Multimodal Digital Classroom Assessments for ESL Learners and Teachers

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Abstract
The pandemic has brought a different setting for teaching and learning, especially in the higher education context. Although multimodal and digital modes of representation are frequently used beyond the educational context, assessments for learners focus on traditional print media and less on digital technology. If teachers aim to use digital technologies in the classroom effectively, a stronger nexus is needed between the use of information communication technology in universities, contextual aspects, and theoretical approaches. This study examined multimodal digital classroom assessments (MDCAs) as a subset of classroom assessments. This study also investigated three examples of MDCAs created in conjunction with learners as a part of a formative experiment by combining multimodal perspectives with performance assessment theory and considering their affordances and possible usefulness for practice. The MDCAs might provide learners and teachers with various teaching modes. Nevertheless, implementing MDCAs needs ongoing consideration of validity, literacy demands, and longitudinal character management of some MDCAs. Therefore, teachers should consider how evidence from MDCAs complements traditional assessment approaches in designing meaningful learning processes for learners.
Keywords: Multimodality, Classroom Assessment, Validity, Teacher and Learners, Digital Technology

Introduction
Background of Study
Various new technologies and communication channels have emerged in the last several decades. In addition to email, texting, phone, and Internet site pages containing images, sounds, and music, print is a common component of modern life and communication. Moreover, the "text" concept has expanded to include digital texts created and composed of several representation modes or ways, including text, pictures, audio, images, and movements. These productions of texts are regarded as interactive, nonlinear, and dynamic. In order to suit the modern setting, literacy instruction shifted from the traditional sense to the production and comprehension of texts by incorporating several modalities of

communication, such as image, vocal, and movement (Leu, 2002). Consequently, this multimodal literacy skill is described as "a framework requiring the collaborative interpretation of two or more texts, pictures, films, graphics, animations, sounds, music, gestures, and facial expressions to produce meaning" (Kress, 2010, p. 54).

The New London Group (1996) and other researchers have urged teachers to reform teaching modes and assessment representation for over two decades. They have also urged educators to investigate students' involvement, creativity, and knowledge-building beyond the formal education system (Jewitt, 2003; Johnson & Kress, 2003; Johnson, 2003; Greenhow et al., 2009; Hughes, 2009; Robelia et al., 2009). According to Cope and Kalantzis (2009), the vast proliferation of new and advanced technology has given rise to the concept of learners as proactive creators of meaning and the teacher as rather than simply following a pre-determined curriculum, a purposeful learning designer actively creates and shapes the learning experience with specific goals and (Cope & Kalantzis, 2009). Kalantzis and Cope (2010) described the process as "particularly, concerning new modalities of representation, a reassessment of the connection between composition and design, as well as the fundamentals of reading and writing has been necessary" (George, 2002; Prain & Hand, 2016, p. 206).

Various practices have been proposed, such as alternative methods to writing on paper. Group efforts, portfolios, and projects are alternative methods of recording information and a stimulant for creative thinking (Kalantzis et al., 2003). Ensuring multimodal learning tools available to students does not guarantee that these materials will be utilised in assessment procedures (Silseth & Gilje, 2017). For example, contextual variables and instructor implementation are seldom considered while studying digital games in a second language (L2) teaching (Acquah & Katz, 2020). A further limitation of theory-based educational technology research is the paucity of such studies, particularly in cases when "middle-range theories" might explain "empirical results" and the structure of the difficulties in impacting the method and procedures (Hew et al., 2019). According to Hennessy (2016), schools should provide chances for professional development, such as applicable training and technological assistance, which assist instructors in incorporating recent technologies to suit the current pedagogy.

Haßler et al. (2016) asserted that teachers' successful professional development is rated more highly than other characteristics, such as the student-device ratio. By developing elaborate instructional designs, the increasing quality of professional development programmes could lead to greater use of technological tools in educational settings (Sung et al., 2016). Besides, other modes involved do not only focus on the language, but it demands the language learning process as it is significant to the teaching and learning process (Fifitnova et al., 2022). If instructors successfully employ digital tools in the classroom, deeper links between using information communication technology in universities, appropriate circumstances, and theoretical methodologies are required. In addition, learners nowadays are regarded as digital natives who have contributed to the development of advanced language learning processes and incorporated numerous modes. Thus, teachers are highly demanded to possess respectable multimodal literacy, which is a vital skill in understanding the various ways of creating meaning. Hence, language instructors must have a solid grasp of the subject matter they teach and the skills and knowledge necessary to fulfil the involvement of information and communication technology in the classroom.

Problem Statement

According to O'Brien and Bauer (2005), the chasm between traditional print-based education and the emerging multimodal literacy practises is "the digital divide and disconnect." In recent years, there has been growing interest in using multimodal digital assessments in the classroom, as these assessments can offer a more comprehensive and authentic measure of student learning. Nevertheless, further investigation into the validation of multimodal digital assessments is needed, although some research has been undertaken on the effectiveness of these assessments. Specifically, there is a need to establish the validity of these assessments and the alignment between the assessments and intended learning outcomes. Without a better understanding of these multimodal digital assessments, ensuring that they provide accurate and meaningful information regarding student learning is difficult, which may limit their utility in supporting instructional decision-making and student outcomes. Therefore, further research is required to establish the validation of multimodal digital assessments.

Research Question

Multimodal digital classroom assessments (MDCAs) have emerged as a popular and innovative assessment form in contemporary educational settings. They provide a means for assessing students' learning outcomes by incorporating multiple modes of expression, including text, images, audio, and video. Nevertheless, despite their growing popularity, there is a lack of research on the validity of MDCAs, which poses a significant challenge for educators seeking to implement effective and reliable assessment practices.

The validity of an assessment refers to the degree to which it measures what it is intended to measure. In the case of MDCAs, validity is particularly crucial due to the complex nature of these assessments. The integration of multiple modes of expression is involved in MDCAs. Hence, determining how effectively they capture students' learning outcomes is difficult. Furthermore, MDCAs are often developed and delivered using digital technologies, which can introduce additional challenges related to the reliability and accuracy of the assessment results.

Despite the challenges associated with validity in MDCAs, research in this area still needs to be expanded. A few studies investigated the validity of specific types of MDCAs, such as those focused on multimedia presentations or digital storytelling. Nevertheless, more comprehensive research on the validity of MDCAs is needed, particularly considering their increasing popularity and use in educational settings.

Overall, limited research on the validity of MDCAs highlights the need for further investigation in this area. By addressing this gap in the literature, educators and researchers can better understand the challenges and opportunities associated with implementing multimodal digital assessments in the classroom and develop highly effective and reliable assessment practices.

Therefore, this study addresses the following two research questions.
1. What difficulties of validity do practitioners encounter while developing and implementing multimodal digital classroom evaluations in their practices?
2. How do the affordances of multimodal and digital technologies affect classroom assessment practises?

Objective of Study

In this qualitative research, MDCAs are being investigated as a subset of classroom assessment practises. Any teacher-designed assessment methods that require students to

integrate two or more representational modes utilising digital technology are referred to as MDCAs in this context. The validity challenges that practitioners are expected to experience while designing and implementing such techniques will necessitate using contextually sensitive research methods. The research specifically intends to demonstrate how MDCAs may supplement traditional assessments while highlighting possible validity concerns that instructors may have while creating and implementing MDCAs through the use of situational examples.

Theoretical Frameworks
Using two theoretical perspectives, namely validity in educational assessment (Messick, 1994; Crooks, 2011; Moss, 2013) and multimodality (Kress & Van Leeuwen, 2001; Jewitt, 2003, 2014; Johnson & Kress, 2003; Johnson & Kress, 2010; Silseth & Gilje, 2017), this study demonstrates to educators how to design MDCAs for utilisation in disciplinary contexts. Performance assessments and MDCAs may have certain characteristics in common. Resultantly, instructors and researchers should apply the validity theory to determine that MDCAs are appropriate for classroom use. Three instances of MDCA practises are offered to show the difficulties in designing and implementing MDCAs. Finally, the ramifications of this point of view are explored.

Validity in Classroom Assessment
Teachers who want to blend learning and assessment might consider including performance assessment assignments in their classroom activities (Wiliam, 2011). According to Moss (2013), most validity theory investigations are done on standardised exams. On the other hand, validity research in classroom assessment situations is characterised by "significant gaps" (Bonner, 2013, p. 102). Nevertheless, little is known concerning the validity of classroom assessments in academic disciplines (Xu & Brown, 2016), the use of feedback by students (Gamlem & Smith, 2013), the relationship between student self-assessment and increased student self-efficacy (Andrade et al., 2009), or the reliability of teachers' inferential decision-making (Andrade et al., 2009; Parkes, 2013). The potential risks to the validity of classroom assessments include professionals' sense-making ability when dealing with contextual difficulties (Moss, 2013) and the lack of skills, confidence, and validity awareness required to enhance classroom evaluations (Black et al., 2010). Teachers must be able to complete classroom evaluations in a timely manner. Stobart (2008) presented this challenge as a one-handed clock by arguing that instructors must balance validity, dependability, and manageability. Unfortunately, satisfying all three criteria is almost impossible in most cases. In reality, teachers (or test designers) can often only meet two of these criteria. Instructors often utilise performance evaluations to help them negotiate this difficult situation. Palm (2008) described performance evaluations as having a wide range of contradicting definitions. Nevertheless, although numerous authors have researched performance evaluations for over two decades (for example, Aschbacher, 1991; Messick, 1994; Borko et al., 1997; Wiggins, 1998), some of the fundamental assumptions of the approach has been questioned.
Several issues related to the validation of performance assessments are identified by Messick (1994), including the importance of construct validity in their interpretation and use, the need to address construct under-representation and construct irrelevant variance, the use of a combination of structured exercises and open-ended tasks to manage the trade-off between issues of domain coverage and generalisability and those of time-intensive depth of examination, and the elimination of unintended consequences. "Performance evaluations

must be examined using the same validity standards, both evidential and consequential, as other assessments," stated Messick (1994) in his conclusion (p. 13). As stated earlier, the validity of performance assessments has been questioned for some time. Crooks (2011, p. 72) identified several issues that need to be addressed:

i. How well the evidence focuses on performance at the intended time or progress over an intended period
ii. Whether the assessment processes are fair to all students
iii. Whether the evidence can coalesce into meaningful pictures of the performance

Teachers must have a thorough understanding of the tasks to be employed. They will be able to prepare students for these tasks if performance assessments are established and executed by teachers. Besides, teachers evaluate standards rather than as part of external accountability systems. The assessment scores may be excellent within that specific standard if the students are aware of this situation. Nevertheless, the students may still lack the breadth of learning normally demanded by curricula (Crooks, 2011).

Literature Review
Literacy in the 21st century is no longer merely recognised as the capacity to speak a language properly within a single culture. This definition of literacy is becoming highly outdated (New London Group, 1996; Cope & Kalantzis, 2009). Literacy in today's world requires students to be able to navigate through a communication landscape that is becoming highly complicated, and to negotiate various contexts and patterns of intercultural meanings, besides the presence of multimodal texts (Cope & Kalantzis, 2021). The modern communication environment is characterised by multimodal meaning-making, which is the "multiplicities of media and modes" and "increasing local diversity and global connectedness" (New London Group, 1996, p. 62), which necessitates a shift in the pedagogical approaches adopted by teachers. Multimodal meaning-making can be defined as the "multiplicities of media and modes" (Morita-Mullaney, 2021). This notion is particularly true today when a single concentration on language in literacy is insufficient for the modern workplace due to the need for an updated concept of "competence" (van Leeuwen, 2017; Palsa & Mertala, 2019). Acknowledging social variety necessitates using instructional strategies compatible with transcultural (de Souza, 2017) and multicultural (Mizusawa & Kiss, 2020) classroom settings. Concerns such as social justice (de Souza, 2019; Andrews et al., 2020) and contemporary issues, including false news (Douka et al., 2017; Weninger, 2019), must be discussed in the classroom. Understanding how different semiotic resources (visual, gestural, spatial, linguistic, and others) function and are organised is the primary emphasis of multimodality research. An extended literacy perspective is what must be achieved through the use of multimodality in education. This view considers the wide variety of multimodal communication activities in which today's youth are engaged. The term "multimodal pedagogies" refers to the various methods a teacher may use to construct learning experiences using various types of multimodal materials (Bezemer & Kress, 2016). Educators must decide how the curriculum material is communicated, structured, and sequenced multimodally (Kress & Selander, 2012).
Developing possibilities for students to investigate and enact their ideas and identities through various means of signification is another multimodal pedagogies component (Lim et al., 2021). In both teaching and learning activities, students are often asked to draw on the knowledge and experience that they have already accumulated (New London Group, 1996).

Teachers orchestrate the learning process by weaving together a series of knowledge representations into a cohesive tapestry using multimodal pedagogies. Consequently, they appropriately select meaning-making resources to design the students' learning experience. Multimodal pedagogies also allow students to construct their own knowledge representations.

Multimodality

Multiple semiotic resources and modes, often known as ways of meaning-making, are employed in the creation of products or events. Multimodality is a method of representing, communicating, and interacting that examines the usage of various resources and modes of semiotics (or meaning-making) that may be found in objects or events, such as images, writing, gesticulation, gaze, voice, or posture (Kress & Van Leeuwen, 2001, p. 20; Jewitt, 2014). Communication involving multimodal modes is vital when these technological devices are employed due to their various modes, namely, visual design, intertextual linkages to other texts, and collaborative engagement (Leu et al., 2016; Beach & O'Brien, 2018). Due to the proliferation of multimodal modes of communication, educators must be cognizant of the emergence of the current "design-oriented communicative environment" (Burke & Hammett, 2009).

In contrast, rethinking teachers' responsibilities in terms of their roles as the creators of multimodal evaluation practices continue to be an uphill battle, even while the advent of multimodal and digital techniques gives opportunities to increase the skills of teachers and learners. According to Hundley and Holbrook (2013), some literacy teachers may hold the belief that digital texts are primarily used for non-academic purposes, which could lead them to underestimate the importance of digital literacy skills for their students. If these teachers do not recognise the potential impact of digital media on education, they may struggle to adapt to technological change in their classrooms, which could limit their students' access to critical digital literacy skills. Teachers' capacity to differentiate between students' inputs and their understanding of subject matter, on the one hand, and their (basic) ability to use digital technology, on the other, will likely be a source of some difficulties (Silseth & Gilje, 2017). In addition, assessments of multimodal texts must consider the material properties of digital media (for example, whether it is possible to link with the text physically), electronic reproduction, and the types of texts (Davis & Yancey, 2014).

In order to analyse multimodality, numerous methodologies have been developed. These fields include conversation analysis, social semiotics, and systemic functional linguistics (Jewitt et al., 2016). The research field known as social semiotics focuses on how society constructs meaning by using various representational resources to produce, change, and transform in each situation (Johnson & Kress, 2003). Therefore, social semiotics examines textual materials and human contact to comprehend better the "communicational landscape" of daily circumstances and interactions (Jewitt et al., 2016, p. 66). This study aims to accept and utilise important ideas from research on multimodality in a selected manner (See Jewitt et al., 2016, p. 5) for a difference between "performing" research on multimodality and just "adopting" research on multimodality).

Multimodal Literacy

To possess multimodal literacy indicates to have an understanding of the following:
   i.   Various methods of knowledge representation and meaning-making

ii.   The discourse investigating the contributions of specific semiotic resources such as language, gestures, and images
iii.   How various modalities co-work to construct a coherent text
iv.   To use various modalities, such as visual and aural elements, to create meaning
v.   An understanding of how various modalities can be used to create meaning

The definition of multimodal literacy is "a framework requiring the collaborative interpretation of two or more texts, pictures, films, graphics, animations, sounds, music, gestures, and facial expressions in order to produce meaning" (Kress, 2010, p. 54). Multimodal texts are intrinsically related to digital technologies since many digital texts, audio, visual, gestural, spatial, and linguistic modalities are combined to produce meaning. Multimodal literacy entails comprehending various modes of knowledge representation and creating meaning, comprehending discourse by analysing the contributions of specific semiotic resources such as words, gestures, and visuals, using numerous modalities such as visual and audio aspects to construct meaning, and knowing how many modalities work together to make a cohesive narrative.

The technologies have moulded the digital natives to communicate and construct meaning differently. Alvermann et al. (2005) contended that training and educating students for life and working in the digital world by focusing on words and paper ignore other forms of communication and interaction. Given that an increasing number of children entering school with better knowledge of current technologies and literacies than their instructors, improvements must be made to prepare the teachers adequately (Chandler-Olcott & Mahar et al., 2004).

Methodological Research
In the context of this research, a formative assessment was undertaken to enhance the assessment that occurs in classrooms through the utilisation of digital devices, such as computers, tablets, cameras, and phones, in collaboration with teachers. According to Bradley and Reinking (2011), the most viable approaches in studying the complexity of writing, new literacies, communication, experimenting, optimising practises, and developing contextualised principles for future assessment practises by emphasising problems of practice at the *connection* of literacy, technology, and classroom assessment in formative assessment. Formative assessment is a way to develop contextualised principles for future assessment practises (Leu et al., 2016). By utilising qualitative descriptions in the findings, this study sheds light on the participant's experiences and the sense-making processes shared in the findings. With the method used, the study's findings cannot be potentially generalised quantitatively. On the other hand, the results may be consistent with other research in comparable settings, and the concept development may help further understand the role such practices play in educational settings (Twining et al., 2017). Explicitly, the study's purpose is to illustrate how MDCAs may be used to augment conventional assessments while simultaneously emphasising probable validity issues that instructors may have when developing and implementing MDCAs through situational scenarios.

According to Kelchtermans (2015), these cases are "good examples of practice" since they demonstrated the possible methods of bringing out the creativity of students and teachers, highlighting the use of technological devices and multimodalities in classroom assessment design. Such "good examples" intend not to impose best practice standards but to provide detailed explanations of a specific situation. It also shows the factors or conditions that

influence the current situation, allowing others to apply the most crucial lessons learned to other professional situations (Kelchtermans, 2015).

Participants

The roles that teachers are expected to play in summative assessment might vary greatly depending on the educational system and policy settings. For instance, the English instructors in the Centre for the Advancement of Language Competence are responsible for assigning students' final marks. They assign the marks based on students' performance while presenting in the classroom. The instructors generally gather the marks through classroom observations, examinations developed by the teachers, performance evaluations, and participation in classroom activities. Few guidelines are established for the composition and implementation of this assessment. The assessment should align with CEFR guidelines to ensure that assessment for students would follow the level of student competency.

Given the large role that teacher plays in assessing students within the curriculum, and the absence of standard principles for evaluating and validating the designs, a formative assessment technique was determined to be appropriate within this framework. This research utilises data from an exploratory assessment comprising participants from the university's Centre of Proficiency Course and two instructors from the Centre for the Advancement of Language Competence. The participants' age ranged from 19-21 years. The research was an ongoing process that took four weeks and was undertaken through formal and informal discussions with the teachers. The instructors agreed to take part of their own will. Meetings were conducted informally, usually once every two weeks, between the teachers and the researcher, and each meeting lasted one to two hours. This research aimed to assist the instructors in the process of designing assessments and investigate validity concerns related to the utilisation of digital technology and multimodal skills. A notion of the backward design served as the basis for the partnership (Smith, 2016). In order to construct the MDCA practises, the educators extensively utilised technology such as iPads, tablets, and cameras from mobile phones, laptops, and computers, giving particular consideration to the literacy requirements of the activities.

Data Collection and Data Analysis

Data for this research were collected from two meetings ranging between one to two hours each, written logs, communication through email with instructors, student assignments examples, two classroom observations, and one interview with two teachers who participated in the study. The data from the two participating instructors were used in this research to understand better how multimodal digital classroom evaluations are perceived and interpreted. Although the study may have shown various experimental practices, the instructors must agree that these instances were viable methods of evaluating learners using multimodal and digital means. A preliminary coding strategy was employed during the first stage of the analysis using NVIVO. By using an open-ended approach, this study identified six major categories related to the design of MDCAs, which are the "content area," "the problem of practice", "instruction and formative assessment", and "the benefit of summative assessment", "the role of students in the assessment process", and "requirements for teacher professional development".

Table 1
Data collection and analysis method

Data Collection Methods	Data Collected	Analysis Methods
Observation	Field notes from two meetings	Initial coding
Observation	Two classroom observations	Initial coding, multimodal analysis
Document analysis	Samples of student assignments	Initial coding, multimodal analysis
Data Collection Methods	Data Collected	Analysis Methods
Document analysis	Written logs and emails communication with teachers	Initial coding
Interviews	Two interviews (One with Teacher 1 and Teacher 2 together)	Initial coding

In the subsequent phase of the research, data from the three MDCAs were evaluated using ideas from social semiotics and performance assessment theory to understand better the three 3076ategoriz. The third stage of the analysis presents the results. The data that provided insight into multimodal and digital components of these activities and validity problems, such as risks to validity and their manageability in a classroom context, will be considered particularly. This technique is adopted to examine teachers' perceptions of validity in the assessments and their decision while constructing and implementing MDCAs in the classroom. Two case studies were included, each presenting a practice issue, the suggested MDCA design, and the instructors' thoughts on the design adjustments. In this research, the emphasis is on the relationship concerning the following:

1) How do the affordances of multimodal and digital technologies affect classroom assessment 3076ategoriz?

2) The validity issues associated with the affordances of MDCAs include the teacher-designed assessment 3076ategoriz requiring students to combine two or more representational modes using digital technology.

Results
As the preliminary coding strategy, the analysis used NVIVO, which involved 3076ategorizing the analysis in different coding. By using an open-ended approach, this study has identified six major categories related to the MDCA design. It involves the "content area", "the problem of practice", "instruction in formative assessment", "the benefit of summative assessment", "the role of students in the assessment process", and "requirements for teacher professional development."
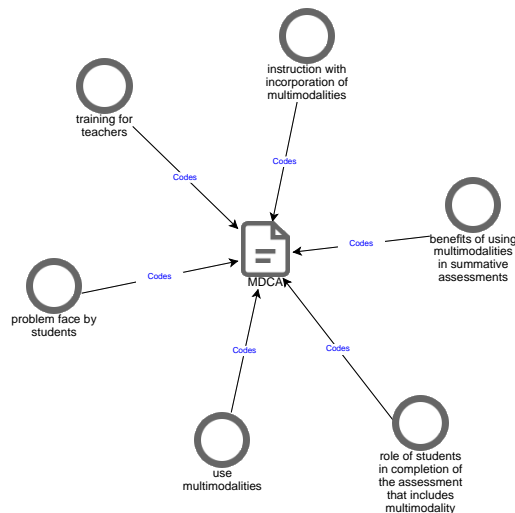
Figure 1: Systematic coding under six different categories

Systematic coding was labelled under six different categories of coding based on the two undertaken interviews. From this interview, six major categories were identified.

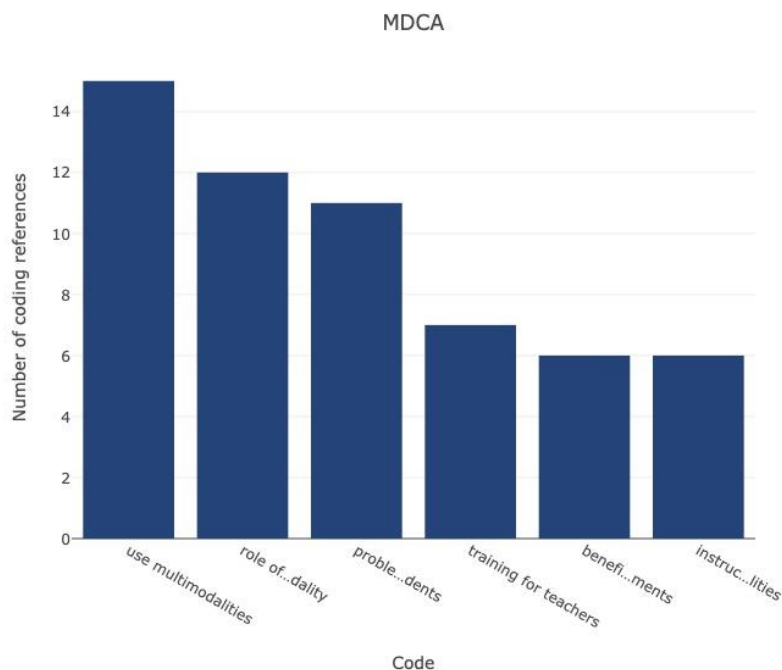Figure 2: Sample of references of six major categories

Figure 3: Number of coding references

The initial coding revealed that 15 references, which are 6.79% coverage, mentioned using multimodalities in teaching and learning. Learners were asked by their teachers to incorporate multimodality in their assessment, where they must prepare a portfolio and slides and record their presentation as a part of the assessment evaluation. In this case, teachers had allocated marks for using multimodality in their assessments.
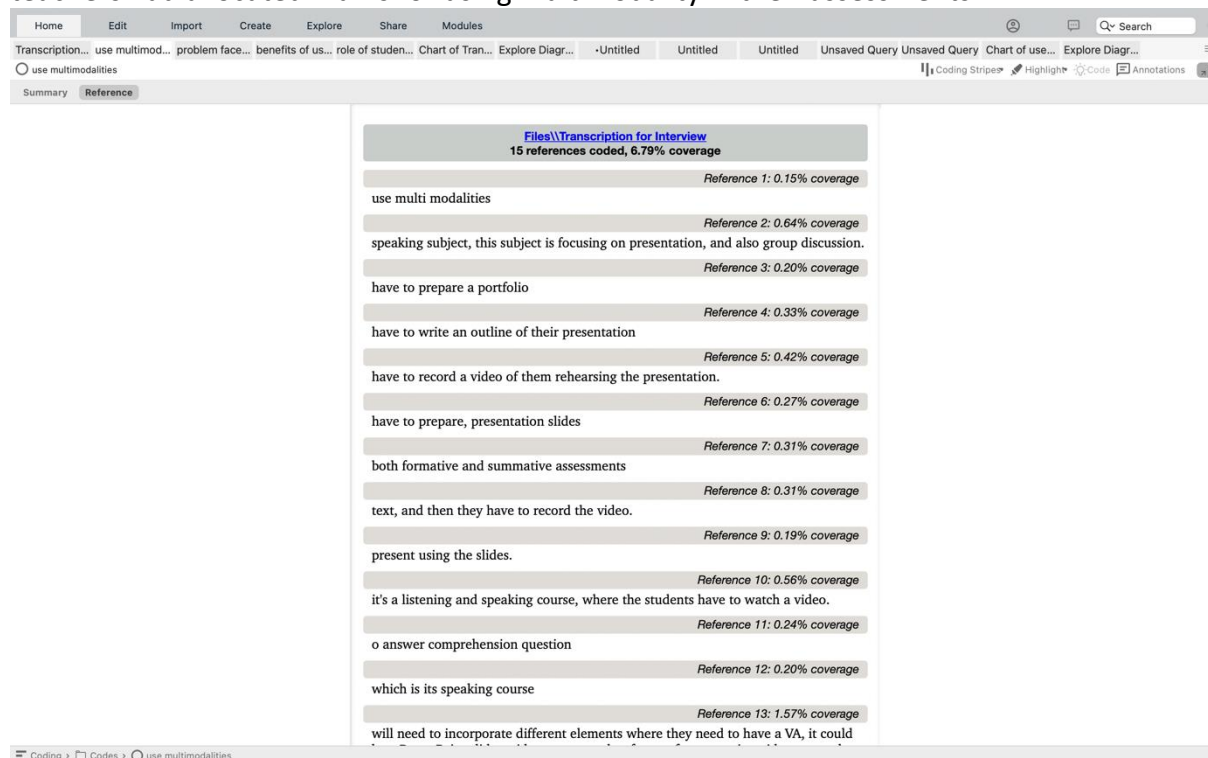

Figure 4: Percentage of coding references

Example A: Creating a presentation video by incorporating multimodality.
Teacher 1 discovered that the students had experienced challenges in including all multimodal aspects in completing their assessments. This challenge prompted MDCA practice development that combines video recordings with pen and paper drafts of the idea. The students developed video presentations in mixed-ability groups, visualising and articulating their perspectives on the assigned themes. Independent video production was required from students with average and above-average abilities. Students were expected to submit their recorded presentations and receive their lecturers' feedback. This technique enables students to think aloud and explain their viewpoints using their slides and hand gestures. The process allows them to integrate the think-aloud exercise with visual representations of handwriting and body language, such as pointing to images and diagrams on the screen. The remainder of the class was invited to utilise the pre-recorded video to improve their presentation skills in preparing for the final presentation. After watching the videos, students may self-evaluate their points and multimodal abilities by comparing their work to their classmates.

Two students received comments on the self-checklist video presentation during one of the classroom observations. The objective was to provide an explanation of the necessary abilities for a successful video presentation. While presenting, the students used hand gestures, written explanations, and vocal explanations to convey their ideas. The students did not mention the potential audience. Besides, their discussion was full of deictic signals such as "there" and "like this," and sequential markers that organised their talk into a few sections, for example, "first" and "then" while showing the presented points, indicating the need for presentation skills. The definition of deictic gestures is "pointing motions used to indicate locations in actual or abstract space" (Stam & McCafferty, 2008, p. 3). The video's motions had two aims: to enrich the explanations and increase audience engagement throughout the presentation.

According to Norris (2011), the video can be considered an instance of high modal density. Multiple techniques were used to illustrate students' achievement in this MDCA ("printed and handwritten notes, gesturing, handling objects, and talking"). This MDCA cannot be effectively assessed without considering their configuration, such as how various modalities of interaction were constructed in relation to one another. For instance, gestures support the points expressed in the image and the vocal explanations. The deictic motions allow interaction of the actual space of the video-making scenario.

On the one hand, this intricacy exposes extensive proof of the student learning process in which students need to prompt a higher-level thought. Besides, assessing the assessment created by MDCA necessitates using higher thinking skills for analysing the interaction between the modes, both in the process of creating the video and the results it reflects when evaluating the assessment. The movements used to control the creation of the video process constitute a second, higher-level operation occurring concurrently. Nevertheless, this procedure does not contribute to the final result. Teachers must be present throughout the video production to see the results effectively. In this instance, neither instructor was able to observe the complete procedure. This MDCA may not be workable for eliciting process evidence in big classrooms or if teachers are unable to oversee the whole process.

Students were able to judge their work after verbalising their presentation skills. Teacher 2 said in the interview, "*When you have to discuss anything for a few of minutes, you'll know whether you understand it or not*." Nonetheless, Teacher 1 also stated that it might be difficult for learners to explain their thoughts when writing. Combining modes might be difficult if the tasks are difficult. Consequently, multimodality is a possible validity in this instance since

functioning in various modes offers a potential source of construct-irrelevant variation. In addition, it was difficult to disentangle social roles, student placement in group work, and substantial changes in knowledge. For instance, students with average performance were likely to spend some time off-task when shooting films and addressed the assignment with various degrees of seriousness. Thus, utilising several modes paradoxically posed a possible danger to validity and the method for lowering construct-irrelevant variation. Hence, distinguishing construct-relevant data from construct-irrelevant material while designing, developing, and using MDCA is crucial.
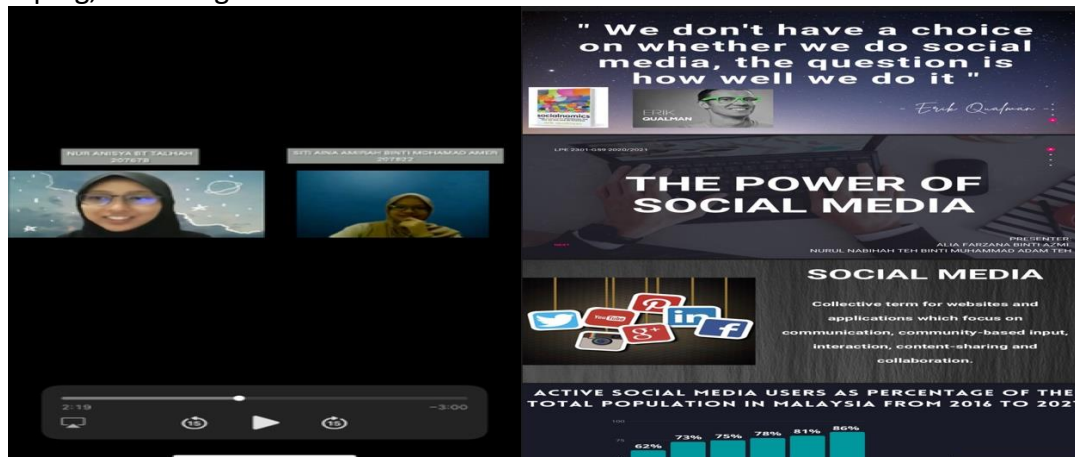

Figure 5: *Creating presentation videos using speaking, writing, and gesturing*

Example B: Business meeting video with role-playing
The English curriculum offers a wide range of learning goals but does not specify the degrees of achievement for these objectives. Students must be exposed to and experience generating various genres, including multimodal, according to the curriculum. These goals must be operationalised as evaluation criteria for particular literacy activities by educators. Students often presented individual oral presentations in which they expressed their viewpoints. Although this technique is prevalent in most higher education institutions, both instructors recognised it as a problem and associated it with "summative", "high-stakes", and "time-consuming" characteristics. The instructors devised an MDCA activity encouraging students to produce video replicating business meetings through role-playing.
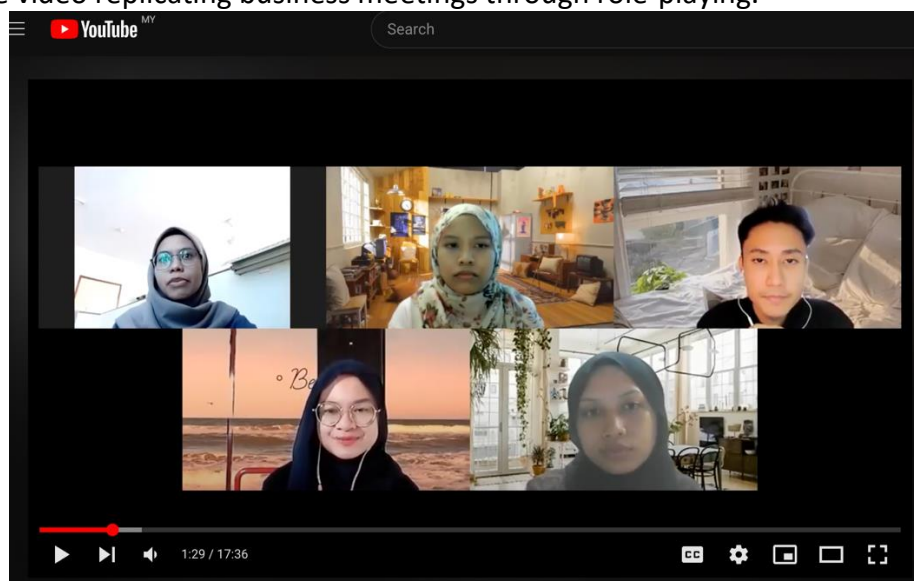

Figure 6: Assessment evidence collected as part of Project 2 business meeting

Using the example of mass media, they developed a set of evaluation criteria integrated with disciplinary goals to describe their expectations for the final result. Several learners were unfamiliar with the use of multimodal and digital formats. Their written reflections enlightened their efforts to develop a shared understanding of the task (the genre or format of this particular meeting style) with the underlying construct (a complex amalgamation of skills such as digital video production and conducting a business interview).

Teacher 1 mentioned, *"I began the lesson with a brief discussion of my ideas for this activity before demonstrating an example of a business meeting setting. Then, I gave the assignment to the students, and we discuss about it. Several students looked forward about the assignment, especially in creating the video. During the session, I assigned them three tasks: 1) collaborate with the same project 1 group members, 2) agree on the part to perform, and 3) negotiate the style of presentation. The major job was to gather as much information as possible on the position held in the firm. Even if the project itself is relatively broad, I believe it is crucial to offer the students something tangible to connect to, a real task. Some of the students were ready to begin, while others were preoccupied with other matters."*

The video was shot in the students' hostels, showing a friendly environment (See Figure 2). The learners were also able to re-record the sessions to review and enhance their presentation and multimodal skills. The final recording was uploaded to the internet and made accessible for evaluation. Employing the MDCA technique requires a blend of conventional classroom managing skills that assures authenticity in managing the challenge of an open task by dividing it into smaller groups and maintaining focus on the assessment criteria. The teachers decided to hold the learners responsible through the summative presentation. Furthermore, they attempted to limit possible sources of assessment invalidity by ensuring that students were engaged in the assignments.

The teacher chose one video as an example of how students simulated business meetings in a corporate setting. Students exhibited their professional skills by demonstrating how experts spoke about important matters while keeping composed using body language, gestures, and making eye contact. In addition, students employed discussion skills that are regularly used in meetings but are seldom used in class or informal conversation. After completing this assignment, the instructor gauged their students' experiences working on this MDCA. Students preferred the chance to record the video before they were evaluated and the chance to use different modes besides writing or only performing oral presentations. Feedback from Student A and Student B is included below:

"It was more enjoyable than sitting and writing, and we learnt about the actual business context conducting meetings effectively."

"It was a lot of fun!" We might be more serious, and if we make a mistake, we can redo it.
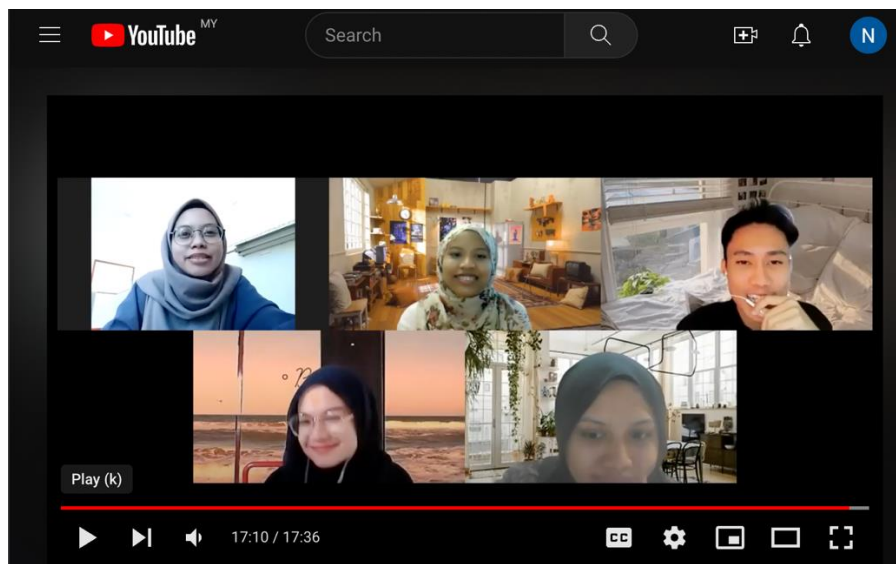
Figure 7: Assessment evidence collected as part of the business meeting assignment

This assessment indicates that the role-play element and ability to produce a video provided variety in literacy education and a formative feature that allows students to edit their video. In contrast, oral presentations in class are unmodifiable.

Nevertheless, new obstacles continue to emerge, notably in technology and literacy areas. Although students had access to mobile phones for basic video recording, not every student had the skills to edit their recordings. Moreover, the instructors warned that posting student films might raise privacy concerns, although the higher institution management system is used. In addition, changing the standard performance evaluation procedure to include other modalities of representation may need the development of new literacy skills. In this instance, the transformation comprised transforming a less formal speaking position (discussion skills) into a highly formal, engaged mode of discourse. Students lacking business setting experience and discussion skills across genres may be at a disadvantage, resulting in possible construct-irrelevant variation and assessment unfairness. In this situation, neither the design nor execution of the MDCA revealed this issue.

Discussion

In many educational settings, digital devices enable instructors to build innovative classroom assessment techniques to blend learning and assessment. Hence, MDCAs may help instructors assess large representations. This study offered examples of contextualised digital and multimodal classroom evaluation investigations. This study elaborates on how teachers can match the assessment practises in the classroom and select the modes of representation most likely to provide relevant evidence of student learning, increase student engagement, and stimulate creativity by analysing the affordances of digital and multimodal technologies and aligning them with curricular goals.

Nevertheless, the validity theory must be used to assess such activities (Brown, 2017). The MDCAs may engage students but may not increase assessment quality. Thus, MDCA validation is essential to assessment design. The diverse uses and literacies of MDCAs are vital for validation. These three factors emphasise certain elements of student learning while downplaying others and may affect instructors and students in diverse ways.

First, instructors may utilise one classroom assessment practice for various reasons, for example, for formative purposes in getting feedback and for summative purposes in holistic

evaluations. Redesigning the assessment processes should reflect MDCAs' goals. If MDCAs are formative and summative, instructors or individuals engaged in the creation should be prepared to defend their designs and generate different validity arguments for each purpose. Thus, developing validity argument guidelines may be helpful. Guidelines should help build and analyse valid arguments and address the relationship between assessment objectives, validation techniques, and decision-making using assessment evidence. Guidelines should also address gestures, audio, and video affordances.

Second, standardised tests and other single-day exams seldom allow students to demonstrate learning over time. High-pressure assessments may not be sufficient to show student improvement over time or learning breadth and depth. The MDCAs may provide instructors and students with extensive data on student skill and comprehension progress over time. The ability to sample student learning across several modalities, such as speaking, writing, listening, or interactive and collaborative work, broadens construct representation. Recording language performance and student self-assessment may help students understand the different language learning subdomains, such as increasing vocabulary and mastery of complex grammar, speaker positionality, contextual awareness, or dialogue participation. Longitudinal learning in MDCA would allow students to self-assess at different phases of development.

Third, MDCA methods demand high technology-specific literacy from instructors and students. As Messick (1994) indicated, the validation process should include assessing the intended and unexpected effects of student performance data interpretation and usage. Any major change in classroom procedures may distract instructors and students from the concept to be mastered and evaluated. The lack of digital or multimodal communication skills may increase technical inquiry time and decrease student engagement with disciplinary concepts and representations, lowering MDCA manageability. Teachers may shift from construct to task-driven approaches when adopting foreign representational modalities. Constant knowledge of the concept should accompany less standard evaluation methods to reduce validity risks. According to Crooks et al. (1996), educators and researchers should analyse whether an MDCA method is fair to all students and if the assessment information forms a cohesive and relevant picture of student performance.

Significance of Study
This study proved the importance of multimodal literacy of pre-service English language teachers in teaching their students. Pre-service English language teachers must comprehend the multimodal in different ways of knowledge representation, meaning making, and discourse by investigating the contributions of specific semiotic resources such as language, gestures, and images, the use of various modalities such as visual and aural elements to create meaning, and how various modalities work together to construct a coherent text. Therefore, language instructors are expected to possess a strong multimodal literacy, which is the ability necessary to comprehend the various modes through which meaning may be conveyed.

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