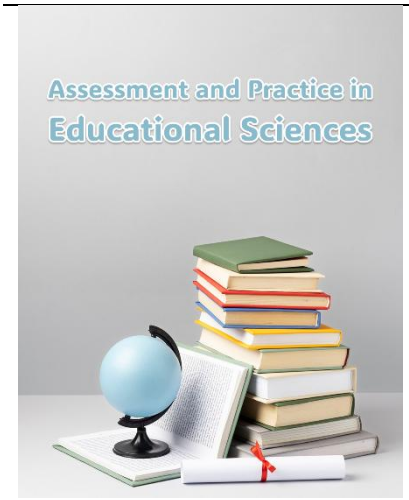
Assessment and Practice in Educational Sciences



Digital Formative Assessment Strategies in Blended Learning Contexts: A Qualitative Case Study

ABSTRACT

This study aimed to explore the strategies employed by educators to implement digital formative assessment in blended learning contexts, focusing on pedagogical intentions, technological affordances, and professional practices. A qualitative case study design was utilized, involving semi-structured interviews with 26 educators from secondary and post-secondary institutions in Tehran who have experience with blended learning. Participants were selected through purposive sampling to ensure diversity in subject areas and teaching backgrounds. Data collection continued until theoretical saturation was achieved. All interviews were transcribed verbatim and analyzed using thematic analysis, supported by Nvivo software to code, organize, and identify patterns in the data. Three main themes emerged from the analysis: (1) Pedagogical Intentions and Design, emphasizing the alignment of assessments with learning objectives, differentiation, timely feedback, integration within instructional cycles, and scaffolding for metacognition; (2) Digital Tools and Technological Affordances, highlighting the importance of platform functionality, interactive features, data analytics, accessibility, and tool selection criteria; and (3) Teacher Beliefs and Professional Practices, including attitudes towards digital assessment, assessment literacy, peer collaboration, implementation challenges, and ethical considerations. Teachers recognized digital assessment as enhancing personalization, engagement, and feedback timeliness but also identified challenges such as technological limitations and equity concerns. Digital formative assessment strategies in blended learning environments present significant opportunities for supporting student learning, fostering metacognitive skills, and providing timely, actionable feedback. However, effective implementation requires careful alignment with pedagogical objectives, attention to accessibility and ethical concerns, and robust professional development for educators. Addressing persistent challenges in technology and equity will be critical for maximizing the potential of digital formative assessment.

Keywords: Digital formative assessment, blended learning, feedback, educational technology, teacher beliefs, qualitative research, metacognition, assessment literacy

1. Sara. Morovvati*: Department of Educational Planning and Management, University of Kerman, Kerman, Iran. (Email: s.morovvati64@gmail.com)

Article type:
Original Research

Article history:
Received 14 February 2024
Revised 18 March 2024
Accepted 30 March 2024
Published online 01 April 2024

How to cite this article:
Morovvati, S. (2024). Digital Formative Assessment Strategies in Blended Learning Contexts: A Qualitative Case Study. *Assessment and Practice in Educational Sciences*, *2*(2), 1-9. https://doi.org/10.61838/japes.2.2.4

Introduction

The proliferation of digital technologies in educational settings has transformed both instructional delivery and assessment practices, particularly in the context of blended learning. Blended learning, which combines face-to-face and online instructional components, has gained widespread adoption across diverse educational levels and disciplines, especially following the disruptions of the COVID-19 pandemic (Boelens et al., 2017; Graham, 2019). In these environments, formative assessment—a process that supports learning by providing feedback and insights into student progress—has undergone significant evolution, increasingly leveraging digital tools and platforms to enhance both its efficiency and pedagogical value (Black & Wiliam, 2009; Irons, 2021). While digital formative assessment holds substantial promise for enriching blended

learning, its implementation raises complex questions regarding pedagogical design, teacher agency, student engagement, and equity (Bryant et al., 2020; Redecker & Johannessen, 2013).

Formative assessment is widely recognized as a cornerstone of effective teaching and learning, enabling educators to monitor student understanding, identify misconceptions, and provide timely, actionable feedback (Black & Wiliam, 1998; Sadler, 1989). Traditionally, formative assessment relied on in-class questioning, quizzes, peer discussions, and written reflections. However, the digitalization of assessment has expanded the repertoire of formative strategies, allowing for more dynamic, individualized, and data-rich feedback mechanisms (Gikandi et al., 2011; Shute, 2008). Digital formative assessments can range from automated quizzes and polls to e-portfolios, interactive simulations, and collaborative wikis, each offering unique affordances for supporting learning processes in blended environments (Bennett, 2011; Nicol, 2007). These affordances are particularly salient in blended learning, where the flexibility and diversity of digital tools can bridge the gap between online and in-person engagement, offering new possibilities for ongoing assessment and feedback (Owston et al., 2019).

The design and integration of digital formative assessment in blended learning is not merely a technical issue; it is fundamentally pedagogical, demanding thoughtful alignment with learning objectives, differentiation, and responsiveness to student needs (Bennett, 2011; Wiliam, 2011). Research highlights that the effectiveness of digital formative assessment is contingent on its alignment with curricular goals and its capacity to support metacognitive development, self-regulation, and student agency (Panadero et al., 2018; Nicol & Macfarlane-Dick, 2006). Moreover, digital tools enable educators to personalize assessment, provide real-time feedback, and scaffold learning in ways that are difficult to achieve in traditional classrooms (Boud & Molloy, 2013; Dawson et al., 2021). For example, analytics dashboards can reveal patterns in student learning, allowing teachers to target support and adapt instruction dynamically (Ifenthaler & Yau, 2020; Lai & Hwang, 2016).

Despite these advantages, the integration of digital formative assessment into blended learning environments is fraught with challenges. Teachers must navigate issues related to technological infrastructure, tool selection, student accessibility, and digital literacy (Bryant et al., 2020; Gikandi et al., 2011). The diversity of available platforms and functionalities can be overwhelming, and not all digital tools are equally suitable for formative purposes (Nicol, 2009). Educators must consider factors such as ease of use, compatibility with learning management systems, cost, data privacy, and the needs of diverse learners (Ifenthaler & Yau, 2020). Furthermore, there are persistent concerns about equity and inclusion, as not all students may have equal access to devices, high-speed internet, or assistive technologies (Redecker & Johannessen, 2013; Dawson et al., 2021). Addressing these barriers is crucial for ensuring that digital formative assessment supports, rather than hinders, learning for all students.

Another key consideration in digital formative assessment is the central role of feedback—its timeliness, specificity, and actionability. Research consistently underscores the importance of prompt, meaningful feedback in fostering student motivation, engagement, and self-directed learning (Shute, 2008; Winstone & Carless, 2020). Digital platforms, when thoughtfully implemented, can facilitate instant or near-instant feedback, enabling students to quickly identify and address gaps in understanding (Lai & Hwang, 2016; Bennett, 2011). Furthermore, automated feedback can be complemented by peer and self-assessment activities, which promote reflection and deeper learning (Panadero et al., 2018; Nicol & Macfarlane-Dick, 2006). However, the effectiveness of digital feedback is influenced by how it is framed and integrated into broader pedagogical practices (Boud & Molloy, 2013). Feedback that is overly generic, delayed, or disconnected from learning objectives may fail to produce desired outcomes (Winstone & Carless, 2020).

Teacher beliefs, knowledge, and professional practices play a critical role in shaping the use of digital formative assessment strategies. Assessment literacy—the ability to design, interpret, and act on assessment data—is essential for maximizing the benefits of digital tools in blended learning (Willis et al., 2013; Irons, 2021). Professional development, collaboration with peers, and institutional support are often cited as enablers for successful implementation (Boelens et al., 2017; Bryant et al.,

2020). Conversely, lack of time, uncertainty about policy, and insufficient technical support may hinder adoption and effective use (Gikandi et al., 2011). Moreover, ethical considerations such as student privacy, consent for data usage, and transparency of evaluation criteria must be addressed to build trust and ensure fairness (Redecker & Johannessen, 2013; Dawson et al., 2021).

Recent scholarship calls for a nuanced, context-sensitive understanding of digital formative assessment in blended learning, emphasizing the interplay between technology, pedagogy, and social dynamics (Owston et al., 2019; Panadero et al., 2018). Qualitative case studies are particularly valuable in illuminating the lived experiences of educators and students, uncovering both the affordances and the constraints of digital tools in specific institutional settings (Bryant et al., 2020; Gikandi et al., 2011). Such research can inform both policy and practice by identifying effective strategies, highlighting persistent challenges, and suggesting pathways for professional learning and system improvement.

Despite the growing body of research on digital assessment and blended learning, there remain important gaps in our understanding of how formative assessment strategies are actually enacted in diverse educational contexts (Irons, 2021; Boelens et al., 2017). Most studies have focused on quantitative measures of student outcomes or on the technical features of assessment tools, with less attention paid to the experiences, beliefs, and decision-making processes of teachers (Boud & Molloy, 2013; Bennett, 2011). Additionally, relatively few studies have explored these dynamics in non-Western contexts or in resource-constrained settings, where issues of equity, infrastructure, and local culture may significantly shape the adoption and effectiveness of digital formative assessment (Gikandi et al., 2011; Redecker & Johannessen, 2013).

Given these considerations, the present study seeks to explore the strategies employed by educators in Tehran to design and implement digital formative assessments in blended learning environments. By employing a qualitative case study approach, this research aims to capture the complexity of pedagogical intentions, technological affordances, and professional practices as experienced by teachers. The study is guided by the following research questions: (1) What digital formative assessment strategies are used by teachers in blended learning contexts? (2) How do educators perceive the affordances and challenges of these strategies? (3) What implications do these practices have for student engagement, equity, and learning outcomes?

By addressing these questions, this study seeks to contribute to the growing literature on formative assessment and digital learning by providing rich, context-specific insights into the realities of blended learning in a major metropolitan area. The findings are intended to inform the ongoing development of assessment policies, teacher professional development, and the design of digital tools that are responsive to the needs of diverse learners. Ultimately, a deeper understanding of digital formative assessment strategies can help educators harness the full potential of blended learning to promote deeper, more equitable, and more meaningful student learning.

Methods and Materials

Study Design and Participants

This study employed a qualitative case study design to explore digital formative assessment strategies within blended learning environments. The case study approach was chosen to facilitate an in-depth, contextualized understanding of participants' experiences, perceptions, and practices concerning digital formative assessment in real-world educational settings. The focus was on capturing nuanced insights into the strategies used and their perceived impact on teaching and learning dynamics.

A purposive sampling method was used to select 26 participants from various educational institutions in Tehran, all of whom were actively engaged in blended learning environments. The participant group included secondary and post-secondary

educators with diverse disciplinary backgrounds and varying levels of experience with digital assessment tools. The inclusion criterion was a minimum of two years of experience in implementing blended learning practices using digital formative assessment techniques. The diversity in participants' educational levels and technological expertise enriched the data and ensured representation of a broad spectrum of perspectives.

Data Collection

Data were collected using semi-structured interviews, which provided the flexibility to probe deeper into participants' individual experiences while maintaining consistency across core research questions. The interview protocol focused on eliciting detailed information about the types of digital formative assessments employed, the rationale behind their use, perceived challenges and benefits, and their integration within blended learning instructional design. Each interview lasted approximately 45 to 60 minutes and was conducted either face-to-face or via secure video conferencing platforms, depending on the participant's preference and availability.

Interviews were audio-recorded with informed consent and transcribed verbatim for subsequent analysis. Data collection continued until theoretical saturation was achieved, meaning no new themes or insights were emerging from the interviews, which occurred by the 26th participant.

Data analysis

Thematic analysis was employed to identify, analyze, and report patterns within the qualitative data. The data analysis followed Braun and Clarke’s six-phase approach, which included familiarization with the data, initial coding, searching for themes, reviewing themes, defining and naming themes, and producing the report. Open coding was initially applied to highlight significant phrases and expressions, followed by axial coding to categorize related codes into themes and subthemes.

Nvivo qualitative data analysis software was utilized to organize the data systematically and enhance the rigor of the coding process. This software facilitated efficient retrieval, comparison, and visualization of coded data segments, supporting the identification of recurring patterns and deeper thematic connections. To ensure trustworthiness and credibility, member checking was conducted with selected participants to confirm the accuracy of the interpretations, and peer debriefing was used to mitigate potential researcher bias.

Findings and Results

Theme 1: Pedagogical Intentions and Design

Alignment with Learning Objectives:

Participants consistently emphasized that digital formative assessment strategies were most effective when closely aligned with curricular goals and learning outcomes. Educators designed assessment tasks that mapped directly to curriculum standards, incorporated outcome-based assessment principles, and utilized frameworks such as Bloom’s taxonomy to ensure depth and coherence. One participant noted, “When digital quizzes match our learning objectives, students understand the purpose behind each task and see the bigger picture.” Tasks were frequently crafted to clarify goals for students and maintain coherence between activities and feedback.

Differentiation and Personalization:

A recurring theme was the importance of personalizing assessment experiences. Teachers implemented adaptive feedback, allowed students to choose from different tasks, and enabled self-paced progression. By leveraging student learning profiles and real-time tracking through digital platforms, educators reported tailoring assessment activities and feedback. One

participant reflected, “I can offer custom rubrics and adjust the level of challenge for each student, which wouldn’t be feasible in a traditional classroom.” This approach facilitated differentiated learning paths and supported diverse student needs.

Feedback Purpose and Timeliness:

Timely and purposeful feedback emerged as central to formative assessment in blended contexts. Teachers valued the ability to provide immediate responses, create ongoing feedback loops, and offer in-task corrections. Digital tools were often used to reduce grading delays and provide timely summaries after each activity. A participant shared, “Students appreciate instant feedback after a quiz; it helps them fix mistakes right away rather than waiting for days.” This prompt feedback encouraged continuous learning and adjustment.

Integration with Instructional Cycle:

Participants described how digital formative assessments were embedded within the instructional cycle, acting as checkpoints before summative tasks or as closure activities to reinforce learning. Reflection prompts were commonly used to help students consolidate knowledge. One teacher commented, “I like to use short polls at the end of each session to see what’s clear and what still needs work—then I adjust my next lesson.” This ongoing integration facilitated just-in-time teaching adjustments.

Promoting Metacognition:

Many educators purposefully designed assessments to enhance student metacognition. Activities such as self-questioning, maintaining learning journals, setting goals, rating confidence, and evaluating strategies were routinely incorporated. As one participant explained, “When students reflect on how they got an answer and rate their confidence, they become more aware of their own learning process.” These practices supported deeper engagement and independent learning.

Scaffolding Learning Progression:

Teachers used digital assessments to scaffold learning, gradually increasing task difficulty and offering hints or clues as needed. Progressive rubrics and just-in-time support allowed students to build competence step by step. One participant stated, “We start with easier problems and add complexity as students progress—hints are there if someone needs a nudge in the right direction.” This scaffolded approach reduced anxiety and supported skill development.

Theme 2: Digital Tools and Technological Affordances

Platform Functionality:

The choice of platform was crucial for effective formative assessment. Participants valued quiz customization, interactive dashboards, multimedia support, auto-grading, real-time polling, and analytics dashboards. A teacher noted, “I need a platform that lets me create different kinds of quizzes and see student progress instantly—analytics make a big difference.” These functionalities enabled teachers to monitor and support student learning dynamically.

Tool Selection Criteria:

Criteria for selecting digital assessment tools included ease of use, accessibility, integration with learning management systems (LMS), security, cost-effectiveness, and data exportability. One participant explained, “If a tool isn’t easy to use or doesn’t work well with our LMS, I just won’t use it—students get frustrated easily.” Security and data privacy also influenced tool adoption.

Interactivity and Engagement:

Participants highlighted the value of interactive features such as game-based quizzes, drag-and-drop tasks, scenario-based activities, and peer assessment widgets. These tools increased student engagement and participation. As one educator put it, “When students can play a game or work on an interactive task, they’re much more motivated to participate.” Peer assessment features were also praised for promoting collaborative learning.

Data Utilization:

The use of digital tools enabled teachers to leverage learning analytics, progress monitoring, identification of misconceptions, heatmaps, and tracking item difficulty. These data-driven insights informed instructional adjustments and targeted support. One participant remarked, “I use analytics to see which questions most students missed—it helps me know what to review in the next class.”

Tool Limitations:

Despite the benefits, several limitations were identified, including technical glitches, internet dependency, compatibility issues, and gaps in student technological literacy. Teachers noted that “sometimes the system crashes or students lose connection,” and that not all students were equally comfortable with digital tools.

Student Accessibility:

Ensuring accessibility was a key concern. Features such as mobile-friendliness, offline access options, screen reader compatibility, and customizable fonts and colors were highlighted as important. One educator shared, “Some of my students use their phones, so I have to make sure everything works on mobile and is readable for everyone.”

Theme 3: Teacher Beliefs and Professional Practices

Teacher Attitudes toward Digital Assessment:

Participants expressed varied attitudes, ranging from trust in technology and enthusiasm for innovative practices, to skepticism about automation and concerns regarding the loss of student agency. One teacher shared, “I believe technology can enhance assessment, but I still want students to have a say in how they’re evaluated.”

Assessment Literacy:

A strong emphasis was placed on developing assessment literacy, including understanding the formative purpose, training in rubric use, feedback writing, and integration of technological and pedagogical knowledge. As one participant commented, “Learning how to design good rubrics and give meaningful feedback is just as important as learning the tech itself.”

Collaboration and Peer Learning:

Collaboration among teachers was common, with sharing of assessment templates, peer review of student work, and cross-departmental tool trials. “We have a shared folder of quizzes and rubrics—everyone adds their best resources, and we all benefit,” noted one participant. Peer learning helped teachers adapt and refine their practices.

Challenges in Implementation:

Common challenges included time constraints, policy ambiguity, lack of institutional support, and balancing formative versus summative assessment needs. One teacher observed, “It’s hard to find time for both formative and summative assessments, especially with limited support from the administration.”

Ethical Considerations:

Ethical issues such as student privacy, fairness in feedback, consent for data usage, and transparency of evaluation criteria were also raised. “I make sure students know how their data will be used and keep everything transparent—it’s about building trust,” shared one educator.

Discussion and Conclusion

The findings of this qualitative case study illuminate the multifaceted nature of digital formative assessment strategies within blended learning environments, as experienced by 26 educators in Tehran. The data reveal a dynamic interplay between pedagogical intentions, technological affordances, and teachers’ professional practices. These emergent themes—*Pedagogical*

Intentions and Design, *Digital Tools and Technological Affordances*, and *Teacher Beliefs and Professional Practices*—not only reflect current innovations but also echo persistent challenges identified in the literature.

One of the most significant results of this study is the centrality of *alignment with learning objectives* in the design and implementation of digital formative assessments. Participants described meticulous efforts to ensure that digital assessment tasks map closely to curricular goals, reinforce targeted learning outcomes, and adhere to established frameworks such as Bloom's taxonomy. This finding is in strong agreement with previous research, which emphasizes that formative assessment achieves its greatest impact when it is tightly coupled with instructional objectives and provides clear criteria for success (Bennett, 2011; Black & Wiliam, 2009). As noted by Black and Wiliam (1998), purposeful alignment not only clarifies expectations for students but also enhances the validity of assessment evidence.

Another salient theme emerging from the data is the ongoing drive toward *differentiation and personalization* through digital means. Teachers in the study leveraged adaptive feedback, task choice, and student-paced progression to individualize assessment experiences. The real-time tracking features of digital platforms were particularly valued for allowing teachers to respond flexibly to learners' needs and provide custom rubrics. This approach resonates with the work of Boud and Molloy (2013), who argue that technology can facilitate individualized feedback and support diverse learning trajectories, thereby fostering greater engagement and self-efficacy. Similarly, Ifenthaler and Yau (2020) highlight that learning analytics can empower educators to identify students' strengths and gaps and to tailor support accordingly.

The theme of *feedback purpose and timeliness* was repeatedly highlighted in the interviews, with educators noting that digital platforms enable more immediate and actionable feedback compared to traditional approaches. Teachers cited the motivational benefits of instant feedback, which allows students to correct misconceptions as they arise and encourages iterative improvement. This aligns with Shute's (2008) assertion that prompt formative feedback is crucial for closing learning gaps and supporting self-regulation. Winstone and Carless (2020) similarly underscore that timeliness and specificity are key characteristics of effective feedback, especially in online or blended settings.

The findings also illustrate the *integration of assessment within the instructional cycle*. Teachers described embedding formative assessments as checkpoints before summative tasks and as closure activities that inform subsequent instruction. These practices are consistent with Wiliam's (2011) advocacy for "embedded formative assessment," where assessment is not a stand-alone event but a continual process that informs teaching and learning in real time. The use of digital reflection prompts, quick polls, and in-task correction all served to create an agile learning environment responsive to student progress.

Metacognitive development was another important goal articulated by study participants. Teachers implemented assessment strategies such as self-questioning, learning journals, and confidence ratings to promote metacognitive awareness. The literature supports this emphasis; Panadero, Andrade, and Brookhart (2018) and Nicol and Macfarlane-Dick (2006) both emphasize the importance of formative assessment in fostering self-regulation and reflective thinking. The findings suggest that digital tools can be purposefully harnessed to support metacognitive skill-building, provided that tasks are intentionally designed to engage students in self-assessment and goal-setting.

The study also highlights the use of *scaffolding* in digital formative assessment. Teachers reported using stepwise increases in difficulty, hints, and progressive rubrics to support learning progression. Such scaffolded support is recommended by Irons (2021), who notes that formative assessment is most effective when it helps students move from their current level of understanding toward more complex skills with appropriate guidance. By leveraging digital tools, educators in this study could more efficiently adjust scaffolds and monitor progress.

A key dimension of the findings pertains to *digital tools and technological affordances*. Participants valued platforms that offered quiz customization, multimedia support, analytics dashboards, auto-grading, and interactive features such as real-time

polling. These affordances enabled more robust and responsive formative assessment, mirroring findings from Gikandi et al. (2011) and Lai and Hwang (2016), who document how digital platforms can enhance both engagement and data-driven instruction. Teachers' tool selection was guided by criteria such as ease of use, accessibility, integration with learning management systems (LMS), and data privacy—issues also highlighted in prior work (Bryant et al., 2020; Redecker & Johannessen, 2013).

At the same time, teachers confronted notable *limitations and challenges*, including technical glitches, internet dependency, compatibility issues, and student technological literacy gaps. These findings align with previous studies that caution against assuming the universality or seamlessness of digital assessment (Owston et al., 2019; Redecker & Johannessen, 2013). Accessibility was a significant concern, as teachers sought mobile-friendly platforms and features accommodating students with varied needs—underscoring persistent equity issues in blended learning (Dawson et al., 2021; Bryant et al., 2020).

Teacher beliefs and professional practices emerged as crucial factors influencing the successful implementation of digital formative assessment. The study found that attitudes ranged from enthusiasm for innovation and trust in technology, to skepticism regarding automation and concern for maintaining student agency. This spectrum of attitudes is echoed in the literature, which points to assessment literacy, professional development, and institutional support as key enablers for effective practice (Willis et al., 2013; Boelens et al., 2017). Peer collaboration, the sharing of assessment templates, and cross-departmental experimentation were highlighted as positive practices that supported ongoing learning and adaptation.

Importantly, ethical considerations—such as student privacy, fairness, consent for data use, and transparency of evaluation criteria—were foregrounded by participants. Teachers described efforts to inform students about data usage and to ensure the fairness of digital feedback, echoing recommendations from Redecker and Johannessen (2013) and Dawson et al. (2021). Such ethical awareness is essential in a context where digital assessment can amplify both opportunities and risks for learners.

Taken together, the findings of this study reinforce and extend the current knowledge base regarding digital formative assessment in blended learning. They affirm the potential of digital strategies to enhance feedback, personalization, and metacognitive development—provided that implementation is grounded in sound pedagogical principles and supported by adequate infrastructure and professional learning. The study also surfaces ongoing challenges related to technology access, tool usability, and institutional policy, signaling the need for continued research and innovation in this domain.

Acknowledgments

We would like to express our appreciation and gratitude to all those who helped us carrying out this study.

Authors' Contributions

All authors equally contributed to this study.

Declaration of Interest

The authors of this article declared no conflict of interest.

Ethical Considerations

All ethical principles were adheried in conducting and writing this article.

Transparency of Data

In accordance with the principles of transparency and open research, we declare that all data and materials used in this study are available upon request.

Funding

This research was carried out independently with personal funding and without the financial support of any governmental or private institution or organization.

References

Bennett, R. E. (2011). Formative assessment: A critical review. *Assessment in Education: Principles, Policy & Practice*, 18(1), 5–25. https://doi.org/10.1080/0969594X.2010.513678

Black, P., & Wiliam, D. (1998). Assessment and classroom learning. *Assessment in Education: Principles, Policy & Practice*, 5(1), 7–74. https://doi.org/10.1080/0969595980050102

Black, P., & Wiliam, D. (2009). Developing the theory of formative assessment. *Educational Assessment, Evaluation and Accountability*, 21(1), 5–31. https://doi.org/10.1007/s11092-008-9068-5

Boelens, R., De Wever, B., & Voet, M. (2017). Four key challenges to the design of blended learning: A systematic literature review. *Educational Research Review*, 22, 1–18. https://doi.org/10.1016/j.edurev.2017.06.001

Boud, D., & Molloy, E. (2013). Rethinking models of feedback for learning: The challenge of design. *Assessment & Evaluation in Higher Education*, 38(6), 698–712. https://doi.org/10.1080/02602938.2012.691462

Bryant, P., Coombs, A., Pazio, M., & Walker, S. (2020). Developing digital assessment: Frameworks for practice. *British Journal of Educational Technology*, 51(3), 1011–1026. https://doi.org/10.1111/bjet.12840

Dawson, P., Henderson, M., Mahoney, P., Phillips, M., Ryan, T., Boud, D., & Molloy, E. (2021). What makes for effective feedback: Staff and student perspectives. *Assessment & Evaluation in Higher Education*, 46(2), 292–307. https://doi.org/10.1080/02602938.2020.1764903

Gikandi, J. W., Morrow, D., & Davis, N. E. (2011). Online formative assessment in higher education: A review of the literature. *Computers & Education*, 57(4), 2333–2351. https://doi.org/10.1016/j.compedu.2011.06.004

Graham, C. R. (2019). Current research in blended learning. In M. G. Moore & W. C. Diehl (Eds.), *Handbook of distance education* (pp. 173–188). Routledge.

Ifenthaler, D., & Yau, J. Y.-K. (2020). Utilising learning analytics for study success: Reflections on current empirical findings. *Research and Practice in Technology Enhanced Learning*, 15(1), 1–16. https://doi.org/10.1186/s41039-020-00137-5

Irons, A. (2021). Enhancing learning through formative assessment and feedback. Routledge.

Lai, C.-L., & Hwang, G.-J. (2016). A self-regulated flipped classroom approach to improving students' learning performance in a mathematics course. *Computers & Education*, 100, 126–140. https://doi.org/10.1016/j.compedu.2016.05.006

Nicol, D. J. (2007). E-assessment by design: Using multiple-choice tests to good effect. *Journal of Further and Higher Education*, 31(1), 53–64. https://doi.org/10.1080/03098770601167922

Nicol, D. J. (2009). Assessment for learner self-regulation: Enhancing achievement in the first year using learning technologies. *Assessment & Evaluation in Higher Education*, 34(3), 335–352. https://doi.org/10.1080/02602930802255139

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. https://doi.org/10.1080/03075070600572090

Owston, R., York, D. N., & Malhotra, T. (2019). Blended learning in large enrolment courses: Student perceptions across four different instructional models. *Australasian Journal of Educational Technology*, 35(5), 29–43. https://doi.org/10.14742/ajet.4310

Panadero, E., Andrade, H., & Brookhart, S. (2018). Fusing self-regulated learning and formative assessment: A roadmap of where we are, how we got here, and where we are going. *Australian Educational Researcher*, 45, 13–31. https://doi.org/10.1007/s13384-018-0258-y

Redecker, C., & Johannessen, Ø. (2013). Changing assessment—Towards a new assessment paradigm using ICT. *European Journal of Education*, 48(1), 79–96. https://doi.org/10.1111/ejed.12018

Sadler, D. R. (1989). Formative assessment and the design of instructional systems. *Instructional Science*, 18(2), 119–144. https://doi.org/10.1007/BF00117714

Shute, V. J. (2008). Focus on formative feedback. *Review of Educational Research*, 78(1), 153–189. https://doi.org/10.3102/0034654307313795

Wiliam, D. (2011). *Embedded formative assessment*. Solution Tree Press.

Willis, J., Adie, L., & Klenowski, V. (2013). Conceptualizing teachers' assessment literacies in an era of curriculum and assessment reform. *The Australian Educational Researcher*, 40(2), 241–256. https://doi.org/10.1007/s13384-013-0089-9

Winstone, N. E., & Carless, D. (2020). *Designing effective feedback processes in higher education: A learning-focused approach*. Routledge.