student learning outcomes. The research is conducted based on interviews with university teachers in Karachi, Pakistan, and it emphasizes the role of such assessments and other factors, including the role of a teacher, student, and the involvement of technology that plays a role in the educational process and its success. This discussion summarizes the results of the study by evaluating their implications and explaining them in terms of existing literature.

Another important element is formative assessments that help achieve better learning outcomes, as they effectively supply feedback throughout the learning process. As shown in the study, formative assessments including quizzes, discussions, and peer

Journal of Management & Social Science

VOL-2, ISSUE-3, 2025

reviews are routinely used by teachers in an effort to measure student learning to make appropriate changes in the instructional process (Black & Wiliam, 1998). This conforms to the studies of Shute (2008) and Wiliam (2011), who assert that early constructive feedback is part and parcel of establishing deeper learning. The study participants admitted that formative assessment provides students with a chance to find out about their knowledge gaps, later correcting them even before the summative assessment. In the case of students, this feedback loop is specifically useful because it creates a sense of ownership among learners in the learning process (Nicol & Macfarlane-Dick, 2006; Aslam, Iqbal, & Ahmed, 2022). The final evaluation of a student's course can be given with the help of summative assessments, which usually mark the successfulness of the academic course with the help of an exam or a final project. In the study, teachers realized that although summative are important in grading and qualification of academic progress, they do not provide the same chance to improve progress in real-time potential to formative assessments. This result is in line with the study conducted by Brown and Knight (1994) which indicates that summative assessments are more of an instrument used to determine the mastery of the work, but might fail to encourage the acquisition of ongoing learning. Summative assessments can be used only once, but because of this feature, they are important, as they ensure accountability and allow defining whether students have achieved the learning goals of a course (Harlen, 2014; Ahmad, Noorani & Ali, 2024).

The role of an assessor in both formative and summative assessments in both aspects was found at the center of the efficacy of these evaluation techniques. The educational professionals who participated in the study emphasized the role of the teacher not only in assessment delivery but also in meaningful feedback which leads to student development. The evidence offered in the literature is unanimous, in that effective feedback plays an essential role in student development. Hattie and Timperley (2007) feel that feedback, especially those that are specific and action-oriented, can substantially increase learning. Teachers in formative assessments always take the position of role players in that they provide feedback, which tends to encourage students to be more interested in investing in content. In summative assessment, teachers are fair and clear in the assessment to meet assessment with course objectives, and the learning outcomes of a student are measured.

The second important factor that surfaced as a result of the study was the role of student engagement in the assessment process. Students who are engaged in the learning process are also eager to become involved in the formative assessment process and use feedback to enhance their performance. This is congruent with the results of Fredricks, Blumenfeld, and Paris (2004), which refer to student engagement as a multidimensional variable that incorporates behavioural, emotional, and cognitive dimensions. Formative assessment with a high frequency of feedback and its contribution to student learning provides a way in which deeper engagement may be achieved. Nevertheless, there are occasions where summative assessments may be detrimental to students' possible disengagement, especially where students think that such assessments are high-stakes and unrelated to their learning by focusing on counseling (Pekrun et al., 2017; Ahmad, Sewani, & Khoso, 2024). The teachers of the

Journal of Management & Social Science

VOL-2, ISSUE-3, 2025

study highlighted the importance of summative assessment in a way that increases the motivation to take the test, that is, by correlating the relationships with the interests of the students or practice in life. The integration of technology in tests is another important theme of this study. Online quizzes and learning management systems (LMS) allow teachers to offer digital exams and provide instant feedback, which makes the process of assessment delivery more efficient. According to the research, using technology in formative assessment enabled teachers to provide personal feedback and learners' progress on a real-time basis, as well as improved engagement. Bennett (2011) and Ali et al., (2023) support this finding and indicate that technology ensures constant formative assessment and makes the process more interactive and personal. Nonetheless, as teachers mentioned there are challenges that have to be mitigated to achieve fair assessment practices like the need to make the required technology available to all students and to make sure that all the data is not collected and tracked (Phulpoto, Oad & Imran, 2024; Ahmad, Sewani, & Ali, 2024).

When it comes to efficacy, research has demonstrated that formative assessment was considered to be more effective in enhancing the learning experience, because it allowed students to reconsider and edit prior to having their learning recorded in high-stakes testing. Teachers observed that summative assessments were more important in the final review, but they did not afford the same building blocks in achievement in the course of learning. This point of view coincides with the findings of Wiliam (2011) and Sadler (1989), who also concentrated on the fact that formative assessment provides more chances to improve constantly and learn deeply. Regular integration of formative assessments in the classroom curriculum will help educators establish an active learning environment through teacher effectiveness that will help in nurturing students alongside academic performance (Ahmad, Mankash, & Sewani, 2024).

Conclusion

This paper discusses the views of university educators regarding the effectiveness of both formative and summative assessments on the academic achievement of students. The results demonstrate that both types of tests are vital parts of the educational process, and formative assessments allow obtaining feedback which stimulates active participation of students in the educational process and their constant progress. When incorporated into the learning process, such assessments enable students to consider their knowledge, fill in any learning gaps, and hone their skills prior to any high-stake assessments. Although summative assessments are important in determining cumulative development, they can only act as assessments of the last resort of academic performance and do not have the same levels of constant review and improvement. The part played by the teacher in the two types of assessments is decisive. Teachers play a role in ensuring that assessments will take place; they are evaluation agents who also facilitate learning by going through the evaluation process and giving student feedback at the right time. Formative assessment exercises pave the way, especially in cultivating an encouraging growth approach where students are motivated to participate in the learning process. Summative assessment when integrated with well-articulated learning objectives can also help in significant assessment as well as provide information on how students are progressing.

Journal of Management & Social Science

VOL-2, ISSUE-3, 2025

The quality of student engagement has become one of the determinants of the successful implementation of both types of assessments. Students who are engaged are more likely to take possession of their learning, engage in formative assessments, and think carefully about summative assessments. The assessment practice has also been boosted by the integration of technology that has made the provision of feedback effective and individualized, as well as promoting interactive learning. Digital technologies have simplified assessment measures, attracted students to participate in the electronic world, and allowed real-time monitoring of students' progress, which certainly leads to better learning results. Overall, the research establishes the necessity of taking both formative and summative assessments as a balanced, strategic approach to advance student learning. The active participation of teachers in the process of assessment, their use of technology, and their engagement with students are relatively major factors that ensure that assessments lead to ongoing improvements in student learning outcomes. Thus, a rational, comprehensive evaluation strategy that integrates frequent formative testing and significant summative evaluation is required to maximize student achievement in higher education.

Recommendations

The following are the recommendations of this study based on the findings:

- There must be a balance between formative and summative assessments to improve students' performance. Formative and summative assessments can aid in constant learning and interaction with the material, and summative assessments can review overall knowledge. A combination of the two types will make student development complete, so it is possible to provide real-time feedback on student performance as well as a retrospective assessment of their performance.
- Student involvement is a determinant of assessment performance. Student involvement is maintained through a formative assessment which comprises regular feedback and appropriate interactive tasks. To develop deeper learning, educators must facilitate active participation, especially in formative assessments.
- Some of the benefits of including technology in both summative and formative assessments are instant feedback, customized assessments, and high engagement rates between assessment tools. Teachers are advised to use digital tools (learning management systems, online quizzes, and adaptive learning programs) to make assessments effective and available.
- Teachers must be trained on a continuous basis on best practices to design, administer, and analyses both formative and summative assessments. Assessment literacy programs have been shown to assist teachers in recognizing the role of various forms of assessment and enhance the functional capability of assessment data to inform teaching.
- Formative assessments allow students to have a sense of self-regulation by reflecting on their achievement and restructuring their means of learning. Teachers are supposed to motivate students to strive to assess themselves through formative testing in order to monitor their progress, come up with their own individual goals, and achieve improvements in real time. This will help develop the mindset of being a growth learner and endorsing student learning.

Journal of Management & Social Science

VOL-2, ISSUE-3, 2025

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VOL-2, ISSUE-3, 2025

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Journal of Management & Social Science
VOL-2, ISSUE-3, 2025

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