Vol.8 No.1 (2025)

Journal of Applied Learning & Teaching

ISSN : **2591-801X**

Content Available at : **http://journals.sfu.ca/jalt/index.php/jalt/index**

Instructors' perceptions on the use of formative assessment and feedback for learning during the COVID-19 pandemic: Another look inside the black box

James Kwan[A]

[A] *Adjunct Professor, SP Jain School of Global Management*

Keywords

Feedback;
formative assessment;
online assessment;
online peer assessment;
Singapore.

Correspondence

jameskwan2014@gmail.com [A]

Article Info

Received 26 September 2023
Received in revised form 3 January 2025
Accepted 6 January 2024
Available online 6 February 2025

DOI: https://doi.org/10.37074/jalt.2025.8.1.17

Abstract

The COVID-19 pandemic has caused a significant disruption in the learning and teaching practices within the higher education sector in Singapore. This study examines the effectiveness of formative assessment, feedback, and peer assessment on undergraduate and postgraduate students' learning outcomes during the pandemic. This study was conducted using a qualitative approach, where semi-structured interviews were conducted with 16 part-time and full-time instructors employed by an American university with an Asia campus in Singapore. The findings revealed that instructors generally felt that feedback improves students' learning, motivation, and engagement. However, many instructors provided a mixed response concerning the benefits and limitations of using peer assessment. For benefits, instructors agreed that peer assessment offers an opportunity for students to acquire essential skills such as critical thinking, communication, teamwork, time management, and collaborative learning. These skills are important learning goals for their future academic and professional careers. In contrast, several instructors observed that peer assessment may not be beneficial when students lack motivation or skills to perform it, and it is time-consuming for students to complete and instructors to review. These findings have more far-reaching implications for instructors and the university in the post-pandemic era.

Introduction

Higher education institutions (HEI) and educators have experienced many challenges in teaching, assessment, and feedback practices during the tumultuous COVID-19 pandemic. The early outbreak of the pandemic has caused educators to switch from traditional classroom teaching to a blended learning delivery, which demands a change in their teaching style from teacher-centric to student-centric (Tan et al., 2022; Thathsara et al., 2020). Many instructors have little prior experience in online facilitation and providing online assessment. An understanding of e-pedagogy is vital to improving engagement and motivation among students (Harris & Tan, 2020; Zou et al., 2021).

In Singapore, universities and private HEI responded swiftly amidst the pandemic by having all learning activities delivered online and converting all summative assessments to proctored examinations or replaced with individual assignments or team projects (Tan et al., 2022). These changes occurred between 10 February and 1 June 2020, and many students expressed anxiety about the sudden transition to fully online learning and the need to adapt to online assessment. Instructors also felt the stress of converting the curriculum to online delivery and changing the assessments including peer assessment to an online format. While recognising the importance of having assessments that align with the learning outcomes, scholars argued that the opportunity to learn (OTL) is perceived as a threat to test scores' reliability and comparability (DePascale & Gong, 2020). To minimise OTL loss caused by COVID-19 and take into consideration the diverse cultural, social, and learning abilities of students, education assessment scholars reviewed existing literature to identify operational psychometric procedures and (re) design assessments that integrate theoretical concepts and job-related skills, knowledge, and abilities with evidence of fairness, reliability, and validity (Keng et al., 2020). Thus, this study seeks to examine students' perceptions of the effectiveness of formative assessment, feedback, and peer assessment in enhancing students' learning during the pandemic in Singapore.

Against the backdrop of the COVID-19 pandemic, this study addresses some gaps identified from prior literature where instructors' views on the value of formative assessment and feedback are examined, particularly in the higher education (HE) sector in Singapore. This topic is worth investigating for two reasons. First, there have been many changes in the teaching and assessment practices in the HE sector in Singapore amid the pandemic, such as the increasing use of hybrid teaching, blended learning, and online assessment (Ng, 2021; Yeo et al., 2021). Thus, it is believed that this study may provide further insights to teaching faculty and policyholders in the HE sector on the effective use of formative assessment and feedback in different modes and technology platforms to improve student learning during and post-pandemic. Second, the researcher hopes the findings from this study, which is believed to be the first to examine formative assessment from instructors' perspectives in the higher educator sector in Singapore during the pandemic, will gain interest from HE assessment scholars in Singapore and other countries to perform comparative studies and meta-longitudinal studies post-pandemic.

Literature review

Formative assessment and online assessment

Formative assessment, also known as assessment for learning, has been defined as "activities undertaken by educators and their students in assessing themselves that provide information to be used as feedback to modify teaching and learning activities" (Black & Wiliam, 2010, p. 82). Formative assessments are broadly categorised into spontaneous and planned (Dixson & Worrell, 2016). Spontaneous formative assessments are impromptu and real-time when a teacher calls on students to answer conceptual questions covered in the previous lesson or engages the class to participate actively in questions raised by students during the lesson. Planned formative assessments include quizzes, homework assignments, and group discussions to assess student progress and improve collaborative learning (Dixson & Worrell, 2016).

Based on the theory of constructivism applied to higher education (HE), assessment is a critical element for learning and teaching for students' reflective construction of knowledge (Ion et al., 2018). This theory suggests that students' active involvement in formative assessment includes a wide range of activities, such as understanding the assessment rubrics, collaboration with instructors in assessment design, participation in peer assessment, and receiving feedback from instructors to improve their learning. In their seminal work on assessment and learning, Black and Wiliam (1998) argued that educational policies in many countries see the classroom as a 'black box' where little attention has been paid to what happens inside the classrooms. Instead, universities pay lots of attention to raising education quality, which involves changing the inputs such as regulation of teachers' qualifications, adjusting student achievement standards, investment in technology, etc., and evaluating the outputs, which include standardised testing for summative assessment, students' performances, and graduate employability (Stančić, 2021).

Prior studies reported that the quality of students' learning may depend on the assessment used (Lynam & Cachia, 2018; Raupach et al., 2013). Biggs and Tang (2011) used the term 'backwash' to refer to the impact of assessment on students' approaches to learning. For instance, formative assessments appear more inclined to promote deep learning, while summative assessments are more conducive to surface learning (Fry et al., 2009). Assessment scholars argued that assessments that involve case studies, simulations, and team presentations should emphasise real-world applications to prepare students to succeed in the workplace in twenty-first-century society (Keppell & Carless, 2006; Libman, 2010).

Over the past two decades, formative assessment has a noticeable intonation in the assessment literature where many universities have adopted the use of online formative assessment instead of continuing with the conventional pen-and-paper summative assessments (Fukuda et al., 2020; Wicking, 2020; Wu & Jessop, 2018). In the context of this study, online formative assessment refers to "the use of information and communication technology to support the iterative process of gathering and analysing information

about student learning by teachers as well as learners and of evaluating it about prior achievement and attainment of intended, as well as unintended learning outcomes" (Pachler et al., 2010, p. 716).

Online formative assessments also benefit instructors and institutions (Baleni, 2015; Or & Chapman, 2022). For instance, having formative online evaluations instead of in-class assessments allows instructors to cover complex areas or spend more time in class to clarify students' queries (Barkley, 2002). Instructors can assess students' performance and promote learning in a psychologically safe environment by having relatively short online formative assessments, such as online quizzes that cover a wide range of topics and permit multiple attempts (Boitshwarelo et al., 2017; Brady, 2005). Online formative assessments also save time and printing costs for instructors and institutions, especially where the cohort of students is extensive and requires frequent assessments (Barkley, 2002; Bloom et al., 2018; Jamil et al., 2012).

The pandemic has opened a flood gate for universities and faculty to re-examine the use of online assessment and feedback to promote students' learning (Almeida & Monteiro, 2021; Meccawy et al., 2021). Online formative assessment may be more prominent as students take classes remotely with minimal physical interaction (Senel & Senel, 2021) and transform teaching and learning by removing time, distance, and space constraints (Cirit, 2015; Lei & Gupta, 2010). During the pandemic, learning management systems such as Canvas, Blackboard, SharePoint, and Moodle have been extensively used for students to access online materials and submit their assignments. There has been a rise in the use of Zoom, Microsoft Teams, and WebEx for synchronous classes and interaction between instructors and students (Koh & Kan, 2020; Nyachwaya, 2020). These platforms provide a fertile ground for formative assessment and instant feedback using online quizzes involving multiple-choice, true-false, and matching questions (Shrago & Smith, 2006). Instructors can use these platforms to monitor students' performance and learning commitment via access rate, the attendance rate for synchronous classes, and participation time and frequency in forum discussions (Murray et al., 2012). The suitability and feasibility of employing these online platforms largely depend on their availability, compatibility with the existing information technology infrastructure and network, storage capacity, and internet connectivity for synchronous sessions (Crawford et al., 2020).

While many universities worldwide have taken active steps to adopt technology to promote online learning, many students and educators have little knowledge and experience in using online assessments (Chien et al., 2014; Foung & Chen, 2019). Instructors also face difficulties in modifying the assessment methods, such as changing the final exam to an online proctored exam or replacing it with a team project or written paper (Carrillo & Flores, 2020; Lee et al., 2022; Nic Dhonncha & Murphy, 2021). Consequently, there were concerns raised by educators and students on cheating and plagiarism, reliability and fairness of assessment, technical and technological issues (Darling-Hammond & Hyler, 2020; Rolim & Isaias, 2019).

Feedback on student performance

There has been a growing body of literature that discusses the importance of feedback to promote student learning in HE in recent years (Boud & Molloy, 2013; Pentassuglia, 2018; Van Heerden, 2020). Providing feedback is widely regarded as one of the most important and powerful influences on student learning in teaching and assessment practices (Hattie & Timperley, 2007). As feedback may be seen as a multifaceted and complex process that deals with evaluating students' assessment performance and managing their expectations (Nicol & Macfarlane-Dick, 2006; Sadler, 2010, 2013; Sellbjer, 2018), the effectiveness of feedback depends on the teachers' preference of feedback practice, including the use of online feedback (Evans, 2013; Mulliner & Tucker, 2017), timely communication process (Gibbs & Simpson, 2004), depth and quality (Dawson et al., 2018), students' emotions (Jonsson, 2012; Poulos & Mahony, 2008), students' perceived usefulness for improvement and their ability to understand, interpret, and act upon it (Blair & McGinty, 2012; Sadler, 2010; Wei & Xie, 2018).

In recent years, the increasing prominence of technology has provided educators with an alternative to the conventional handwritten or typewritten hardcopy feedback to students: online feedback, which allows them to provide synchronous and asynchronous feedback (Chong, 2019; Shintani & Aubrey, 2016). For this study, online feedback, or e-feedback, follows the definition provided by Tuzi (2004) who referred to "teacher's feedback in digital, written form that is transmitted via the web" (p. 217). Synchronous online feedback is provided when the instructor and students are online simultaneously. The instructor offers instant feedback using the 'comment' function on Google Docs or other word-processing software while the students compose their texts online. In contrast, asynchronous online feedback occurs after the students submit their work electronically. Instructors provide online feedback, which may be provided in word-processing software (e.g. Google Docs, Microsoft OneNote, Turnitin Studio), audio software (e.g. Audacity), and screen capture software (e.g. TechSmith Capture, formerly known as Jing) (Lunt & Curran, 2010).

Results from prior studies on the effectiveness of online feedback were mixed (Deeley, 2018; Ellegaard et al., 2018; Henderson et al., 2019; Shang, 2022). For instance, Chong (2019) examined 93 college students' perceptions of online feedback in Hong Kong. He found that students were more motivated and responded more proactively to the instructor's online feedback as they gained clarity on annotated comments with tracked changes and highlighting, which saved time when revising their work. His findings were also supported by earlier studies conducted by McCabe et al. (2011) and Alvarez et al. (2012).

Studies have reported that audio feedback provides a sense of teachers' presence through their voice (Oyarzun et al., 2017), faster than written feedback (McCarthy, 2015; McCarthy et al., 2022), and more personalised engagement with greater expression, tone, and nuance (Carruthers et al., 2015; Murphy & Barry, 2016; Nicol, 2016), students are more engaged compared to feedback given in written format (Lunt & Curran, 2010). Brearley and Cullen (2012) reported

that audio feedback is most beneficial for draft assignments as students are allowed to revise their work before the final submission. For video feedback, which is considered "the latest development in alternative methods for organising feedback systems" (Denton, 2014, p. 53), studies noted that students value it as instructors may provide feedback through a plethora of ways, including verbal elaborations, written briefs, and displaying of online information to stimulate students to reflect deeply on their learning and continually improve on their work (Scheerer & Jones, 2018). In terms of limitations, scholars noted that online feedback lacks emotional and personalised support when feedback is extracted from a statement bank (Mayordomo et al., 2022). However, audio feedback may also be a challenge for students who face difficulties opening or downloading the file (Henderson & Philips, 2015; McCarthy, 2015), or have a hearing impairment (Lunt & Curran, 2010).

Peer assessment

Peer assessment is defined as an "arrangement in which individuals consider the amount, level, value, worth, quality or success of the products or outcomes of learning of peers of similar status" (Topping, 1998, p. 250). It is commonly a form of a self-regulated learning tool in HE (Liu et al., 2019), which typically involves students to "provide either feedback or grades (or both) to their peers on a product, process, or performance, based on the criteria of excellence for the product" (Falchikov & Boud, 2007, p. 132). Typically, the product would be in writing, portfolios, oral presentations (both individuals and teams), and other performance tasks as prescribed by the instructors (Topping, 2009).

Peer assessment can be summative (provide evaluation and assigning a grade or a score) or formative (provide feedback to support learning and suggest improvement) to promote collaborative learning (Falchikov & Goldfinch, 2000) and self-regulation in learning (Andrade & Valtcheva, 2009; Orsmond et al., 2000). Students are empowered to demonstrate their subject knowledge, reflective and evaluation skills, and critical thinking process while evaluating their peer work, in writing or oral (Barak & Dori, 2009; Nicol et al., 2014; Reinholz, 2016), which deepens their learning (Man et al., 2018). Performing a detailed peer assessment enables students to evaluate other students' performance from the perspective of an assessor, improves their work and learning quality to a large extent, and promotes independence and task ownership (Bong & Park, 2020; McMahon, 2010; Sluijsmans et al., 2002) in a more varied and timely manner (Boud et al., 1999; Carnell, 2016). As peer assessment enables students to be aware of assessment standards, make an evaluative judgement and provide feedback with a set of rubrics and predefined assessment criteria (Tai et al., 2018), it provides opportunities for students to cultivate a broad range of behavioural, cognitive, and transferable skills such as verbal and written communication, team building, self-awareness, critical thinking, and time management (Tighe-Mooney et al., 2016; Wu et al., 2014; Yucel et al., 2014). These skills are highly valuable for students to acquire to be future career-ready when they gain employment upon graduation (Boud & Soler, 2016; Kearney, 2013; Liu & Carless, 2006; Weaver & Esposto, 2012).

While students and educators see the benefits of peer assessment in promoting self-regulated learning, there are several limitations to peer assessment (Adachi et al., 2018; Boud et al., 2013; Carnell, 2016; Naomi & Boud, 2022). For instance, prior studies reported that students perceived peer assessment as a time-consuming and stressful exercise (Ashenafi, 2017; Nortcliffe, 2012; Patton, 2012; Topping et al., 2000). Students may lack the skills or motivation to provide peer assessment (Hanrahan & Issacs, 2001; Lladó et al., 2014; Stančić, 2021; To & Panadero, 2019; Wanner & Palmer, 2018), they remained sceptical and distrust over their peers' assessment reliability and accuracy compared to their instructors' assessment (Kaufman & Schunn, 2011; Wen & Tsai, 2006; Zhou et al., 2020), quality of peer relationship (Panadero & Alonso-Tapia, 2013) and competitive pressure to provide lower assessment grade or peer pressure to give favourable or bias feedback (Chen, 2010).

There has been a substantial body of literature examining students' perception of peer assessment in HE in recent years (Gaynor, 2020; Huisman et al., 2018; Hoo et al., 2020; Mercader et al., 2020; Li et al., 2020; To & Panadero, 2019; Usher & Barak, 2018; Zhang et al., 2020; Zong et al., 2022; Zou et al., 2018). However, recent empirical studies on faculty's perceptions of peer assessment are relatively scarce, with the notable exception of Adachi et al. (2018) and a dated study by Liu and Carless (2006). Before the pandemic, Adachi et al. (2018) conducted a qualitative study involving 13 instructors in an Australian HEI to examine the benefits and challenges of peer assessment. They reported seven benefits, which include the development of transferrable skills; preparation of students to be work-ready; lifelong learners; promotion of active learning; improved understanding of standards and assessment criteria; time flexibility for students to provide feedback; skills involved in delivering and receiving feedback; and less input and time required of instructors. Five challenges have been gathered from the study: reliability and accuracy of students' feedback skills; lack of perceived expertise; power relations between instructors and students; time constraints; and resource constraints. This study did not consider online peer assessment during the pandemic, which caused a significant shift in the HE sector, where many courses and assessments are conducted online. As the instructors are the key assessment designers, examining the effectiveness and challenges of using online peer assessment during the pandemic would be timely.

Method

This study adopted a qualitative approach where the researcher conducted semi-structured interviews with the full-time and adjunct faculty members involved in teaching undergraduate courses at an American university offering undergraduate and postgraduate courses in Singapore (see Interview Guide in Appendix). The reasons for using semi-structured interviews were three-fold. Firstly, based on the preliminary discussion with the instructors, who worked closely with the researcher, many preferred semi-structured interviews instead of questionnaires as they would not want to be restricted by the specific areas spelt out in questionnaires. Secondly, there have been many changes in the teaching and assessment practices in Singapore's HE

sector amid the pandemic. Semi-structured interviews with the instructors enable the researcher to gain deeper insights into their perceptions of the benefits and challenges of providing formative assessments and feedback via various technological tools. Thirdly, semi-structured interviews allowed the researcher to observe non-verbal cues such as facial expressions, gestures, and other non-verbal communications that may enrich the meaning of the spoken words (Carr & Worth, 2001; Hiller & DiLuzio, 2004). Due to the exploratory nature of this study and the challenges in gathering a large number of interviewees to participate, as they were working from home and have family, social, and other personal commitments, there was no attempt to gather equal representation in full-time and adjunct, years of teaching experience, and gender for the instructors.

A total of 18 instructors (10 full-time and eight adjuncts) within the Business School were invited to participate in the study via email. They were recruited randomly via direct contact from the researcher or referrals from other instructors within the university. Sixteen instructors accepted the invitation (eight full-time and eight adjuncts), which constituted a response rate of 89%. The interviews were conducted between 14 February and 1 April 2022. To provide comfort and ease of sharing of views, all interviews were conducted via MS Teams, and interviewees could switch on the camera if they are comfortable. Table 1 summarises the interviewees' profile, which includes interviewees' identity codes (F represents female, M represents male), interview duration, appointment, gender, number of years of teaching experience, and specialisation that have been placed beside their extracts.

The interview timings varied from 47 minutes to 88 minutes, with an average interview time of approximately 63 minutes. The interviewees' average number of years of teaching experience was 14.3 years. It appears that the length of the interview varied with the years of teaching experience, suggesting that the "senior" faculty were able to provide more insights on the benefits and challenges of using online formative assessment and feedback.

All transcripts were reviewed several times and the researcher examined data contained in individual nodes and at node intersections to allow interpretation of the findings. Thematic analysis was performed based on the interview information gathered and coded. Ontologically, the study is broadly conducted based on realism, where the researcher believes the participants (instructors) are involved in providing formative assessment and feedback in one way or another (Maxwell, 2013).

Table 1. Profile of interviewees.

No.	*Interview (minutes)*	*Full-time/ Adjunct*	*Gender*	*Experience (years)*	*Specialisation*
F1	44	Full-time	Female	8	Business
F2	57	Adjunct	Female	12	Accounting
F3	66	Full-time	Female	15	Linguistic
F4	64	Adjunct	Female	5	Accounting
F5	53	Adjunct	Female	10	Auditing/Accounting
F6	53	Full-time	Female	6	Economics
M1	88	Adjunct	Male	22	Auditing/Accounting
M2	58	Full-time	Male	7	Business
M3	56	Adjunct	Male	12	Accounting
M4	61	Full-time	Male	20	Economics
M5	61	Adjunct	Male	30	Accounting
M6	47	Full-time	Male	2	Business
M7	51	Adjunct	Male	20	Human Resource
M8	76	Adjunct	Male	26	Business
M9	81	Full-time	Male	25	Accounting
M10	83	Full-time	Male	10	Business

Results

Effectiveness of online assessment

Interviewees were asked about the ease of, and challenges faced using online assessment during the pandemic. In line with the prior studies reported by Baleni (2015), Seifert and Feliks (2019), and Meccawy et al. (2021), several instructors expressed excitement about the use of online assessment as it saves time in marking, provides flexibility in terms of timing and venue, reduces paper wastage, lowers the risk of moving physical copies around resulting in loss or damage, improves efficiency for tech-savvy students, and evaluates students' performance in real-time:

> I love online assessments as it helps me to save time in marking, especially for MCQ tests. It allows me to swiftly upload results to the portal without manual inputs into the system. Students also prefer this channel since it is safer to continue learning through digital means instead of taking physical tests during the height of Covid. (F3)

> Working from home, I found the online assessments an effective tool as these reduced the inconvenience of keeping hard copies of the papers. It also eliminates the need to transfer the scripts to and from school to home and facilitates access anytime and anywhere. (M4)

> From the students' perspectives, online assessment allows them to log in anytime to access the quizzes. The only requirement on my part is to ensure that questions are randomised to prevent cheating. Most of my students are very tech-savvy, so completing quizzes is faster than in the traditional pen-and-paper format. As for me, I advocate "green initiatives", so online assessments save paper and cost too. (M9)

Several instructors expressed concern over the use of online assessments, especially with regard to students' readiness, cheating, internet connectivity, reduced engagement, and administration:

> Cheating is my number one concern. Detecting cheating online is more challenging than physical detection. Moreover, not all online proctoring programmes are 100% reliable… Another concern

> I have is reduced engagement with students, including feedback and in-class interaction. (M1)

> To a large extent, the lack of integrity is a key challenge when using online assessments. Despite online proctoring, the possibility of students attempting to cheat remains. In other instances, internet and wifi connectivity issues could cause disruption and anxiety. It could be more time-wasting for students to log in again to resume the online test. (F2)

> Frankly, I do not find online assessment effective or helpful at all! There is more administrative work, from uploading questions to online invigilation, marking, and providing online feedback. There is also the need to deal with security issues and handle students' queries via Moodle, etc. Some of my MBA students are not used to online assessment as they prefer in-class assessments, which reduces their technological anxiety. (M10)

It is telling from the above quotes that there were mixed responses to online assessments. Many instructors shared their views from both instructors' and students' perspectives. Such a problem was widely documented in the literature before the pandemic (Baijnath & Singh, 2019; Chace, 2012; King et al., 2009; Larkin et al., 2017). It remains to be seen whether online assessments will replace classroom-based assessments after the pandemic and how the university will address the concerns raised by the instructors.

Interestingly, while many instructors valued the benefits of online assessments to improve student learning, they highlighted some key considerations that influence the choice of using different technological tools for teaching and assessment, which were not covered in the interview guide. Essentially, several instructors see the ease of use, cost of the license, availability of technical support, integration with other devices, and students' readiness are critical factors:

> Without a doubt, I see the ease of use and cost as two key factors. As a part-time lecturer, I don't have funding or technical support from the university when using these tools. I wouldn't want to bear the cost alone, to pay a couple of hundred for limited time use of the software. If I should lose my teaching job, this would be a waste. (M3)

> I am a baby boomer and am not technologically savvy. The ease of use and availability of technical support from the school will be the most crucial for me. (M5)

> I used several technological tools such as Kahoot! Mentimeter, Slido, Mural, and Padlet to facilitate my online classes and to engage my learners… it all boils down to the familiarity and ease of use of these tools, for both lecturer and students. (F6)

> While some tools are freely available, they may not be easily integrated into students' mobile devices. It may be a concern, especially when students do not have laptops or when their laptops are down. Other tools may not be user-friendly … I would tend to avoid using them. (M7)

A closer examination of the above quotes and responses gathered from other instructors revealed that many of them are digital immigrants, a term coined by Prensky (2001), where they started using computers at a later stage of their adult life. Thus, it is interesting that all the interviewees with more than 20 years of teaching experience, including the above quotes from M5 and M7, who are adjunct instructors, expressed concern over the ease of use as one of the critical factors. In addition, it is telling that several adjunct instructors see the lack of technical and financial support from the university as a barrier to using these tools. Such concerns were not raised by full-time faculty as the university paid for the license and provided training and technical support for them.

Importance of feedback to support students' learning

In line with prior studies (Boud & Molley, 2013; Dawson et al., 2018; Hattie & Timperley, 2007), all the instructors unanimously agreed that feedback is crucial to support students' learning and increase their satisfaction levels. Many of the instructors felt that feedback enables instructors to "highlight strengths and areas for improvement" (F2), "provide clarity" (M3), "motivate students and promote students' engagement" (F6), and "justify students' grades" (M10). For online feedback, a few instructors noted that it "reduces workload and saves time" (M5), "detects plagiarism more easily" (M7), and allows "repeated access for students compared to one-off feedback" (M10).

When it comes to the benefit of using audio feedback, the following quote is telling:

> Admittedly, I have ugly handwriting and dislike spending time typing feedback to students. I started using audio-recording feedback via Turnitin during the pandemic. I find it convenient to communicate with my students as I do not need to arrange Zoom meetings with more than 100 undergraduates per semester. (F1)

However, two instructors do not see the benefits of audio feedback as they felt there are clarity and misinterpretation issues, and not suitable for students with hearing impairment:

> I am not a fan of audio feedback as I find that students may not understand my [American] accent, and I feel that I tend to speak very fast when I am excited. (M6)

> Audio feedback may be opened to different interpretations. The tone and delivery could be misunderstood. Lecturers also need to be sensitive to students who may have hearing impairment. I would rather provide typewritten feedback with sufficient depth and explanation. (F5)

As most instructors are unaware of audio feedback or have not explored this option, the real benefits and challenges of using this "less conventional, but yet exciting feedback channel" (M3) have yet to be seen.

Value of peer assessment to support students' learning and challenges faced

The views on the value of peer assessment were mixed. Several instructors felt that peer assessment provides opportunities for the development of a wide range of transferable, cognitive, and behavioural skills such as "communication, critical thinking, teamwork, time management, collaborative learning" (M4), promoting "active learning where students act as assessors to provide peer feedback" (F5), "raising students' sense of task ownership" (F6), and "gain a better understanding of the assessment criteria and promotes self-reflection" (M8). These findings were in line with the results gathered from prior studies (Barak & Dori, 2009; Sluijsmans et al., 2002; Zheng et al., 2020).

In contrast, some instructors saw little value in peer assessment:

> Though peer assessment helps to develop students' critical thinking, self-reflection, and communication skills…unfortunately, most of my students lack the skills to provide it. Many are sceptical about the reliability and accuracy of such feedback as they don't see themselves as teachers who are more experienced and qualified to provide feedback. (F4)

> Some of my colleagues see that peer assessment helps to reduce their workload as the students do it. But for me, it takes up more time for me to design, implement, and review their feedback to ascertain whether their assessment is fairly done (M2)

> Many students see it as an additional burden on them to do it, and there could also be favouritism or biases among students who may either provide a high rating for their buddies or deliberately give a low rating to their classmates whom they perceive as competitors. (M8)

It appears that instructors perceived students' lack of motivation or skills to provide peer assessment may impact the reliability of results (Gurbanov, 2016), and the effectiveness of rubrics (Andrade et al., 2008). In addition, it appears that several adjunct faculty instructors expressed concern over the time used to review the peer assessment. Thus, they felt that it was a time-consuming exercise for both students and instructors.

Several instructors related the challenges faced for peer assessment to the technology used, which includes "lack of motivation from students to perform when it is not mandatory" (M3), "requires lots of investment in resources and time" (F5), and "effectiveness of rubrics" (M6), and "time-consuming to learn and evaluate the feedback quality" (M7). They noted that while many students were facing anxiety and stress during the pandemic, and undergraduates and full-time MBA students placed priority over internship and full-time employment opportunities, they felt that students did not see much value in peer assessment.

Discussion

Instructors' commitment

As the pandemic was far from over at the time of conducting this study, instructors needed to continue to remain committed to employing e-pedagogies that engage students by encouraging them to interact and participate in online assessment, providing prompt and quality online feedback to them (Műller et al., 2021; Senel & Senel, 2021; Watermeyer et al., 2021). Converting all existing course modules to online delivery requires highly systematic lesson plans and well-structured teaching materials, including multimedia content with strong support from IT staff (Daniel, 2020). For application-based degrees such as science, engineering, dentistry, and medicine that require laboratory practical lessons that enhance students' hands-on experience, instructors may provide recorded videos that enable students to watch important laboratory experiments remotely (Baltà-Salvador et al., 2021). As active learning may occur online and offline, instructors need to provide the flexibility for students to learn in physical, online, and hybrid settings (Huang et al., 2020).

Working professionals who are pursuing part-time studies with the university may face additional academic burnout and be left with little time for studies during the pandemic as they not only have work, family, and other social commitments, but they could also face financial hardships caused by pay reduction or fear of losing their jobs attributable by the poor financial performance of their employers. As much learning took place online during the pandemic, working professionals need to juggle between attending virtual meetings during office hours and may also need to participate in online classes after work or during weekends. Students need to develop a high level of discipline for self-directed learning (Khodaei et al., 2022). To encourage students to adopt a self-directed learning attitude with a high level of commitment to online learning, it is paramount for instructors to develop an online assessment that strikes a good balance that meets students' learning outcomes while maintaining their commitment to their studies. In addition, instructors should consider these students' commitments when designing the course syllabus and ascertain the extent of online learning and assessments. The flexibility of delivering online lectures with a recorded function that allows students who missed the class to follow up, availability of teaching materials and resources on various digital devices (desktop, laptop, mobile phone, tablet, etc.) and not restricted to fixed time slots, and narrated PowerPoint slides that permit self-directed learning will improve students' satisfaction (Basilaia & Kvavadze, 2020). As instructors have little control over students' commitment and engagement in their online learning environment, they may provide online activities such as forum discussion/posting to promote student engagement outside synchronous online classes (Thathsara et al., 2020). Instructors may perform periodic tracking to monitor students' participation and engagement in online activities.

Chickering and Gamson (1987) noted that educators should consider seven principles of good teaching and learning practices in higher education, which include ongoing interaction between educators and students, collaboration among students, promoting active learning, providing prompt feedback, emphasise time management, communicating expectations, and mutual respect of diverse ways of learning. These principles have been widely used to evaluate online assessment effectiveness (Tartavulea et al., 2020). Similarly, for online assessments, Morgan and O'Reilly (2005) suggested ten critical qualities, including a clear, rational and consistent pedagogical approach; clear values, aims, criteria and standards; authentic and holistic activities; awareness of students' learning contexts; timely feedback; a highly structured, reasonable amount of assessment; assessment reliability and validity; assurance of students' work, continuous improvement; and quality enhancement.

Developing credible online assessments that meet the course's learning objectives may be one of the most challenging areas the university and educators must address during the pandemic (Halaweh, 2021; Huang et al., 2020). It requires a detailed review of the existing educational assessment policy, which may require changes, and support from the universities' educators, students, and senior management is crucial (Hayashi et al., 2020; Yang et al., 2022). A primary concern from the instructors (interviewees) in this study relates to the issue of cheating. A three-tiered approach offered by Olt (2002) may be considered: (1) highlight to students the moral and ethical severity of cheating (virtues approach), (2) eliminate or minimise opportunities for cheating (prevention approach), and (3) punish those who cheat (police approach). Under the virtues approach, instructors must emphasise that cheating is morally and ethically unacceptable, even though there are opportunities to do so. Cheating tarnishes the university as a whole, reflects poorly on the instructor and the students, and may harm future employment (Larkin et al., 2017). Instructors and universities may need to redefine academic integrity for online assessments and amend university policy accordingly (Reedy et al., 2021). For the prevention approach, Kayed (2013) proposed using multiple assessment techniques, not reusing assignments, and redesigning online take-home tests where students' application and demonstration of critical thinking skills are more essential than reproducing textbook knowledge. Other online formative assessments, such as ungraded randomised online quizzes with multiple attempts, are permitted, and team projects and virtual presentations may also be considered (Mulrooney & Kelly, 2020). Instructors and invigilators should be provided extensive training on cheating techniques students employ for online assessment (Alvarez et al., 2009). Finally, instructors and universities should punish students who are caught cheating to signal the consequences of cheating to other students, especially those who may be tempted to cheat for online or in-class assessments.

As hybrid learning and online assessment may be relatively new to many students, especially those who have never taken any courses under this mode of delivery, tutors need to provide sufficient scaffolding to improve students' engagement and collaborative learning for online assessments (Chao et al., 2006). When designing online courses, instructors may consider employing Salmon's (2000) five-stage framework in designing online assessments (access and motivation, online socialisation, information exchange, knowledge construction, and review) that motivate students to increase their engagement level via interaction with their peers and tutors (Alebaikan & Troudi, 2010). In addition, students may be facing academic burnout and anxiety during the pandemic, so instructors need to exercise empathy (Crossman, 2007), be sensitive to students' emotions (Ryan & Henderson, 2018; Saplacan et al., 2018), and motivation (Rowe et al., 2017) when providing feedback. Further support may also be provided via email or social media such as WhatsApp, WeChat, or Telegram, and from teaching assistants.

While several instructors acknowledged the benefits of providing online feedback, they need to ensure the feedback is provided promptly, and the quality is on par, if not better, than the face-to-face discussion so that it saves their time and focus on fulfilling other responsibilities. To promote collaborative learning and peer assessment, tutors may encourage students to log in to the LMS at designated time slots, such as weekday evenings or weekends, to interact synchronously on any problems they face or to hold some discussions on specific essential topics (Gilbert, et al., 2007; Moore et al., 2016). Prior studies reported that synchronous interaction enhanced critical thinking skills and promoted collaborative learning effectively (Giesbers et al., 2014; Oztok et al., 2013). During face-to-face teaching, tutors may check with the students to determine whether they are coping well with their studies, particularly online learning and assessment.

Prior studies reported that students who are only concerned with marks may not show a strong interest in reading the feedback (Carless, 2006; Pitt & Norton, 2016). To encourage students to read the feedback and reflect on their learning, instructors may use software that requires students to open the feedback files before releasing the marks (Hepplestone et al., 2011; Parkin et al., 2012). Despite some concerns over audio feedback, instructors may still consider using it or in conjunction with video feedback to improve student-instructor interactions (Thompson & Lee, 2012; West & Turner, 2016).

Due to the restrictions imposed by the government, where students may not always attend physical classes during the pandemic, instructors may be unable to conduct face-to-face feedback. Thus, audio-recorded feedback may be an expedient substitute for face-to-face feedback (Lunt & Curran, 2010; Mahoney et al., 2019; Ryan & Henderson, 2018). However, as most students have returned to campus since April 2022, instructors should remain committed to integrating the online assessment with face-to-face teaching. Learning on two separate platforms with little or no integration could make students feel disengaged. As adjunct instructors do not have the authority to design the course and online activities, it is essential for the course leader and the full-time faculty to develop the course to ensure that it will link online assessment with classroom teaching. In addition, the course leaders should communicate more with the adjunct instructors by setting their expectations from the outset. They should be open to students' feedback gathered

by the adjunct instructors to improve students' engagement and motivation in learning.

To address the reported challenges of using peer assessment, educational scholars proposed several recommendations for more effective peer assessment implementation and execution, which include designing peer assessment criteria that address the learning process and outcome, such as communication skills and respect for others (Boud et al., 1999), provide multiple, significant and specific criteria on the assessment instrument or scale (Dancer & Kamvounias, 2005; Willey & Gardner 2010), be familiar with the process of peer assessment before its use (Ballantyne et al., 2002; Sluijsmans et al., 2001), provide exemplars of excellent or poor works for students (Hanarahan & Issacs 2001), and offer numerous opportunities for peer assessment and feedback (Nicol et al., 2014; Sadler 2010).

University support

Faculty members are the main teaching pedagogy implementation decision-makers (Graham & Robinson, 2007). Universities seeking to revise the instructional delivery of the courses with little support and commitment from faculty members and staff are more likely to fail (Christo-Baker, 2004). Recent studies reported that faculty members may resist hybrid or online delivery due to time constraints on converting the content and assessment to digital mode and also face difficulties in adjusting to the use of more sophisticated online technologies (Ali, 2020; Blankenberger & Williams, 2020). Thus, the university may provide incentives to instructors such as financial rewards, funding for software purchases, additional off-in-lieu for online proctoring, promotion and lengthier tenure, and technical support (Garrison & Kanuka, 2004; Shea, 2007). This is particularly relevant in this study as many of the instructors are part-time faculty holding full-time jobs elsewhere. They have to balance their full-time jobs and increased interaction with students under the online teaching and learning model (Graham et al., 2003).

The interaction with the full-time and adjunct instructors revealed that many of them are novice of online teaching and possess little experience in using online technology for online assessment and feedback. Thus, the university should continue to invest in faculty training and professional development to equip tutors with the skills and knowledge to support student learning, as satisfaction is crucial in providing a successful quality hybrid learning MBA and undergraduate programmes (Kenney & Newcombe, 2011; Kim & Bonk, 2006). The university may engage hybrid learning course developers and online assessment specialists to train all tutors in e-pedagogy, deliver online lectures using various online platforms such as Zoom, Microsoft Teams, and WebEx, and develop and utilise interactive online materials, assessments, and feedback. The university may extend existing software licenses to adjunct instructors or provide funding support for new purchases of technological tools that enhance their online teaching and assessment. As the university would like to enrich student's learning experience with this new delivery method, which is in line with Graham's (2006) transformative learning, it is of paramount importance that it should continuously review the existing teaching pedagogy and make significant improvements to engage students actively in the construction of knowledge in both the online and face-to-face learning.

To minimise student cheating, online proctoring may be one possible alternative. Operationally, the university needs to take into account logistic, infrastructure, and financial constraints (Lassoued et al., 2020; Rahim, 2020), faculty's digital competencies and readiness (Bao, 2020; Rapanta et al., 2020), systems support and staff availability (Elzainy et al., 2020; Joshi et al., 2020).

As the qualitative findings suggest that many instructors were unaware of audio feedback, the university may encourage instructors to employ audio feedback in conjunction with face-to-face and written feedback. However, instructors may be concerned about using technology for audio feedback (Cann, 2014) and finding a quiet environment to record their feedback (Henderson & Philips, 2015). Alternatively, using various meeting platforms such as Zoom, MS Teams, and Google Meet may be viable for instructors to provide feedback and allow students to clarify any doubts. This alternative may not be effective for experienced or full-time instructors with large classes as it is time-consuming. Thus, the university may lower the instructor-to-student ratios by hiring more adjunct instructors or teaching assistants to support full-time instructors, notwithstanding the budgetary concerns it may face (Crook & Bligh, 2016).

Conclusion

This study is believed to be the first in Singapore to examine the effectiveness of formative assessment, feedback, and peer assessment to promote student learning during the pandemic from the instructors' perspective. While instructors acknowledged the benefits of online assessment, feedback, and peer assessment, they recognised some challenges faced in administering them. They also highlighted some key considerations when using technological tools to provide formative assessment and feedback. These findings have more far-reaching implications for instructors and the university in the post-pandemic era.

The findings and implications gathered from the study presented some limitations. Essentially, the interviewees selected were based on the premise that they possessed the necessary knowledge and relevant experience to discuss the research questions. However, due to the small sample size, the views expressed by the interviewees cannot be generalised to all instructors within and outside the university in Singapore and elsewhere. For instance, due to confidentiality reasons, several adjunct faculty members declined to comment on the extent of funding and technical support for using technological tools in assessment and feedback. Furthermore, some interviewees could not provide insights on the peer assessment as they acknowledged that they did not use peer assessment for their students or felt that it was too lengthy and detailed to be elaborated on in a single interview. A few interviewees cited disruptions from work or a less conducive environment to engage in 'shorter than expected' interviews. Thus, the views expressed by the

instructors may be incomplete or lack the depth required to address the research questions identified in the study.

Another limitation of this study is that the questions did not seek to cover all aspects of assessment and feedback. For instance, the study did not address assessment and feedback provided by employers during students' internships. In addition, due to the course requirements, peer assessment only applies to team projects but not formative individual evaluations. Finally, as the pandemic was far from over after the interviews, there was no follow-up with the interviewees on further development concerning online assessment and feedback post-pandemic. This area may be of interest to researchers to consider in the future.

While this study focuses on the instructors' perceptions of the value of formative assessment, feedback, and peer assessment to students' learning during the pandemic, other relevant areas have yet to be fully explored in Singapore. Firstly, longitudinal studies may be conducted to evaluate to what extent the perceived benefits of online assessments and feedback on students' learning and academic performance during and post-pandemic (Slack & Priestley, 2022). Secondly, the study may also be extended to other countries where factors such as government support, cultural dimensions such as those propounded by Hofstede (1994, 2001) and Hampden-Turner and Trompennars (2000), students' resilience (Ahmed-Shafi et al., 2023; Millican et al., 2023), hybrid learning, and changes in assessment structure and feedback mechanisms may have an impact on students' performance during and post-pandemic. Thirdly, focused group interviews may be conducted with assessment scholars, curriculum specialists, and department heads from various divisions and schools to gain deeper insights into how learning and teaching practices may impact assessment changes in the HE sector.

The pandemic is unprecedented in its scale and has provided opportunities for HEI to relook into their existing learning and teaching, assessment, and feedback practices. Given the ambiguity in the epidemiological and economic outlook, predicting when all conventional educational activities can resume is difficult. Any changes in educational policies and assessment practices must be supported by the government, organisational (professional and private), faculty, educational designer, and educational technologist. Future developments such as the 5G network and artificial intelligence-powered technology, including ChatGPT, Bard, Bing, Ernie, HIX.AI, and LaMDA may enable universities to implement more sophisticated online learning and assessment tools that enhance students learning (Mills et al., 2023; Rudolph et al., 2023; Thathsara et al., 2020). Such technologies may play a pivotal role in online assessment and feedback in a student-centric learning environment in the HE sector in Singapore (Kwan, 2022). They may be the new standard in the post-pandemic era for universities.

References

Adachi, C., Tai, J. H-M., & Dawson, P. (2018). Academics' perceptions of the benefits and challenges of self and peer assessment in higher education. *Assessment & Evaluation in Higher Education, 43*(2), 294-306. https://doi.org/10.1080/02602938.2017.1339775

Ahmed-Shafi, A., Middleton, T., Millican, R., Templeton, S., Hill, J., & Jones, C. (2023). Learning in a disrupted environment: Exploring higher education student resilience using the Dynamic Interactive Model of Resilience. *Journal of Applied Learning and Teaching, 6*(2), 172-186. https://doi.org/10.37074/jalt.2023.6.2.18

Alebaikan, R., & Troudi, S. (2010). Blended learning in Saudi universities: Challenges and perspectives. *ALT-J, Research in Learning Technology, 18*(1), 49-59. https://doi.org/10.1080/09687761003657614

Ali, W. (2020). Online and remote learning in higher education institutes: A necessity in light of COVID-19 pandemic. *Higher Education Studies, 10*(3), 16-25. http://dx.doi.org/10.5539/hes.v10n3p16

Almeida, F., & Monteiro, J. (2021). The challenges of assessing and evaluating the students at distance. *Journal of Online Higher Education, 5*(1), 3-10.

Alvarez, I., Espasa, A., & Guasch, T. (2012). The value of feedback in improving collaborative writing assignments in an online learning environment. *Studies in Higher Education, 37*(4), 387-400. https://doi.org/10.1080/03075079.2010.510182

Alvarez, I., Guasch, T., & Espasa, A. (2009). University teacher roles and competencies in online learning environments: a theoretical analysis of teaching and learning practices. *European Journal of Teacher Education, 32*(3), 321-336. http://dx.doi.org/10.1080/02619760802624104

Andrade, H., Ding, Y., & Wang, X. (2008). Putting rubrics to the test: The effect of a model, criteria generation, and rubric-referenced self-assessment on elementary school students' writing. *Educational Measurement and Issues, 27*(2), 3-13. http://dx.doi.org/10.1111/j.1745-3992.2008.00118.x

Andrade, H., & Valtcheva, A. (2009). Promoting learning and achievement through self-assessment. *Theory into Practice, 48*(1), 12-19. https://doi.org/10.1080/00405840802577544

Ashenafi, M. (2017). Peer-assessment in higher education – twenty-first century practices, challenges and the way forward. *Assessment & Evaluation in Higher Education, 42*(2), 226-251. https://doi.org/10.1080/02602938.2015.1100711

Baijnath, N., & Singh, D. (2019). Examination cheating: Risks to the quality and integrity of higher education. *South African Journal of Science, 115*(11/12), 1-6. http://dx.doi.org/10.17159/sajs.2019/6281

Baleni, Z. (2015). Online formative assessment in higher education: Its pros and cons. *The Electronic Journal of e-Learning , 13*(4), 228-236.

Ballantyne, R., Hughes, K., & Mylonas, A. (2002). Developing procedures for implementing peer assessment in large classes using an action research process. *Assessment &*

Evaluation in Higher Education, 27(5), 427-441. https://doi.org/10.1080/0260293022000009302

Baltà-Salvador, R., Olmedo-Torre, N. , Peña, M., & Renta-Davids, A.-I. (2021). Academic and emotional effects of online learning during the COVID-19 pandemic on engineering students. *Education and Information Technologies, 26,* 7407-7434. https://doi.org/10.1007/s10639-021-10593-1

Bao, W. (2020). COVID-19 and online teaching in higher education: A case study of Peking university. *Human Behavior and Emerging Technologies, 2*(2), 113-115. https://doi.org/10.1002/hbe2.191

Barak, M., & Dori, Y. J. (2009). Enhancing higher order thinking skills among in-service science teachers via embedded assessment. *Journal of Science Teacher Education, 20*(5), 459-474. http://dx.doi.org/10.1007/s10972-009-9141-z

Barkley, A. (2002). An analysis of online examinations in college courses. *Journal of Agricultural and Applied Economics, 34*(3), 445-458.

Basilaia, G., & Kvavadze, D. (2020). Transition to online education in schools during a SARS-CoV-2 Coronavirus (COVID-19) pandemic in Georgia. *Pedagogical Research, 5*(4), 1-9. https://doi.org/10.29333/pr/7937

Biggs, J., & Tang, C. (2011). *Teaching for quality learning at university.* Open University Press.

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

Black, P., & Wiliam, D. (2010). Inside the black box: Raising standards through classroom assessment. *Phi Delta Kappan, 92*(1), 81-90. http://dx.doi.org/10.1177/003172171009200119

Blair, A., & McGinty, S. (2012). Feedback-dialogues: Exploring the student perspective. *Assessment & Evaluation in Higher Education, 38*(4), 466-476. https://doi.org/10.1080/02602938.2011.649244

Blankenberger, B., & Williams, A. M. (2020). COVID and the impact on higher education: The essential role of integrity and accountability. *Administrative Theory & Praxis, 42*(3), 404-423. https://doi.org/10.1080/10841806.2020.1771907

Bloom, T., Rich, W. D., Olson, S. M., & Adams, M. L. (2018). Perceptions and performance using computer-based testing: One institution's experience. *Currents in Pharmacy Teaching and Learning, 10*(2), 235-242. https://doi.org/10.1016/j.cptl.2017.10.015

Boitshwarelo, B., Reedy, A. K., & Billany, T. (2017). Envisioning the use of online tests in assessing twenty-first century learning: A literature review. *Research and Practice in Technology Enhanced Learning, 12*(1), 1-16. https://doi.org/10.1186/s41039-017-0055-7

Bong, J., & Park, M. S. (2020). Peer assessment of contributions and learning processes in group projects: An analysis of information technology undergraduate students' performance. *Assessment & Evaluation in Higher Education, 45*(8), 1155-1168. https://doi.org/10.1080/02602938.2020.1727413

Boud, D., Cohen, R., & Sampson, J. (1999). Peer learning and assessment. *Assessment & Evaluation in Higher Education, 24*(4), 413-426. http://dx.doi.org/10.1080/0260293990240405

Boud, D., Lawson, R., & Thompson, D. G. (2013). Does student engagement in self-assessment calibrate their judgement over time? *Assessment & Evaluation in Higher Education, 38*(8), 941-956. https://doi.org/10.1080/02602938.2013.769198

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

Boud, D., & Soler, R. (2016). Sustainable assessment revisited. *Assessment & Evaluation in Higher Education, 41*(3), 400-413. http://dx.doi.org/10.1080/02602938.2015.1018133

Brady, A.-M. (2005). Assessment of learning with mutiple-choice questions. *Nurse Education in Practice, 5,* 238-242. https://doi.org/10.1016/j.nepr.2004.12.005

Brearley, F., & Cullen, W. R. (2012). Providing students with formative audio feedback. *Bioscience Education, 20*(1), 22-36. https://doi.org/10.11120/beej.2012.20000022

Cann, A. (2014). Engaging students with audio feedback. *Bioscience Education, 22*(1), 31-41. https://doi.org/10.11120/beej.2014.00027

Carless, D. (2006). Differing perceptions in the feedback process. *Studies in Higher Education, 31*(2), 219-233. https://doi.org/10.1080/03075070600572132

Carnell, B. (2016). Aiming for autonomy: Formative peer assessment in a final-year undergraduate course. *Assessment & Evaluation in Higher Education, 41*(8), 1269-1283. https://doi.org/10.1080/02602938.2015.1077196

Carr, E., & Worth, A. (2001). The use of the telephone interview for research. *Nursing Times Research, 6,* 511-524. http://dx.doi.org/10.1177/136140960100600107

Carrillo, C., & Flores, M. A. (2020). COVID-19 and teacher education: A literature review of online teaching and learning practices. *European Journal of Teacher Education, 43*(4), 466-487. https://doi.org/10.1080/02619768.2020.1821184

Carruthers, C., McCarron, B., Bolan, P., Devine, A., McMahon-Beattie, U., & Burns, A. (2015). 'I like the sound of that' – an evaluation of providing audio feedback via the virtual learning environment for summative assessment. *Assessment & Evaluation in Higher Education, 40*(3), 352-370. https://doi.org/10.1080/02602938.2014.917145

Chace, W. (2012). Cover story: A question of honor: Cheating on campus undermines the reputation of our universities and the value of their degrees. Now is the time for students themselves to stop it. *Am Scholar, 81*(2), 20-32. https://www.jstor.org/stable/i40070051

Chao, T., Saj, T., & Tessier, F. (2006, 27 July). Establishing a quality review for online courses. *Educause Review,* 32-39.

Chen, C. (2010). The implementation and evaluation of a mobile self- and peer-assessment system. *Computers & Education, 55*(1), 229-236. https://doi.org/10.1016/j.compedu.2010.01.008

Chickering, A., & Gamson, Z. F. (1987). Seven principles for good practice in undergraduate education. *AAHE Bulletin,* 3-7.

Chien, S.-P., Wu, H.-K. , & Hsu, Y.-S. (2014). An investigation of teachers' beliefs and their use of technology-based assessments. *Computers in Human Behavior, 31*, 198-210. https://doi.org/10.1016/j.chb.2013.10.037

Chong, S. (2019). College students' perception of e-feedback: A grounded theory perspective. *Assessment & Evaluation in Higher Education, 44*(7), 1090-1105. https://doi.org/10.1080/02602938.2019.1572067

Christo-Baker, E. (2004). *College and university faculty attitude, incivilities and barriers towards distance education.* [Bowling Green State University: Unpublished thesis Ph.D].

Cirit, N. C. (2015). Assessing ELT pre-service teachers via Web 2.0 tools: Perceptions toward traditional, online and alternative assessment. *Turkish Online Journal of Educational Technology-TOJET, 14*(3), 9-19.

Crawford, J., Butler-Henderson, K., Rudolph, J., Malkawi, B., Glowatz, M., Burton, R., & Lam, S. (2020). COVID-19: 20 countries' higher education intra-period digital pedagogy responses. *Journal of Applied Learning & Teaching, 3*(1), 9-28. https://doi.org/10.37074/jalt.2020.3.1.7

Crook, C., & Bligh, B. (2016). Technology and the displacing of learning in educational futures. *Learning, Culture and Social Interaction, 11*, 162-175. http://dx.doi.org/10.1016/j.lcsi.2016.09.001

Crossman, J. (2007). The role of relationships and emotions in student perceptions of learning and assessment. *Higher Education Research & Development, 26*(3), 313-327. https://doi.org/10.1080/07294360701494328

Dancer, D., & Kamvounias, P. (2005). Student involvement in assessment: A project designed to assess class participation fairly and reliably. *Assessment & Evaluation in Higher Education, 30*(4), 445-454. http://dx.doi.org/10.1080/02602930500099235

Daniel, J. (2020). Education and the Covid-19 pandemic. *Prospects,* 1-6. https://doi.org/10.1007/s11125-020-09464-3

Darling-Hammond, L., & Hyler, M. E. (2020). Preparing educators for the time of COVID ... and beyond. *European Journal of Teacher Education, 43*(4), 457-465. https://doi.org/10.1080/02619768.2020.1816961

Dawson, P., Henderson, M., Mahoney, P., Phillips, M., Ryan, T., Boud, D., & Molloy, E. (2018). What makes for effective feedback: Staff and student perspectives. *Assessment & Evaluation in Higher Education, 44*(1), 25-36. https://doi.org/10.1080/02602938.2018.1467877

Deeley, S. (2018). Using technology to facilitate effective assessment for learning and feedback in higher education. *Assessment & Evaluation in Higher Education, 43*(5), 439-448. https://doi.org/10.1080/02602938.2017.1356906

Denton, D. W. (2014). Using screen capture feedback to improve academic performance. *TechTrends, 58*(6), 51-56. https://doi.org/10.1007/s11528-014-0803-0

DePascale, C., & Gong, B. (2020). Comparability of individual students' scores on the "same test". In E. H. A. I. Berman (Ed.), *Comparability of large-scale educational assessments: Issues and recommendations* (pp. 25-48). Washington, DC: National Academy of Education.

Dixson, D. D., & Worrell, F. C. (2016). Formative and summative assessment in the classroom. *Theory Into Practice, 55*(2), 153-159. https://doi.org/10.1080/00405841.2016.1148989

Ellegaard, M., Damsgaard, L., Bruun, J., & Johannsen, B. F. (2018). Patterns in the form of formative feedback and student response. *Assessment & Evaluation in Higher Education, 43*(5), 727-744. https://doi.org/10.1080/02602938.2017.1403564

Elzainy, A., Sadik, A. E. , & Abdulmonem, W. A. (2020). Experience of e-learning and online assessment during the COVID-19 pandemic at the College of Medicine, Q assim University. *Journal of Taibah University Medical Sciences, 15*(6), 456-462. https://doi.org/10.1016/j.jtumed.2020.09.005

Evan, C. (2013). Making sense of assessment feedback in higher education. *Review of Educational Research, 83*(1), 70-120. https://doi.org/10.3102/0034654312474350

Falchikov, N., & Boud, D. (2007). *Rethinking assessment in higher education* (1st ed.). Routledge.

Falchikov, N., & Goldfinch, J. (2000). Student peer assessment in higher education: A meta-analysis comparing peer and teacher marks. *Review of Educational Research, 70*(3), 287-322. https://doi.org/10.3102/00346543070003287

Foung, D., & Chen, J. (2019). A learning analytics approach to the evaluation of an online learning package in a Hong Kong University. *Electronic Journal of e-Learning, 17*(1), 11-24.

Fry, H., Ketteridge, S., & Marshall, S. (2009). *A handbook for teaching and learning* (3rd ed.). Routledge.

Fukuda, S., 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. http://dx.doi.org/10.1177/0033688220925927

Garrison, D., & Kanuka, H. (2004). Blended learning: Uncovering its transformative potential in higher education. *Internet and Higher Education, 7,* 95-105. https://doi.org/10.1016/j.iheduc.2004.02.001

Gaynor, J. (2020). Peer review in the classroom: Student perceptions, peer feedback quality and the role of assessment. *Assessment & Evaluation in Higher Education, 45*(5), 758-775. https://doi.org/10.1080/02602938.2019.1697424

Gibbs, G., & Simpson, C. (2004). Conditions under which assessment supports students' learning. *Learning and Teaching in Higher Education, 1*, 3-31. http://dx.doi.org/10.1007/978-3-8348-9837-1

Giesbers, B., Rienties, B., Tempelaar, D., & Gijselaers, W. (2014). A dynamic analysis of the interplay between asynchronous and synchronous communication in online learning: The impact of motivation. *Journal of Computer Assisted Learning, 30*(1), 30-50. https://doi.org/10.1111/jcal.12020

Gilbert, J., Morton, S., & Rowley, J. (2007). e-Learning: The student experience. *British Journal of Educational Technology, 38*(4), 560-573. https://doi.org/10.1111/j.1467-8535.2007.00723.x

Graham, C. (2006). Blended learning systems: Definitions, current trends and future directions. In C. J. Bonk & G. R. Graham (Eds.), *The handbook of blended learning: Global perspectives, local designs* (pp. 3-21). Pfeiffer.

Graham, C., Allen, S., & Ure, D. (2003). *Blended learning environments: A review of the research literature.* Provo, UT: Unpublished manuscript.

Graham, C., & Robinson, R. (2007). Realizing the transformational potential of blended learning: Comparing cases of transforming blends and enhancing blends in higher education. In A. Picciano (Ed.), *Blended learning: Research perspectives* (pp. 83-110.). Needham: Sloan Consortium.

Gurbanov, E. (2016). The challenge of grading in self and peer-assessment (undergraduate students' and university teachers' perspectives). *Journal of Education in Black Sea Region, 1*(2), 97-107. http://dx.doi.org/10.31578/jebs.v1i2.21

Halaweh, M. (2021). Are universities using the right assessment tools during the pandemic and crisis time? *Higher Learning Research Communications, 11*, 1-9. http://dx.doi.org/10.18870/hlrc.v11i0.1184

Hampden-Turner, C., & Trompennars, F. (2000). *Building cross-cultural competence: How to create wealth from conflicting values.* Yale University Press.

Hanrahan, S., & Issacs, G. (2001). Assessing self- and peer-assessment: The students' views. *Higher Education Research & Development, 20*(1), 53-70. https://doi.org/10.1080/07294360123776

Harris, C., & Tan, H. (2020). You can teach old dogs new clicks - the importance of teacher use of online content in a blended higher education course in Singapore. *Journal of Applied Learning & Teaching, 3*(2), 59-70. https://doi.org/10.37074/jalt.2020.3.2.9

Hattie, J., & Timperley, H. (2007). The power of feedback. *Review of Educational Research, 77*(1), 81-112. https://doi.org/10.3102/003465430298487

Hayashi, R., Garcia, M., & Maddawin, A. (2020). Online learning in Sri Lanka's higher education institutions during the COVID-19 pandemic. *ADB Briefs,* 1-12.

Henderson, M., & Phillips, M. (2015). Video-based feedback on student assessment: Scarily personal. *Australasian Journal of Educational Technology, 31*(1), 51-66. https://doi.org/10.14742/ajet.1878

Henderson, M., Ryan, T., & Philips, M. (2019). The challenges of feedback in higher education. *Assessment & Evaluation in Higher Education, 44*(8), 1237-125. https://doi.org/10.1080/02602938.2019.1599815

Hepplestone, S., Holden, G., Irwin, B., Parkin, H. J. , & Thorpe, L. (2011). Using technology to encourage student engagement with feedback: A literature review. *Research in Learning Technology Aquatic Insects, 19*(2), 117-127. https://doi.org/10.3402/rlt.v19i2.10347

Hiller, H., & DiLuzio, L. (2004). The interviewee and the research interview: Analysing a neglected dimension in research. *Canadian Review of Sociology and Anthropology, 41*(1), 1-26. https://psycnet.apa.org/doi/10.1111/j.1755-618X.2004.tb02167.x

Hofstede, G. (1994). The business of international business is culture. *International Business Review, 3*(1), 1-14. https://doi.org/10.1016/0969-5931(94)90011-6

Hofstede, G. (2001). *Culture's consequences: Comparing values, behaviors, institutions and organizations across nations* (2nd ed.). SAGE Publications.

Hoo, H.-T., Tan, K., & Deneen, C. (2020). Negotiating self- and peer-feedback with the use of reflective journals: An analysis of undergraduates' engagement with feedback. *Assessment & Evaluation in Higher Education, 45*(3), 431-446. https://doi.org/10.1080/02602938.2019.1665166

Huang, R., Liu, D. J., Zhan, T., Amelina, N., Yang, J. F., Zhang, R. X...., & Cheng, W. (2020). *Guidance on active learning at home during educational disruption: Promoting student's self-regulation skills during COVID-19 outbreak.* Beijing: Smart Learning Institute of Beijing Normal University.

Huisman, B., Saab, N., van Driel, J., & van den Broek, P. (2018). Peer feedback on academic writing: Undergraduate students' peer feedback role, peer feedback perceptions and essay performance. *Assessment & Evaluation in Higher Education, 43*(6), 955-968. https://doi.org/10.1080/02602938.2018.1424318

Ion, G., Marti, A. S., & Morell, I. A. (2018). Giving or receiving feedback: Which is more beneficial to students' learning? *Assessment & Evaluation in Higher Education, 44*(1), 124-138. https://doi.org/10.1080/02602938.2018.1484881

Jamil, M., Tariq, R. H., & Shami, P. A. (2012). Computer-based vs paper-based examinations: Perceptions of university teachers. *Turkish Online Journal of Educational Technology-TOJET, 11*(4), 371-381.

Jonsson, A. (2012). Facilitating productive use of feedback in higher education. *Active Learning in Higher Education, 14*(1), 63-76. https://doi.org/10.1177/1469787412467125

Joshi, A., Vinay, M., & Bhaskar, P. (2020). Impact of coronavirus pandemic on the Indian education sector: Perspectives of teachers on online teaching and assessments. *Interactive Technology and Smart Education, 18*(2), 205-226. http://dx.doi.org/10.1108/ITSE-06-2020-0087

Kaufman, J., & Schunn, C. D. (2011). Students' perceptions about peer assessment for writing: Their origin and impact on revision work. *Instructional Science, 39*, 387-406. https://doi.org/10.1007/s11251-010-9133-6

Kayed, R. (2013). Integrating e-learning into higher education. *Palestinian Journal for Open Learning & e-Learning , 4*(7), 1-28. http://dx.doi.org/10.12816/0016343

Kearney, S. (2013). Improving engagement: The use of 'authentic self-and peer-assessment for learning' to enhance the student learning experience. *Assessment & Evaluation in Higher Education, 38*(7), 875-891. https://doi.org/10.1080/02602938.2012.751963

Keng, L., Boyer, M., & Marion, S. (2020). Into the unknown: Assessments in spring 2021. *Educational Measurement: Issues and Practice, 39*(3), 53-59. https://psycnet.apa.org/doi/10.1111/emip.12362

Kenney, J., & Newcombe, E. (2011). Adopting a blended learning approach: Challenges encountered and lessons learned in an action research study. *Journal of Asynchronous Learning Networks, 15*(1), 45-57. http://dx.doi.org/10.24059/olj.v15i1.182

Keppell, M., & Carless, D. (2006). Learning-oriented assessment: A technology-based case study. *Assessment in Education, 13*(2), 179-191. http://dx.doi.org/10.1080/09695940600703944

Khodaei, S., Hasanvand, S., Gholami, M., Mokhayeri, Y., & Amini, M. (2022). The effect of the online flipped classroom on self-directed learning readiness and metacognitive awareness in nursing students during the COVID-19 pandemic. *BMC Nursing, 21*(22), 1-10. https://doi.org/10.1186/s12912-022-00804-6

Kim, K., & Bonk, C. J. (2006). The future of online teaching and learning in higher education: The survey says. *Educause Quarterly, 29*(4), 22-30.

King, C., Guyette, R. W. Jr., & Piotrowski, C. (2009). Online exams and cheating: An empirical analysis of business students' views. *The Journal of Educators Online, 6*(1), 1-11. http://dx.doi.org/10.9743/JEO.2009.1.5

Koh, J., & Kan, R. Y. P. (2020). Perceptions of learning management system quality, satisfaction, and usage: Differences among students of the arts. *Australasian Journal of Educational Technology, 36*(3), 26-40. http://dx.doi.org/10.14742/ajet.5187

Kwan, J. (2022). Academic burnout, resilience level, and campus connectedness among undergraduate students during the COVID-19 pandemic: Evidence from Singapore. *Journal of Applied Learning & Teaching, 5*(1), 52-63. https://doi.org/10.37074/jalt.2022.5.s1.7

Larkin, C., Szabo, S., & Mintu-Wimsatt, A. (2017). Academic integrity of graduate online students in a curriculum and instruction program. *International Research in Higher Education, 2*(4), 1-8. http://dx.doi.org/10.5430/irhe.v2n4p1

Lassoued, Z., Alhendawi, M., & Bashitialshaaer, R. (2020). An exploratory study of the obstacles for achieving quality in distance learning during the COVID-19 pandemic. *Education Science, 10*(9), 1-13. https://doi.org/10.3390/educsci10090232

Lee, V., Lam, P. L. C., Lo, J. T. S., Lee, J. L. F., & Li, J. T. S. (2022). Rethinking online assessment from university students' perspective in COVID-19 pandemic. *Cogent Education, 9*(1), 1-13. https://doi.org/10.1080/2331186X.2022.2082079

Lei, S., & Gupta, R. K. (2010). College distance education courses: Evaluating benefits and costs from institutional, faculty and students' perspectives. *Education, 130*(4), 3-13. https://eric.ed.gov/?redir=http%3a%2f%2fwww.projectinnovation.biz%2feducation_2006.html

Li, H., Xiong, Y., Hunter, C. V., Guo, X., & Tywoniw, R. (2020). Does peer assessment promote student learning? *Assessment & Evaluation in Higher Education, 45*(2), 193-211. https://doi.org/10.1080/02602938.2019.1620679

Libman, Z. (2010). Alternative assessment in higher education: An experience in descriptive statistics. *Studies in Educational Evaluation, 36*(1-2), 62-68. https://doi.org/10.1016/j.stueduc.2010.01.002

Liu, J., Guo, X., Guo, R., Fram, P., Ling, Y., Zhang, H., & Wang, J. (2019). Students' learning outcomes and peer rating accuracy in compulsory and voluntary online peer assessment. *Assessment & Evaluation in Higher Education, 44*(6), 835-847. https://doi.org/10.1080/02602938.2018.1542659

Liu, N.-F., & Carless, D. (2006). Peer feedback: The learning element of peer assessment. *Teaching in Higher Education, 11*(3),279-290.https://doi.org/10.1080/13562510600680582

Lladó, A., Soley, L., Sansbelló, R., Pujolras, G., Planella, J., Martínez, J., & Moreno, L. (2014). Student perceptions of peer assessment: An interdisciplinary study. *Assessment & Evaluation in Higher Education, 39*(5), 592-610. https://doi.

org/10.1080/02602938.2013.860077

Lunt, T., & Curran, J. (2010). "Are you listening please?" The advantages of electronic audio feedback compared to written feedback. *Assessment & Evaluation in Higher Education, 35*(7), 759-769. https://doi.org/10.1080/02602930902977772

Lynam, S., & Cachia, M. (2018). Students' perceptions of the role of assessments at higher education. *Assessment & Evaluation in Higher Education, 43*, 1-12. https://doi.org/10.1080/02602938.2017.1329928

Mahoney, P., MacFarlane, S., & Ajjawi, R. (2019). A qualitative synthesis of video feedback in higher education. *Teaching in Higher Education, 24*(8), 1-23. https://doi.org/10.1080/1356 2517.2018.1471457

Man, D., Xu, Y., & O'Toole, J. M. (2018). Understanding autonomous peer feedback practices among postgraduaate students: A case study in a Chinese university. *Assessment & Evaluation in Higher Education, 43*(4), 527-536. http://dx.doi.org/10.1080/02602938.2017.1376310

Maxwell, J. (2013). *Qualitative research design: An interactive approach (Applied social research methods)* (3rd ed.). SAGE Publications.

Mayordomo, R., Espasa, A., Guasch, T., & Martínez-Melo, M. (2022). Perception of online feedback and its impact on cognitive and emotional engagement with feedback. *Education and Information Technologies, 27,* 7947-7971. https://doi.org/10.1007/s10639-022-10948-2

McCabe, J., Doerflinger, A., & Fox, R. (2011). Student and faculty perceptions of E-feedback. *Teaching of Psychology, 38*(3), 173-179. http://dx.doi.org/10.1177/0098628311411794

McCarthy, J. (2015). Evaluating written, audio and video feedback in higher education summative assessment tasks. *Issues in Educational Research, 25*(2), 153-169.

McCarthy, K., Wilkerson, D., & Ashirifi, G. (2022). Student and faculty perceptions on feedback in a graduate social work distance education program. *Journal of Teaching in Social Work, 42*(4), 392-408. http://dx.doi.org/10.1080/08841233.2022.2102103

McMahon, T. (2010). Peer feedback in an undergraduate programme: Using action research to overcome students' reluctance to criticise. *Educational Action Research, 18*(2), 273-287. http://dx.doi.org/10.1080/09650791003741814

Meccawy, Z., Meccawy, M., & Alsobhi, A. (2021). Assessment in 'survival mode': Student and faculty perceptions of online assessment practices in HE during Covid-19 pandemic. *International journal for Educational Integrity, 17*(16), 1-24. https://edintegrity.biomedcentral.com/articles/10.1007/s40979-021-00083-9

Mercader, C., Ion, G., & DÍaz-Vicario, A. (2020). Factors influence students' peer feedback uptake: Instructional design matters. *Assessment & Evaluation in Higher Education, 45*(8), 1169-1180. https://doi.org/10.1080/02602938.2020.1726283

Millican, R., Templeton, S., & Hill, J. L. (2023). Exploring the impact of disruption on university staff resilience using the dynamic interactive model of resilience. *Journal of Applied Learning and Teaching, 7*(1), 112-124. https://doi.org/10.37074/jalt.2023.6.1.19

Mills, A., Bali, M., & Eaton, L. (2023). How do we respond to generative AI in education? Open educational practices give us a framework for an ongoing process. *Journal of Applied Learning and Teaching, 6*(1), 16-30. https://doi.org/10.37074/jalt.2023.6.1.34

Moore, G., Warner, W. J., & Jones, D. J. J. (2016). Student-to-student interaction in distance education classes: What do graduate students want? *Journal of Agricultural Education, 57*(2), 1-13.

Morgan, C., & O'Reilly, M. (2005). Ten key qualities of assessment online. In M. &. Hricko (Ed.), *Online assessment and measurement: Foundations and challenges* (pp. 86-101). IGI Global. http://dx.doi.org/10.4018/9781591407201.ch004

Müller, A., Goh, C., Lim, L. Z., & Gao, X. (2021). COVID-19 emergency eLearning and beyond: Experiences and perspectives of university educators. *Education Sciences, 11*(1), 1-15. https://doi.org/10.3390/educsci11010019

Mulliner, E., & Tucker, M. (2017). Feedback on feedback practice: Perceptions of students and academics. *Assessment & Evaluation in Higher Education, 42*(2), 266-288. http://dx.doi.org/10.1080/02602938.2015.1103365

Mulrooney, H., & Kelly, A. F. (2020). COVID-19 and the move to online teaching: Impact on perceptions of belonging in staff and students in a UK widening participation university. *Journal of Applied Learning & Teaching, 3*(2). https://doi.org/10.37074/jalt.2020.3.2.15

Murphy, K., & Barry, S. (2016). Feed-forward: Students gaining more from assessment deeper engagement in video-recorded presentations. *Assessment & Evaluation in Higher Education , 41*(2), 213-227. https://doi.org/10.1080/02602938.2014.996206

Murray, M., Pérez, J. , Geist, D. , & Hedrick, A. (2012). Student interaction with online course content: Build it and they might come. *Journal of Information Technology Education: Research, 11*, 125-140.

Naomi, W., & Boud, D. (2022). The need to disentangle assessment and feedback in higher education. *Studies in Higher Education, 47*(3), 656-667. https://doi.org/10.1080/03075079.2020.1779687

Ng, P. (2021). Timely change and timeless constants: COVID-19 and educational change in Singapore. *Educational Research for Policy and Practice, 20*, 19-27. https://doi.org/10.1007/s10671-020-09285-3

Nic Dhonncha, E., & Murphy, M. (2021). Learning new ways of teaching and assessment: The impact of COVID-19

on undergraduate dermatology education. *Clinical and Experimental Dermatology, 46*(1), 170-171. https://doi.org/10.1111/ced.14364

Nicol, D. (2016). From monologue to dialogue: Improving written feedback processes in mass higher education. *Assessment & Evaluation in Higher Education, 35*(5), 501-517. https://doi.org/10.1080/02602931003786559

Nicol, D., & Macfarlane-Dick, D. (2006). Formative assessment and self-regulated learning: A model and seven principles of good feedback practice. *Studies in Higher Education, 31*(2), 199-218. https://doi.org/10.1080/03075070600572090

Nicol, D., Thomson, A., & Breslin, C. (2014). Rethinking feedback practices in higher education: A peer review perspective. *Assessment & Evaluation in Higher Education, 39*(1), 102-122. https://doi.org/10.1080/02602938.2013.795518

Nortcliffe, A. (2012). Can students assess themselves and their peers?: A five year study. *Student Engagement and Experience Journal, 1*(2), 1-17. https://shura.shu.ac.uk/7610/

Nyachwaya, J. (2020). Teaching general chemistry (I) online during COVID-19. Process, outcomes, and lessons learned: A reflection. *Journal of Chemistry Education, 97*(9), 2935-2939. https://doi.org/10.1021/acs.jchemed.0c00891

Olt, M. (2002). Ethics and distance education: Strategies for minimizing academic dishonesty in online assessment. *Online Journal of Distance Learning Administration, 5*(3), 1-6.

Or, C., & Chapman, E. (2022). Development and acceptance of online assessment in higher education: Recommendations for further research. *Journal of Applied Learning & Teaching, 5*(1), 10-26. http://dx.doi.org/10.37074/jalt.2022.5.1.6

Orsmond, P., Merry, S., & Reiling, K. (2000). The use of student derived marking criteria in peer and self-assessment. *Assessment & Evaluation in Higher Education, 25*(1), 23-38. https://doi.org/10.1080/02602930050025006

Oyarzun, B., Conklin, S. A., & Barreto, D. (2017). Instructor presence. In P. F. Vu (Ed.), *Handbook of research on innovative pedagogies and technologies for online learning in higher education* (pp. 108-126). IGI Global.

Oztok, M., Zingaro, D., Brett, C., & Hewitt, J. (2013). Exploring asynchronous and synchronous tool use in online courses. *Computers & Education, 60*(1), 87-94. https://doi.org/10.1016/j.compedu.2012.08.007

Pachler, N., Daly, C., Mor, Y., & Mellar, H. (2010). Formative e-assessment: Practitioner cases. *Computers & Education, 54*(3), 715-721. https://doi.org/10.1016/j.compedu.2009.09.032

Panadero, E., & Alonso-Tapia, J. (2013). Self-assessment: Theoretical and practical connotations. When it happens, how is it acquired and what to do to develop it in our students. *Electronic Journal of Research in Educational Psychology, 11*(2), 551-576.

Parkin, H., Hepplestone, S., Holden, G., Irwin, B., & Thorpe, L. (2012). A role for technology in enhancing students' engagement with feedback. *Assessment & Evaluation in Higher Education, 37*(8), 963-973. https://doi.org/10.1080/02602938.2011.592934

Patton, C. (2012). Some kind of weird, evil experiment: Student perceptions of peer assessment. *Assessment & Evaluation in Higher Education, 37*(6), 719-731. https://doi.org/10.1080/02602938.2011.563281

Pentassuglia, M. (2018). Inside the 'body box': Exploring feedback in higher education. *Assessment & Evaluation in Higher Education, 43*(5), 683-696. https://doi.org/10.1080/02602938.2017.1396442

Pitt, E., & Norton, L. (2016). 'Now that's the feedback I want!' Students' reactions to feedback on graded work and what they do with it. *Assessment & Evaluation in Higher Education, 42*(4), 1-18. https://doi.org/10.1080/02602938.2016.1142500

Poulos, A., & Mahony, M. J. (2008). Effectiveness of feedback: The students' perspective. *Assessment & Evaluation in Higher Education, 33*(2), 143-154. https://doi.org/10.1080/02602930601127869

Prensky, M. (2001). Digital natives, digital immigrants. *On the Horizon, 9*(5), 1-6. https://marcprensky.com/writing/Prensky%20-%20Digital%20Natives,%20Digital%20Immigrants%20-%20Part1.pdf

Rahim, A. (2020). Guidelines for online assessment in emergency remote teaching during the COVID-19 pandemic. *Education in Medical Journal, 12*(2), 59-68. https://doi.org/10.21315/eimj2020.12.2.6

Rapanta, C., Botturi, L., Goodyear, P., Guàrdia, L., & Koole, M. (2020). Online university teaching during and after the Covid-19 crisis: Refocusing teacher presence and learning activity. *Postdigital Science and Education, 2,* 923-945. https://doi.org/10.1007/s42438-020-00155-y

Raupach, T., Brown, J., Anders, S., Hasenfuss, G., & Harendza, S. (2013). Summative assessments are more powerful drivers of student learning than resource intensive teaching formats. *BMC Medicine, 11*(61), 1-10. http://dx.doi.org/10.1186/1741-7015-11-61

Reedy, A., Wurm, P. A. S., Janssen, A., & Lockley, A. (2021). A community of practice approach to enhancing academic integrity policy translation: A case study. *International Journal for Educational Integrity, 17*(12), 1-20. https://edintegrity.biomedcentral.com/articles/10.1007/s40979-021-00080-y

Reinholz, D. (2016). The assessment cycle: A model for learning through peer assessment. *Assessment & Evaluation in Higher Education, 41*(2), 301-315. https://doi.org/10.1080/02602938.2015.1008982

Rolim, C., & Isaias, P. (2019). Examining the use of e-assessment in higher education: Teachers and students' viewpoints. *British Journal of Educational Technology, 50*(2),

1785-1800. https://doi.org/10.1111/bjet.12669

Rowe, D., Mazzotti, V. L., Ingram, A., & Lee, S. (2017). Effects of goal-setting instruction on academic engagement for students at risk. *Career Development and Transition for Exceptional Individuals, 40*(1), 25-35. https://psycnet.apa.org/doi/10.1177/2165143416678175

Rudolph, J., Tan, S., & Tan, S. (2023). War of the chatbots: Bard, Bing Chat, ChatGPT, Ernie and beyond. The new AI gold rush and its impact on higher education. *Journal of Applied Learning and Teaching, 6*(1), 364-389. https://doi.org/10.37074/jalt.2023.6.1.23

Ryan, T., & Henderson, M. (2018). Feeling feedback: Students' emotional responses to educator feedback. *Assessment & Evaluation in Higher Education, 43*(6), 880-892. https://doi.org/10.1080/02602938.2017.1416456

Sadler, D. (2010). Beyond feedback: Developing student capability in complex appraisal. *Assessment and Evaluation in Higher Education, 35,* 535-550. https://doi.org/10.1080/02602930903541015

Salmon, G. (2000). *E-moderating: The key to teaching and learning online*. Kogan Page.

Saplacan, D., Herstad, J., & Pajalic, Z. (2018). Feedback from digital systems used in higher education: An inquiry into triggered emotions. In G. D. Craddock (Ed.), *Transforming our world through design, diversity and education* (pp. 421-430). Proceedings of Universal Design and Higher Education in Transformation Congress 2018. http://urn.nb.no/URN:NBN:no-71908

Scheerer, N., & Jones, J. A. (2018). The role of auditory feedback at vocalization onset and mid-utterance. *Frontiers in Psychology, 9*, 1-9. https://doi.org/10.3389/fpsyg.2018.02019

Seifert, T., & Feliks, O. (2019). Online self-assessment and peer-assessment as a tool to enhance student-teachers' assessment skills. *Assessment & Evaluation in Higher Education, 44*(2), 169-185. https://doi.org/10.1080/02602938.2018.1487023

Sellbjer, S. (2018). "Have you read my comments? It is not noticeable. Change!" An analysis of feedback given to students who have failed examinations. *Assessment & Evaluation in Higher Education, 43*(2), 163-174. https://doi.org/10.1080/02602938.2017.1310801

Senel, S., & Senel, H. C. (2021). Remote assessment in higher education during COVID-19 pandemic. *International Journal of Assessment Tools in Education, 8*(2), 181-199. http://dx.doi.org/10.21449/ijate.820140

Shang, H.-F. (2022). Exploring online peer feedback and automated corrective feedback on EFL writing performance. *Interactive Learning Environments, 30*(1), 4-16. https://doi.org/10.1080/10494820.2019.1629601

Shea, P. (2007). Bridges and barriers to teaching online college courses: A study of experienced online faculty in thirty-six colleges. *Journal of Asynchronous Learning Networks, 11*(2), 73-128. http://dx.doi.org/10.24059/olj.v11i2.1728

Shintani, N., & Aubrey, S. (2016). The effectiveness of synchronous and asynchronous written corrective feedback on grammatical accuracy in a computer-mediated environment. *The Modern Language Journal, 100*(1), 296-319. https://doi.org/10.1111/modl.12317

Shrago, J., & Smith, M. K. (2006). Online assessment in the K-12 classroom: A formative assessment model for improving student performance on standardized tests. In L. S. M. Hricko (Ed.), *Online assessment and measurement: Case studies from higher education, K-12 and corporate* (pp. 181-195). Information Science Publishing. http://dx.doi.org/10.4018/978-1-59140-497-2.ch013

Slack, H., & Priestley, M. (2022). Online learning and assessment during the COVID-19 pandemic: Exploring the impact on undergraduate student well-being. *Assessment & Evaluation in Higher Education*, 1-17. https://doi.org/10.1080/02602938.2022.2076804

Sluijsmans, D., Brand-Gruwei, S., & Van Merriënboer, J. (2002). Peer assessment training in teacher education: Effects on performance and perceptions. *Assessment & Evaluation in Higher Education, 27*(5), 443-454. https://doi.org/10.1080/0260293022000009311

Sluijsmans, D., Moerkerke, G., Van Merriénboer, J., & Dochy, F. (2001). Peer assessment in problem based learning. *Studies in Educational Evaluation, 27*, 153-173. https://doi.org/10.1016/S0191-491X(01)00019-0

Stančić, M. (2021). Peer assessment as a learning and self-assessment tool: A look inside the black box. *Assessment & Evaluation in Higher Education, 46*(6), 852-864. https://doi.org/10.1080/02602938.2020.1828267

Tai, J., Ajjwai, R., Boud, D., Dawson, P., & Panadero, E. (2018). Developing evaluative judgement: Enabling students to make decisions about the quality of work. *Higher Education, 76*, 467-481. https://doi.org/10.1007/s10734-017-0220-3

Tan, S., Rudolph, J., Crawford, J., & Butler-Henderson, K. (2022). Emergency remote teaching or andragogical innovation? Higher education in Singapore. *Journal of Applied Learning & Teaching, 5*(1), 64-80. https://doi.org/10.37074/jalt.2022.5.s1.8

Tartavulea, C., Albu, C. N., Albu, N., Dieaconescu, R, I., & Petre, S. (2020). Online teaching practices and the effectiveness of the educational process in the wake of the COVID-19 pandemic. *Amfiteatru Economic, 22*(55), 920-936. http://dx.doi.org/10.24818/EA/2020/55/920

Thathsara, D., Maddumapatabandi, & Gamage, K. A. A. (2020). Novel coronavirus (COVID-2019) pandemic: Common challenges and responses from higher education providers. *Journal of Applied Learning & Teaching, 3*(2), 41-50. https://doi.org/10.37074/jalt.2020.3.2.20

Thompson, R., & Lee, M. (2012). Talking with students through screencasting: Experiments with video feedback to improve student learning. *The Journal of Interactive Technology & Pedagogy, 1*(1). https://digitalcommons.tacoma.uw.edu/ias_pub/229

Tighe-Mooney, S., Bracken, M., & Dignam, B. (2016). Peer assessment as a teaching and learning process: The observations and reflections of three facilitators on a first-year undergraduate critical skills module. *All Ireland Journal of Teaching and Learning in Higher Education, 8*(2), 2831-2847. https://doi.org/10.62707/aishej.v8i2.283

To, J., & Panadero, E. (2019). Peer assessment effects on the self-assessment process of first-year undergraduates. *Assessment & Evaluation in Higher Education, 44*(6), 920-932. https://doi.org/10.1080/02602938.2018.1548559

Topping, K. (1998). Peer assessment between students in colleges and universities. *Review of Educational Research, 68,* 249-276. https://doi.org/10.3102/00346543068003249

Topping, K. (2009). Peer assessment. *Theory into Practice, 48*(1), 20-27. https://doi.org/10.1080/00405840802577569

Topping, K., Smith, E., Swanson, I., & Elliot, A. (2000). Formative peer assessment of academic writing between postgraduate students. *Assessment & Evaluation in Higher Education, 25*(2), 149-169. http://dx.doi.org/10.1080/713611428

Tuzi, F. (2004). The impact of e-Feedback on the revisions of L2 writers in an academic writing course. *Computers and Composition, 21*(2), 217-235. https://doi.org/10.1016/j.compcom.2004.02.003

Usher, M., & Barak, M. (2018). Peer assessment in a project-based engineering course: Comparing between on-campus and online learning environments. *Assessment & Evaluation in Higher Education, 43*(5), 745-759. https://doi.org/10.1080/02602938.2017.1405238

Van Heerden, M. (2020). It has a purpose beyond justifying a mark: Examining the alignment between the purpose and practice of feedback. *Assessment & Evaluation in Higher Education , 45*(3), 359-371. https://doi.org/10.1080/02602938.2019.1644602

Wanner, T., & Palmer, E. (2018). Formative self-and peer assessment for improved student learning:The crucial factors of design, teacher participation and feedback. *Assessment & Evaluation in Higher Education, 43*(7), 1032-1047. https://doi.org/10.1080/02602938.2018.1427698

Watermeyer, R., Crick, T., & Knight, C. (2021). Digital disruption in the time of COVID-19: Learning technologists' accounts of institutional barriers to online learning, teaching and assessment in UK universities. *International Journal for Academic Development, 27*(2), 148-162. https://doi.org/10.1080/1360144X.2021.1990064

Weaver, D., & Esposto, A. (2012). Peer assessment as a method of improving student engagement. *Assessment & Evaluation in Higher Education, 37*(7), 805-816. https://doi.org/10.1080/02602938.2011.576309

Wei, W., & Xie, Y. (2018). University teachers' reflections on the reasons behind their changing feedback practice. *Assessment & Evaluation in Higher Education, 43*(6), 867-879. http://dx.doi.org/10.1080/02602938.2017.1414146

Wen, M., & Tsai, C.-C. (2006). University students' perceptions of and attitudes toward (online) peer assessment. *The International Journal of Higher Education and Educational Planning, 51*(1), 27-44. https://doi.org/10.1007/s10734-004-6375-8

West, J., & Turner, W. (2016). Enhancing the assessment experience: Improving student perceptions, engagement and understanding using online video feedback. *Innovations in Education and Teaching International, 53*(4), 1-11. https://doi.org/10.1080/14703297.2014.1003954

Wicking, P. (2020). Formative assessment of students from a Confucian heritage culture: Insights from Japan. *Assessment & Evaluation in Higher Education, 45*(2), 180-192. https://doi.org/10.1080/02602938.2019.1616672

Willey, K., & Gardner, A. (2010). Investigating the capacity of self and peer assessment activities to engage students and promote learning. *European Journal of Engineering Education, 35*(4), 429-443. http://dx.doi.org/10.1080/03043797.2010.490577

Wu., C., Chanda, E., & Willison, J. (2014). Implementation and outcomes of online self and peer assessment on group based honours research projects. *Assessment & Evaluation in Higher Education, 39*(1), 21-37. https://doi.org/10.1080/02602938.2013.779634

Wu, Q., & Jessop, T. (2018). Formative assessment: Missing in action in both research-intensive and teaching focused universities. *Assessment & Evaluation in Higher Education, 43*(7), 1091-1031. https://doi.org/10.1080/02602938.2018.1426097

Yang, D., Tang, Y. M., Hayashi, R., Ra, S., & Lim, C. P. (2022). Supporting inclusive online higher education in developing countries: Lessons learnt from Sri Lanka's university closure. *Education Sciences, 12*, 1-11. https://doi.org/10.3390/educsci12070494

Yeo, S., Lai, C. K. Y. , Tan. J., & Gooley, J. J. (2021). A targeted e-learning approach for keeping universities open during the COVID-19 pandemic while reducing student physical interactions. *PLoS ONE, 16*(4), 1-17. https://doi.org/10.1371/journal.pone.0249839

Yucel, R., Bird, F. L., Young, J., & Blanksby, T. (2014). The road to self-assessment: Exemplar marking before peer review develops first-year students' capacity to judge the quality of a scientific report. *Assessment & Evaluation in Higher Education, 39*(8), 971-986. https://doi.org/10.1080/02602938.2014.880400

Zhang, F., Schuun, C., Li, W., & Long, M. (2020). Changes in the reliability and validity of peer assessment across the

college years. *Assessment & Evaluation in Higher Education, 45*(8), 1037-1087. http://dx.doi.org/10.1080/02602938.2020.1724260

Zheng, L., Zhang, X., & Cui, P. (2020). The role of technology-facilitated peer assessment and supporting strategies: A meta-analysis. *Assessment & Evaluation in Higher Education, 45*(3), 372-386. https://doi.org/10.1080/02602938.2019.1644603

Zhou, J., Zheng, Y., & Tai, J. H.-M. (2020). Grudges and gratitude: The social-affective impacts of peer assessment. *Assessment & Evaluation in Higher Education, 45*(3), 345-358. http://dx.doi.org/10.1080/02602938.2019.1643449

Zong, Z., Schunn, C., & Wang, Y. (2022). What makes students contribute more peer feedback? The role of within-course experience with peer feedback. *Assessment & Evaluation in Higher Education, 47*(6), 972-983. https://doi.org/10.1080/02602938.2021.1968792

Zou, M., Kong, D., & Lee, I. (2021). Teacher engagement with online formative assessment in EFL writing during COVID-19 pandemic: The case of China. *Asia-Pacific Educational Research, 30*(6), 487-498. https://doi.org/10.1007/s40299-021-00593-7

Zou, Y., Schunn, C. D., Wang, Y., & Zhang, F. (2018). Student attitudes that predict participation in peer assessment. *Assessment & Evaluation in Higher Education, 43*(5), 800-811. https://doi.org/10.1080/02602938.2017.1409872

Appendix

Interview Guide

1. Tell me your teaching and assessment (designing and marking) experiences with the university you are currently engaged with.
2. What major challenges do you face in designing, administering (e.g., invigilation), and marking the assessments (formative and summative) before and during the COVID-19 pandemic?
3. What type of assessments would you believe are effective in promoting students' learning?
4. What are your views on using online assessments and the challenges involved?
5. What support would you like the university to provide for online assessments?
6. To what extent do you see the importance of feedback (written, audio, video, face-to-face) to students learning?