

Online formative assessment in undergraduate programs in Vietnam: Teachers' beliefs and practices

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ABSTRACT

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Many universities worldwide have transformed digitally, offering online programs in addition to in-person courses since the pandemic. As a result, teachers became familiar with conducting online assessments or e-assessments. However, little is known about teachers' beliefs and practices of online formative assessment, especially when compared with offline assessment; therefore, it is necessary to examine these issues. The current study examined how the same teachers conducted their formative online assessments and the differences in their beliefs regarding the principles of online assessment, compared with those of traditional offline assessment. The study used a mixed-methods research design, employing in-depth interviews with 13 teachers and a survey of 100 respondents working at higher education institutions that offer online degrees. The study found that teachers utilized different assessment methods, with multiple-choice questions being the most popular in both online and offline teaching. Teachers also expressed concerns about the validity and reliability of online formative assessment due to students' cheating, plagiarism, or the use of AI. The results suggested diversifying formative online assessment tasks and conducting regular assessments to prevent student misconduct and enhance the reliability and validity of formative online assessment.

Introduction

Several studies have investigated online assessment, for example, systematic reviews by Ghouali et al. (2020) and Alamr et al. (2024) on the types of online assessments. However, these reviews have not considered the purpose of online assessments, i.e. for formative or summative assessment, as well as teachers' beliefs about these assessment types.

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Some studies examined the delivery of online assessment, including via learning management systems (LMS) and assessment tools such as Test Pilot and Questionmark (Appiah & Van Tonder, 2018). While systematic reviews have examined types of online assessments, there is limited research on the tools and platforms used to facilitate these assessments. Other under-researched topics for online formative assessment include the often-overlooked role of formative assessment and the lack of connection between assessment and learning outcomes. There are also concerns regarding students' cheating, the trustworthiness of test results, the lack of focus on higher-order thinking skills (A Sa'di et al., 2021), platform design issues, and students' mistakes (Azmi & Khoshaim, 2021). The current literature has been quite extensive on both online and offline assessments, but it has hardly examined them in comparison in the same context. Another under-researched area is teachers' belief in the principles of online formative assessment.

In response to the growing demand for online education, the Vietnamese government has permitted online courses and programs, and higher institutions in Vietnam have created online courses for students. Many universities have opened online programs and online assessments have become an essential part of these courses (Vietnamese Ministry of Education and Training, 2021). However, little has been done to examine how teachers conduct online formative assessment and their beliefs about it.

Knowing whether a teacher would conduct assessment tasks differently in online or offline modes and the attitudinal motivation driving these approaches would help make assessment more practical, reliable, and appropriate. This is particularly important in higher education, where teachers have greater flexibility in designing and conducting formative assessment tasks for their courses, both online and offline. The current study, therefore, aims to examine how teachers practise online formative assessments and their beliefs about it. The study also investigates whether there is any difference between their online and offline formative assessment. By doing so, this study aims to both fill a gap in online assessment in the higher education context and offer valuable teachers' perspectives on how to make formative assessment more practical, reliable, valid, authentic, and useful for both teachers and students.

Literature review

Assessment and its principles

Assessment is a process used to measure someone's skills or performance in a specific area, evaluate strengths and weaknesses, and track progress (Brown & Abeywickrama, 2019). There were two types of assessment: formative and summative. Summative assessment refers to an assessment at the end of a unit or course to check whether students have reached the learning goal, while formative assessment is ongoing assessment during the classroom that provides feedback to improve teaching and learning (Gu, 2021). One of the most well-known frameworks for assessment was the principles identified by Brown and Abeywickrama (2019, p.19), who proposed five main principles for language assessment: practicality, reliability, validity, authenticity, and washback. Practicality is the administration of the test, including cost, time, ease of scoring, and interpreting the results. Reliability is the consistency of the test across

learners and time. Validity is how well the test measures what it purports to measure and does not measure what is irrelevant. Authenticity refers to whether the test resembles real-life situations. Washback is the effect of the tests on teaching and learning practice. For example, whether the test can affect a teacher's teaching methodology and students' learning behavior. These comprehensive principles cover various aspects of the assessment process from design to implementation and evaluation, and, therefore, are adopted in the current study as the basis principles for online formative assessment as a subset of assessment.

Online assessment in higher education

E-assessment, or online assessment, refers to the use of technology to administer, proctor, mark, and give feedback on the student's test (Tuah & Naing, 2021). The current study will examine formative assessment during online teaching, which is the ongoing assessment that teachers use to provide feedback and check students' understanding.

There are four common types of online assessment: peer assessment, automated assessment, teacher assessment, and self-assessment (Heil & Ifenthaler, 2023). Like other forms of assessment, online assessment can be delivered through LMSs or assessment tools, using technologies such as Test Pilot and Questionmark (Appiah & Van Tonder, 2018). While e-assessment was often found to be more challenging than traditional assessment, as teachers are required to learn to use assessment technologies, a systematic review revealed that experience and training can help address this challenge (Appiah & Van Tonder, 2018).

The current literature consists of various frameworks for online assessment. For example, Tinoca et al. (2014) focused on authenticity, consistency, transparency, and practicality while overlooking the impact of assessment on students' learning and teachers' teaching methods. Padayachee et al. (2018, p. 228) proposed another framework comprising the physical, intellectual, emotional, and virtual learning environment, emphasizing support for students' performance in the online environments. This framework, however, has not considered the critical principles of validity and reliability in online assessment.

Similarly, Jamalludin and Romli (2023) found that seven factors make up an online assessment conceptual framework: authenticity, responsiveness, practicality, adaptability, transparency, alignment, and affordance. Huber et al. (2024) also proposed a framework for designing online assessments focusing on equity of access, academic integrity, student experience, authenticity, quality feedback, and information integrity. These frameworks contribute to a deeper understanding of what good online assessment practice should look like when the latest technologies are in use. However, they have also not considered some of the most critical principles of assessment: whether the assessment task is trustworthy and useful for stakeholders, which determines the reliability and validity of online assessment.

A more comprehensive framework was proposed by De Villiers et al. (2016, p. 72), who outlined seven principles of effective online assessment: affordance, alignment, articulation, accountability, accreditation, adaptation, and authenticity. These principles align with the assessment principles of Brown and Abeywickrama (2019) on reliability, validity, and authenticity, with an added focus on the use of technology for online assessment. However, the framework overlooked the practicality of online assessment, an important consideration for

busy teachers with limited resources.

Of the various models for assessment found in the literature, the five principles of assessment by Brown and Abeywickrama (2019) proved their value as they addressed the shortcomings of the other frameworks. The five principles proposed by Brown and Abeywickrama (2019) are practicality, reliability, validity, authenticity, and washback. Practicality concerns how the test is administered, including factors like cost, time, and ease of scoring. Reliability refers to the test's ability to produce consistent results over time and across different learners. Validity assesses whether the test accurately evaluates what it is intended to measure, without including irrelevant content. Authenticity looks at how closely the test reflects real-world contexts. Washback describes the impact the test has on teaching and learning, such as influencing teachers' instructional methods and students' study habits. The current study adopts these principles because of their comprehensiveness and applicability to both online and offline assessments for comparing teachers' beliefs about assessments.

In short, alongside technological development, various models for online assessment have been proposed (Tinoca et al., 2014; De Villiers et al., 2016; Huber et al., 2024; Padayachee et al., 2018). While these models emphasize aspects such as authenticity, alignment, and practicality, they often overlook the validity and reliability of online formative assessments. This gap reinforces the relevance of Brown & Abeywickrama's (2019) five principles, which provide a more holistic foundation for this study.

The benefits and disadvantages of online assessment

Online assessment has a number of benefits. While a large number of students can participate in the assessment task simultaneously using technology, the most appealing benefits are immediate feedback and objectivity, thanks to automatic grading (Ghouali et al., 2020). For teachers, other advantages include flexibility and practical administration for collecting, marking, and communicating results at any time and place (Ghouali et al., 2020). Other significant benefits include the possibility of reuse, a wide range of question types, opportunities to assess groups of learners, and different types of assessment (Kiryakova, 2021). Anytime, anywhere implementation and the various types of assessment are also major pros for teachers (Appiah & Van Tonder, 2018; Kiryakova, 2021). Furthermore, online assessment enables the teacher to get detailed data on students' performance and reduce the instructor's workload by reducing time for feedback and record-keeping (Alamr et al., 2024).

However, online assessment has a range of disadvantages, including limited assessment of high cognitive reflective abilities, the costs of hardware and tools, students' lack of attention, insufficient materials and infrastructure, student cheating, and loss of personal information (Ghouali et al., 2020). Instructors' and students' readiness to use assessment technologies, cybersecurity, and the validity and reliability of the test are also barriers to online assessment (Doğan et al., 2020). Furthermore, online assessments did not provide equal opportunities for all students due to varying internet connection types and speeds and other technical issues. Some further challenges for teachers include the time and effort required to design assessments (Appiah & Van Tonder, 2018), academic integrity, access to and consistency of technology services, feedback, and students' preferences (Cram et al., 2022). The alignment between online assessment and learning goals is also a major problem (Jarrah et al., 2022). The various benefits

suggest that online assessment should be more widely adopted in higher education contexts; however, the range of challenges highlights the need for further research on how to implement it more efficiently and effectively to address the identified concerns regarding formative assessment, which is a crucial component of teachers' workload.

Teachers' implementation of and attitudes towards online assessment

Teachers around the world have employed online assessments for formative purposes. Formative online assessment tasks come in various types, for example, audio or visual media records, presentations, multiple choice questions, matching, gap-filling, true-false, drag and drop items, simulation questions, discussion groups, role-play, case studies, blogs, wikis, shared documents, e-portfolios (Doğan et al., 2020; Ghouali et al., 2020; Heil & Ifenthaler, 2023). Multiple-choice questions were good for assessing theoretical topics but not for practical topics (Babo et al., 2020). Among these types of online assessments, written essays, online quizzes, and live presentations were reported to be the most popular ones, while reflective journals, portfolios, online discussions, peer assessments, and interactive games were less common (Cram et al., 2022). Asynchronous discussions on an online platform were widely accepted and used because they fostered student-student and student-teacher interactions and created a learning community where students could develop their cognition (Fehrman & Watson, 2021).

Formative assessment was found to have greater diversity than summative assessment (Attia, 2023), prompting the need for further research so teachers can best exploit its variety and benefits. Several studies have examined how teachers conducted their online assessments. Howe (2020) examined students' and lecturers' perceptions of online assessment using qualitative and quantitative methods. The study found positive attitudes towards online assessment because teachers could reduce their workload in terms of marking and moderation. However, the study has not explored how teachers conducted their online and in-person assessments and whether there was any difference between them or what teachers thought about formative online assessments.

Similarly, Kearns (2012) examined 24 courses in an online program at a university in the USA through interviews with the course instructors. The study found that lecturers used written assignments, online discussions, fieldwork, quizzes, and presentations to assess student performance in the course, with written assignments being the most popular. The study, however, only explored the challenges and benefits of these types of assessments without analyzing whether they were valid, practical, and reliable. Furthermore, Mirza (2020) found that university teachers in Lebanon questioned the validity and reliability of online summative assessments, especially quizzes, and therefore employed project-based assessments or oral exams for formative assessment. Without meeting these principles, any form of assessment would be useless, regardless of how interesting it may be.

More recent studies have looked more into technological tools used for formative online assessment. For example, Al-Hattami (2020) examined the types of applications, such as Kahoot, Google Forms, Socrative, Quizlet, Nearpod, and Mentimeter, employed by teachers in Bahrain for online assessment.

Other studies, however, largely focused on the advantages and disadvantages of online

assessment without further examining the implementation of formative online assessment or teachers' beliefs about its validity, reliability, practicality, authenticity, and washback (Sarigoz, 2023).

In summary, while there have been studies exploring the benefits and challenges of online assessment, as well as digital tools used for online assessment, there are still gaps regarding online formative assessment, namely how differently teachers conducted it in comparison to offline mode, and what teachers believe about online formative assessment in terms of practicality, authenticity, validity, reliability, and washback.

The above-identified gap has motivated the current study to answer the following research questions:

1. How did instructors conduct their formative e-assessments during online courses?
2. What are instructors' beliefs about formative e-assessments during online courses?
3. Are there any differences between online and offline formative assessments?

Methods

The study's design

The study was an exploratory study examining how university lecturers conducted formative assessments and their beliefs regarding online formative assessment. The study also aims to investigate differences between online and offline assessments conducted by teachers. The study employed mixed methods with an exploratory sequential design, combining qualitative and quantitative approaches to yield rich data. Both surveys and semi-structured interviews, which were based on five main principles for language assessment, such as practicality, reliability, validity, authenticity, and washback (Brown and Abeywickrama, 2019), were used to collect data.

Survey

The survey used in the study consists of Likert and multiple-choice items, along with a few open questions. The survey content was developed based on the analysis of responses from a preliminary semi-structured interview with three teachers on their implementation of online formative assessment. All the interviews were conducted in Vietnamese. We have adopted the guidelines by Dörnyei and Taguchi (2010) in developing and validating the questionnaire. First, the questionnaire draft was written based on the preliminary findings from the interviews. The questionnaire was then revised by the research team. After that, the questionnaire was piloted with two participants to gather feedback on the wording. The questionnaire was further revised to make sure it was accessible and comprehensive.

The questionnaire has two parts: the first is background demographic information, such as years of experience, type of university, gender, and education level. The second part of the survey is about how teachers conducted their formative assessments in online and offline teaching and their beliefs about both types of assessment. The questionnaire has three types of questions: open-ended, Likert-scale, and multiple-choice. The multiple-choice questions examined the

types of strategies teachers used for online formative assessment and the challenges they faced when conducting online assessment, while Likert-scale questions examined teachers' beliefs about the assessment process, such as validity, reliability, practicality, washback, and authenticity. Open questions asked teachers to share their further opinions about assessment. The questionnaire investigated both online and offline formative assessment.

Participants

Survey respondents

Participants in this study were 103 university lecturers who taught both online and offline tertiary courses in the north, middle, and south of Vietnam. Lecturers were purposefully selected across three regions based on their voluntary participation to ensure diverse representation of universities offering online courses and a regional balance in the sample population. Among these participants, 71% were female, 28% were male, and 1 participant did not wish to reveal their gender. 100 of 103 taught both online and offline programs. Three participants did not teach online; hence, their data were removed, as they could not offer insights into how they conducted online formative assessments.

Among 100 participants, the majority (83%) held an MA degree, 12% a PhD, and a small minority (5%) a BA. 86% of the teachers worked at public universities, while only 11% of them taught at private universities, and only 3% taught at both public and private universities.

In terms of overall teaching experience, over a quarter of the teachers had about 6 – 10 years of experience, and just under a quarter had about 11-15 years of experience. One sixth (16%) of them had over 20 years and the figure for 16 to 20 years of experience is nearly the same at 15%. Teachers with less than 5 years of experience accounted for more than a sixth (18%). Regarding online teaching experience, over half (58%) had 3-5 years, while teachers with less than 2 years of experience constituted just over a quarter. Only 14% had from 6 – 10 years. Only one participant had more than 10 years of experience teaching online. The participants in the study were first, second, third, and fourth-year students.

Interviewed participants

To further validate the questionnaire results, in-depth, structured interviews were conducted with 13 teachers from different regions of Vietnam. When completing the survey, respondents were invited to leave their email addresses at the end if they were interested in a follow-up survey. Thirteen interviewees were chosen based on their geographical location: the north, the middle, and the south of Vietnam. Saturation was assessed during the interview and analysis. After 11 interviews, no new codes were identified, and after 13, the codes were redundant.

Therefore, we decided to stop interviewing participants after the 13th interview. The interviews were conducted to examine how teachers conducted their online formative assessment when they taught online and whether there were any differences between online and offline formative assessments. Data from the interviews answered the research questions. The interviews were conducted in Vietnamese through Zoom, and the data collection procedure followed the guidelines suggested by Blank (2016). All the interviews were recorded using Zoom. The interview questions focused on how teachers conducted their online formative assessment and on their beliefs about online formative assessment, based on the principles of assessment:

practicality, validity, reliability, washback, and authenticity. In addition, the interview questions also investigated the difference between their online and offline assessment methods. First, teachers from three different regions in the survey were asked to participate in the interviews. If they agreed, appointments were scheduled for them. During the interview, teachers were asked how they conducted online formative assessments, what types of technology they used, and their beliefs about it. The interview questions were in Appendix 2. Each interview lasted about 45 minutes.

Data analysis

The data from the questionnaire was imported into SPSS. Data screening was carried out. If participants did not answer all the survey questions, their incomplete responses would not be used in further analysis. In addition, survey responses that showed signs of lack of care, ingenuine or inauthentic opinions, for example choosing the same option for all multiple-choice questions or Likert scales, or stepping between them, e.g. A – B – C – D – A- B – C – D, etc. are considered invalid and removed from the analysis. For analysis, descriptive statistics such as percentages, means, and medians were used. Data from the interviews were analyzed using thematic analysis. Open-ended questionnaire responses were analyzed using NVivo software alongside the interview transcripts. An AI-powered website (<https://memobot.io/>) was used to transcribe audio recordings of the interviews into text. Two of the researchers then listened to the recordings again and double-checked the transcripts for accuracy and clarity before they were used for data analysis. AI tools were not used in any other tasks during the data analysis and preparation of this manuscript, including proofreading. The transcript was then proofread, double-checked, and edited by a human researcher in the team to ensure the accuracy of the interviewees' answers. The interviews were then analyzed thematically based on the content and coded using keywords as described by Braun and Clarke (2006). The coding of qualitative data and open-ended questionnaire items was conducted in several rounds. The iterative process yielded final themes on how teachers conducted their online formative assessments and their beliefs regarding validity, reliability, practicality, authenticity, and the washback of online formative assessment on students' performance.

Ethics

The study strictly followed the ethical guidelines set by the host university, which approved the research project. All participation in the study is voluntary, and participants could choose to withdraw at any time without any negative consequences. Each participant was informed about the project via email and word of mouth, and an information sheet was included in the call for participants that was sent out. All participants provided their consent by answering the first question in the questionnaire. If they agreed to participate in the project, they chose yes; otherwise, the survey would jump to display the end page with thanks for viewing. Similarly, all the interview participants were informed about the project in advance and provided their consent before the interview started. All the data were kept confidential, and their real name was replaced by coded names. Participants' personal information that could be used to identify them was also removed before data analysis to ensure their privacy and confidentiality.

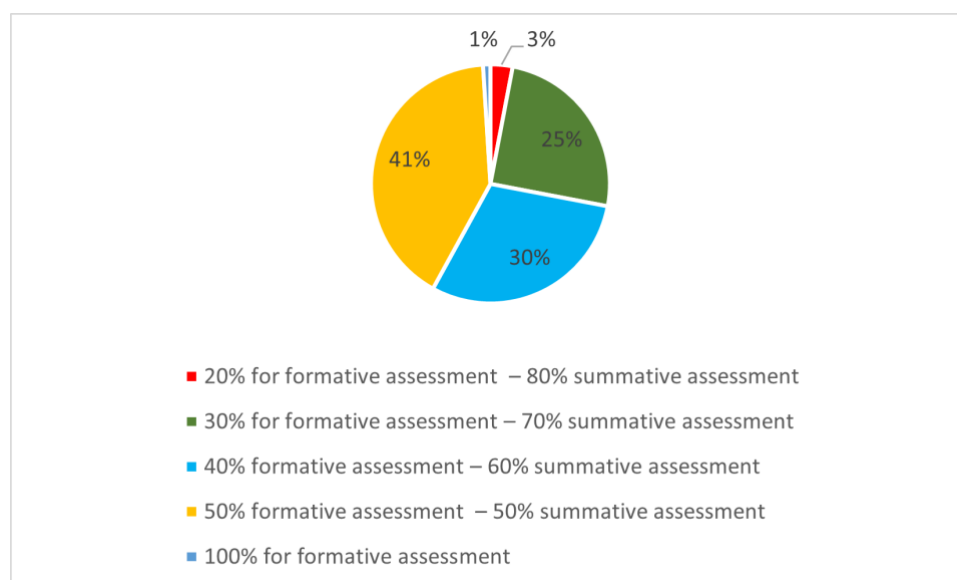
Results

Formative assessment implementation

In terms of the weightage of online formative assessment, the teachers reported that formative assessment accounted for from 30% to 50% of the total scores in their courses, depending on the subjects and classes. The types of tests and assignments for formative assessment also varied, depending on the teachers. To be more specific, two-fifths of the teachers reported that online formative assessment and summative assessment had an equal share of weighting (50%) of the final grade. Just a third of the teachers (30%) said that formative assessment was 40% of the total scores, while a quarter of the teachers (25%) had a 30%-70% ratio for formative versus summative assessment. A small number of teachers (4%) employed other proportions for their assessment types, as shown in Figure 1.

Figure 1.

Formative-summative assessment ratio



Data from Figure 1 confirms the importance of formative assessment in tertiary courses as they account for a significant portion of the final grades. In the interview, teachers explained that they employed different strategies for formative assessment. For example, a teacher summarized:

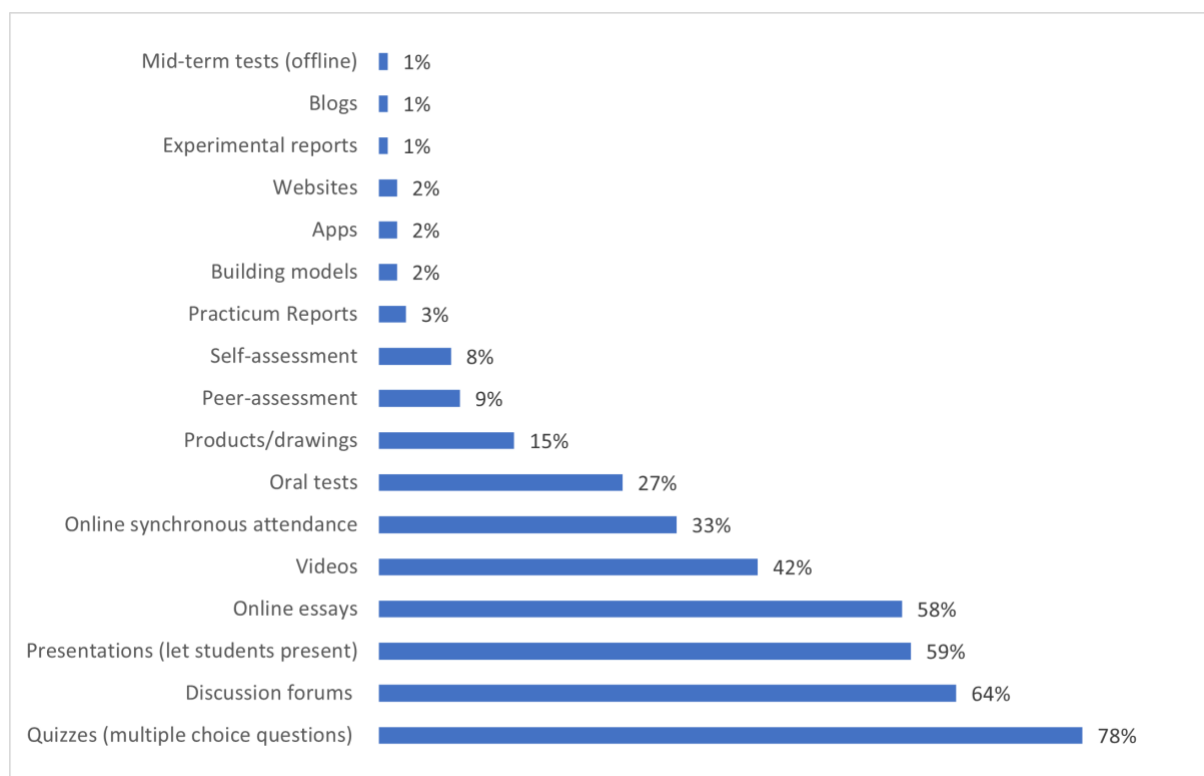
Sometimes, I conducted two tests; sometimes, 3 tests or assignments were dependent on the subject. Students also did exercises in online synchronous classes, and then the tests were marked, and the total score was calculated (Teacher M).

In terms of assessment types, teachers' formative assessment tasks were diverse and flexible, with many different techniques. Figure 2 shows that the most common types of formative assessment were multiple choice questions, accounting for 78%. A majority of teachers also used presentations (59%), forum discussions (64%), and essays (58%). Other types of assessments included videos (42%), attendance in online synchronous meetings (33%), oral tests (27%), and products (15%). However, they were less popular. Less than 10% of the teachers used self-assessment or peer assessment. A small minority of teachers used other ways

of assessment, such as website submissions, blogs, reports, models, and experiment results.

Figure 2.

Methods teachers used for online formative assessment



Survey data from Figure 2 suggests that while a wide range of formative assessments were used by the participants, most were individual tasks, and only a few were interactive or group work. Findings from the interview also further explained ways of employing different types of formative assessments:

I used different techniques to assess students. For example, with listening, the popular forms of formative assessment are multiple-choice, true-false questions, or yes-no questions. (Teacher E)

Teachers also used other methods of assessment while teaching online, as they did in the offline class. One of them said that ‘students could do a project in groups; then, they uploaded the video to the LMS so I could grade it’ (Teacher F)

Teachers combined different methods of formative assessment and gave them different score proportions, for example

The discussion board only accounts for 5% or 10% of the final grade, not much compared to other assignments. The video conference is also 5%, the two combined together are 10%, and the remaining 40% is always the tests if the students don't think for themselves (Teacher M)

Teachers' beliefs about the online formative assessment

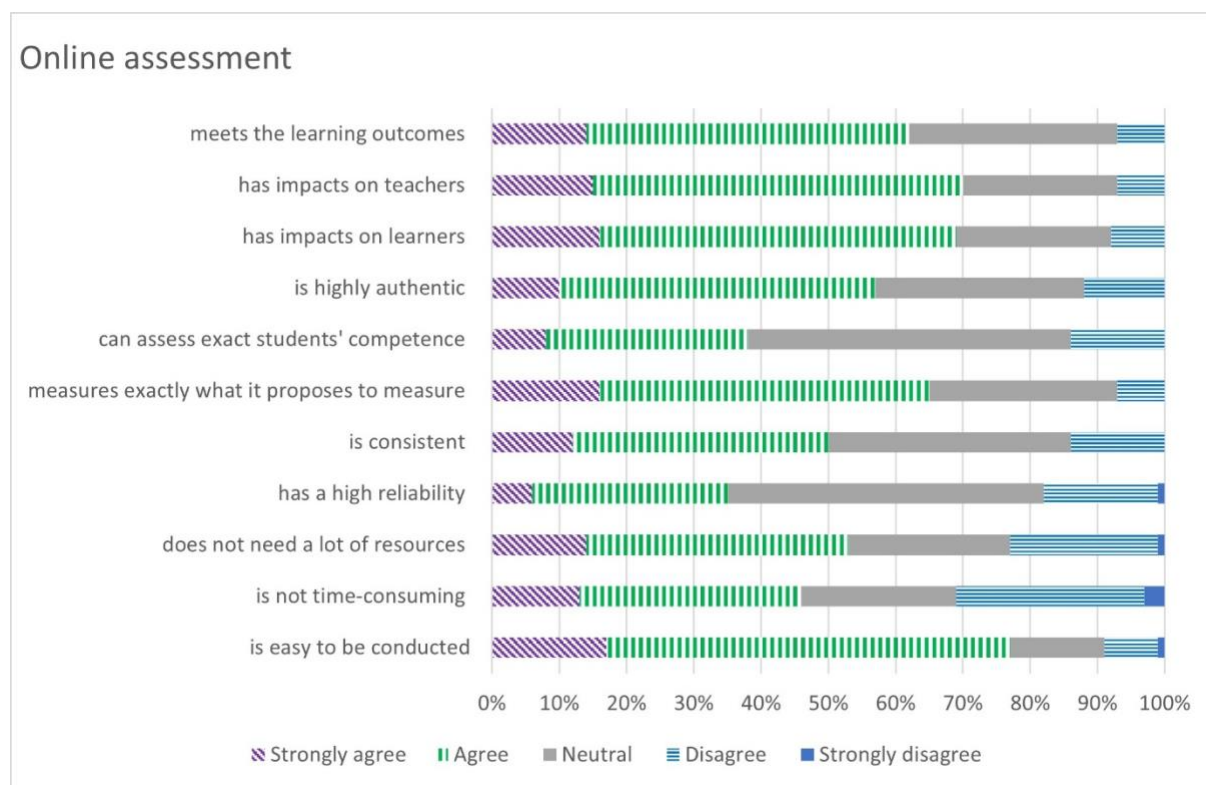
In terms of practicality, more than half of the teachers supposed that online assessment is time-consuming (54%) and needs more resources (45%) (see Figure 3). However, a majority of the

teachers (77%) agreed that online formative assessment is easy to be conducted.

Figure 3 suggests that fewer teachers believe that online assessment is valid and reliable than authentic, and has a washback effect. Interestingly, many teachers found online assessment easy to conduct, but it is also time-consuming and resource-intensive, hence not always so practical.

Figure 3.

Teachers' beliefs about online assessment



Teachers reported that they could use two cameras to supervise students while they were taking the test. The test administration could be conducted through online platforms. Teachers even commented that online assessment had more advantages as it was administered easily, and the system could grade the students' submissions automatically, so that teachers did not have to spend time marking students' work.

On the day of the test, I added the students to the room and let them take the test. When taking the test, the students still did it within 45 minutes, meaning all the procedures were followed consistently. But the only difference is that students would do the test on IOP [a LMS]. Students would get scores as usual...when the student submitted the test, the system would report the score. I found it very fast and convenient. (Teacher G)

However, teachers also faced some challenges in giving feedback because it might take more time to comment online, especially when there are many students in the same class in the online program. One teacher admitted:

Marking assignments and comments directly on the LMS took a lot of time. For example, if the assignments were too long, teachers had to grade all the papers. Sometimes, the

assignment has several pages, which takes a lot of time to read. (Teacher M)

Regarding the washback of online assessment, Figure 3 shows that about 70% of teachers agreed or strongly agreed that online assessment had an impact on learners and teachers. A majority of the teachers (62%) agreed that online formative assessment meets learning outcomes. This means that most of the teachers agreed that online formative assessment was valid and enabled students to learn and achieve their learning outcomes. One of the teachers in the interview explained that the assessment was helpful for students to develop their language skills if the students completed all the assignments given to them:

After they finished doing it [the online formative assessment task], they found that they had achieved a lot of things; that is, their language improved because they had to write the script, remember the main idea, and then record it. If they did not speak fluently, they had to record it again and again. (Teacher G)

In terms of authenticity, 57% of the teachers said that online assessment was authentic. The interview further confirmed and explained why teachers supposed online formative assessment was authentic because the task teachers designed for online assessment was also like the situations that they would encounter in real life, or very practical.

The instructor let students participate in projects and then make presentations about their responsibilities. Students were divided into groups, and they would present their work for scoring, which is considered quite practical and similar to real activities. (Teacher E)

In terms of the validity of the test, 65% of the teachers supposed that the test was valid. However, because of a lack of reliability, only 38% of the teachers supposed that online assessments could measure students' competencies. The interview data showed that teachers perceived that online assessment still measures what it is supposed to do, especially during the oral exam. One of the teachers explained that, for practical subjects, like speaking skills, it is possible to ensure its validity because it can be conducted online easily by using Zoom. (Teacher E)

However, some teachers tried to give more difficult tests to make sure that students did not have time to cheat during the exam. That was when a teacher felt concerned:

Actually, one day, I was grading, and I realized that the exam was too difficult. That is, for example, they incorporate a listening lesson from IELTS section 4 or section 3, but for section 4 here, it is a bit difficult compared to Listening - Speaking 1 [the course being tested]. (Teacher G)

Quite a few teachers raised concerns about the reliability of the online assessment. Just a little over a third of the surveyed (see more in Figure 3) supposed that online assessment was reliable. Only half of the teachers thought that online assessment provided consistent results. The interview further explained the trustworthiness of online assessment that students might ask somebody else to do the assignment for them, as reported by a teacher:

Students asked somebody for help. They asked somebody to do their tests or assignments and submitted. Although I remind students to control their computers and phones, it is

difficult to find out [who cheated]. (Teacher C)

In addition, if students used AI to do assignments, and teachers could not find evidence that students used AI to do so, so they could not impose a penalty or deal with the situation.

Students used AI to do the assignment, but it is difficult to detect AI. As Ms. H explained earlier, there was no evidence, and it was a school exam. Students who used AI got a very high score, but I did not have any evidence to report or penalise them. (Teacher E)

Another major issue is that students might copy from the internet, then, use paraphrasing software to rewrite what they copied from the internet and submit.

Students copied from the internet and submitted, but there was no way to detect the evidence, so it is hard for teachers to deal with these students. Teachers had difficulties finding evidence that students copied from the internet [as it was paraphrased]. (Teacher M)

Teachers' suggestions for improvement

Some teachers who responded to the questionnaire suggested various strategies to reduce cheating and improve the practicality and reliability of the tests. For example, teachers may introduce the rules at the beginning of the class and inform students about the possible consequences. Teachers should also ensure that students will not plagiarize or use AI to do their assignments. In addition, when creating assessment tasks, it was recommended that teachers should focus on topics that students were familiar with to limit their use of digital tools to search.

In the first session, when introducing the subject, I would let students know about the heavy penalties for academic misconduct to reduce the situation of students plagiarizing or using AI. At the same time, I would use plagiarism-checking software for students' submissions. When designing assessment tasks, I often choose topics that are related to students' own feelings in specific situations so that students could limit the use of AI or search for them using Google. (Teacher I)

Another way to reduce cheating is that teachers could organize more group work and collaborative activities instead of individual tests.

Instead of just giving individual tests, instructors encourage students to participate in group projects or one-on-one online class discussions. This not only helps reduce stress but also encourages collaboration and mutual learning among students. Group projects can give students the opportunity to demonstrate teamwork and communication skills instead of just relying on individual test-taking abilities. (Teacher J)

Another suggestion is that teachers should diversify their formative assessment. Instead of mid-term tests, teachers could let students do more regular exercise, small group projects, and discussions.

Reducing exam pressure for students increases formative assessment: Focus on continuous assessment (group exercises, small projects, participating in discussions) instead of just focusing on a single midterm test. Create a positive learning environment:

Inspire and motivate students to see tests as learning opportunities instead of pressure just to get points. (Teacher G)

The above teacher has pointed out that diversifying formative assessment tasks using a variety of online assessment types and tools would, therefore, help create a positive washback and authentic learning environment for students while enhancing the validity and reliability of online formative assessment. However, it also means that the amount of teachers' time, effort, and resources needed would also increase, impacting the practicality of assessment.

Differences between online and offline assessments

The results reveal that teachers used similar methods to conduct their online and face-to-face assessments. Three popular task types that teachers used to conduct their offline assessments were quizzes, presentations, and discussion forums. However, the percentage of teachers employed by these three types of assessment is a little bit higher compared to the online assessment. Quizzes are still the most favorite choice for organizing the assessment. Two other popular offline assessments were essays and videos, accounting for about 50%, which is nearly the same as the online assessment.

One of the teachers in the interview explained that there was a slight difference between online and offline assessment methods because teachers had to ensure consistency in achieving learning outcomes set by the schools.

For the subjects that I taught, I only changed the approach to assessment a little bit, just the form. There is not much difference in the core approach between online and offline assessments. (Teacher A)

The fact that consistent learning outcomes must be achieved explains the similarity between assessment task types used for formative online and offline assessment. Figure 4 presents the assessment types used by the participants for offline formative assessment.

Figure 4.

Methods teachers used for formative offline assessment

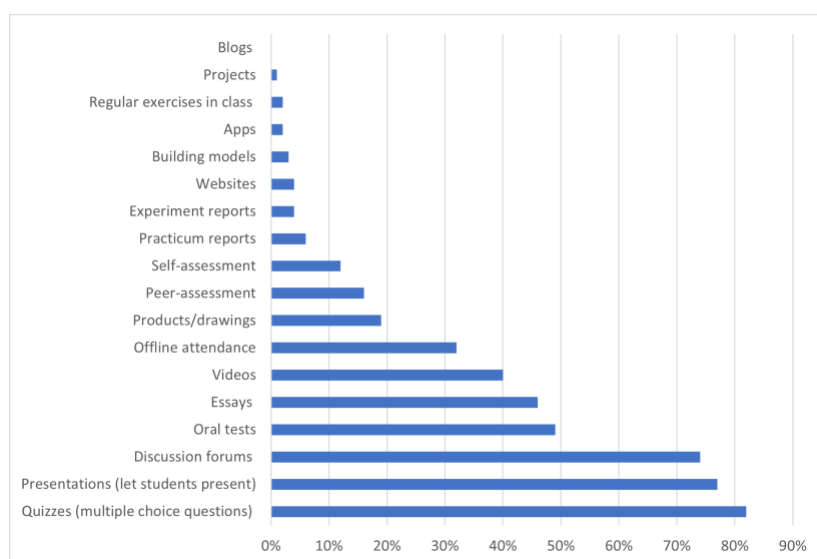


Figure 4 reveals that teachers used quizzes, presentations, and discussion forums for online formative assessment, which was similar to what they did in the offline formative assessment. While the assessment types are similar between online and offline formative assessments, teachers' beliefs about them are quite different, as shown in Figure 5.

Figure 5.

Teachers' beliefs about offline assessment

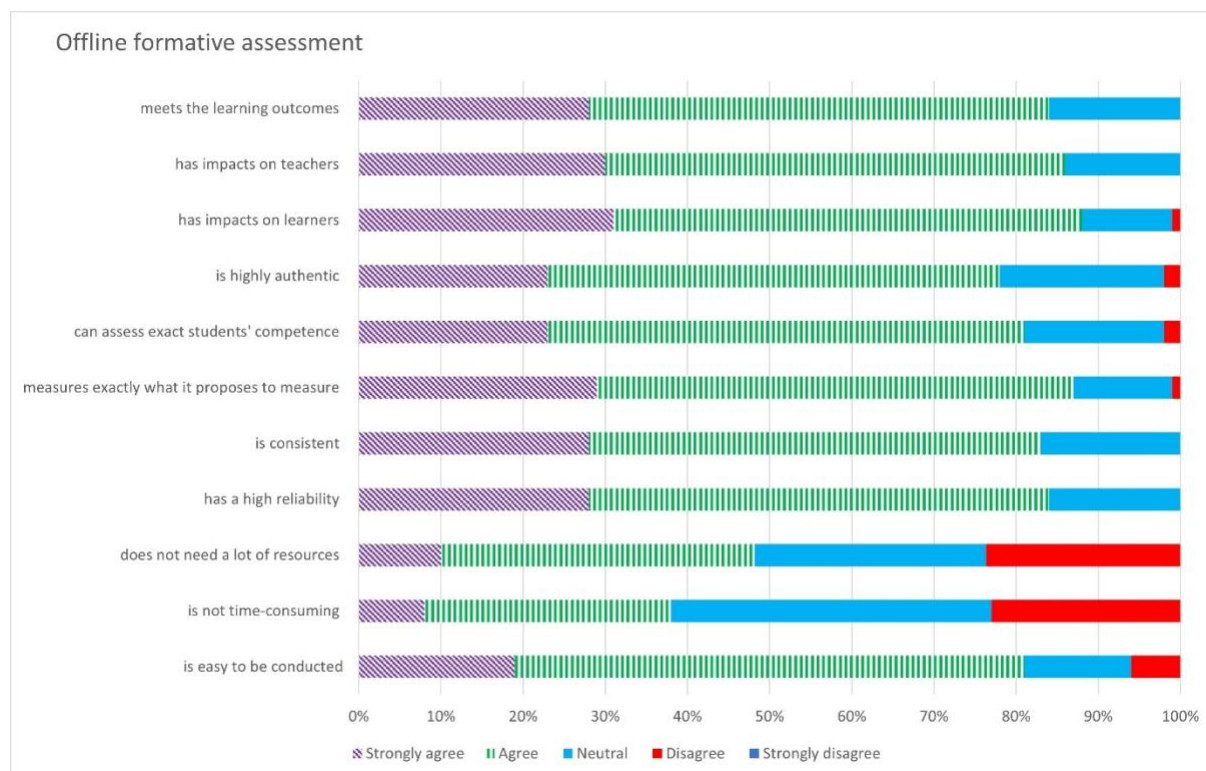


Figure 5 shows that most teachers (about 80% or more) agreed or strongly agreed that offline assessments had validity, reliability, authenticity, and washback, which is a much higher rate compared to formative online assessments. Practicality is an issue for both online and offline formative assessment due to being resource-intensive and time-consuming, as reported by about 60% of the teachers. However, it is clear that the most significant contrast is that teachers believe offline formative assessment has higher levels of reliability and validity than online formative assessment. It is worth noting that all the participants taught both online and in-person programs, and considering that the task types are similar, it is interesting that they have more trust in offline formative assessment, thinking it is more valid and reliable than online formative assessment. The interview revealed the reasons why they believed offline assessments were more valid and reliable in the questionnaire.

Teachers could easily monitor students while students were taking tests or assignments, ensuring that there was no cheating during face-to-face assessments. For online assessments, it was difficult to track the learning progress of individual students. Therefore, teachers could only identify progress through accurate tests (Teacher L).

Teachers reported that they could keep track of their students' progress through formative

offline assessment, while they found it difficult to check their students' advancement through formative online assessment because they could not supervise.

Another difference is the quality of feedback and the speed of their feedback between online and offline formative assessments. Because teachers could communicate much more easily through their offline assessment, they believe that they could explain in more detailed ways.

For online teaching, feedback will be slower due to longer grading time, and feedback may be less personalized due to communication difficulties. Feedback can be more detailed due to face-to-face interactions, giving students a better understanding of their strengths and areas for improvement (Teacher K).

In short, teachers used similar methods for online and offline formative assessments. However, teachers believe that offline formative assessments are more valid and reliable than online ones because teachers can supervise students during their assessments so they can have a better understanding of their students' levels. In addition, teachers could give more detailed feedback during their offline formative assessments than their online ones because of the ease of communication.

Discussion

Survey data reveal that formative online assessment accounts for about 30% to 50% of the course final grade, which is quite high. The teachers reported they often conducted one to three mini-tests, attendance, and online forums for online formative assessment. High weighting and regular assessment ensure students engage regularly with learning content for better outcomes in terms of performance and grading. This aligns with McCallum and Milner's (2021) recommendation that regular assessments help students perceive their progress and encourage them to study regularly. These findings suggest that assigning higher weighting to formative assessments, diversifying assessment tasks, and implementing them regularly can enhance student engagement with learning outcomes and better achieve learning outcomes.

Findings from the survey revealed four types of assessment that were popular: multiple choice questions, presentations, forum discussions, and essays, which are similar to what A Sa'di et al. (2021), Ghouali et al. (2020) and Alamr et al. (2024) found that most tests were carried out in the form of multiple-choice questions. However, in this current study, teachers used forum discussions for students to discuss and write their reflections, which focused more on high-order thinking, a skill that was found lacking in these aforementioned studies. More than 60% of the teachers in the current study used forum discussions for formative assessment to foster students' critical thinking skills by reflecting on their experiences, in line with the suggestion by A Sa'di et al. (2021). Teachers in this current study generally had extensive experience in teaching online and in-person; therefore, they learned from their trials and errors and organized more activities for students to develop their critical thinking skills, which helped explain why they conducted online formative assessment in the way they did. This is in accordance with the findings from Appiah and Van Tonder (2018) that teachers who have experience and are well-trained can create tasks that could help students improve their thinking skills.

In terms of teachers' beliefs about online formative assessment, the current study also found that most of the teachers reported that it was easy to conduct online formative assessment, and formative assessment had an impact on student learning. Most teachers reported that the assessment was authentic. Among the principles by Brown and Abeywickrama (2019) reliability and validity are teachers' concerns. Students' academic misconduct, including cheating, plagiarism, or relying on AI to do the assignment, causes some issues in terms of validity and reliability of the online formative assessment. In the same vein, A Sa'di et al. (2021) found that students cheated in their assessments and achieved higher scores than their actual ability. Teachers in the current study expressed their concern in terms of validity and reliability and tried to solve the problems by adopting a more difficult assessment compared to their students' levels and familiar topics to reduce students' time and need to consult the internet or use AI tools. The teachers believed that the assessment itself is still valid if the course is well-designed with well-thought-out learning outcomes. On the other hand, reliability may be improved by teachers' use of technologies, e.g., using two cameras to administer and supervise students during the online assessment implementation.

The findings show that teachers adopted nearly the same strategies for online and offline assessment, which is different from Veugen et al.'s (2022) finding that secondary school teachers adopted more formative assessment strategies and used them more frequently than in face-to-face teaching. One of the reasons is that teachers in the current study had more experience in teaching online and needed to ensure students meet consistent learning outcomes regardless of the teaching modes. This is also different from the finding by Tuah and Naing (2021) that teachers used more diverse techniques in traditional face-to-face classrooms than in online assessments.

The results of the current study offer clear implications for teachers who need to conduct online formative assessments. The data suggests that teachers should diversify their formative assessment methods, for example, including more group work or one-on-one class discussions. This not only helps reduce stress but also encourages collaboration and mutual learning among students (Ghouali et al., 2020). Group exercises can give students the opportunity to demonstrate teamwork and communication skills. Peer assessment should also be used more as a good chance for students to reflect on their progress, as recommended by Morris et al. (2021), as it helps to develop their critical thinking skills.

On the other hand, it was also recommended that teachers introduce classroom regulations about the use of AI early on in the course. Teachers believe it will be helpful to be clear about expectations and acknowledgment of possible consequences, including harsh penalties if students exploit AI in an inappropriate manner for assignments. Teachers should also use plagiarism software to check their students' works, and the task should be more authentic and related to the student's experiences so that they would not use Google for searching. By implementing the above suggestions, teachers would be able to create a positive learning environment that inspires and motivates students to see formative assessment as learning opportunities instead of pressure just to get higher marks.

Limitations

The study only collected teachers' self-reported data in the questionnaire and the interview;

therefore, the data might have potential biases. Furthermore, the study should include observation so that the data can be triangulated better. Moreover, the number of teachers surveyed is only 100 teachers, and the sampling techniques in this survey are purposeful to represent three areas in Vietnam, which may limit the generalizability of the results. Further study could examine a larger pool of teachers with random sampling so that the findings could be generalized to larger scales.

Conclusion

The study found that university teachers employed high weights for online formative assessment, and they used four main types of assessment: presentation, forum discussion, essays, and multiple-choice questions. Teachers utilized nearly the same strategies for online and offline formative assessment. However, teachers were concerned about the validity and reliability of online formative assessment because of students' misconduct, such as cheating, plagiarism, or the use of AI to do the assignment. Teachers supposed that the reliability of assessment improved thanks to the use of technology to supervise and administer the assessment, and still believed in the validity of the online formative assessment, and tried to improve the reliability of the assessment. The current study suggested that teachers should employ more diverse types of assessment, including self-assessment, peer-assessment, and group assessment, to enhance collaborative learning and reduce students' pressure. Teachers should inform students about the rules for online assessment at the beginning of the course and check whether students have employed AI or not.

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Biodata

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Appendix 1

Survey

Online formative assessment

The purpose of this survey is to provide an overview of the formative assessment methods used in online undergraduate programs at universities in Vietnam. Your responses will help educational administrators and researchers gain deeper insights into these programs. The findings will contribute to the development of online undergraduate programs across various academic disciplines.

Participation in this study is completely voluntary, and you have the right to withdraw at any time. You are not required to disclose any personal information. All personal information (if any), as well as your responses, will be kept confidential. We sincerely appreciate the time you spend completing this survey and the valuable feedback you provide.

If you have any questions or would like more information before making a decision, please feel free to contact the lead researcher, Dr. Le Van Thinh, at the email address: thinhlv.py@hvn.edu.vn

I am willing to participate in this research.

a. Agree b. Disagree

Thank you sincerely for your cooperation!

A. Personal Information

1. Gender (please select one):

☐ Male

☐ Female

☐ Other

☐ Prefer not to disclose

2. Are you currently teaching in any online undergraduate program?

☐ Yes

☐ No (*end of survey*)

3. What is the highest level of education?

☐ Bachelor's degree

☐ Master's degree

☐ Doctoral degree (Ph.D.)

☐ Other (please specify)

4. What type of university are you currently teaching at?
 - ☐ Public university
 - ☐ Private university
 - ☐ Other (please specify)
5. How many years of teaching experience do you have?
 - ☐ 0 – 5 years
 - ☐ 6 – 10 years
 - ☐ 11 – 15 years
 - ☐ 16 – 20 years
 - ☐ More than 20 years
6. How many years of experience do you have teaching online?
 - ☐ 0 – 2 years
 - ☐ 3 – 5 years
 - ☐ 6 – 10 years
 - ☐ 11 years or more
7. What subjects are you currently teaching at the undergraduate level?
8. What is your current teaching specialization or major?
9. Which year(s) of undergraduate students are you currently teaching?

B. Questionnaire

Part 1: Online Assessment (E-assessment)

1. What is the ratio between formative assessment and final assessment in the online undergraduate program in which you teach the most?
 - ☐ 20% formative – 80% final
 - ☐ 30% formative – 70% final
 - ☐ 40% formative – 60% final
 - ☐ 50% formative – 50% final
 - ☐ Other ratio (please specify)
2. In your opinion, what is an appropriate ratio between formative assessment and final assessment?
3. Which formative assessment methods have you used in online undergraduate programs? (Please select all that apply across all online programs you have taught.)
 - ☐ Multiple choice questions or quizzes
 - ☐ Presentations
 - ☐ Discussion forums
 - ☐ Essays
 - ☐ Videos
 - ☐ Products/ drawings
 - ☐ Oral tests
 - ☐ Online synchronous attendance
 - ☐ Self-assessment
 - ☐ Peer-assessment
 - ☐ Experimental reports
 - ☐ Building models
 - ☐ Practicum reports
 - ☐ Apps
 - ☐ Websites
 - ☐ Blogs,...
 - ☐ Others – Please specify

4. What do you believe about online formative assessment?

<i>Online formative assessment is</i>	<i>Strongly agree</i>	<i>Agree</i>	<i>Neutral</i>	<i>Disagree</i>	<i>Strongly disagree</i>
can assess exact students' competence					
is easy to be conducted					

is not time-consuming					
does not need a lot of resources					
is highly reliable					
is consistent					
measures exactly what it proposes to measure					
can assess exact students' competence					
is highly authentic					
has impacts on learners					
has impacts on teachers					
meets the learning outcomes					

5. Do you have any feedback or comments regarding formative or midterm assessments in the online programs you are currently teaching? Please specify.

6. What difficulties did you have in the assessment process of the online teaching program? (You may select multiple options)

- ☐ Students use AI to do assessment.
- ☐ Students ask someone else to do assignments.
- ☐ Students plagiarise.
- ☐ It takes a lot of time for teachers to mark the test.
- ☐ Teachers do not have enough time and resources to give detailed feedback.
- ☐ Teachers had difficulties in proctoring students.
- ☐ Teachers lack assessment knowledge.
- ☐ Teachers lack opportunities for professional development about online assessment.
- ☐ Teachers have difficulties in changing from offline assessment to online assessment.
- ☐ Teachers have difficulties in online infrastructure like LMS, platform.
- ☐ Teachers do not have online assessment application accounts such as Kahoot, Quizz.
- ☐ There is no technical support from schools during online assessment.
- ☐ Teachers face financial difficulties to buy digital tools.
- ☐ Schools do not have clear policy in terms of online assessment.
- ☐ There is no clear guidance from the faculty.
- ☐ Students do not have digital devices.
- ☐ Other difficulties (Please specify).

7. What have you done to address the challenges related to formative or midterm assessment in the online teaching program? Please describe in detail and provide specific examples.

8. Do you have any suggestions for improving formative or midterm assessment in online teaching programs?

Part 2: Offline assessment

1. Which formative assessment methods have you used in offline undergraduate programs?
(Please select all that apply across all offline programs you have taught)

- ☐ Multiple choice questions or quizzes
- ☐ Presentations
- ☐ Discussion forums
- ☐ Essays
- ☐ Videos
- ☐ Products/ drawings
- ☐ Oral tests
- ☐ Online synchronous attendance
- ☐ Self-assessment
- ☐ Peer-assessment
- ☐ Experimental reports
- ☐ Building models

- ☐ Practicum reports
- ☐ Apps
- ☐ Websites
- ☐ Blogs,...
- ☐ Others – Please specify

2. What do you believe about offline formative assessment?

Offline formative assessment is	<i>Strongly agree</i>	<i>Agree</i>	<i>Neutral</i>	<i>Disagree</i>	<i>Strongly disagree</i>
can assess exact students' competence					
is easy to be conducted					
is not time-consuming					
does not need a lot of resources					
is highly reliable					
is consistent					
measures exactly what it proposes to measure					
can assess exact students' competence					
is highly authentic					
has impacts on learners					
has impacts on teachers					
meets the learning outcomes					

3. Can you compare the differences in formative or midterm assessment between offline (in-person) teaching and online teaching programs?

Appendix 2

Interview questions

Online formative assessment

- How do you conduct your formative assessments? What kind of technology do you use to assess students?
- How do you perceive online formative assessment? (Is it practical, reliable, valid, and authentic?)
- What is the washback of online formative assessment on students' learning?
- Do you have any difficulties when conducting online formative assessment?
- What is the ratio between formative assessment and summative assessment in online teaching?

Formative offline assessment?

- Can you compare the difference between online and offline formative assessment? Is it different or similar?
- Do you have any suggestions for both online and offline formative assessment?