

# A Systematic Review on L2 Online Assessment Amidst COVID-19

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**Abstract**—This study carries out a systematic review on L2 online assessment during the pandemic. PRISMA approach is applied in this review to identify, evaluate and select the literature. Data include 23 empirical studies retrieved from Scopus database, ranging in publications dated from January 2020 to January 2022, and are categorized into three main themes: L2 stakeholders' perspectives of online assessment; cheating issues, as well as the evolution of technology enhancing e-assessment. The findings show that L2 e-assessment is moderately accepted by HEI stakeholders who flexibly applied and took diverse alternative assessment forms in their pedagogy. Yet there are some great concerns about cheating challenges in e-assessment practices in the studies. Our discussions indicate that the adaptation of quality assurance framework for ensuring assessment integrity and aligning pedagogical practices of e-assessment with technology-enabled testing would guarantee a successful implementation of L2 e-assessment in HEIs in the post crisis time.

**Index Terms**—systematic review, L2 online assessment, PRISMA

## I. INTRODUCTION

COVID-19 will indeed be remembered as a tragic global pandemic that has profoundly impacted millions of students worldwide. This crisis has compelled educational institutions to swiftly adapt to alternative modes of online learning (Galarce-Miranda et al., 2022). Universities globally hastily transitioned all teaching activities online without adequate preparation (García-Peñalvo et al., 2021). The urgency left little time for essential restructuring of the subjects to be taught and studied, prompting Higher Education Institution (HEI) stakeholders to implement emergency remote teaching, affecting institutional management, pedagogical practices, and assessment practices (Rizakhojayeva et al., 2021). Many educators in higher education (HE) have received ICT training to navigate the challenges of emergency remote learning mode (Cruz et al., 2013).

Ensuring assessment integrity during the pandemic has posed significant challenges for HEI stakeholders, given the pivotal role assessment plays in the pedagogy. While learners' digital competencies do not hinder online assessment, thorough preparation and support guidelines are crucial for its success (Angus & Watson, 2009).

This systematic review paper timely investigates the emerging literature on L2 online assessment practices during the pandemic in tertiary education. It aims to provide a thorough comprehension of how HEI stakeholders have adapted to emergency remote teaching. The paper begins with a concise overview of EFL assessment in HEI and key issues surrounding online assessment. It then outlines the methodology of the review, presents the findings, and engages in further discussion on relevant themes explored by other scholars and researchers.

Assessment has become an essential element of quality assurance in tertiary education. Assessment is crucial for effective pedagogy and must remain central to provide learners the chance to perform their aptitudes and obtain provision from HEI stakeholders to improve students' learning outcomes (Lang, 2000; Bransford et al., 2000). In addition, the Ontario University's Quality Assurance Framework (2021) underscores the importance of assessing students to ensure educational goals are achieved.

During the Education 4.0 period, remote teaching and blended teaching have gained significant traction, particularly in HE. Technological advancements have revolutionized the application of online assessment in tertiary education. Online assessment encompasses various activities or tests designed for learners to undertake directly on electronic devices, offering flexibility in timing and location (Alkhezzi & Al-Zakri, 2011). It facilitates immediate feedback and suggestions for improvement, enhancing the learning experience (Weleschuk et al., 2019). Multi-modal digital classroom assessments (MDCA) have emerged, combining different assessment formats using digital technology, thereby enriching students' techno-academic skills (Fjørtoft, 2020).

In this context, tertiary education is related to undergraduate and graduate education, with L2 students being those studying foreign languages for academic achievement and future careers (ICAS & Force, 2006). Challenges related to testing foreign language learners in HEI include construct-irrelevant variance and the measurement of foreign language proficiency (Haladyna & Downing, 2004; Kim et al., 2011). It is essential to develop assessments that measure learners' content-specific knowledge and skills while reducing the impact of foreign language proficiency on exam results (Pitoniak et al., 2009; Kim et al., 2011).

In summary, this review aims to synthesize the existing research on L2 e-assessment practices during COVID-19, addressing the abrupt shift to online exams for language teachers and students. It poses four research questions

concerning HEI stakeholders’ perceptions, teachers’ practices, cheating challenges, and technological evolution in L2 e-assessment practices during the epidemic:

1. *What are the perceptions of HEI stakeholders regarding L2 online assessment in the epidemic?*
2. *How do teachers and students perceive instances of cheating in online assessments?*
3. *What role does technology play in the context of L2 online assessment practices?*

## II. METHODOLOGY

The PRISMA methodology by Page et al. (2021) was used to perform this systematic review. The research process adhered to three primary steps: literature identification, screening, and inclusion of papers (see Figure 1). The selected papers needed to meet specific eligibility criteria, including being peer-reviewed research articles written in English and published in the Scopus database, ensuring their novelty and quality. Conference articles, review articles, and book chapters were excluded from consideration. Retrieved papers were compiled in an Excel file to facilitate screening and review, and the reference management was handled using EndNote 20.

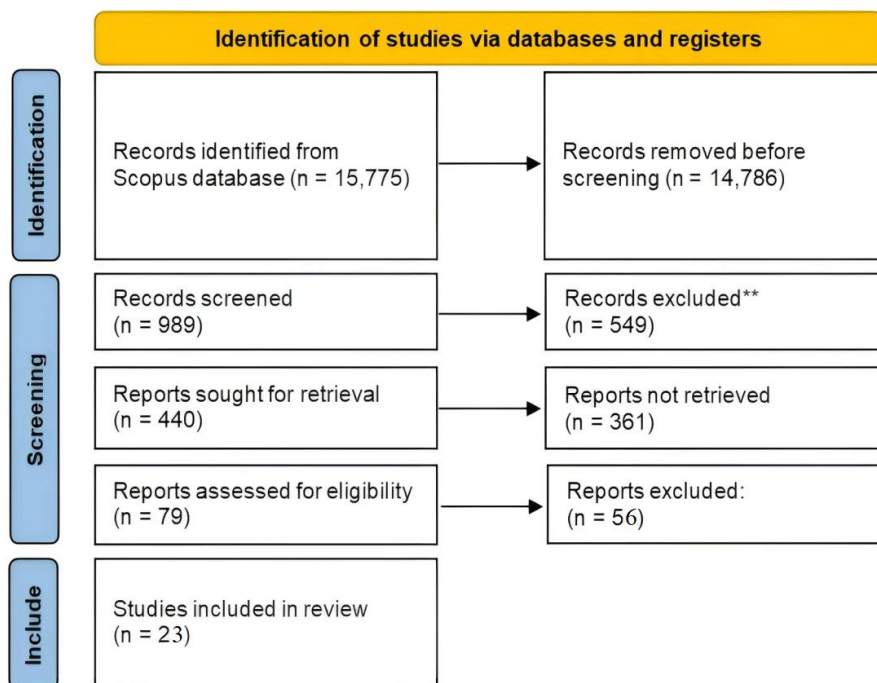


Figure 1. PRISMA Diagram of the Selection

The literature review selection criteria involved multiple stages. Initially, ineligible records identified by automation tools were removed. Subsequently, each of the 989 titles and abstracts was screened based on the eligibility criteria, leading to the exclusion of numerous studies that did not pertain to higher education or were non-empirical. This screening process significantly reduced the volume of studies. Next, the full text of selected abstracts was double-reviewed, and papers unrelated to the context of L2 assessment in higher education or focusing on other educational levels or disciplines were eliminated. Selected articles were then read in full, sorted by year of publication and relevance to the research topic, and their main themes were noted. Through this evaluation and selection process, 23 empirical studies were identified as relevant to the research question, focusing on the application of L2 e-assessment in the context of online and blended higher education during the COVID-19 pandemic. These studies covered themes such as EFL stakeholders’ perceptions of e-assessment amidst COVID-19, L2 teachers’ practices of e-assessment and alternative forms of assessments applied, challenges faced by L2 e-assessment practitioners (including cheating), and the role of technology in L2 e-assessment.

Quality assessment of the database was conducted applying the MMAT (Mixed Methods Appraisal Tool) version developed by Hong et al. (2018) from McGill University. It provided a set of evaluation questions corresponding to the research method of each paper, enabling the assessment of quality across three levels: high, medium, and low (Hong et al., 2018). Table 1 summarizes the selected papers by country of research, theme, method, participants, and quality. These papers consist of empirical and case studies focusing on HEI stakeholders and universities and their experiences with L2 e-assessment. The complexity and broad scope of e-assessment theories attract many researchers, who often conduct case studies and empirical research to test, confirm, and supplement these theories. Several studies among the selected papers have provided recommendations for the practice of e-assessment, effectively aligning with online pedagogical designs. Additionally, various studies have documented the experiences of practicing e-assessment from the perspectives of teachers and students, shedding light on different issues in the assessment process. Through these

studies, emerging perspectives, challenges, and solutions regarding the application of L2 e-assessment in online and blended learning contexts in tertiary education globally can be observed.

TABLE 1  
THEMATIC SYNTHESIS OF DESCRIPTIVE THEMES

Main author	Year	Country	Theme	Method	Participants	MMAT Quality Review
Abduh	2021	Saudi Arabia	Instructors' perspectives, the challenges, the evolution of technology	Mixed method	26 teachers	High
Afshar & Ranjbar	2021	Iran	The challenges	Mixed method	50 teachers	High
Alghammas	2020	Saudi Arabia	Instructors' perspectives, the practices of e-assessment, the challenges, the evolution of technology	Quantitative	171 teachers	High
AlTameemy et al.	2020	Saudi Arabia	Students' perspectives, the challenges, the evolution of technology	Quantitative	660 students	High
Andujar	2020	Spain	The practices of e-assessment, the evolution of technology	Mixed method	60 students	High
Chen et al.	2021	China	Students' perspectives, the practices of e-assessment, the evolution of technology	Observation and quantitative	60 students	High
Chirumamilla & Sindre	2021	Norway	Staff and managers' perspectives, the evolution of technology	Mixed method	11 vendors and system managers; 1 process manager	High
Chung & Choi	2021	South Korea	The practices of e-assessment, the evolution of technology	Case study	979 students and 14 teachers	High
Ghanbari & Nowroozi	2021	Iran	Instructors' perspectives, the practices of e-assessment, the challenges, the evolution of technology	Mixed method	20 teachers	Medium
Ghouali & Cecilia	2021	Algeria	Students' perspectives, the evolution of technology	Quantitative	42 students	Medium
Güngör & Güngör	2021	Turkey	Instructors' perspectives, the practices of e-assessment	Quantitative	1 test-designer	Low
Hamdan et al.	2021	Palestine	Staff and managers' perceptions, the practices of e-assessment, the challenges, the evolution of technology	Qualitative	5 officials	High
Hanafiah et al.	2022	Indonesia	Students' perspectives, the evolution of technology	Case study	60 students	Medium
Hidalgo et al.	2021	Ecuador	Students' perspectives	Mixed method	480 students	High
Mahapatra	2021	India, Bangladesh and Nepal	Instructors' perspectives, the practices of e-assessment, the challenges, the evolution of technology	Case study; qualitative	3 teachers	Low
Mustafa & Raisha	2021	Indonesia	the challenges, the evolution of technology	Mixed method	72 students	Medium
Olga & Victor	2021	Russia	Students' perspectives, the practices of e-assessment, the evolution of technology	Mixed method	55 students	High
Poonpon	2021	Thailand	Students' perspectives, the evolution of technology	Mixed method	218 students	High
Rofiah & Waluyo	2020	Thailand	Students' perspectives, the challenges, the evolution of technology	Quantitative	769 students	High
Saleem et al.	2021	Pakistan	Students' perspectives	Qualitative	40 students	Medium
Wu & Wang	2021	China	Instructors' perspectives, the practices of e-assessment, the challenges, the evolution of technology	Mixed method; Q Methodology	22 teachers	High
Zhang et al.	2021	China	Instructors' perspectives, the challenges, the evolution of technology	Qualitative	6 teachers	Medium
Zou et al.	2021	China	Instructors' perspectives, the practices of e-assessment, the challenges, the evolution of technology	Case study; qualitative	3 teachers	Low

### III. FINDINGS

#### A. Stakeholders' Views on L2 Online Assessment

##### (a). Educators' Perspectives

Studies exploring teachers' viewpoints on e-assessment have consistently portrayed a generally positive outlook, albeit with initial concerns raised by some (Ghanbari & Nowroozi, 2021; Wu & Wang, 2021; Güngör & Güngör, 2021; Mahapatra, 2021; Hamdan et al., 2021; Zhang et al., 2021; Zou et al., 2021).

Abduh (2021) conducted a recent study focusing on this aspect, revealing that the majority of L2 educators showed enthusiasm for e-assessment. They cited benefits such as technological skill improvement, enhanced assessment and grading methods, precise measurement of learning outcomes, recognition of unique student variations, and support networks for improving teacher performance. Moreover, gender did not significantly affect teachers' perceptions, consistent with findings from Alghammas (2020). However, Alghammas (2020) noted gender differences in perceptions, particularly regarding dimensions like validity, practicality, reliability, and security. Similarly, Chung and Choi (2021) found the majority of L2 instructors expressing satisfaction with a newly implemented form of language evaluation, highlighting the positive impact on students' abilities of independent learning.

Zhang et al. (2021) highlighted the significance of strong motivation and an open attitude towards innovative testing methods as essential components for e-assessment integration that are based on qualitative data analysis. Among L2 teachers, those who possessed these attributes tended to adjust to the demands of e-assessment more easily than others did, although teachers might initially encounter difficulties with technology, teaching, emotional support, and administration. As the course advanced, teachers actively searched for solutions and adeptly managed these obstacles, modifying them to fit the framework of e-assessment within the new environment (Ghanbari & Nowroozi, 2021).

#### *(b). Students' Perspectives*

Numerous studies have illuminated a positive association between academic performance and diverse evaluation methods (AITameemy et al., 2020; Olga & Victor, 2021; Hidalgo et al., 2021; Hanafiah et al., 2022), a consensus reinforced by the analyses of Rofiah and Waluyo's (2020) study. Ghoulali and Cecilia's (2021) investigation revealed that a significant portion of students garnered equivalent learning outcomes in virtual classrooms compared to traditional direct settings. Cooperative implements such as online communities, discussion boards, blogs, and real-time work sheets have been found to be crucial in raising students' curiosity and involvement in the subjects they are studying, which in turn supports their academic achievement in online learning. However, in another study learners reported maintaining consistent learning outcomes despite increased effort in online study, echoing sentiments found in traditional courses (Hidalgo et al., 2021).

Generally, modern students exhibit a preference for online assessments over conventional paper-based tests (AITameemy et al., 2020; Chung & Choi, 2021; Chen et al., 2021), citing reduced stress levels and increased comfort with take-home tests. Online assessment formats received praise for factors such as test security, time management, examiner courtesy, and innovative approaches to skill assessment (AITameemy et al., 2020; Rofiah & Waluyo, 2020). Students also underscored the importance of digital assessment implements in foreign language testing and valued associated procedures like test orientation, guidance, and proctor support (Poonpon, 2021). However, Hidalgo et al. (2021) observed student indifference towards online learning, especially with relation to emotive factors like perspective, preference, preparedness for online L2 study, and self-assurance in the classroom.

Furthermore, AITameemy et al.'s (2020) study highlighted the substantial influence of gender on students' attitudes towards and experiences with online assessment, with online testing, when male students showed a more positive attitude due to technological proficiency differences. Additionally, more proficient learners tended to be more receptive to online testing (Rofiah & Waluyo, 2020). Nonetheless, concerns regarding online learning persisted among students, potentially impeding progress and test results (Hanafiah et al., 2022; Rofiah & Waluyo, 2020; Poonpon, 2021). Technical challenges, such as equipment inadequacy and unstable internet connections, were noted to negatively impact students' emotional states (Hidalgo et al., 2021). Saleem et al. (2021) reported student reluctance towards online assessments due to encountered issues during test sessions, particularly highlighting connectivity problems and perceptions of unfairness and susceptibility to cheating.

During online examinations, students faced distractions from various sources, such as other test-takers engaging in conversation with proctors via microphones. Some students reported physical discomfort, including eye strain and anxiety from navigating lengthy reading passages (Poonpon, 2021). In the study by Olga and Victor (2021), students expressed dissatisfaction with online communication with examiners, citing concerns about the lack of nonverbal cues, eye contact, and emotional connection. They also lamented the absence of feedback from examiners and abrupt schedule changes during online events. Despite these challenges, online assessment has been perceived favorably by students as a viable alternative for continuing education amidst the COVID-19 pandemic.

#### *(c). Perspectives of Other HEI Stakeholders*

Apart from educators, numerous stakeholders including vendors, process managers, system managers, and e-learning department administrators in various universities encounter challenges in assessing the efficiency of e-assessment in tertiary education (Hamdan et al., 2021). Chirumamilla and Sindre (2021) delved into the perspectives of eleven vendors, system managers, and one process manager regarding essential aspects and decision-making processes concerning e-exam systems. They found consensus on both functional and non-functional aspects, with system administrators prioritizing security and interoperability. While stakeholders acknowledged the adequacy of systems, they also recognized increased instances of cheating through traditional or high-tech methods outside the digital examination environment. In terms of interoperability, it is understood by all interviewees that smooth integration of various automated technologies required open standards and Application Programming Interfaces. However, challenges

arose during the epidemic, particularly in integrating third-party tools and transmitting data between online examination systems and Learning Management Systems (LMS), potentially influenced by the study's Norway-specific context.

Hamdan et al. (2021) explored the efforts of e-learning faculties in Palestinian universities in adapting instructional training during the pandemic to align with students' standard capabilities. Initial findings revealed e-assessment as a significant challenge during the pandemic, with plagiarism and identity fraud being key concerns for university teachers. As a result, e-learning departments started using alternative assessments, like in-person exams, multiple-choice questions at random, and synchronous exams with a webcam. This highlights the need for HEIs in Palestine to establish policies conducive to e-assessment for sustainable blended learning beyond the pandemic.

Test designers' perspectives on the development of test adaption, implementation, technology, and new issues in language assessment procedures are given by Güngör and Güngör (2021). They underlined the significance of creating macro-remote testing rules to guarantee equitable and cost-effective access to exams, bolstering test offices for readiness, and empowering test coordinators with flexibility and autonomy in emergency situations. It was determined that the assessment community's ability to communicate effectively and the test designers' ability to make decisions quickly were essential for reducing teachers' stress and getting over students' technical obstacles. They also promoted giving teachers access to technology-enabled testing support in these extraordinary times (Saleem et al., 2021).

### *B. Cheating Challenges in L2 Online Assessment*

During the epidemic, L2 e-assessment practitioners encountered significant challenges, with cheating emerging as a predominant concern (Hamdan et al., 2021; Afshar & Ranjbar, 2021; Ghanbari & Nowroozi, 2021). Studies have highlighted cheating as a prevalent issue among L2 teachers utilizing e-assessment methods (AITameemy et al., 2020; Abduh, 2021). Teachers expressed a preference for platforms like Blackboard due to perceived security advantages (Alghammas, 2020). Concerns regarding cheating were exacerbated by the lack of adequate solutions and the absence of physical engagement and teamwork skills in online assessments (Abduh, 2021).

Scholars investigating test takers have identified instances of cheating facilitated by technical tools during online assessments (AITameemy et al., 2020; Mustafa & Raisha, 2021). For instance, students completing reading comprehension questions on Moodle at an unusually rapid pace raised suspicions of answer sharing or translation using external aids like Google Translate (Mustafa & Raisha, 2021). Conversely, Blackboard users reported no evidence of cheating or plagiarism, possibly due to teachers implementing specific applications to prevent cheating (AITameemy et al., 2020). However, more proficient students demonstrated a reduced inclination towards cheating during exams (Rofiah & Waluyo, 2020).

Despite the benefits of online platforms like Socrative for teaching and learning, students perceived them as vulnerable to cheating due to low security levels (Rofiah & Waluyo, 2020). This perception influenced their preference for Socrative quizzes over traditional paper-based assessments. However, students refrained from employing specific cheating tactics during Socrative tests, recognizing the likelihood of detection by teachers (Rofiah & Waluyo, 2020). Overall, cheating in online assessments poses significant challenges for L2 practitioners, necessitating the implementation of robust security measures and proactive strategies to deter dishonest behavior.

### *C. The Evolution of Technology in L2 E-Assessment Amidst the Pandemic*

The shift to tech-based e-assessment tools in online education during the pandemic is evident from recent studies. These tools, delivered via web-based or download methods, include Google Meet, Google Forms, Skype, Facebook, and others. Numerous studies have explored the use of various tools such as Microsoft Teams, Moodle, Zoom, and Socrative for e-assessment purposes. Certain platforms like Moodle and Blackboard support real-time quizzes and interactions, while Skype and Zoom are useful for assessing learners' speaking and presenting skills (Abduh, 2021; Alghammas, 2020; Ghoulali & Cecilia, 2021; Olga & Victor, 2021; Poonpon, 2021; Wu & Wang, 2021). These platforms have also been utilized as systems for proctoring with SEB conjunction (Poonpon, 2021). Despite concerns raised by some students regarding technology-related issues such as incompatible computer specifications or inadequate internet speed (Poonpon, 2021), the majority reported a smooth transition to online assessments, with minimal negative outcomes (AITameemy et al., 2020; Olga & Victor, 2021).

In selecting online tools for Objective Feedback Assessment (OFA), L2 teachers' choices are influenced by factors like expertise, student accessibility, affordability, and internet speed (Mahapatra, 2021). Commonly used tools for feedback include Google Forms, WhatsApp, Facebook, Google Docs, Google Meet, Microsoft Teams, and Moodle (Mahapatra, 2021). Chinese L2 teachers have similarly embraced platforms like SPOC for online teaching and assessment, recognizing the alignment between instruction, learning, and testing in online settings (Zhang et al., 2021).

Blackboard-based assessment has been extensively used to evaluate language skills in Saudi universities, despite limitations in technology or the platform's ability to meet teachers' needs for online L2 assessment (Alghammas, 2020). While technology, including social media, offers numerous benefits for learning delivery and feedback integration, comprehensive supervision and instructions are essential to maximize its potential (Wu & Wang, 2021).

## IV. DISCUSSION

Findings show that generally L2 stakeholders showed a moderate acceptance of online assessment. However, teachers have some concerns about assessment integrity, the amount of work during online assessment practice, mental stress, as well as the lack of independence and autonomy in remote emergency teaching. The majority of students were satisfied with online testing, yet some of them are concerned about cheating and the reliability of the automatic grading system. The staff and administrators asserted that cheating did occur during the e-Exam with students' high-tech digital examination equipment. For these reasons, we recommend that online assessment practitioners should pay attention to the following issues: integrity of online assessment; e-assessment quality management framework; compatibility between teaching methods, educational program and online assessment, plus technology supporting online assessment. These issues are discussed in turn as follows.

#### *A. Ensuring Assessment Integrity in Online Format*

In Fluck's (2019) study on the global application of e-Exam, the growth of e-Exam in 5 countries was examined. The results show that these countries have a gradual path to replace the traditional paper-pencil exams with e-Exams. Data were gathered by observing e-Exam procedures and conducting interviews with 17 distinct stakeholders. The findings show that the adoption rate of e-Exam is in the range of 1% to 40% of the total exams. In addition, the integrity of e-Exam in ensuring validity and reliability is equivalent to that of the traditional exam. However, the relationship between HEI stakeholders involved in the e-assessment process is generally poor and lacks interaction (Fluck, 2019). Although it has long been assumed that students take the primary accountability for preserving assessment integrity, there is a growing consensus that the responsibility should be shared, since maintaining assessment integrity is an obligation of an entire educational institution. Activities of academic fraud occur unreported unless stakeholders are explicitly recognized to actively participate in the handling of suspected instances. Therefore, after surveying stakeholders' perceptions, we suggest that maintaining the relationship between e-assessment practitioners and stakeholders is critical, and assessment integrity can only be achieved if the quality assurance framework (QAF) of online assessment is applied to e-learning and blended learning.

Several countries have implemented QAFs into HEIs in their own countries, including Canada, China, the UK, and some European nations (Gamage et al., 2020). Moreover, Peking University in China also implemented several anti-cheating procedures based on the US framework (Chen & Macfarlane, 2016). Seven HEIs in Europe tested the TeSLA (Adaptive Trust-based e-Assessment System for Learning) including e-assessment frameworks, personal data processes, and TeSLA tools to identify students' speech, pose, and key combinations during e-testing equipped into each university's learning management system (Foerster et al., 2019).

#### *B. Aligning Pedagogical Practices and E-Assessment*

Regarding HEI stakeholders' practices of L2 e-assessment, the findings show that there has been a flexible and diverse application of forms and tools in L2 online assessment in HE. In the traditional assessment format, some popular forms of assessment are paper-and-pencil exams (essay or test); performance-based assessments; oral presentation etc. In the context of COVID-19, as supported by other studies, traditional assessment forms are replaced by technology-enabled assessment such as: audio/ video-based files uploaded to Cloud; online simulation-based tasks; e-portfolios submission; real-time interviews via video conferencing applications such as Zoom (Deakin University, 2022).

In addition, reviewed studies emphasize the role of online formative assessment over summative one. It is properly recognized and widely applied by teachers in their adaptation of this form into pedagogical programs. In the traditional assessment modality, although formative assessment and summative assessment are not separate procedures in testing practice, a flexible combination of these forms still remains a challenge (Petko et al., 2018). A basic condition to master a language is that students should use it, receive feedback, analyze their shortcomings, and acquire opportunities to enhance their performance through the feedback (Brown & Abeywickrama, 2004). Summative exams are typically given at the end of a course when students have no more time and motivation to alter their learning style to generate more progress. Thus, teachers should make use of formative assessment and combine it well with summative assessment. This is consistent with the results from the online assessment practice, thereby showing the undeniable role of formative assessment in e-learning and blended learning. It places a strong emphasis on how the learning process is organized and assessed, as well as the student experience, including experimental activities, practice, homework, and presentation of reports as part of the course.

#### *C. Computer-Assisted Language Testing*

The findings in this review are supported by Petko et al. (2018) whose work confirmed that although there are differences in technology-related skills and knowledge, teachers are affected by the context of the universities and therefore should be supported by the university leaders in terms of digital tools, tactical objective clarification regarding the use of technology in education (Petko et al., 2018). Maguire (2005) found one of the barriers for teachers in blended teaching format is the increased workload, especially in research time for lesson preparedness. Lee and Busch (2005) identified a negative impact of communication issues, for instance a lack of social contact causing teachers' unwillingness towards distance teaching. According to Dolan and Burling (2017), four broad categories best describe how computer-based testing can enhance educational assessment: expanding the breadth of student knowledge and skill;

enhancing accuracy range of exam results; boosting process' effectiveness; and enhancing testing fairness. This strategy is in line with the growing emphasis on the 21st-century abilities that HEI students need to possess (Yarnall & Ostrander, 2012). They are communication, collaboration, critical thinking, and creativity (Kay, 2010; Trilling & Fadel, 2009). These skills need to be combined with technology and used in reading, writing, science, social studies, and other subject areas across content pedagogy. Additionally, in order to test these skills (the four domains—the 4Cs), core content knowledge, and technological proficiency should be combined with authentic tasks, created response assessments, and technology-presented simulations (Yarnall & Ostrander, 2012).

## V. CONCLUSION

The systematic review provided a range of evidence of the value and practice of e- assessment in L2 context during the emergency remote teaching, thereby showing that with the support of technology, the education sector has made dramatic and positive changes in applying e-assessment in COVID-19. Some of the positive points are that the role of online formative assessment has been properly recognized, along with the widespread adoption of progressive alternative forms of assessment. Technological assessment tools have had a positive effect on supporting teachers and students in e-assessment. However, cheating is still a great concern for educators and administrators, making the acceptance of e-assessments in HE remain a challenge in the future.

Through this systematic review, implications for practice are obviously emerging. With a set of global scenarios of L2 online assessment in a blended learning context, we suggest that HEI educators and administrators should harmoniously combine the course programs, teaching methods, learning objectives with online assessment, and testing to give teachers and learners beneficial class-room assessment practices. The effective implementation of e-assessment requires a great consideration of various factors such as choosing and designing an LMS model for e-learning and online assessment, supporting teachers and learners in technological competence plus applying the Quality Assessment Framework of e-assessment so as to maintain assessment integrity. There is also a need to foster the relationship between HEI stakeholders in the assessment process and clarify their roles in this practice to accomplish appropriate learning outcomes.

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