LLT Journal, e-ISSN 2579-9533, p-ISSN 1410-7201, Vol. 27, No. 2, October 2024, pp. 911-930

LLT Journal: A Journal on Language and Language Teaching
http://e-journal.usd.ac.id/index.php/LLT
Sanata Dharma University, Yogyakarta, Indonesia

EXPLORING STUDENT ENGAGEMENT WITH FORMATIVE ASSESSMENT AND ICT TOOLS

Steve T. Fukuda[1*], Bruce W. Lander[2], and Christopher J. Pope[3]
[1]Bunkyo University, Japan
[2]Matsuyama University, Japan
[3]Tokushima Bunri University, Japan
steve@bunkyo.ac.jp[1], blander@g.matsuyama-u.ac.jp[2],
and pope@tks.bunri-u.ac.jp[3]
*correspondence: steve@bunkyo.ac.jp
https://doi.org/10.24071/llt.v27i2.9092
received 8 July 2024; accepted 2 September 2024

Abstract
This study investigates the potential of Information and Communication Technology (ICT) tools to enhance formative assessment (FA) practices in English as a Foreign Language (EFL) classrooms. While previous research has focused primarily on teacher feedback in writing courses, this study emphasizes a broader scope of FA. Utilizing a cross-sectional, quantitative analysis, the research examines how ICT tools support FA's goal of facilitating the learning process from students' perspectives, thereby informing effective teaching practices and improving learning outcomes. Participants included 173 university EFL students in Japan, divided into English majors and non-English majors. The study employed a revision of an existing survey for language learning with digital tools and a self-developed survey based on an existing framework for FA. Correlational analysis indicated that participants generally perceived ICT tools as supportive of all five FA principles. Despite issues like connectivity problems, students found the tools valuable for making the learning progress visible and enhancing peer communication. The study underscores the importance of understanding and practicing FA beyond feedback, such as clarifying learning goals and fostering peer learning, to enhance learning. These findings suggest that integrating ICT tools into FA practices can significantly benefit EFL instruction by promoting student engagement and self-regulated learning.

Keywords: EFL, formative assessment, ICT tool, university context

Introduction
In the current digital and life-long learning era, it is essential for teachers to facilitate the development of students' learning skills, which are crucial for their success (Collins & Halverson, 2009). In the English as a Foreign Language (EFL) context, the teacher's role extends beyond language acquisition to providing appropriate learning materials and employing effective pedagogical approaches that foster student autonomy (Dudeney & Hockly, 2012). The advent of Information and Communication Technology (ICT) tools has further amplified this role by

This work is licensed under CC BY-SA.
Creative Commons Attribution-ShareAlike 4.0 International License

emphasizing "learner autonomy and the continued opportunities for learning that our students now have outside of the classroom walls" (Dudeney & Hockly, 2012, p. 542). ICT tools, which include a range of technologies used by students and teachers to communicate, create, disseminate, store, and manage information, have become integral to modern education (UNESCO, 2002).

Despite the potential benefits of ICT tools in the classroom (e.g., enhanced communication, assessment, content delivery, collaboration, and autonomous learning), students' self-assessments of their learning capacities and management often prove to be imperfect. These challenges underscore the need for more structured support within the learning process. Educational literature advocates for the implementation of formative assessment (FA) as a means to address these gaps, facilitating student learning and the development of essential learning skills (Andrade, 2010). FA is characterized by its focus on providing feedback that helps students understand their learning process, identify strengths and areas for improvement, and ultimately take responsibility for their own learning (Wiliam, 2018). Integrating ICT tools into FA practices can further enhance the efficiency and effectiveness of these assessments, enabling teachers to offer timely and meaningful feedback tailored to individual student needs (Burns, 2017).

Furthermore, the rise in the number of available ICT tools provides teachers with more opportunities to practice FA both inside and outside the classroom. This integration can lead to more personalized and student-centered learning experiences, as teachers can leverage technology to tailor their feedback and learning opportunities to individual student needs (Elkordy & Keneman, 2019). However, while the literature on FA emphasizes the importance of student understanding of the learning process, there remains a significant gap in students' confidence in their own learning abilities, particularly in contexts where traditional, teacher-centered approaches have dominated education, such as in Japan (Fukuda et al., 2020; Tabuchi et al., in press). In these settings, students often struggle to take ownership of their learning, which is compounded by the lack of familiarity with ICT tools designed for FA.

This issue is not only crucial in Japan but also globally, as educational systems worldwide are increasingly integrating technology into classrooms. International studies have highlighted the potential of ICT tools to enhance FA, but they often overlook the challenges students face in engaging with these tools and the resulting impact on learning outcomes (Fargeeh, 2015; Rahmawanti & Umam, 2019). In the local context, the transition to technology-enhanced FA is still in its nascent stages, making it imperative to explore how students interact with and benefit from these tools. This research aims to fill this gap by examining the intersection of student engagement, FA, and ICT tools, offering insights that are both locally relevant and globally significant.

By critically reviewing both local and international studies below, this study positions itself at the forefront of addressing the challenges and opportunities presented by ICT tools used for FA. It addresses a crucial gap of theoretical understanding combined with the practical application of FA. Insights from students can inform the development of more effective teaching and learning strategies (Lizzio, 2002; Mork, 2014), ensuring that teachers are well-prepared to practice FA and utilize ICT tools in their classrooms. Understanding these

experiences can help teachers create supportive environments that encourage the effective use of technology and FA.

The integration of ICT tools for FA offers a promising avenue for enhancing student engagement in the EFL context. This study aims to shed light on the potential benefits and challenges of using ICT tools for FA in a Japanese university EFL context. The urgency of this research lies in its potential to inform EFL teachers, ultimately improving the quality of EFL education in an increasingly digital world.

To achieve these goals, this study is guided by the following questions:

1. How do Japanese university EFL students engage with ICT tools used for formative assessment?
2. What are the perceived benefits and challenges of using ICT tools for formative assessment in the EFL classroom?
3. How can the integration of ICT tools in formative assessment practices enhance student learning outcomes in an EFL context?

By addressing these questions, this study aims to provide actionable insights for stakeholders in EFL contexts, contributing to the ongoing development of effective, technology-enhanced practices in EFL classroom.

Formative assessment

Bloom (1968) introduced the concept of formative evaluation within his Thinking Skills Taxonomy. He argued for the formative measurement of learning at the end of a unit of study to deepen stakeholders' understanding of student learning and to evaluate and improve a curriculum. Sadler (1989) then brought this concept into the everyday classroom, renaming it formative assessment based on checkpoints before, during, and after lessons. These checkpoints create a feedback loop between teachers and students to gather information on learning. This information is also used to feed learning forward by using the gathered data of student learning to plan and execute the next stages of learning (Sadler, 1998). Since then, FA has been shown to enhance learning inside and outside of the classroom (Andrade, 2010). Most recently, and in the EFL context, Fukuda, Lander, and Pope (2020) summarize FA and define it as "sharing learning goals and success criteria, while helping learners recognize how to reach these goals through effective self- and peer-assessment of learning output with feedback promoting confidence in learning and the aim of fostering self-regulated learning" (Fukuda, Lander, & Pope, 2020, p. 4).

It is crucial for teachers and students to gain a deeper understanding of FA as part of the learning process to enhance their instructional choices and the learning skills and experiences of their students (Pat-El et al., 2013). Hattie and Timperley (2007) conceptualize FA as three critical questions to be asked by the teacher to the student or student to peer (or him/herself) during the learning process: (1) Where is the student (am I) going? (understanding learning goals), (2) How is the student's (my) learning going? (monitoring student learning), and (3) Where is the student (am I) going next? (planning subsequent learning). In this way, teachers can gather information about learning and make better instructional choices to support student learning or add evidence to confirm instruction that is already being used effectively. For students, they can use this information along with feedback from the teacher

(or peers) to monitor their own learning and develop learning skills. Furthermore, teachers and students can use this information to identify gaps between current levels of learning and learning goals, and thus, plan for the next steps in the learning process.

This learning process also develops students' learning skills that can be leveraged to exercise agency in learning (van den Boom et al., 2004). The process mirrors what Zimmerman (2000) calls the three phases of self-regulated learning: (1) forethought, (2) performance, and (3) reflection. In the forethought phase, learners set learning goals and analyze their learning tasks to reach those targets. The performance phase consists of learners monitoring their learning and selecting successful strategies to enhance learning. In the reflection phase, students reflect on their learning process and bring that information to a new forethought phase.

Critical to this learning process is the information on learning gathered from the self or a peer used to further learning. In the classroom, FA allows teachers to clearly articulate learning goals and students can clearly understand those goals (i.e., forethought stage). FA also supports the teacher and student in the form of giving and receiving feedback about where the student is in the learning process in relation to the learning goals and what strategies they are using (i.e., performance stage). With this information, teachers and students can adjust the learning strategies or revise work to better future learning (i.e., reflection stage). Table 1 describes this learning process in detail using Wiliam's (2018) five principles of FA in connection with other notable researchers.

Table 1. Five principles of formative assessment (adopted from Fukuda, et al., 2020)

Hattie & Timperley (2007)	Zimmerman (2000)	Brookhart (2010)	Wiliam (2018)
Question 1	Stage 1	Principle 1	Clarifying, sharing, and understanding learning intentions and criteria for success: For effective FA, instructors and learners need to be clear on the learning goals, which include narrowly defined criteria or for creative assignments a broader goal that students can aim towards.
Question 2	Stage 1 Stage 2	Principle 2	Engineering effective classroom discussions, questions, and tasks that need to elicit evidence that informs further instruction: This evidence should include a clear understanding of the learning intentions while eliciting understanding of learning progress and difficulties.
Question 2	Stage 2 Stage 3	Principle 3	Providing feedback that moves learners forward (FA must be prospective, not retrospective): Instructors and learners must think about the learning process that is extracted from the information gathered. Also, feedback is more effective if it points to the task, informing the instructor how to adjust instruction rather than the learner's affective state.

Hattie & Timperley (2007)	Zimmerman (2000)	Brookhart (2010)	Wiliam (2018)
Question 2 Question 3	Stage 2 Stage 3	Principle 4	Activating students as instructional resources for one another: FA can also facilitate the other four strategies because to assess others, learners first need to internalize learning goals and success criteria for themselves. Also, because FA is less emotionally charged than self-evaluation, it becomes a scaffold towards more effective self-assessment and ultimately self-regulation.
Question 1 Question 2 Question 3	Stage 2 Stage 3	Principle 5	Activating students as the owners of their own learning: To become active learners, students need to become self-regulated learners.

As seen in Table 1, FA should be considered responsive teaching rather than simply feedback from the teacher (Christodoulou, 2016). In other words, it is not only about assessing students' learning but helping students become owners of their own learning by being able to use the gathered information about learning to better subsequent learning. Brookhart (2010) illustrates how these five principles of FA can be practiced in five stages. In the initial stage, teachers clearly communicate the learning targets and success criteria to reach those targets. The second stage consists of instructors providing examples of the learning outcomes which students can then use to determine their learning plans; or instructors can use these examples of learning outcomes to communicate the learning progressions they have planned in the unit. These examples can also be used in the third stage, during self-assessments or other forms of assessment to provide feedback as learners work to close the gap between their current levels and target. In the fourth stage, students can use each other in the form of talk partners or conduct peer (and self) assessment to continue to gather information on their learning to better future learning. In the fifth stage, instructors gradually release their responsibility and allow students more say in learning targets, progressions, and activities.

The subject context started to implement FA at two schools to understand how FA could be implemented during lessons before it was added to the national curriculum (Kajita, 2016). FA was initially used in planning learning goals and assessing the starting points of learning (Kajita, 2016). At its outset, FA was implemented using paper-and-pencil tests of memory to gather this information. Kajita recommended using FA throughout the duration of the class by using observations and note-checking. However, Kajita argued that there were too many learning targets in each unit of study; this made lessons teacher-centered as instructors believed they needed to lecture to achieve these goals instead of developing students' learning skills.

Because FA places the focus on the learning process as opposed to the learning outcomes, Ando (2016) argued along with Kajita (2016), the ultimate goal of FA is to improve learning and foster the self-regulated learner. Unfortunately, in the subject context, FA is still considered something added on to the end of a lesson

and not a practice in and of itself or as simply teacher feedback on student learning (Ando, 2016). Therefore, Ando (2016) introduced a lesson design template based on the FA cycle, in which instructors share learning goals and success criteria at the start of a lesson, then provide feedback to better learning during the lesson and use self- and peer-assessment at the end of a lesson.

Though research has also examined FA in other EFL contexts to a certain extent, most research comes from writing courses and through the lens of feedback from the teacher (Chen, Zhang, & Li, 2021). In one instance, Umeki and Niimi (2022) conducted a study in their EFL writing course while focusing on FA, in the form of peer feedback, to better the learning process for low-proficiency learners. Their results suggested higher proficiency may influence the quality of feedback. They also suggested FA plays a part in the improvement of language skills, and it would be beneficial for EFL teachers. However, as in these studies, FA in practice is not always based on all five principles of FA (Guadu & Boersma, 2018).

ICT tools for FA

An ICT tool for the classroom is defined as "technology or devices and concepts used in Information and Communication Technology among students to students, and students to teacher interaction" (Fusic, Anandh, & Thangavel, 2020, p. 224). Though outside of the subject context but still in Asia, a few ICT tools for FA have been examined. From Indonesia, Rahmawanti and Umam (2019) argued that "one cannot assume that just because social software provides affordances, that is all that is required for effective learning. Careful planning and a thorough understanding of the dynamics of these affordances are mandatory" (p. 311). Their study examined whether an ICT tool empowered participants to act on subsequent learning after learning goals and success criteria were made clear. Learning goals were posted on the app, and participants were able to ask questions to clarify via the app. The ICT tool was used for self- and peer-assessment of learning, as well as peer feedback and teacher feedback. Rahmawanti and Umam's study suggested that ICT tools may enhance FA principles.

In another study in Thailand, Waluyo (2020) explored the influence ICT tools have on learning outcomes with over 900 first-year university participants from various majors in a general education EFL curriculum. His operational definition of FA centered on feedback and was used in the form of immediate teacher feedback on vocabulary tests which were administered via an ICT tool. He concluded that ICT tools could enhance classroom interaction, as found previously in Japan (Mork, 2014) and in other EFL contexts such as Saudi Arabia (Awedh et al., 2015).

An ICT tool scaffolds learning by providing opportunities for feedback, reflection, regulation of student's own learning, and help to enhance learning communities and enable collaboration (National Academies of Sciences, Engineering, and Medicine, 2018), which mirror the five FA principles discussed above. Davies (2010) points out many positive aspects of assessment using an ICT tool, such as better management of student work, timely and higher quality assessment, and better dialogue between learners and teachers. He makes the following list arguing that for effective assessment, the ICT tool should be (1) based on the teacher's goals towards a higher quality of learning and assessment, (2) based on principles of good assessment, such as to motivate learning, encourage time on task, facilitate self-assessment and enable learners to act on feedback, (3) informed

by a clear understanding of the purpose of the task, ICT skills, and diverse needs of learners, (4) used to facilitate enhancements previously deemed difficult to achieve at a larger scale, (5) used to monitor learners' progress and improve teaching and learning, and (6) used to enhance the current learning situation, not for the sake of using the ICT tool.

Guided by these principles for effective and efficient implementation of assessment using ICT tools, Noskova and colleagues (2016) in a paper titled "Approach to Selecting ICT Tools for Formative Assessment" created an ICT tool evaluation checklist. The checklist included four factors to measure ICT tools for FA: (a) scalable, (b) adaptive, (c) effective, and (d) supportive. Scalable was defined as whether the tool could be an easy add-on to the existing curriculum and not take up student or teacher time (Noskova et al., 2016). Evaluation was also based on the cost to use the ICT tool and the time it took to start using it. In terms of costs, many tools offer free versions but also have paid options with more functionality. Teachers can choose from the various tools which are free for initial use to test them in their classrooms. Because any ICT tool should support both teachers and students, any ICT tool should help reduce workload or save time. Thus, teachers and students should be able to access the ICT tool promptly, with either no registration other than email or a simple login process.

An ICT tool can be considered adaptive if it is easy to use, requiring minimal instruction or training for learners. Although some initial time investment is necessary, the benefits are critical, such as facilitating dialogue, providing immediate feedback, and enhancing authenticity (Noskova et al., 2016). Additionally, a supportive ICT tool is typically selected after the curriculum, unit, or lesson plan is established, ensuring that it enhances rather become a centerpiece of any lesson. This framework ensures that ICT tools are integrated thoughtfully and purposefully, supporting the principles of FA rather than being used merely for their own sake.

The considerations discussed above underscore the need to explore the specific ways in which ICT tools can enhance FA practices in EFL classrooms. This study, therefore, focuses on investigating how student engage with ICT tools used for FA. By examining how these tools can be effectively integrated to support student learning and engagement, this research aims to provide valuable insights into the practical and theoretical implications of technology-enhanced assessment in EFL education. This inquiry is especially pertinent as the role of digital tools in education continues to expand, necessitating a deeper understanding of their potential to improve instructional practices and learning outcomes.

Method

This study aimed to investigate the role of ICT tools for FA practices within EFL classrooms, specifically by examining how students engage with ICT tools used for all five principles of FA. While feedback is a crucial component of FA, merely providing feedback in the form of grades or numbers does not guarantee subsequent learning (Sadler, 1989). Effective FA should generate meaningful feedback and guide decisions about the next steps in learning (National Academies of Sciences, Engineering, and Medicine, 2018). Therefore, FA encompasses more than just teacher feedback; it should be an integral part of lesson design, supporting teacher instruction and student learning, and facilitating reflective practices for both

(Bransford, Brown, & Cocking, 1999; Kingston & Nash, 2011).

In the context of EFL education, ICT tools have been posited as supportive elements in the FA process. They assist students in demonstrating content understanding, learning from mistakes, reviewing their progress, and increasing time on task, ultimately aiming for student autonomy in learning (Fargeeh, 2015). However, existing studies primarily focus on feedback or suggestions from the teacher's perspective. There is a noticeable lack of research on how students engage with ICT tools for FA, which is essential for gaining a comprehensive understanding of FA's role in the teaching and learning process. This study addresses this gap by focusing on how ICT tools can make the learning process visible and clear for students who may not be well-versed in pedagogical concepts, such as FA.

The study involved three cohorts across four classes, each using ICT tools to enhance all five FA principles. A cross-sectional, quantitative research design was employed to investigate whether ICT tools can achieve FA's objective of supporting the learning process from the students' perspectives as well. The primary research question guiding this study was: How do students engage with ICT tools for FA in terms of supporting their learning based on the five principles of FA? This methodological approach was chosen to capture a snapshot of student engagement and provide quantifiable data on the effectiveness of ICT tools in the subject context.

Participants

The target population was university EFL students in Japan. A convenient sample (N = 173) was drawn from the authors' universities and divided into two groups (i.e., English majors and non-English majors) to gain a more comprehensive view of the population. English majors tend to have a personal goal of improving their skills and an intrinsic interest in English, as can be inferred from their enrolment. Non-English majors tend to be more instrumentally motivated, as indicated by their participation in English courses without enrolling in an English major. Group 1 (Cohort 1) consisted of 85 second-year university students who were English majors and were divided into two courses comprising of 42 and 43 students respectively. They were taught by the same instructor. Group 2 comprised 88 first-year university students from two universities who were non-English majors (Cohort 2, n = 46; Cohort 3, n = 42). Group 2 was divided into 2 cohorts because they were from different universities and the course was taught by different instructors. All participants gave their consent to take part voluntarily in the study.

Participants in Group 1 were considered basic-level learners based on the CEFR framework according to the instructor. Participants in Group 2 were considered equivalent in terms of academic standards and university entrance exam percentile rankings and were categorized as false beginners by their instructors. Participants were enrolled in a required English course that met once a week for 90 minutes. All courses focused on training in the four skills with communication activities and reading, writing, and vocabulary assignments outside of class. The courses used for the study was the only EFL course in the semester for both groups.

On a pre-survey, all participants were asked two questions about their experience with ICT tools: (a) for language learning and (b) for reasons other than language learning. Responses for the first question (Have you used ICT tools for

English study? If so, which tools and how did you use them?) revealed that 122 out of 173 participants (70.52%) had experience using ICT tools for language learning, with 51 students reporting no experience (Group 1 n = 20, Group 2 n = 31). Students with experience reported using ICT tools for language learning, such as digital flashcards and graded reading programs.

Results also showed that 70 out of 173 participants (40.46%) had experience with ICT tools in other courses (Group 1 n = 18, Group 2 n = 52) and reported using ICT tools mostly for homework and presentations, as well as using the university's learning management systems and other popular presentation and file-saving tools. However, no students reported using ICT tools for feedback or the five FA principles.

These results align with Cote and Milliner's (2017) argument describing a status quo at the tertiary level in the subject context, where students have limited experience with ICT tools. While participants may have experience with ICT tools for language learning, they did not have experience with ICT tools aimed at FA. For instance, no participant reported using ICT tools for confirming learning targets, reflections, giving or receiving feedback, or improving their learning.

ICT tools used in the study

Each course was taught by a different author who had collaborated on teaching and research projects in FA in the past. The authors were familiar with and had experience using ICT tools. All authors had similar backgrounds in research interests and experience teaching in the subject context. The ICT tool used in each course claimed to enhance FA but with no mention of the five FA principles. Additionally, the authors were familiar with the tool producing no novelty effect or learning curve influences to the course or students' perspectives. The ICT tool was used for the duration of the study to avoid the novelty effect from the students' side as well.

The ICT tool the 4FA selection criteria, and their respective websites claimed they were specifically for FA. The ICT tool also allowed the instructor to post class content in the form of assignments, discussions, tests, video links, and evaluative measures. Through class content uploaded by the instructors, participants were able to access the tool through either the more versatile online web-tool or via the freely available app, which syncs to all activity entered via the PC or web-tool version. Through usage of this tool, participants were able to interact via class discussions accessible by all class members. The instructor was also able to interact with participants individually or with the group in open discussions. The tool was also used as a messenger-type service, allowing participants to contact the instructor or each other. Participants could also view their learning progress for any evaluated material at any time.

The ICT tool provided a free, user-friendly platform that required very little adaptive learning with a simple login process. To use the ICT tool, participants were provided with an access code after initial registration, and to avoid further problems, all login details were set to participant email addresses and passwords as their student identification numbers. The user-friendly element of this tool allowed the instructor to provide immediate feedback to participants. The advantage of this approach is that all this was possible through just one small tech-tool, student smartphones.

Participants also used the ICT tool to make comments about each class and read each other's comments as well as responding to those comments. Participants also sent individual comments to the instructor using the tool. The instructor uploaded all the class PowerPoints in a folder for easy access and instructions on assignments for participants to view and plan their learning. The tool was seen to enhance opportunities for interaction between participants and the instructor in this way.

Participants were provided with all learning content through the ICT tool, which they were required to check regularly for updates. The instructor would post homework assignments, video links, and all class slides, which could be accessed either via the website version from PCs or during/after class on the smartphone app. Some FA elements of this course involved class discussions whereby participants were required to write a reflective statement about the class that day, read at least five posts uploaded by their peers, and provide feedback to at least three peers. This method encouraged participants to interact and learn from each other.

Another activity using the ICT tool consisted of participants reviewing previous class content both verbally and digitally by asking partners a series of simple questions about what they remembered. Participants were requested to enter a class presentation using a presentation function through which participants input five to ten keywords from the previous class. Answers that appeared were projected onto the screen at the front of the auditorium, with the same screen visually displayed on two screens towards the back. In this way, collaborative and collective learning opportunities were provided. Finally, participants also took short and simple quizzes at the end of every class to determine their involvement and understanding of class content. In this way, and as observed by the authors' subjective experience in the past, all ICT tools allowed instructors to go through the FA learning process with learners (e.g., share learning goals). To avoid researcher bias, however, the authors ensured not to mention the word FA or any terminology that would influence student perspectives of the ICT tool being used for FA and used the terms *learning* or *the learning process*.

Data collection and analysis

A revised version of the Web-Enhanced Language Learning (WELL) questionnaire was used. WELL was developed for the Japanese university context by Taylor and Gitsaki (2003). They designed the questionnaire based on Osuna and Meskill's (1998, cited in Taylor & Gitsaki, 2003) study. Participants responded to each item on a six-point Likert scale. It includes 27 items measuring student perspectives on the web as a learning tool. In particular, WELL measured whether students thought the web was a valuable component of the course or not, how easy or difficult it was to use, and the likelihood of using the tool again. Because it was not developed for FA, each item was adapted to fit this study.

This study also adopted Noskova et al.'s (2016) four-factor framework for an ICT tool that aims to enhance FA (4FA). The survey also used a six-point scale. The four factors include Scalability (i.e., a simple addition to existing curriculums, free and widely accessible), Adaptability (i.e., becomes an accurate diagnosis of individual students' learning, such as being easy to use and teach), Effectiveness (i.e., improves learning outcomes, such as by giving students and instructors

immediate feedback on learning), and Supportive (i.e., supports the curriculum, unit, or lesson, such as providing support in one or more of the five FA principles).

Two rounds of back-translations with four native speakers (i.e., two English and two Japanese) resulted in minor revisions. Our final version of the questionnaire contained 18 items (Table 2). Two items for each of the five FA principles and two items for each 4FA item (i.e., ICT tool selection criteria). At the end of the survey, there was one open-ended item that allowed participants to comment on any aspect of the tool they used.

Table 2. Survey items

FA Category	Item
FA1a	The tool allowed me to understand my learning progress better.
FA1b	The tool allowed me to understand learning goals better.
FA2a	The tool allowed me to communicate with peers more.
FA2b	The tool allowed me to communicate with the teacher more.
FA3a	The tool allowed me to have more productive discussions with my teacher.
FA3b	The tool allowed me to receive more feedback from my teacher.
FA4a	The tool allowed me to have more productive discussions with my peers.
FA4b	The tool allowed me to receive more feedback from my peers.
FA5a	The tool allowed me to see my learning progress more.
FA5b	The tool allowed me to take control of my learning more.
4FA Category	**Item**
Scalable 1	The tool was easy to install.
Scalable 2	The tool was easy to access.
Adaptive 1	It was easy to learn how to use the tool.
Adaptive 2	I was comfortable using the tool.
Effective 1	The tool was necessary for this course.
Effective 2	The tool helped me earn a better score in this course.
Supportive 1	The tool was a valuable part of learning the course content.
Supportive 2	The tool was a valuable part of my learning skills in general.

All surveys were administered in the last class of each 15-week course using Google Forms. The study's purpose, procedures, and participant confidentiality were explained to the participants in their native language, Japanese, by their instructor. It was emphasized that participation was entirely voluntary and would not affect their grades. Consent was obtained from all participants who agreed to participate. The researchers involved were certified through their respective universities, ensuring compliance with ethical protocols. Data confidentiality and security were maintained by securely storing all collected information on the respective USB memory sticks of each author, which were kept in a safe and controlled environment. The data will be retained for five years before being securely destroyed.

Raw data from Google Spreadsheet was printed out and then observed for any misleading data. Two participants from Group 1 (Cohort 1) were omitted because it was obvious that they had simply answered every question with the same value of six with a short response time. Two internal consistency estimates of reliability were computed for each item using a split-half coefficient expressed as a Spearman-

Brown corrected correlation and coefficient alpha. For the split-half coefficient, the scale was split into two halves such that the two halves would be as equivalent as possible. Values for the split-half coefficient for 18 items were the same at 0.95, indicating satisfactory reliability.

Due to the explanatory nature of this study, we separated and interpreted data based on whether students agreed (i.e., positive) or did not agree (i.e., negative) with each item. Though justification for collapsing data in this way is complicated at the risk of losing information and potential validity (McCallum et al., 2002), it can be feasible for reporting descriptive statistics as we do here to gain interpretability or simplicity in an exploratory study (Jeong & Lee, 2016).

We also examined correlations between each FA principle and how supportive the participants felt the ICT tool for FA were in the course and in learning in general. This examination links to the general view of FA that it should be overall supportive of the teaching and learning process. Our Likert-scale data was not interval but ordinal data because we judged the intervals between positions on the scale to be monotonic and not well-defined in numerically uniform increments. For correlational analysis, data was input and analyzed using SPSS 27.0J. Spearman rho was administered because our variables were ordinal. Also, the conservative Bonferroni approach was used to control for false-positive Type 1 error. The uncorrected p-value was 0.05 divided by our 20 comparisons (i.e., ten FA principles and two 4FA items), resulting in a corrected p-value of 0.003.

Findings and Discussion

Overall, descriptives show that participants from all groups perceived the ICT tool they used as supportive of each of the five FA principles (Table 3). Even when broken down into groups, results for each principle were at or over 60 percent when rounded up for all groups, except for Group 1's FA principle 2 (i.e., communication with peers) results (58.82%). These results suggest that FA tools have potential to support the five principles of FA from the student perspective.

Table 3. Survey results for FA principles

		FA1a	FA1b	FA2a	FA2b	FA3a	FA3b	FA4a	FA4b	FA5a	FA5b
All	+	82.08%	69.94%	69.36%	69.36%	72.83%	67.05%	76.88%	73.41%	72.83%	75.72%
(n = 173)	-	17.92%	30.06%	30.64%	30.64%	27.17%	32.95%	23.12%	26.59%	27.17%	24.28%
Cohort 1	+	76.47%	61.18%	58.82%	64.71%	68.24%	64.71%	69.41%	65.88%	68.24%	69.41%
(n = 88)	-	23.53%	38.82%	41.18%	35.29%	31.76%	35.29%	30.59%	34.12%	31.76%	30.59%
Cohort 2	+	100.00%	95.65%	93.48%	82.61%	89.13%	73.91%	97.83%	91.30%	91.30%	95.65%
(n = 46)	-	0.00%	4.35%	6.52%	17.39%	10.87%	26.09%	2.17%	8.70%	8.70%	4.35%
Cohort 3	+	73.81%	59.52%	64.29%	64.29%	64.29%	64.29%	69.05%	69.05%	61.90%	66.67%
(n = 42)	-	26.19%	40.48%	35.71%	35.71%	35.71%	35.71%	30.95%	30.95%	38.10%	33.33%

Descriptive results for our 4FA criteria show that participants felt the tool was valuable for their course as well (Table 4). Though participant feelings were negative when describing the tools' scalability (i.e., easy to install 28.32%, easy to access 52.60%), overall participants' responses were fairly positive when asked if the tools were easy to use (76.30%) and if they were comfortable using them (64.16%). As seen in the qualitative responses below (Table 5), most participants thought the tool was effective for the course, and negative feelings stemmed from technical issues (e.g., internet connection speed). Without these technical issues, more students may have felt the ICT tool was necessary for the class (65.90%) or

felt the tool helped them receive better grades (20.81%), as the latter category produced the lowest responses.

Table 4. Survey results for 4FA

		Scalable 1	Scalable 2	Adaptive 1	Adaptive 2	Effective 1	Effective 2	Supportive 1	Supportive 2
All	+	28.32%	52.60%	76.30%	64.16%	65.90%	20.81%	79.77%	79.77%
(n = 173)	-	71.68%	47.40%	23.70%	35.84%	34.10%	79.19%	20.23%	20.23%
Cohort 1	+	36.47%	52.94%	72.94%	68.24%	56.47%	30.59%	80.00%	71.76%
(n = 88)	-	63.53%	47.06%	27.06%	31.76%	43.53%	69.41%	20.00%	28.24%
Cohort 2	+	17.39%	58.70%	93.48%	73.91%	84.78%	4.35%	93.48%	100.00%
(n = 46)	-	82.61%	41.30%	6.52%	26.09%	15.22%	95.65%	6.52%	0.00%
Cohort 3	+	23.81%	45.24%	64.29%	45.24%	64.29%	19.05%	64.29%	73.81%
(n = 42)	-	76.19%	54.76%	35.71%	54.76%	35.71%	80.95%	35.71%	26.19%

Despite these technical issues, the results could also be interpreted as the tools focusing more on the learning process than the learning product. This interpretation can be supported by the results for the supportive category, showing participants felt the tool was a valuable part of the course (79.77%) as well as in their learning in general (79.77%). In sum, combined results of our three cohorts suggest the advantages of using an ICT tool for FA in the EFL classroom may outweigh any disadvantages, such as the time it takes to install the tool or for students to get comfortable using it. We delve further into this with inferential statistics below, with a correlational analysis of the supportive category and FA principles to measure how participants felt the ICT tool was supportive.

Open-ended results illustrate that most of the negative feelings arose from technical issues. For instance, participants in all three cohorts wanted (a) easier access to the university's online system and Wi-Fi, (b) faster and easier installation or login with their tool, (c) fewer connection issues, (d) a less data-heavy tool for faster operation, and (e) reduced time lags for uploading files and posts.

Table 5. Open-ended responses (direct translation by authors)

Cohort	Response
1	It was easy to say my opinion because I could write it and show and not say it in front of everyone. I could use it to learn anytime and anywhere. I was able to see my learning progress easily. Can give feedback and communicate with peers.
2	It was easy to ask the teacher questions. The lesson flow became more efficient, and it was easy for me to reflect. We could share answers more easily effectively communicating with each other. I was able to organize my opinion and deepen my understanding because of hearing others' opinions.
3	Easy to share opinions anonymously. We were able to share our ideas with the teacher and get feedback. Easy to reflect on class. Help make collaboration more efficient.

Group 1 (Cohort 1, English majors) analysis

Responses suggest that the ICT tool somewhat enhanced FA from the participants' perspective. Overall, most participants responded positively to each

item of the five FA principles, with over 60% agreement for all items except for the item asking whether participants felt the ICT tool enhanced their communication with their peers, which resulted in 58.82% positive responses (Table 3). These results describe a situation where participants may have felt more in control of their own learning, reducing the need for peer communication through the tool. This interpretation can be linked to the FA principle of communicating with the teacher (64.71%) and discussing learning with the teacher (64.71%), both of which were fairly positive.

Results showed that participants agreed the tool was a supportive component of the course (80.00%) and their learning (71.76%), which could be connected to the results showing they felt the tool was adaptive (i.e., easy to learn how to use 72.94%; felt comfortable using ICT tool 68.24%). However, participants only somewhat felt the tool was effective for their learning (i.e., helping with study 56.47%, aiding the achievement of improved grades 30.59%). When asked whether the tool was scalable, participants felt it was somewhat difficult to install (36.47%), and about half thought it was not very accessible (52.94%). These accessibility issues likely stemmed from connection problems, as noted in Table 5.

Group 2 (Cohort 2 and 3, non-English majors) analysis

For the first FA principle, results show that both cohorts had positive experiences (FA1a 100% Cohort 2, 73.81% Cohort 3; FA1b 95.65% Cohort 2, 59.52% Cohort 3). For the second FA principle, results were similar (FA2a 93.48% Cohort 2, 64.29% Cohort 3; FA2b 82.61% Cohort 2, 64.29% Cohort 3). The third FA principle also showed similar results (FA3a 89.13% Cohort 2, 64.29% Cohort 3; FA3b 73.91% Cohort 2, 64.29% Cohort 3). Responses for the fourth FA principle were also similar (FA4a 97.83% Cohort 2, 69.05% Cohort 3; FA4b 91.30% Cohort 2, 69.05% Cohort 3). The results were also similar for the fifth FA principle of activating students as the owners of their own learning (FA5a 91.30% Cohort 2, 61.90% Cohort 3; FA5b 95.65% Cohort 2, 66.67% Cohort 3).

These results suggest that ICT tools may have the potential to enhance FA in the classroom. However, these results could also indicate that using an ICT tool for FA practice with knowledge of the five FA principles in class may help most students understand their learning process better, as items showed at least a 60% positive response rate.

The descriptive results for the 4FA items show that both cohorts felt the ICT tools they used were somewhat useful. Responses from both cohorts show that the ICT tools were not easy to install (17.39% Cohort 2, 23.81% Cohort 3), and participants were split in terms of accessibility (58.70% Cohort 2, 45.24% Cohort 3). These results could be due to weak internet connections at home or on campus, or inexperience with the ICT tool (Table 5). In terms of the ICT tool being supportive in the course and in their learning, responses were divided. For Cohort 2, 93.42% of the participants felt that the tool was supportive for the course, and 64.29% of Cohort 3 participants felt the tool was supportive.

These results could indicate that participants in Cohort 3 felt the ICT tool was not necessary for their learning or that they could achieve similar results without it. This interpretation is supported by the results of over 70 percent of the participants in both groups (100% Cohort 2, 73.81% Cohort 3) reporting the ICT tool they used as a supportive part of their learning in general. These results can be linked to their

responses showing that they felt the ICT tool was necessary as part of the learning process (84.78% Cohort 2, 64.29% Cohort 3) but not necessarily for receiving a better grade (4.35% Cohort 2, 19.05% Cohort 3).

Finally, in terms of the ICT tool being easy to use or becoming comfortable using it, the groups differed somewhat. When asked if the ICT tool was easy to learn how to use, participants in both groups were fairly positive (93.48% Cohort 2, 64.29% Cohort 3), but when asked if they were comfortable using the ICT tool, the groups had dissimilar reactions (73.91% Cohort 2, 45.24% Cohort 3).

The ICT tool was a significant component of the course, as shown by the response tendencies of both cohorts. The largest difference came from the results of asking participants if the tool was supportive of their learning in the course. The participants in Cohort 2 felt the ICT tool was supportive of their learning in general (93.48%), while participants in Cohort 3 may have felt it was simply a course component (64.29%). In other words, Cohort 3 participants most likely felt the ICT tool was used to support their learning in general, while participants in Cohort 2 felt they were using the ICT tool to learn English in the course.

Correlational analysis

We further explored our data by examining whether responses towards FA principles had any relationships to how supportive participants felt the ICT tools were in the course. As discussed above, any ICT tool used for FA should be first and foremost supportive of the learning process and learning environment, irrespective of whether it was, for instance, easy to use or inexpensive.

Correlation coefficients were computed among the five FA principles (i.e., 10 items) and the two supportive items of 4FA. The results of the correlational analysis presented in Table 6 show that 20 out of the 20 correlations were positive and statistically significant, ranging from .466 to .690. These correlation results suggest that an ICT tool used for FA to enhance the learning process may be moderately to strongly supportive of FA conducted in an EFL course for university EFL students. Particularly notable were the two strong positive correlations found for FA1a, $r(171) = .690$, $p < .003$, and FA5a, $r(171) = .669$, $p < .003$. These items asked students about how the ICT tool supported their learning by making the learning progress visible. Participants' responses show that they tended to feel the ICT tool was being used for each FA principle and that it was supportive of their learning in general.

Table 6. Spearman rho results (N = 173)

	Sup1	Sup2
FA1a	.690*	.639*
FA1b	.628*	.596*
FA2a	.590*	.582*
FA2b	.618*	.466*
FA3a	.649*	.526*
FA3b	.598*	.541*
FA4a	.579*	.577*
FA4b	.633*	.559*
FA5a	.669*	.565*
FA5b	.601*	.553*

note: *$p < 0.003$

Discussion

This study set out to explore how Japanese university EFL students engage with ICT tools used for FA, identify the benefits and challenges of these tools, and examine how their integration might enhance student learning outcomes. The pre-survey results indicated that while most participants had used ICT tools in their language learning, none had experience with these tools specifically for FA. This finding directly addresses our first research question by highlighting a gap in students' prior engagement with ICT tools in the context of FA.

After implementing an ICT tool designed to emphasize the five principles of FA, our survey results suggested that these tools indeed have the potential to enhance all FA principles, aligning with our second research question. Participants generally perceived ICT tools as supportive of their learning, particularly in areas such as clarifying and sharing learning intentions (FA Principle 1) and fostering student ownership of learning (FA Principle 5). This aligns with previous research by Elkordy and Keneman (2019), who also noted the role of ICT tools in promoting personalized learning and student engagement. However, our findings extend this understanding by emphasizing the importance of making the learning process visible, which is an aspect that was particularly valued by participants in our study.

In contrast, previous studies, such as those by Fargeeh (2015) and Rahmawanti and Umam (2019), have primarily focused on the potential of ICT tools to facilitate interaction and immediate feedback (FA Principle 3). While our findings support these benefits, as well as highlight the significance of other FA principles that are often overlooked, such as making learning progress visible (FA1a) and fostering student agency (FA5a). The emphasis on these principles may be particularly relevant in the Japanese EFL context, where students are often accustomed to more teacher-centered approaches and may struggle to take ownership of their learning. This contrast suggests that in contexts where traditional pedagogical practices dominate, the value of ICT tools may lie not only in enhancing interaction and feedback but also in empowering students to engage more actively with their learning process.

One of the significant challenges identified in our study was the technical issues associated with ICT tools, such as Wi-Fi connectivity problems. This finding resonates with previous studies, such as those by Awedh et al. (2015) and Mork (2014), which also reported technical difficulties as a barrier to effective ICT integration. However, our study uniquely situates this challenge within the context of Japanese universities, where infrastructure limitations may exacerbate these issues. The critical implication here is that for ICT tools to be fully effective in supporting FA, it is essential to address these technical barriers, particularly in settings where such challenges are prevalent.

Our third question focused on how the integration of ICT tools in FA practices can enhance learning outcomes. The results suggest that when ICT tools are used to align with all FA principles, they can indeed support student engagement. This finding is consistent with the work of Panadero, Andrade, and Brookhart (2018), who emphasized the role of FA in fostering self-regulation. However, the practical implementation in our study revealed that the effectiveness of ICT tools is contingent upon addressing both pedagogical and technical challenges. This nuance adds depth to the existing literature by highlighting the contextual factors that influence the success of ICT-enhanced FA.

In summary, our study advances the understanding of how ICT tools can be used to support FA in EFL classrooms, particularly within the Japanese context. By critically discussing our findings in relation to previous studies, we have identified both the potential and limitations of these tools. The key takeaway is that while ICT tools offer significant promise for enhancing FA, their success depends on careful consideration of the local context, including both pedagogical practices and technical infrastructure.

Limitations and future studies

This study was an exploratory investigation that was small-scale and predominantly quantitative. Future research could compare different tools across various courses with diverse participants, potentially yielding different results. Our survey was largely self-developed and not tested for validity or reliability.

Future studies should include more indirect data collection techniques, incorporating more qualitative data. Also, collecting quantitative data with more than two items for each category might lead to different conclusions. Additionally, the ICT tool selection criteria should be rigorously tested. Readers might question whether other ICT tools could perform better; thus, any tool claiming to enhance FA should be tested and be evidence-based before using in practice.

Conclusion

This study explored the potential of ICT tools to enhance FA practices in EFL classrooms, addressing a notable gap in the literature regarding the use of ICT for FA beyond teacher feedback. The survey results revealed that while students had prior experience with ICT tools, they had not utilized them for FA purposes. The findings demonstrated that ICT tools could effectively support all five FA principles, significantly contributing to the understanding of their role in improving the learning process. Despite technical challenges, the study underscored the importance of principles beyond feedback, such as clarifying learning goals, fostering peer learning, and promoting student ownership of learning. By highlighting these aspects, this research provides a novel insight into the integration of ICT tools for FA, suggesting that their practical implementation can enhance the EFL learning environment and outcomes for students. Thus, this study fills a research gap by extending the application of FA principles in technology-enhanced settings, offering valuable implications for both theory and practice in EFL education.

References

Ando, T. (2016). *Minnade fukaimanabiwo tasseisuru jyugyo* [Lessons in which every student achieves deep learning]. Tosho Bunka.

Andrade, H. (2010). Students as the definitive source of formative assessment: Academic self-assessment and the self-regulation of learning. In H. Andrade & G. Cizek (Eds.), *Handbook of formative assessment* (pp. 90–105). New York: Routledge. https://doi.org/10.4324/9780203874851

Awedh, M., Mueen, A., Zafar, B., & Manzoor, U. (2015). Using socrative and smartphones for the support of collaborative learning. *International Journal on Integrating Technology in Education*, *3*(4), 17–24. https://doi.org/10.5121/ijite.2014.3402

Bloom, B. M. (1968). Learning for mastery. *Center for the Study of Evaluation of Instructional Programs, 1*, 1–12.

Bransford, J. D., Brown, A. L., & Cocking, R. R. (Eds.). (1999). *How people learn: Brain, mind, experience, and school*. Washington, DC: National Academy Press. https://doi.org/10.17226/9853

Brookhart, S. (2010). *Formative assessment strategies for every classroom* (2nd ed.). Alexandria, VA: ASCD.

Burns, M. (2017). *#Formativetech meaningful, sustainable, and scalable formative assessment with technology*. Thousand Oaks, CA: Corwin Press. https://doi.org/10.4135/9781506361925

Chen, Q., Zhang, J., & Li, L. (2021). Problematising formative assessment in an undeveloped region of China: Voices from practitioners. *Educational Assessment, Evaluation and Accountability, 33*, 648–673. https://doi.org/10.1007/s11092-021-09369-5

Christodoulou, D. (2016). *Making good progress: The future of assessment for learning*. Oxford: Oxford University Press.

Collins, A., & Halverson, R. (2009). *Rethinking education in the age of technology: The digital revolution and schooling in America*. New York: Teachers College Press.

Cote, T. J., & Milliner, B. (2017). Preparing Japanese students' digital literacy for study-abroad: How much CALL training is needed? *The JALT CALL Journal, 13*(3), 187–197. https://doi.org/10.29140/jaltcall.v13n3.218

Davies, S. (2010). *Effective assessment in a digital age: A guide to technology-enhanced assessment and feedback*. Bristol: JISC Innovation Group. https://ctl.utexas.edu/sites/default/files/digiassass_eada.pdf

Dudeney, G., & Hockly, N. (2012). ICT in ELT: How did we get here and where are we going? *ELT Journal, 66*(4), 533–542. https://doi.org/10.1093/elt/ccs050

Elkordy, A., & Keneman, A. (2019). *Design Ed: Connecting learning science research to practice*. New York: International Society for Technology in Education.

Fargeeh, A. I. (2015). EFL student and faculty perceptions of and attitudes towards online testing in the medium of blackboard: Promises and challenges. *The JALT CALL Journal, 11*(1), 41–62. https://doi.org/10.29140/jaltcall.v11n1.183

Fukuda, S. T., Lander, B. W., & Pope, C. J. (2020). Formative assessment for learning how to learn: Exploring university student learning experiences. *RELC Journal, 53*(1), 118–133. https://doi.org/10.1177/0033688220925927

Fusic, F., Anandh N., & Thangavel, M. (2020). A case study on improving learner engagement by incorporating ICT tool usage and active learning strategies in engineering courses. In K. Kumar & J. P. Davim (Eds.), *Methodologies and outcomes of engineering and technological pedagogy* (pp. 224–246). Hershey, PA: IGI Global.

Guadu, Z. B., & Boersma, E. J. (2018). EFL instructors' beliefs and practices of formative assessment in teaching writing. *Journal of Language Teaching and Research, 9*(1), 42–50. https://doi.org/10.17507/jltr.0901.06

Hattie, J., & Timperley, H. (2007). The power of feedback. *Review of Educational Research, 77*(1), 81–112.

Jeong, H. J., & Lee, W. C. (2016). The level of collapse we are allowed: Comparison of different response scales in safety attitudes questionnaire. *Biometrics & Biostatistics International Journal, 4*(4), 128–134. https://doi.org/10.15406/bbij.2016.04.00100

Kajita, E. (2016). *Keiseitekina hyokanotameni* [On formative assessment]. Meiji Tosho.

Kingston, N., & Nash, B. (2011). Formative assessment: A meta-analysis and a call for research. *Educational Measurement: Issues and Practice, 30*(4), 28–37. https://doi.org/10.1111/j.1745-3992.2011.00220.x

Lizzio, A., Wilson, K., & Simons, R. (2002). University students' perceptions of the learning environment and academic outcomes: Implications for theory and practice. *Studies in Higher Education, 27*(1), 27-52. https://doi.org/10.1080/03075070120099359

McCallum, R. C., Zhang, A., Preacher, K. J., & Rucker, D. D. (2002). On the practice of dichotomization of quantitative variables. *Psychological Methods, 7*(1), 19–40. https://doi.org/10.1037/1082-989x.7.1.19

Mork, C.M. (2014). Benefits of using online student response systems in Japanese EFL classrooms. *The JALT CALL Journal, 10*(2), 127–137. https://doi.org/10.29140/jaltcall.v10n2.171

National Academies of Sciences, Engineering, and Medicine. (2018). *How people learn II: Learners, contexts, and cultures.* Washington, DC: The National Academies Press. https://doi.org/10.17226/24783

Noskova, T., Pavlova, T., Yakovleva, O., Malach, J., & Kostolányová, K. (2016, May 2–4). Approach to selecting ICT tools for formative assessment. *The 11th International Scientific Conference on Distance Learning in Applied Informatics Proceedings*, DIVAI 2016, Sturovo, Slovakia, 199–213. https://www.divai.sk/assets/divai2016.pdf

Osuna, M. M., & Meskill, C. (1998). Using the world wide web to integrate Spanish language and culture. *Language Learning & Technology, 1*(2), 71–92. http://dx.doi.org/10125/25022

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

Pat-El., R.J., Tillema, H., Segers, M., & Vedder, P. (2013). Validation of assessment for learning questionnaires for teachers and students. *The British Psychology Society, 83*(1), 98–113. https://doi.org/10.1111/j.2044-8279.2011.02057.x

Rahmawanti, M. R., & Umam, A. (2019). Integrating web 2.0 tools in writing class to promote assessment for learning. *Journal of English Education Society, 4*(2), 53–59. https://doi.org/10.21070/jees.v4i2.2516

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

Sadler, D. R. (1998). Formative assessment: Revisiting the territory. *Assessment in Education: Principles, Policy & Practice, 5*(1), 77–84. https://doi.org/10.1080/0969595980050104

Tabuchi, K., Kobayashi, S., Fukuda, S. T., & Nakagawa, Y. (in press). Online lessons as a learning mode: Case study on speaking proficiency and anxiety in second language learning. *Technology in Language Teaching & Learning*.

Taylor, R., & Gitsaki, C. (2003). Teaching WELL in a computerless classroom. *Computer Assisted Language Learning, 16*(4), 275–294. https://doi.org/10.1076/call.16.4.275.23412

Umeki, R., & Niimi, N. (2022). Improving university students' proactive learning through assessment for learning: A case of academic writing class. *ARELE, 33*, 175–190. https://doi.org/10.20581/arele.33.0_175

United Nations Educational, Scientific and Cultural Organization. (2002). *Information and communication technology in education: A curriculum for schools and programme of teacher development.* Paris: UNESCO. https://unesdoc.unesco.org/ark:/48223/pf0000129538

van den Boom, G., Paas, F., van Merrienboer, J.J.G., & van Gog, T. (2004). Reflection prompts and tutor feedback in a web-based learning environment: Effects on students' self-regulated learning competence. *Computers in Human Behavior, 20*(4), 551–567. https://doi.org/10.1016/j.chb.2003.10.001

Waluyo, B. (2020). Learning outcomes of a general English course implementing multiple e-learning technologies and active learning concepts. *Journal of Asia TEFL, 17*(1), 160–181. https://doi.org/10.18823/asiatefl.2020.17.1.10.160

Wiliam, D. (2018). Feedback: At the heart of but definitely not all of formative assessment. In A. A. Lipnevich & J. K. Smith (Eds.), *The Cambridge handbook of instructional feedback* (pp. 3–28). Cambridge: Cambridge University Press. https://doi.org/10.1017/9781316832134.003

Zimmerman, B.J. (2000) Attainment of self-regulation: A social cognitive perspective. In M. Boekaerts, P.R. Pintrich, & M. Zeidner (Eds.), *Handbook of self-regulation* (pp. 13–39). San Diego, CA: Academic Press.