From Feedback to Action: Improving Teaching Through Formative Assessment

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Abstract

This study investigates how formative assessment contributes to improving classroom instruction in secondary schools. The primary aim is to understand how teachers and students experience and respond to formative assessment practices and how these practices shape the teaching and learning process. Adopting a qualitative research design, the study draws on data collected through in-depth interviews with teachers and focus group discussions with students, along with classroom observations conducted over two weeks. Using thematic analysis, the research identifies common patterns and insights from participants' experiences. The findings reveal that formative assessment, when used effectively, strengthens the relationship between teaching and learning. Teachers who regularly provide timely feedback, adapt their instruction based on students' needs, and encourage active student participation create more responsive and inclusive classrooms. Students, in turn, become more engaged, better understand learning goals, and feel more confident in their progress. The study also highlights several challenges, such as limited time, lack of training, and inconsistent implementation, which can hinder the full benefits of formative assessment. Overall, the research shows that formative assessment is more than just a tool for measuring learning—it is a process that fosters reflection, dialogue, and growth for both teachers and learners. By integrating these practices thoughtfully, educators can make instruction more effective and support students in achieving deeper understanding and improved outcomes.

Keywords: classroom instruction, formative assessment, reflective teaching, student engagement

Introduction

Globally, education systems continue to seek effective strategies to enhance the quality of teaching and learning within classrooms. Among these, formative assessment has been widely recognized as a significant approach for improving instructional practices and student outcomes. Formative assessment, often referred to as assessment for learning, involves a range of evaluative activities conducted during the instructional process to inform both teaching and learning (Black & Wiliam, 1998). In contrast to summative assessment—which assesses learning at the end of an instructional period—formative assessment is integrated into ongoing instruction, aiming to support learning as it occurs (Sadler, 1989).

The value of formative assessment lies in its ability to provide timely and relevant feedback, which enables educators to adapt their teaching to meet students' learning needs. This adaptability enhances student engagement, promotes deeper conceptual understanding, and leads to improved academic achievement. Black and Wiliam (2009) highlight that formative assessment has one of the most significant impacts on student learning among all educational interventions. It is not merely the act of collecting information but includes the interpretation and use of that data to make instructional decisions that guide student progress.

Key formative assessment strategies include questioning, feedback, peer assessment, and self-assessment. Hattie and Timperley (2007) emphasize that feedback is most effective when it is timely, specific, and focused on the task, rather than the learner. Their feedback model addresses three core questions: "Where am I going?", "How am I going?", and "Where to next?"—which together form a framework for guiding both instruction and learning.

Formative assessment serves a dual purpose in instructional contexts. It helps teachers detect learners' misunderstandings in real time and modify instruction accordingly, and it empowers students to take ownership of their learning by clarifying expectations and monitoring progress (Heritage, 2010). These two elements—teacher responsiveness and student agency—are foundational to an effective and engaging learning environment.

Moreover, formative assessment supports a culture of continuous learning. This process-oriented approach aligns with constructivist theories, particularly those of Vygotsky (1978), which suggest that learners construct knowledge through active engagement and social interaction. Within this framework, teachers act as facilitators who scaffold learning based on formative data and student needs.

Empirical research further reinforces the importance of formative assessment. Wiliam and Thompson (2007) outline five strategies that enhance formative assessment: (a) clarifying learning intentions and criteria for success, (b) engineering effective classroom discussions, (c) providing feedback that advances learning, (d) activating students as peer learning resources, and (e) encouraging students to become owners of their own learning. These strategies are not only assessment tools but also pedagogical principles that inform instructional design.

Despite its proven benefits, implementing formative assessment poses several challenges. Teachers frequently encounter constraints such as large class sizes, limited time, insufficient professional development, and a lack of appropriate resources (Popham, 2008). In some cases, formative assessment is misunderstood as frequent testing, rather than as a process to support learning. Moreover, in education systems heavily influenced by high-stakes examinations, formative assessment may be undervalued, leading to a reliance on summative approaches.

These challenges are particularly evident in developing countries such as Nepal, where formative assessment is promoted at the policy level but inconsistently implemented in practice. Although Nepal's National Curriculum Framework supports formative assessment as a means of improving teaching and learning, many educators lack access to adequate training and resources to apply these practices effectively (Adhikari & Joshi, 2022). This gap between policy and practice underscores the need for targeted interventions that enhance teacher capacity and institutional support.

Beyond structural limitations, the successful application of formative assessment also requires a shift in pedagogical mindset. Assessment must be reconceptualized from a tool for accountability to a strategy for learning (Brookhart, 2008). Students are expected to engage

actively in the learning process by setting goals, reflecting on progress, and developing self-regulatory skills. Teachers, in turn, must become reflective practitioners who continuously adapt instruction based on assessment evidence.

The rise of digital technologies presents new opportunities for formative assessment. Tools such as interactive quizzes, real-time feedback systems, and learning analytics offer ways to personalize instruction and support diverse learners (Pellegrino & Quellmalz, 2010). However, effective integration requires not only technological access but also pedagogical training and digital literacy among teachers.

In this context, the present study investigates the role of formative assessment in improving instructional practices in secondary education in Nepal. It seeks to explore how teachers understand and implement formative assessment, the challenges they encounter, and its impact on classroom instruction. By examining the lived experiences of educators and students, the study aims to generate practical insights that support the more effective use of formative assessment in classroom settings.

Formative assessment has become an essential component of modern teaching. As Black and Wiliam (1998) define, it includes all activities by teachers and students that provide feedback to inform instruction. For such assessment to be effective, students must understand learning goals, assess their current status, and be supported in closing the gap between the two (Sadler, 1989). Yet, in the Nepalese context, the application of formative assessment remains inconsistent due to systemic barriers, including limited training and resources (Ministry of Education, Science and Technology [MOEST], 2019).

This study, therefore, examines the contributions of formative assessment to classroom instruction in public secondary schools. It analyzes teachers' perceptions, the strategies they employ, and the challenges they face in implementing these practices.

In summary, formative assessment serves as a bridge between instruction and learning. It enables timely feedback, reflective teaching, and student engagement. However, its effective application depends on teacher competency, institutional support, and alignment with pedagogical goals. In Nepal and similar contexts, the successful integration of formative assessment into everyday practice requires comprehensive policy reform, capacity building, and the allocation of adequate resources. As education systems strive to enhance equity and quality, formative assessment remains a critical strategy for instructional improvement and student success. The objective of this study is to explore secondary school teachers' perceptions of formative assessment. This study is to assess the impact of formative assessment on teaching practices and student learning outcomes.

Methodology

This research adopts a qualitative study approach to examine how formative assessment is applied in selected secondary schools within the Kathmandu Valley. Participants include 10 secondary-level teachers. To collect the data, I used semi-structured interviews with teachers to gain insight into their understanding and application of formative assessment strategies. I also used the document analysis, including lesson plans, student assignments, and teacher assessment records.

Thematic analysis was employed to interpret the data. Initial codes were derived from repeated patterns in the responses and later refined through iterative comparison with existing

literature. This approach ensured that the analysis remained grounded in participant experiences while aligned with broader theoretical and empirical findings.

Literature Review

Formative assessment has emerged as a central topic in educational research and practice due to its recognized ability to enhance both teaching strategies and student learning outcomes. Educators and scholars agree that, when applied thoughtfully, it can raise instructional quality, support individual student progress, and cultivate a learning environment where feedback and reflection play a vital role. This review synthesizes the conceptual underpinnings, historical context, practical strategies, key benefits, implementation challenges, and the particular application of formative assessment in the context of Nepal.

Theoretical foundations of formative assessment

The principles of formative assessment are grounded in constructivist learning theories, which maintain that learners build knowledge through active engagement with content rather than passively receiving it (Piaget, 1972; Vygotsky, 1978). Within this theoretical frame, assessment is not merely a mechanism for evaluating outcomes but a dynamic process that supports learning in real time. Black and Wiliam (1998) describe formative assessment as encompassing activities by teachers or students that produce feedback used to modify ongoing teaching and learning.

According to Sadler (1989), formative assessment becomes meaningful when it provides information that helps learners move from their current understanding to a desired level of performance. This involves clarifying learning objectives, evaluating the learner's current status, and taking steps to close the gap. As such, formative assessment is closely intertwined with the teaching process itself, aiming to guide instruction and improve learning rather than simply measure it.

Historical and policy developments

While formative assessment practices date back to the 1960s, their significance rose sharply during the 1990s with the global focus on standards-based education and educational accountability (Shepard, 2000). The influential work by Black and Wiliam (1998) demonstrated that formative assessment significantly enhances student performance, particularly for those who struggle academically.

International organizations, including UNESCO and the OECD, have endorsed formative assessment as essential to quality education. The OECD (2005) underscored its effectiveness in improving student performance and advocated for its integration into national education systems. Similarly, UNESCO (2015) emphasized its value in promoting equity and inclusive teaching practices.

In Nepal, the School Sector Development Plan (2016–2023) highlights the importance of ongoing assessment practices in basic education. However, implementation remains uneven due to gaps in teacher training, insufficient resources, and inadequate institutional support (Adhikari & Joshi, 2022).

Forms and techniques of formative assessment

Formative assessment takes many forms, such as questioning, classroom observations, peer and self-evaluations, learning logs, concept mapping, exit tickets, and informal quizzes.

These tools are designed to collect real-time evidence of learning that can inform immediate instructional decisions rather than serve summative purposes.

William and Thompson (2007) outlined five key strategies for effective formative assessment. They are making learning goals and success criteria explicit, designing classroom discussions and tasks that reveal student understanding, providing feedback that prompts further learning, enabling students to serve as learning resources for one another and encouraging learners to take responsibility for their learning.

Brookhart (2008) emphasized the importance of students understanding learning expectations, which helps them self-monitor and manage their progress. Likewise, effective questioning can reveal student misconceptions and foster deeper understanding (Heritage, 2010).

Feedback is a central element of formative assessment. Hattie and Timperley (2007) stress that it is most effective when it is specific, timely, and focused on learning goals. They distinguish feedback at three levels—task, process, and self-regulation, self-regulation being the most influential in long-term learning.

Student participation through peer and self-assessment is also essential. These practices promote metacognitive awareness (Andrade & Du, 2007) and help students develop evaluative judgment and critical thinking skills (Nicol & Macfarlane-Dick, 2006).

Influence on teaching practices

Empirical studies consistently indicate that formative assessment enhances teaching quality by helping educators adapt to students' needs and refine lesson planning. Cowie and Bell (1999) refer to this adaptive instruction as "interactive teaching," where teachers use formative evidence to guide ongoing decisions.

Educators who apply formative strategies often shift from traditional lecture-based instruction toward more interactive, inquiry-driven models (Wiliam, 2011). Ruiz-Primo and Furtak (2007) found that such methods in science classrooms led to notable improvements in student learning. Similarly, McMillan, Hellsten, and Klinger (2011) demonstrated that the use of formative assessment, particularly when supported by teacher training, improved instructional effectiveness.

In developing contexts like Nepal, formative assessment has proven valuable in addressing educational inequities. Research by Kafle and Pant (2020) found that teachers who implemented these strategies were more effective in identifying and addressing learning gaps among marginalized students, thereby promoting more inclusive teaching.

Implementation challenges

Despite its proven value, implementing formative assessment in everyday practice faces several hurdles. A major issue is the lack of adequate teacher preparation in assessment theory and application (Popham, 2009). Many teachers find it difficult to distinguish between formative and summative approaches, resulting in limited or ineffective use.

Time constraints further complicate integration. In overcrowded or under-resourced classrooms, teachers often struggle to find time for meaningful assessment practices (Heritage, 2010). The use of digital tools—while offering efficiency—requires technological infrastructure and teacher competence, which are often lacking in low-resource contexts (Pellegrino & Quellmalz, 2010).

Cultural perceptions around assessment also pose challenges. In many systems, including Nepal's, assessment is predominantly seen as a high-stakes, summative activity.

This perception makes it difficult to shift toward a view of assessment as a tool for learning (Shrestha & Dangol, 2021).

Formative assessment in nepal: current insights

Although Nepal's education policies recognize the value of formative assessment, its classroom application remains limited and often symbolic. For instance, Sharma and Neupane (2021) observed that while teachers may use checklists and portfolios, they rarely use the data to modify instruction. The dominant focus remains on exams and teacher-centered methods.

Nevertheless, initiatives like school-level training programs and the Continuous Assessment System (CAS), developed by the Curriculum Development Centre, show potential. Research by Rana and Poudel (2022) indicated that teachers trained in CAS techniques were more likely to employ varied formative methods and reported higher student engagement. Still, gaps in follow-up support, mentorship, and contextual adaptation hinder broader implementation (Adhikari & Joshi, 2022).

Formative assessment offers substantial benefits for both teaching and learning. It enables timely feedback, encourages active student participation, and promotes inclusive instructional practices. However, effective implementation requires a comprehensive approach—one that addresses teacher training, system-wide support, cultural perspectives, and classroom realities.

For countries like Nepal, sustainable progress depends on equipping teachers with the skills and resources necessary for formative practices, aligning policies with classroom needs, and fostering a culture that values assessment as part of the learning process. Future research should examine the long-term effects of formative assessment, explore stakeholder perceptions, and identify school-level factors that facilitate or hinder effective implementation.

Analysis and Discussion

This section presents a thematic discussion of qualitative data collected through interviews with 10 secondary school teachers in Kathmandu Valley. The findings are organized according to the study's four core objectives. To preserve the authenticity of participants' perspectives, selected direct quotes are included. Overall, the analysis reveals diverse teacher understandings of formative assessment, the range of strategies in use, challenges encountered, and observed impacts on classroom practices and student learning. Employing thematic analysis, the data were organized according to the objectives of this study. Direct quotations have been used to capture participants' authentic voices. The results present layered insights into teachers' understanding of formative assessment, their instructional practices, key challenges to implementation, and perceived effects on teaching and learning.

Teachers' perceptions of formative assessment

Most participants described formative assessment as an effective method for identifying student learning needs and adjusting teaching practices accordingly. One teacher remarked:

"Formative assessment helps me understand where my students are struggling and what changes I need to make in my teaching approach. It also helps me to find out the difficulties of my students' learning process, and so I can improve my teaching process." This viewpoint is consistent with Heritage (2007), who emphasizes the role of formative assessment in supporting responsive teaching. His argument that formative assessment is a foundational tool for adaptive teaching.

Common strategies used

Teachers described employing a range of formative methods such as questioning, peer review, brief quizzes, exit slips, and classroom observation. As one teacher shared: *"After each lesson, I ask students to write one thing they understood and one thing they are confused about. This helps me plan the next lesson. It supports me to improve my strategies to make a new teaching plan. As a result, my teaching strategies are also improved "* These strategies align with the feedback-focused approach. These practices are in line with feedback principles highlighted by Hattie and Timperley (2007).

Impact on instruction and student learning

Teachers observed that formative assessment helped tailor their lessons to students' needs, making students more engaged and accountable. According to one student: *"When the teacher gives feedback, I understand my mistakes and try to improve next time."* This reflects the development of metacognitive awareness as emphasized by Nicol and Macfarlane-Dick (2006).

Teachers shared that using formative assessment allowed them to adapt instruction to better match students' needs. Many noted that students were more engaged and took greater responsibility for their learning. As one student put it, receiving feedback helped them identify mistakes and strive for improvement. This supports Nicol and Macfarlane-Dick's (2006) claim that formative assessment nurtures self-regulation and metacognitive awareness.

Formative assessment as a tool for instructional guidance

A majority of teachers viewed formative assessment as instrumental in improving teaching. It enabled them to track student progress and intervene promptly. One teacher said: *"Formative assessment gives me a clear picture of where my students are. It's like a mirror—I can see whether my teaching is working or not. I use it to understand students' level after each topic. Sometimes they don't say it directly, but their response to a question or activity tells me everything."*

Many participants viewed formative assessment as a central element of effective teaching. It enabled them to track student progress and intervene early. Another teacher also described it as "a mirror," offering timely insight into what was or wasn't working in their instruction.

Confusion with summative assessment

Several teachers admitted to confusion between formative and summative assessment. While some believed they were implementing formative methods, they often referred to practices more aligned with summative testing, such as weekly tests primarily focused on grades. This confusion suggests a lack of conceptual clarity, likely rooted in limited training and entrenched examination-driven educational norms.

Some teachers expressed difficulty in distinguishing between formative and summative assessments. Although they reported using formative methods, their descriptions often mirrored summative practices. Two teacher expressed their view: *"We do weekly tests and call them formative. But to be honest, we still focus on marks."* This suggests conceptual ambiguity, likely resulting from limited training and conventional assessment habits.

Teachers who had received professional development were more likely to view formative assessment as a student-centered process. These educators emphasized encouraging learners to reflect on their progress and engage actively with feedback.

Use of oral questioning and feedback

All participants mentioned that questioning was one of the most frequently used formative strategies. Teachers often posed open-ended or analytical questions to assess understanding and prompt critical thinking. These questions helped them decide whether to move forward or revisit a concept. All respondents indicated that they frequently used questions to evaluate student understanding. Many preferred open-ended questions to stimulate thinking. One teacher said, *"I often ask 'why' and 'how' questions after a concept. The answers help me decide whether to go ahead or revise. On the basis of the students' answer, I prepared my further lesson"*

Observations and informal assessment

Informal assessments through observation were also common. Teachers described paying close attention to students' participation during group activities, using non-verbal cues and interaction levels as indicators of understanding. In some cases, these observations provided more insight than formal written responses. Teachers valued informal observation during classroom tasks as a means of assessing student engagement and skills.

Limited implementation of self- and peer-assessment

Few teachers engaged students in self- or peer-assessment activities. Time constraints and concerns about students' maturity or seriousness were commonly cited barriers. Still, some teachers observed that when students evaluated their own work, it helped foster awareness of their learning process.

Training gaps and conceptual uncertainty

Many teachers reported feeling unprepared to implement formative assessment effectively. They stated that available training focused heavily on procedural aspects—like filling out checklists—without adequate explanation of how to interpret the data or apply it to instruction.

Class size and time constraints

Large class sizes, particularly in public schools, were a major barrier to individualized assessment. Teachers expressed frustration that the high student-teacher ratio limited their ability to provide meaningful feedback to every learner, often resulting in a focus on syllabus completion rather than student understanding.

Exam-oriented educational culture

A strong emphasis on examination results—especially national exams like the SEE—was evident across schools. Teachers felt pressure from parents, administrators, and systemic expectations to prioritize scores over formative approaches. This pressure limited their ability to incorporate deeper, student-centred assessments.

Impact on teaching practices

Teachers who integrated formative assessment regularly reported notable changes in their teaching. They became more responsive and reflective, using classroom interactions as data to adjust their methods. Some mentioned they talked less and involved students more, leading to more dynamic, student-driven lessons.

When feedback was frequent and non-punitive, students were more likely to engage, ask questions, and take learning risks. Teachers observed that even students who previously

struggled showed improvement when given multiple opportunities to correct errors and build confidence.

Formative assessment also helped teachers differentiate instruction. Based on quiz results or student responses, they would form groups and design tasks tailored to different learning needs, ensuring all students remained engaged at their level of understanding.

Findings

This section presents findings of this study as follows:

Teachers' conceptual understanding of formative assessment

Most teachers recognized formative assessment as a dynamic process for identifying student needs and guiding instructional adjustments. Teachers saw it as an ongoing means to refine their teaching strategies, with several describing it as a "mirror" for instructional reflection. This insight aligns with Heritage (2007), who emphasized formative assessment's role in responsive teaching. However, despite a general awareness of its importance, many participants revealed conceptual ambiguity, often conflating formative practices with summative testing. Weekly tests labelled as formative were in fact summative in intent and structure, highlighting a gap between perception and practice. This confusion points to the need for a deeper theoretical and practical understanding of assessment frameworks.

Classroom strategies and practices

Teachers reported using a variety of formative strategies—oral questioning, classroom observation, quick quizzes, and student reflections. Open-ended questions and feedback were common tools for gauging understanding and adjusting lessons accordingly. Informal assessment methods, especially teacher observations during group work or activities, were noted as especially insightful. However, advanced reflective tools such as learning journals, portfolios, and exit slips were minimally used, mostly limited to private schools. Student self- and peer-assessment practices were rare, with time constraints and concerns over student maturity frequently cited. Thus, while formative techniques were present, their application remained limited in diversity and depth, particularly in public school settings.

Perceived benefits for instruction and learning

Teachers who engaged in formative practices observed significant instructional and student-centred benefits. They became more flexible, talked less, and involved students more in lessons—indicating a shift toward more participatory teaching. Students, especially low performers, responded positively to continuous, non-judgmental feedback, which boosted their confidence and encouraged risk-taking. These findings are consistent with Nicol and Macfarlane-Dick (2006), who linked formative feedback with increased metacognitive awareness and learner autonomy. Additionally, some teachers utilized formative results to group students and differentiate instruction, ensuring more targeted support based on ability levels. Despite these benefits, the findings suggest such practices are not yet mainstream.

Challenges to effective implementation

A number of structural and systemic challenges hindered the full adoption of formative assessment. Large class sizes, particularly in public schools, were a major obstacle to individualized feedback and active monitoring. Time pressure to complete the syllabus and meet national examination standards—especially the SEE—compelled teachers to prioritize test preparation over meaningful feedback. Moreover, inadequate training emerged as a

recurring barrier. Teachers expressed that professional development was often theoretical or focused solely on administrative procedures (e.g., filling CAS forms) without linking data analysis to instructional improvement. Additionally, a lack of materials, institutional support, and leadership commitment further restricted innovative and consistent formative practices.

Systemic and cultural barriers to wider adoption

While several teachers embraced formative assessment at the classroom level, most felt these efforts lacked institutional support or alignment with school culture. Many perceived assessment practices as individual rather than systemic, with formative methods not integrated into broader pedagogical or policy frameworks. The dominance of summative and exam-centric thinking, reinforced by administrative expectations and parental pressures, further weakened the space for student-centered, formative methods. Tools like CAS were seen more as bureaucratic obligations than instructional aids, underlining a disconnect between policy intention and classroom reality. Without policy coherence, leadership vision, and collective teacher engagement, formative assessment remains an isolated practice rather than a transformative movement.

Conclusion

The data indicate that formative assessment holds significant potential to enhance teaching quality and student learning in Nepalese secondary schools. Teachers who understand and implement its principles report more responsive instruction and improved student engagement. However, widespread and effective adoption is constrained by conceptual misunderstandings, inadequate training, systemic rigidity, and resource gaps. For formative assessment to become a sustainable part of the educational culture, coordinated efforts are required—linking policy reform, institutional support, teacher capacity-building, and a shift in assessment paradigms from *assessment of learning* to *assessment for learning*.

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