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A PRELIMINARY INVESTIGATION INTO MULTIMODAL ASSESSMENTS: EXPLORING EFFECTIVE APPROACHES TO TRANSFERABLE SKILLS ENHANCEMENT IN HIGHER EDUCATION

WSTĘPNE BADANIE OCENIANIA MULTIMODALNEGO – ANALIZA SKUTECZNYCH METOD ROZWIJANIA I PRZENOSZENIA KOMPETENCJI MULTIMODALNYCH W SZKOLNICTWIE WYŻSZYM

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Streszczenie: Ugruntowane od dawna przekonanie, że język nie jest jedynym dostępnym środkiem komunikacji, przyczyniło się do wzrostu zainteresowania multimodalnością w komunikacji, którą można zastosować również w egzaminowaniu w szkolnictwie wyższym. Tradycyjnie, kursy językowe w szkolnictwie wyższym opierają się na egzaminach opartych na esejach pisemnych i prezentacjach. Jednakże pojawienie się mediów społecznościowych i sztucznej inteligencji wprowadziło wyzwania dla tych konwencjonalnych metod egzaminowania, zwłaszcza w kontekście przenoszenia nabytych kompetencji. W celu udoskonalenia egzaminowania w szkolnictwie wyższym ten artykuł proponuje wprowadzenie komponentów multimodalnych, które łączą różne tryby semiotyczne. Chociaż badacze zajmowali się już integracją multimodalności w komunikacji w projektowaniu kursów akademickich, niewiele badań dotyczyło jej praktycznego wdrożenia w egzaminowaniu i projektowaniu tychże kursów. Artykuł ten analizuje wpływ egzaminów multimodalnych na 86 studentów uczestniczących w kursie komunikacji w języku angielskim oraz przenoszenie nabytych kompetencji na inne kursy i dziedziny życia. Jako wstępne badanie w ramach dwuletniego projektu na dużą skalę, wykorzystując dane z analizy treści wywiadów jakościowych ze studentami oraz wyniki ilościowych badań ankietowych, badanie ocenia implikacje dla egzaminowania komunikacji w języku angielskim i przenoszenia nabytych kompetencji w oparciu o samoocenę studentów. Wstępne wyniki pokazują, że studenci, którzy uczestniczyli w kursie i egzaminach multimodalnych, skutecznie przełożyli różnorodne kompetencje miękkie na inne kursy uniwersyteckie i inne dziedziny życia. Badanie to wykazało również, że projekty multimodalne oparte na współpracy sprzyjają rozwojowi i transferowi kompetencji miękkich.

Słowa kluczowe: Multimodalność; Kompetencje cyfrowe; Egzaminowanie; Przenoszenie umiejętności; Transfer umiejętności; Szkolnictwo wyższe

Abstract: The long-established notion that language is not the only available means of communication has led to a growing interest in diverse communication modalities, which can be extended to higher education assessment. Traditionally, language courses in higher education rely on written essays and presentations for assessment. However, the emergence of Generative Artificial Intelligence has introduced challenges to these conventional assessment methods, because students can complete these tasks with some simple prompts for ChatGPT. To enhance higher education assessments, incorporating multimodal components that merge various semiotic modes has been proposed. While scholars have addressed the integration of multimodality into course design, few studies have explored its practical implementation in assessment and course design. This article examines the effects of multimodal assessments on 86 students enrolled in an English communication course and the transferability of assessment skills to other courses and domains. As an initial exploration of a two-year large-scale project, by utilizing data from content analysis of qualitative student interviews along with quantitative survey results, the study assesses the implications for English communication assessment and skill transferability based on students' self-perception. Initial findings reveal that students who engaged in the course and multimodal assessment effectively translated a variety of soft skills into other university courses and other domains. This study also showcased that collaborative multimodal projects are conducive to soft skills development and transfer.

Keywords: Multimodality; Digital literacies; Assessment; Skills transferability; Higher education

Introduction

Multimodality is the use of different semiotic resources to communicate meanings (Jewitt et al., 2016, p.3). Over the past few decades, the widespread adoption of modern technology has revolutionized language classrooms, allowing for the extensive use of multimodal approaches in both learning and assessment. This shift has prompted researchers to advocate for expanded perspectives on literacy and increased focus on the multimodality framework, which encompasses the various ways individuals create and convey meaning in the digital age. The New London Group (1996) emphasizes the importance of understanding multimodal communication, while acknowledging its relevance to contemporary human interactions. Additionally, the concept of New Literacies (Coiro et al., 2014) encompasses the novel forms of literacy that have emerged due to advancements in digital technology. This shift towards multimodal approaches in language classrooms has prompted calls to re-evaluate fundamental assumptions about literacy and communication in the digital age.

Digital media offers unique affordances for students to communicate with their target audience effectively. As a result, multimodal composing has emerged as a new learning approach involving the use of digital tools to integrate multiple semiotic resources in different modes, such as text, image, video and audio (Jiang, 2017). Various forms of multimodal composing have appeared over the years, ranging from web pages, blogs, wikis, podcasts, videos, video games, infographics, posters, to brochures. In addition to meeting students' real-world needs in a digitally mediated world, research also shows that multimodal composing may foster learner autonomy, enhance students' voices, and heighten genre awareness, among other benefits (Hafner & Ho, 2020). These benefits of multimodal composing suggest the need to reconceptualize traditional theories of literacy, learning, and communication to better account for the multimodal nature of meaning-making in the digital age.

Learning transfer is "the transition of acquired skills and knowledge across different contexts" (Jackson, 2016, p.200). Beyond the benefits of multimodal composing, transfer of learning has been investigated in student employability (Jackson, 2016), but is rarely examined in the context of multimodal projects in language communication courses. Examining the transfer of skills developed through multimodal assessments has important theoretical implications for expanding models of literacy and communication beyond traditional print-based paradigms. This ongoing pilot study investigates an array of soft skills and technical skills developed by students through multimodal assessment in a university communication course. Employing a mixed-methods design, the study intends to uncover the degree to which students perceive the growth of transferable skills within a multimodal project, and to shed light on how to best support their skills learning through the multimodal assessment design. Ultimately, this study responds to calls for

expanded perspectives on literacy and communication by investigating the skills and competencies students develop through multimodal composing. The findings will contribute to theoretical understandings of how digitally mediated, multimodal meaning-making differs from traditional models of literacy. At the same time, the practical implications will guide instructors in leveraging multimodal assessments to better prepare students for the communicative demands of the 21st century education and employment .

Literature Review

Transfer of Learning: The Adaptive Transfer Theory

Educational researchers are interested in the theory of transfer in learning. Learning transfer is "the transition of acquired skills and knowledge across different contexts" (Jackson, 2016, p.200). Education researchers' interest in this topic, stems from the common assumption that transfer of learning is at the heart of education (Bradford & Schwartz, 1999). The current study draws on the recent theory of Adaptive Transfer which originally targets first language and second language writing. We believe the tenets of this theory are also applicable to the skills transfer in multimodal projects because both transfers share the dynamic, flexible, and adaptive nature.

Drawing on insights from educational psychology, DePalma and Ringer (2011) put forward the theory of Adaptive Transfer as a broader and more flexible framework to understand how students both carry forward and reshape writing knowledge and experiences learned in prior contexts, to fit new ones. Guided by this theory, Kang (2022) identified the transfer of knowledge across writing genres and across composing media. For our study, Adaptive Transfer is operationalised as the conscious or intuitive process of applying or reshaping learned skills in new and potentially unfamiliar situations. Adaptive Transfer highlights the agency of individuals and consider students as "actors"- that is, as possessors of unique language resources and abilities rather than as passive vessels of transfer (Lobato, 2003, p. 20) and recognizes that learned skills are adapted and transformed based on the given socio-rhetorical situation and the individual's "personal construction of relations of similarity across activities" (Lobato, 2003, p. 20). This theory will guide our inquiry in the interpretation of the skills transfer of the participants in multimodal assessments.

Multimodal Assessments

Multimodal assessment in the current study refers to the production of videos using different semiotic resources such as sound, text, images, and gestures. Multimodal composing has gaining traction as a form of assessment in different

levels of education from primary school to university and is particularly common in writing courses or English language courses (for a review, see Anderson & Kachorsky, 2019; Zhang et al., 2021). Multimodal assessments have been observed to enhance students' multiliteracies and/or digital literacies. These two terms have similar meanings but with slightly different emphases. Multiliteracies involve multiple ways of meaning making in different modes (e.g., linguistic, aural, visual, spatial and gestural modes) (Hafner, 2015) while digital literacies emphasize "the ability to use information and communication technologies to find, evaluate, create, and communicate information, requiring both cognitive and technical skills" (American Library Association, 2012, para. 1?). Studies have collectively shown that multimodal assessment is motivational for learners' productive meaning making, lending supports to its benefit for L2 learning and teaching (Jiang et al., 2021). As a result, various forms of multimodal assessment have been integrated by researchers as part of second language pedagogy, with video-making as a major form.

It should also be noted that as a new learning approach, the assessment framework of multimodal assessment is still undergoing substantial development. Researchers have proposed different models for multimodal assessment in recent years, such as the process-oriented model (Hafner & Ho, 2020) and a multimiodal assessment framework (Ross et al., 2020). It was suggested in both studies that multimodal assessment should include both formative and summative assessment, to effectively assess students' multiliteracies. The curriculum design of the current course reflected this trend and included both assessed and non-assessed multimodal video assignments. It should be noted that past research on multimodal assessment was mostly situated in the field of language education. The current study innovatively explores the impact of multimodal assessment against the backdrop of higher education in language education and will shed new light regarding its influence on students' skill development and transfer.

Soft Skills Development in Multimodal Assessment

The definitions of soft skills vary in academic literature, with some only concerning people skills while some others including thinking skills. Across literature, the overlapping examples of soft skills include sociability, self-management, communication skills, ethics, diversity sensitivity, teamwork skills, problem-solving or critical thinking abilities, customer service competencies, emotional intelligence, and leadership skills, among others (Mitchell et al., 2013). On the other hand, technical skills, or 'hard skills', are often associated with the use of tools, equipment related to work properly and efficiently. In the working environment, technical skills normally refer to technical procedures or practical tasks that are typically easy to observe, quantify, and measure (Nasir et al., 2011).

Previous studies have typically investigated how specific competencies are developed through multimodal assessments. In a review, Zhang et al. (2021) identified a few examples in which students improved in competencies beyond language development, such as critical thinking skills (Abdel-Hack & Helwa, 2014), learner autonomy (Hafner & Miller, 2011), digital empathy (Jiang & Gao, 2020), authorial identity expression (Tardy, 2005), and authorial agency (Cimasko & Shin, 2017). In some studies, students made use of their cognitive and meta-cognitive skills while composing (Hung, 2019), which could also be transferred to the study of other courses. Jiang (2017) reported the advantages of multimodal assessment in affording students' improvement in technical skills and peer interaction, which facilitated student learning.

The current project will explore a wide range of soft and technical skills that are improved and transferred by students, without confining to a specific skill. First, we refer to existing multimodal assessment models in selecting some common areas of students' competencies (e.g. critical thinking, creativity, communication, planning and organization, audience awareness, and video-editing) (Ross et al., 2020; Zhang & Yu, 2023). And we identified other skills that could benefit from multimodal assessment in the existing literature. For example, information search skills were mentioned by various students in multimodal projects, such as "I attempt to find further or extra information to read as long as I found the materials were not enough for me to carry on composing the content." (Lee et al., 2021, p.81). As for other soft skills, we found that group multimodal projects involved students' teamwork, conflict management, intercultural awareness, and time management. For example, in an online digital storytelling project involving Taiwanese and Canadian university students, they had various contradiction in work habits due to cultural differences (Priego & Liaw, 2017). They had different preference regarding project schedules, tools for project creation, and division of labour, etc. It was through strategies such as offering help and creating a team spirit that they managed to resolve the conflict. In another study (Amgott, 2020), American students made vlogs about their residence abroad in France, which also improved students' intercultural awareness. Besides, leadership was also mentioned by students in another group multimodal project, saying that "I learn how to communicate with my group members and how to lead a team" (Chen, 2020, p.488). Lastly, aesthetic sense is an indispensable element of multimodal project. Participants have reflected on how they manipulated image tones and colours, to match the atmosphere that they wanted to foreground (Oskoz & Elola, 2016), which lends support to the inclusion of this skill in the questionnaire.

As for methodology, researchers have employed various methods to measure the above skills of students in multimodal works, ranging from mixed methods to case studies. For example, Hung (2019) recruited 88 English major students from a university in Taiwan and used mixed methods including student reflections and three survey scales about digital stories to measure that cognitive and meta-cognitive

skills. Similarly, Hafner and Miller (2011) combined questionnaire, focus-group interviews, and weekly reflection blogs to investigate the learner autonomy in multimodal videos. In contrast, Cimasko and Shin (2017) conducted a case study on one college student and they used interview data to analyse students' authorial agency in an argumentative paper and an animated video.

Gaps in the Literature and Research Questions

To the best of our knowledge, Kang (2022) is the only study that explicitly explored skills transfer in a multimodal project, though his study focuses on writing skills. He tracked six students' knowledge transfer between narrative print-based writing, narrative multimodal composing, argumentative multimodal composing, and argumentative print-based writing in a 14-week period. Kang collected data such as field notes, class recordings, student demographic surveys, and three interviews per student. Results demonstrated that students transferred knowledge across genres and across media. The knowledge they transferred ranged from genre-based knowledge to audience awareness, content organizing skills, etc. In the same vein, participants in Christiansen's (2017) study transferred the knowledge acquired from multimodal projects, such as "organization of ideas, variety of examples, and variety of writing styles" (p. 59), to their print-based writing.

These previous studies have confirmed that students can transfer skills or knowledge acquired from multimodal projects to different forms of writing. However, their scope is limited to near transfer within the same course. The transfer of knowledge happened in a short timeframe and was not explored beyond the course per se (e.g., to other courses, student societies, or employment). The review by Zhang et al. (2021) demonstrated that a variety of skills can be cultivated through multimodal works, but they usually focus on a specific skill (e.g., critical thinking skills) and did not follow up after the completion of the course. In other words, findings could only show that students possess such skills, but there is no information on whether they have applied those skills elsewhere.

Based on the above review, the current study has an ambitious scope, that is, to explore whether and how a range of technical and soft skills are developed and transferred from a multimodal assessment project to other contexts. The current study can compare which skills are improved the most from multimodal assessments in the communication course and understand how students apply the skills they learned from the multimodal assessment to real life. Two research questions (RQs) are proposed:

RQ1: What is the extent of student perceived skill improvement from a multimodal assessment in a university communication course in Hong Kong?

RQ2: Does multimodal assessment in a university English communication course in Hong Kong enhance students' self-perceived skills transfer? If so, how?

Research Design and Methodology

The Communication Course and Multimodal Assessment

The current study is conducted within the context of a compulsory university communication course in Hong Kong, which is taken by nearly all first-year students from each major and who have non-native English proficiency. This context was chosen because it provides a representative sample of students who possess diverse soft and hard skills at baseline. This diversity is advantageous for exploring the transferability of skills using multimodal assessment in the study. The course was initially implemented in Spring 2022, and several revisions were made in Spring 2023 to improve the course design. These revisions have since remained consistent.

In Spring 2022, the course was conducted entirely online as a response to the COVID-19 pandemic restrictions. Students collaborated in groups despite being physically located in different places. During this period, students were tasked with creating 6–8-minute videos on various 21st-century study and work trends, such as assistive technologies, coworking spaces, and digital nomads, to both inform and engage an academic audience. The multimodal project carried a weightage of 30% of the total grade, with an additional 5% allocated for assessing teamwork.

In Spring 2023, following the lifting of COVID-19 restrictions, the course transitioned to face-to-face instruction. During this iteration, students were still required to produce individual 4–6-minute videos on the same list of topics as the previous rendition. However, the multimodal video now accounted for 40% of the total grade, while the teamwork aspect was removed. Instead, in line with the literature by Hafner and Ho (2020) and Ross et al. (2020), the updated course version included a 1–2-minute collaborative short-video task, as a *summative* precursor to the *formative* final video. Students were instructed to apply the same assessment criteria from the final evaluated video to the precursor task, providing an opportunity to receive valuable peer and instructor feedback before the final submission.

Despite the differences between the two course renditions, the assessment criteria remain fundamentally the same. In both versions, the final multimodal video was evaluated based on four key criteria: Synthesis (SY), which involves the evaluation and use of appropriate sources to support arguments, the integration of ideas from multiple sources to construct coherent arguments, and the effective paraphrasing and summarizing of ideas; Coherence (CO), which encompasses strategies for elaborating, substantiating, and organizing logical ideas into strong arguments in both speaking and writing; Spoken Language (SL), which focuses on selecting language suitable for a given audience, context, and purpose, as well as expressing complex ideas precisely with a wide range and complexity of vocabulary and sentence structure; and Multimodality (MM), which entails incorporating and

effectively utilizing a combination of different modes (e.g., audio, text, graphics, video) to communicate meaning. It is important to note that the MM criterion carries slightly more weight than the other criteria, given its central role in the task. Additionally, it is acknowledged through this weighing that creating multimodal content can be time-consuming, particularly for students without prior experience in video production.

The Participants

The participants (N = 86) come from two intakes, Spring 2022 and Spring 2023. 78 Spring 2023 participants formed the quantitative sample. The majority of students were from the Standard Proficiency Strand with a minority of them from the Advanced Strand. In this study, English Medium Instruction (EMI) experience means students learn academic subjects in English (Macaro, 2018). The students' mean age is 18.6 years old (SD = 2.2) and on average they had 4.8 years of English Medium Instruction (EMI) experience, with large individual differences. Most students only had one year of EMI since entering the university. Students were primarily local Hong Kong students, but there was also a mixture of L1 Mandarin speakers and other international students included in the sample. 61.5% of students were male while 30.8% were female.

The qualitative sample for the study consisted of 8 participants enrolled in the Spring 2022 term, all of whom were from the Advanced Strand and were local students. Within this sample, seven individuals were native speakers of Cantonese (L1), while one participant was a native speaker of English (L1). Gender distribution within this sample was evenly balanced, with 50% representing female participants and the remaining 50% male participants. Convenience sampling was employed, facilitated by the participants' familiarity with the interviewer and their availability to participate in the research endeavour. This specific focus on participants from the Advanced Strand, as a distinct subgroup within the broader student population, inherently restricted the potential participant pool, thereby warranting a tailored approach to recruitment. Furthermore, the utilization of convenience sampling underscored the emphasis on availability, aligning with common practices in qualitative research aimed at ensuring ease of recruitment and data collection focusing on depth instead of breadth of the data.

Instruments

Adopting a mixed methods design, the current study employed two instruments, a questionnaire and a semi-structured interview to collect data. Students' multimodal videos serve as supplementary resources in the investigation.

The questionnaire consisted of three parts (see Appendix). The first part was a background questionnaire collecting students' biodata information, such as

age, gender, the experience of English-Medium-Instruction, school of study (e.g. Science, Business, Engineering, Social Science and Humanities) and grade in a previous university English course. The second part of the questionnaire was a set of questions, encompassing some previously identified areas for skills development and potential skills gaps of students from the literature and the research team's experience of teaching this course (Figure 1). Given that our research question is novel, there is no published validated questionnaire that we could draw on directly. Following a study on students' self-perception on digital literacies (Smith & Storrs, 2023) which used 5-point Likert scale, a 7-point Likert scale was chosen to gauge a more nuanced picture in participants' responses. Table 1 displays the relevant studies in which the data revealed students' improvement or challenges in certain multimodal projects. Since there are many studies that demonstrated certain frequently mentioned skills (e.g. creativity, organization), the listed studies were not exhaustive and were shown as examples. For example, in group-based multimodal projects (Deng et al., 2023; Priego & Liaw, 2017), students may face challenges in assigning tasks, coordinating completion time and communication platforms etc, which may enhance their conflict management, time management, and leadership. The last part of the questionnaire concerns skill transferability and includes two questions focusing on whether students applied such soft skills in other contexts and in which contexts they foresee the application of such soft skills in the future.

Tab. 1. Examples of studies that mentioned the skills explored in our questionnaire

Transferrable skills	Relevant Literature
Video editing	Chen, 2020; Zhang & Yu, 2023
Information search	Lee et al., 2021
Audience awareness	Zhang & Yu, 2023
Planning and organization	Chen, 2020; Zhang & Yu, 2023
Communication	Chen, 2020; Zhang & Yu, 2023
Creativity	Ross et al., 2020; Zhang & Yu, 2023
Critical thinking	Huang, 2019, Ross et al., 2020
Teamwork	Chen, 2020; Priego & Liaw, 2017
Intercultural awareness	Amgott, 2020; Priego & Liaw, 2017
Conflict management	Deng et al., 2023; Priego & Liaw, 2017
Time management	Deng et al., 2023; Priego & Liaw, 2017
Aesthetic sense	Cimasko & Shin, 2017; Oskoz & Elola, 2016
Leadership	Chen, 2020

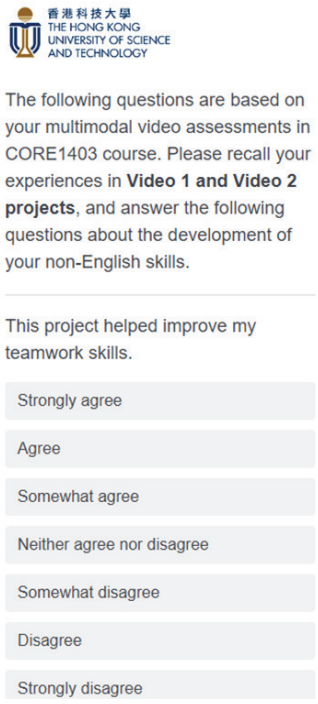

Fig. 1. Screenshot of the Questionnaire

Questionnaire Validity and Reliability

The internal reliability of the questionnaire, as indicated by Cronbach's alpha, was .939, demonstrating the consistency of responses. While the first part and the third part are straight forward descriptive questions, the validity of the second part of the questionnaire can be examined from a few perspectives. First, content validity was evaluated by expert judgment (senior lecturer and associate professor in applied linguistics) and literature review. The questionnaire used common terms of skills that respondents could easily understand (e.g. leadership, teamwork) and added necessary explanation in brackets for a less common skill (e.g. for aesthetic sense, we explained it as sense of beauty) to avoid ambiguity. For construct validity, the items have a clear boundary of measuring self-perception of skills improvement. Open-ended space is provided at the end, so students could list other skills that they have improved from the multimodal project, to ensure that the questionnaire covers all the major skills. Second, criterion-related validity could not be examined in the present study, because of the absence of other previously validated skill transfer questionnaire for correlation analysis. Third, in terms of external validity, the most well-developed skills from this study align with the findings in existing literature on multimodal composing (Ross et al., 2020; Zhang & Yu, 2023), suggesting that there were some consistent benefits of multimodal composing across different projects which established its external validity. It should be recognized that ideally, the direct effectiveness of skills transfer should be measured by demonstration of the same skills in another context (e.g. Yang & Liu, 2022). However,

given the fact that the current study explored an array of skills, self-perception was deemed the most practical way of collecting the data, considering the practicality and the cost-effectiveness of self-reported data. Future research is needed to conduct factor analysis and interviews with participants, to better validate the test.

As for the semi-structured interviews, the questions are adapted from Hung (2019) and Yeh (2018). This adaptation process involved carefully considering and selecting questions that would yield insightful responses related to the research objectives. By leveraging the expertise and insights of previous researchers, the question items were designed to elicit comprehensive and relevant information from the participants. English is chosen as the interview language to create a controlled condition. The interviews were carried out by a researcher face-to-face on campus and the process was audio recorded. The interview lasted approximately 20 minutes per person and the interview prompts are provided in the Appendix.

Results

Development of Soft and Technical Skills

Table 2 illustrates the results of the descriptive analysis and highlights the degree of agreement among students regarding the development of various transferable skills as directly linked to the multimodal project. To provide a practical overview of the results, the following sections focus on highlighting the top four skills that demonstrated the highest levels of improvement as perceived by the students, followed by the bottom two, because of the significant differences revealed from a between-groups one-way ANOVA: [$F(12, 1001) = 3.8$, $p < .001$]. The significant differences were observed between leadership and four other skills (planning and organizing skills, $p = .009$; audience awareness, $p = .004$; video editing, $p < .001$; and information search, $p = .002$). Besides, the video editing skills improvement was also significantly higher than the improvement of aesthetic sense ($p = .048$).

Tab. 2. Descriptive Statistics of Transferable Skills by Descending Order (n=78)

Transferrable skills	*Mean*	*SD*	Min	Max	Category
Video editing	5.6	1.29	1	7	Technical
Information search	5.54	1.02	3	7	Technical
Audience awareness	5.5	1.07	2	7	Soft
Planning and organization	5.46	1.15	2	7	Technical
Communication	5.35	1.13	2	7	Soft
Creativity	5.22	1.38	1	7	Soft

Transferrable skills	*Mean*	*SD*	Min	Max	Category
Critical thinking	5.18	1.30	1	7	Soft
Teamwork	5.1	1.32	2	7	Soft
Intercultural awareness	5.03	1.28	1	7	Soft
Conflict management	4.96	1.34	1	7	Soft
Time management	4.95	1.58	1	7	Soft
Aesthetic sense	4.91	1.36	1	7	Soft
Leadership	4.67	1.54	1	7	Soft

Most Improved Skills

Amongst the measured skills, Video-editing (M = 5.6) technical skills emerged as the most beneficial, with students largely agreeing that they had improved in this area. Following closely were Information search skills (M = 5.54), Audience awareness (M = 5.5), and Planning and organisation (n = 5.46) skills. Furthermore, of the 13 skills being measured, it is noteworthy that only three were categorized as "technical skills" rather than "soft skills." Interestingly, these three technical skills were among the top four skills listed at the highest positions on the chart, and considered to be "most improved" based on their mean scores. This finding suggests that students perceived these technical skills to be particularly valuable and experienced significant improvement in these areas after completion of the multimodal project.

Least Improved Skills

The data further revealed that students perceived the least improvement overall in Leadership skills (M = 4.67). This suggests that in Spring 2023 rendition of the course, where students created individual rather than collaborative multimodal videos, leadership was not the perceived emphasis in successfully completing the multimodal project. Additionally, the second least improved skill was the Aesthetic sense (M = 4.91). Despite these skills showing relatively lower improvement, there was still notable progress observed in every single skill measured. This suggests that while the perceived improvement in these skills may not be as prominent in comparison to others, they still offer valuable insights into the areas where students encountered challenges or experienced limited growth during the multimodal projects.

Emphasis on Technical Skills

Upon initial examination of the listed skills, it is apparent that the student place emphasis on enhancing technical skills, despite the notable disparity in quantity

with respect to soft skills. This could be attributed to the perceived importance and visibility of these abilities within the context of multimodal projects. Given the tangible outcomes of video editing, information search, and technical execution, these skills were more directly observable and measurable, leading students to prioritize their development over other soft skills. However, it is crucial to note that while technical skills demonstrated the most significant development, the acquisition of soft skills remains equally vital for fostering well-rounded personal and professional growth.

Transfer of Soft and Technical Skills Beyond the Course

Expanding on the emphasis placed on skill improvement, our investigation explores the student application of skills beyond the course (see Table 3 below). The findings revealed that a notable proportion of students (n = 26%) reported applying these skills in other courses, indicating their transferability across diverse academic contexts. Moreover, 18% of students mentioned utilizing these skills within other student societies, highlighting their broader relevance beyond the traditional classroom setting. Notably, given their status as Year 1 students, only 13% of participants had integrated these newly acquired skills into internships, which aligns with the early stage of their academic journey. It is crucial to recognize that, for a significant number of participants, this course represented their inaugural experience in video production, and the data collection occurred prior to the official completion of the course. Hence, the opportunities for them to apply these multimodal skills elsewhere were relatively limited at the time of data collection.

Tab. 3. Current Skill Application Beyond the Course

n = 76	No	Yes
Student societies	62	14
Internships	66	10
Part-time jobs	63	13
Other courses	56	20

Future Application of Soft and Technical Skills

As seen in Table 4 below, students were asked about their expectations regarding future application of the skills discussed. The participants' expectations of transferring the acquired skills to internships, student societies, other courses, and part-time jobs highlight their proactive approach towards integrating these abilities into their future endeavours. For instance, almost half of the students anticipate applying these skills in various domains, reflecting their recognition of the value and versatility of the skills presented. This proactive mindset aligns

with the evolving digital landscape, where students increasingly realize the benefits of these skills in their future work and study. As the requirements of work and study continue to be shaped by the digital era, the significance of these transferable skills is expected to grow. To gain a comprehensive understanding of the long-term impact and relevance of these skills, further data collection and ongoing monitoring are crucial. These efforts will enable researchers to continuously refine and enhance educational practices, ensuring the optimal development of future students and their success in an ever-changing professional landscape.

Tab. 4. Expected Future Skill Application Beyond the Course

n = 76	No	Yes
Student societies	46	30
Internships	43	33
Part-time jobs	56	20
Other courses	46	30

Inferential statistics

A one-way between-group ANOVA, Spearman correlation, and multiple regression were run to explore the predictors of self-perceived skills development. There is not any significant correlation between students' grades in the course, years of English-medium instruction, university majors, and the development of the identified skills within the study . To assess the impact of school on skills improvement as measured by the multimodal assessment, a one-way ANOVA was conducted. The results of the one-way ANOVA demonstrated that there was no statistically significant difference in the overall skills improvement among students from different disciplinary backgrounds [$F(3, 74) = 1.390$, $p = .253$]. Lastly, multiple regression analysis explored whether gender, school of study, age, years of EMI education and the grade in a previous Year 1 English course could predict the transferrable skills improvement of the students. First, a total score of skills development was computed by adding the rated value of the 13 skills. Second, the categorical variables (i.e., gender and school) were recoded into dummy variables for analysis purposes. Then all the independent variables were put in the model. Results showed that the regression model did not converge ($p=.461$), suggesting none of the above variables could predict the self-perceived skills development of students.

This finding suggests that the skills cultivated through the multimodal project represent a distinct and independent set of New Literacies skills that are not influenced by students' discipline or their proficiency in the English language. As a result, the assessment offers an equitable opportunity for students from diverse schools and varying levels of English proficiency to excel.

Semi-Structured Interview Data

Unlike the questionnaire data, the semi-structured interview data was subjected to an inductive thematic analysis, following an iterative process of identifying themes within the collected data. This analytical approach allowed for a comprehensive exploration of the skills that the students had developed as a direct result of their involvement in the multimodal project. Additionally, the analysis sought to gain insights into how these acquired skills were being utilized by the students, particularly focusing on their application and effectiveness beyond the course in question in both academic and real-life contexts.

Major themes

Thematic analysis revealed four key themes central to the research objectives: Communication and Collaboration, Audience Awareness, Digital Literacy, and Learning and Personal Growth. These themes highlight the development of essential skills through the multimodal project and their broader impact on participants' academic and personal growth.

Communication and Collaboration

Effective communication and collaboration were consistently recognized as crucial to the success of group projects. Participants emphasized the benefits of combining diverse expertise, which enhanced project outcomes and fostered the development of soft skills like multitasking and consensus-building. For instance, one participant noted that role-playing in the project required significant preparation and research, highlighting the importance of teamwork and communication in achieving project goals.

Audience Awareness

Audience awareness emerged as a critical skill, with participants acknowledging the need to tailor communication to effectively engage their target audience. They recognized that understanding audience preferences and expectations was essential for delivering comprehensible and engaging content. One interviewee reflected on how the course helped them improve in presenting research clearly, a skill they had previously struggled with.

Digital Literacy

The project significantly enhanced participants' digital literacy, particularly in video production and editing. Students applied these skills in real-life contexts, such as promoting events in student organizations. The emphasis on digital tools

and platforms facilitated efficient task completion and effective communication, underscoring the growing importance of digital literacy in modern education.

Learning and Personal Growth

Beyond technical skills, the project contributed to personal growth, boosting participants' confidence and enhancing their negotiation and communication abilities. Participants reported that overcoming challenges in the project, such as tight deadlines and remote collaboration, provided a confidence boost that positively impacted their performance in other academic courses.

The qualitative data provides valuable insights into the transferability of skills and the impact of multimodal assessment on students' emotional and skill-based growth. These findings suggest that multimodal assessment offers potential benefits beyond technical skill development, emphasizing the importance of soft skills as well. These insights will guide the next phase of the research project, focusing on the long-term value of multimodal assessment and the role of soft skills in students' overall development.

Discussion

The extent of perceived skill improvement resulting from a multimodal assessment in a university communication course in Hong Kong is a central inquiry (RQ1) of this study. By collecting and analysing qualitative and quantitative data, this study shed light on the tangible benefits and perceived value of employing multimodal assessment within the context of a communication course. Additionally, this investigation offers insights into the specific skill areas where students believe they have experienced the most significant growth, contributing to a comprehensive understanding of the effectiveness of this assessment approach in fostering skill development.

This project also investigates the extent of perceived transfer in skills stemming from a multimodal assessment in a university English communication course in Hong Kong (RQ2). By exploring students' perceptions, this research seeks to identify whether engagement with multimodal assessment methods positively influences their ability to apply acquired skills in different contexts. The study uncovered the connection between the integration of multimodal assessment and the perceived enhancement of transferable skills, such as the application of course content to real-world situations. The quantitative analysis provided an overview of the development of both soft skills and technical skills of the participants. Through qualitative analysis, this investigation provides insights into the specific ways in which students believe multimodal assessment contributes to their skills transfer, potentially highlighting the benefits of this assessment strategy in promoting practical skill application beyond the classroom.

The findings of this study make important theoretical contributions by extending the application of Adaptive Transfer Theory beyond the domain of writing skills. Qualitative findings illustrated how students actively absorb, adapt, and transfer the skills they acquired from the course to other contexts. Specifically, the qualitative data reveals the idiosyncratic and transformative nature of skills transfer, as each student envisioned applying the acquired competencies across diverse contexts, from other academic courses to student societies and internships. This supports the dynamic, cross-contextual perspective emphasized in Adaptive Transfer Theory (DePalma & Ringer, 2011). The study's insights thus highlight the theory's relevance for understanding the multifaceted and the contextually-situated process of skills development and application in educational settings.

Collaborative Aspects in the Multimodal Project

It is evident from this research project that incorporating additional elements of group work and collaborative decision-making into the educational process enriches students' learning experiences by exposing them to diverse perspectives, fostering their communication and teamwork skills, learning to respect others' opinions, and improving their critical thinking capacities. These collaborative undertakings go beyond individual experiences, exceeding the limitations of conventional learning methods. Group work and collaborative decision-making expose students to diverse viewpoints, helping them appreciate various approaches to problem-solving e.g., deciding on the video script or choosing the right editing software. The collaborative nature of such activities nurtures effective communication and teamwork skills. As demonstrated in the qualitative sample analysis, these abilities are essential not only within educational contexts but also in professional settings. By combining a multitude of ideas and perspectives, students are empowered to collectively address challenges and devise novel solutions. An often-overlooked aspect of collaboration is its role in cultivating relationship-building and conflict-management skills. Engaging in group work necessitates understanding and accommodating varying viewpoints, thus honing the ability to manage conflicts constructively. These interpersonal skills extend well beyond the classroom, enabling students to navigate interpersonal relationships well. Collaboration within the context of a multimodal project can also deepen students' understanding of the subject matter. Meaningful discussions induced by shared objectives and common goals encourage in-depth exploration and analysis.

Nevertheless, the assumption that collaboration always leads to a multiplicity of perspectives and viewpoints might not always be true (Deng et al., 2023). Group dynamics can sometimes result in conformity rather than diversity, where individuals might be reluctant to express dissenting opinions to maintain harmony within the group (Tabassi et al., 2019). This can potentially hinder the robust exchange of ideas and limit the exposure to truly alternative viewpoints. In practice,

group projects can sometimes lead to unequal distribution of work, where a few members contribute significantly more than others. This can lead to frustration, and resentment, and ultimately impede the development of effective teamwork skills (Nunkoo & Sungkur, 2021). Another consideration is that while collaboration can advance creativity, it might not be the lone or the most effective route to innovation (Donelan & Kear, 2023). Independent thinking and individual exploration can also lead to advances. Overemphasis on group-based creativity might curb the potential for unique ideas that develop in more individualistic conditions.

Soft Skills Development

From the research undertaken, it is evident that the cultivation of soft skills plays a key role in both personal and professional growth. While the assessed multimodal projects have typically emphasized technical proficiencies, it is important to acknowledge the significance of soft skills such as teamwork, effective communication, leadership, and time management. These skills contribute significantly to an individual's holistic development, shaping their ability to navigate a diverse range of contexts. Considering this finding, there exists a compelling need to expand the scope of assessment beyond technical competence alone. Recognizing the fundamental role that soft skills play in this form of assessment. Future iterations of multimodal projects should be designed to explicitly integrate opportunities for the deliberate cultivation of these attributes. By providing attention to the development of soft skills, students are afforded the chance to enhance their interpersonal abilities, fine-tune their communication techniques, and improve their proficiency in various non-technical scenarios. Such a deliberate approach to soft skills development through multimodal projects is poised to produce transformative outcomes. The integration of leadership opportunities within these projects further enables students to step into roles of responsibility, developing the traits necessary to guide and motivate others.

However, the researchers are also aware that while soft skills are undoubtedly valuable, an overemphasis on soft skills through multimodal projects might overshadow the mastery of core academic content (Hattie et al. 2019). Balancing these skills with maintaining strong academic foundations, addressing subjectivity in assessment, accommodating diverse learning styles, and considering practical implementation challenges are all crucial aspects that need careful consideration (Popham, 2019).

Compared with existing literature, our results showed convergence and divergence of findings, depending on the specific skills. On one hand, creativity and critical thinking were highly valued learning outcome in assessment frameworks of multimodal composing (Hafner &Ho, 2020; Ross et al., 2020). However, our participants did not perceive much gain in those regards, probably because many of them did not receive sufficient higher-level thinking training or scaffolding

in the multimodal projects. They were mostly satisfied with the improvement in the hard skills, and probably the development of soft skills is based on prior mastery of the technical skills and available cognitive capacity. Otherwise, students would be preoccupied with finishing the task, instead of caring about more advanced aspects such as aesthetic sense. On the other hand, students' development in audience awareness aligned with existing literature on students gain in audience/genre awareness (Hafner & Ho, 2020; Zhang & Yu, 2023). It highlights the facilitative role of multimodal projects in enhancing students' effectiveness of communication.

Multimodality as an Inclusive Form of Assessment

The results of the study highlight the significance of multimodal assessment as it goes beyond the limitations of traditional academic evaluation methods. This innovative approach offers students an equitable platform to exhibit their diverse abilities and agrees with previous studies e.g., by Kolb (1984) and his experiential learning theory in which learners engage differently with materials necessitating varied approaches to cater to their needs. Unlike conventional assessment methods, the performance in multimodal assessment is not completely reliant on students' prior English accomplishments or their chosen field of study. This characteristic empowers students to showcase their talents through unique and imaginative means that extend beyond the confines of standard assessment rubrics. Additionally, multimodal assessment has a broader reach (e.g., through social media platforms), enabling students to spotlight their skill sets in a manner that traditional evaluations often fail to capture. In doing so, it introduces a sense of fairness and equality by accommodating individuals from varied backgrounds, regardless of their academic discipline or English language proficiency. This inclusive approach acknowledges and appreciates transferable skills that extend beyond the immediate subject matter, cultivating attributes such as creativity, critical thinking, and adaptability. As a result, multimodal assessment cannot only serve as an assessment tool, but also as a catalyst for nurturing a holistic skill set that equips students to excel in diverse academic pursuits and professional endeavours.

It is worth noting, however, that the claim that multimodal assessment transcends the constraints of prior academic accomplishments might be overly optimistic (Fjørtoft, 2020). Prior academic achievements can still play a role in shaping a student's foundational knowledge and critical thinking abilities. Disregarding these aspects entirely could undermine the educational value of assessments. Moreover, the emphasis on diverse abilities and talents might overshadow the importance of mastering core subject matter. While creativity and adaptability are indeed valuable, they should ideally complement a strong grasp of foundational concepts. Focusing excessively on showcasing talents could lead to a disconnect between students' demonstrated skills and their actual understanding of the academic material. Another consideration is the potential for unequal access to technology

and resources (Kress & Van Leeuwen, 2001). Multimodal assessments often require access to equipment, software, and resources that might not be equally available to all, and this could disadvantage students who lack the means to create multimedia projects.

Conclusion

This research project has examined the effects of incorporating multimodal assessments within the context of an English communication course in Hong Kong, and its subsequent impact on the transferability of skills acquired through assessment activities. Qualitative student interviews and quantitative survey data revealed that students acquire both technical skills and soft skills from the multimodal assessment. Students perceived the improvement in technical skills such as video editing directly and immediately, while students valued the soft skills development and transfer with a sense of personal growth. By analysing the implications of multimodal assessments within the domain of English communication and evaluating the extent to which the acquired skills impact other university courses and real-world contexts, this study has provided novel insights into the broader applicability of these skills. Preliminary findings indicate that students who engaged meaningfully with the multifaceted course curriculum and its integrated multimodal assessment proficiently transferred a significant proportion of the acquired skills to other academic courses and beyond, illustrating the tangible potential of these skills in real-world applications. This outcome underscores the promising prospects of leveraging multimodal assessments as a potent tool for fostering skills that extend well beyond the classroom, enriching students' personal growth in the process.

From a practical standpoint, the findings of this study can also serve as a model to guide instructors in designing and implementing multimodal assessments that effectively support students' skills development and transfer. The results suggest that multimodal projects have the potential to enhance students' preparedness for the communicative demands of the 21st century workplace by fostering the application of technical skills and soft skills beyond the classroom. For example, instructors could intentionally structure multimodal assessment tasks to require the integration of multiple semiotic resources, promote genre awareness, and encourage the contextualized application of course content.

Declarations

Availability of Data and Materials

To ensure student privacy and confidentiality, the raw data collected for this research project, which includes sensitive student information, is strictly protected

and will not be shared externally. However, interested researchers can request access to the research instruments used in this study. Copies of these instruments can be obtained by contacting the corresponding author. The availability of materials is subject to ethical considerations and privacy regulations to safeguard student confidentiality and adhere to relevant guidelines.

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Ethics Declarations

This article was conducted with strict adherence to ethical standards (HREP-2023-0095). Informed consent was obtained from all student participants, ensuring they were fully informed about the study's purpose, procedures, and potential risks. Confidentiality and anonymity were maintained throughout the research process. The study was conducted in compliance with relevant guidelines and received the necessary approvals. No conflicts of interest were present. Any inquiries regarding its ethical aspects can be directed to the corresponding author.

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APPENDIX

Questionnaire Items

Part A

1. Age
2. Gender
3. School
4. Years of EMI (e.g., international school, study abroad)
5. Grade in a previous Common Core English course (select from A/B/C/D)

Part B

1. I improved my teamwork skills from this project.
2. I improved my communication skills from this project.
3. I improved my critical thinking from this project.

4. I improved my planning and organizing skills from this project.
5. I improved my audience awareness from this project.
6. I improved my technical video-editing skill from this project.
7. I improved my creativity from this project.
8. I improved my information search skill from this project.
9. I improved my conflict management skills from this project.
10. I improved my time management skills from this project.
11. I improved my aesthetic sense (sense of beauty) from this project.
12. I improved my leadership skills from this project.
13. I improved my intercultural awareness from this project
14. Others _____

Part C

1. Consider your multimodal Video 1 and Video 2 projects in the course. In which areas have you applied the previously mentioned skills?
2. Consider your multimodal Video 1 and Video 2 projects in the course. In which areas will you probably apply the previously mentioned skills?

Interview Questions

1. What did you learn about your topic from making the video?
2. What have you learned from the process of creating the video?
3. What have you learned from group members?
4. What skills/methods did you use to finish your own parts (e.g., text, narration, image, animation)?
5. What do you like or dislike about the project?
6. How did this video project enhance your other skills?
7. Overall, what did you benefit from most in this multimedia project? Please explain in detail.