AN INVESTIGATION OF THE PERCEPTIONS OF MULTILITERATE ASSIGNMENTS USING 21ST-CENTURY TECHNOLOGIES AMONG UNIVERSITY STUDENTS AND EDUCATORS IN CHINA

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ABSTRACT

This study aims to survey the perceptions of students and educators on the use of multiliterate assignments involving 21st-century technologies in Chinese universities. With the widespread use of digital tools and multimodal approaches to learning, it has become essential for any researcher and scholar to investigate how such innovations are perceived by key stakeholders in the educational process. Specifically, it investigates the influence of multiliterate tasks on students' engagement and learning as well as the skills required in modern society by a worker. Two open-ended questionnaires, one for the students and the other for the teachers, were conducted to explore which pedagogical challenges or benefits students and teachers perceive that are involved when using such assignments, considering particularly how these tasks contribute to the development of critical 21st-century skills. Students looked to creativity and problem-solving as keys to finishing the project, especially in the case of multimodal assignments. Teachers' priorities centre on critical thinking, communication, and technological competency. A divergence in perspectives is however noted between teachers who tend to focus more on non-technological skills and the students, who centred on digital fluency and creativity. The study concludes that multiliterate assignments provide much more than just the triumph of knowledge mastery. These assignments encourage students to practice the practical application of 21st-century skills, fitting them for success in this digitally connected world. The study further suggests the need for further pedagogical development focusing on optimizing the design and delivery of these assignments so that they enhance content knowledge and essential life skills.

KEYWORDS: Multiliterate assignments, 21st-century, Technologies, Chinese university students, Perceptions of students, Perceptions of educators.

INTRODUCTION

The economics, health, and politics of nations and cultures have all seen tremendous transformations as a result of globalisation and advancements in information technology. Digitalisation has set in motion several changes in the field of education. Learners' needs, traits, and the competencies needed by instructors to educate them have all changed in response to this new framework. Modern classrooms should focus on more than only the corporate sector while preparing their pupils for the workforce. As a bonus, it should equip students with the knowledge and abilities to become contributing members of society (OECD, 2018). Adapting to the modern world and meeting specific expectations requires a particular set of abilities. Among them are the following: the capacity for critical and creative thinking; the ability to think entrepreneurially; the capacity for effective and inventive communication; the capacity to utilise technology professionally; and the capacity to propose answers to problems. Modern educators, if they want to live up to societal standards, need to demonstrate good pedagogical and communication abilities while also serving as positive role models for their pupils. Teachers today are expected to equip their students with a diverse set of skills, such as critical thinking, creativity, adaptability, innovation, scientific literacy, and digital literacy. Ultimately, their goal is to create globally conscious and actively involved citizens (Ministry of National Education, 2017). These competencies, sometimes called "21st-century skills," are now included in the curriculum objectives of many countries, but there is still no consensus on how to incorporate 21st-century learning methods into universities. Research suggests that students' real-life experiences should form the basis of classroom education. Building pupils. Knowledge-generating skills alongside their expertise in the field, guiding them through the process of effective education, facilitating the sharing of the results of student learning, leveraging technology to enhance education, and fostering creativity are all important goals for educators in today's classrooms (Kara et al., 2022). Developing 21st-century skills at the university level may help students, who will create a future society, be ready for the business world and social life. Instructors have a responsibility to help their students, who look up to them as role models and spend the majority of their academic careers in higher education, develop the skills necessary to think critically, solve problems creatively, and take initiative. Spending time in college with professors who can serve as positive role models helps students develop abilities appropriate to the modern world, which they may then use at higher levels of university and throughout their academic careers. Educators in the classroom undoubtedly play a crucial role in this regard. Teachers need to have a firm grasp of their own professional identity and the ways they approach teaching to effectively impart their 21st-century abilities to their pupils (Hilliker & Loranc, 2022).

BACKGROUND OF THE STUDY

The area of literacies appropriate to the modern world has seen a lot of study. Although the New London Group (1996) first used the phrase "new literacies" in the 1990s, some studies have broken down their emphasis into specific forms of literacy, while others have grouped their findings under this umbrella. These literacies are still novel thirty years after their introduction. To help students understand and operate with modern technology, Anstey and Bull (2006) maintained this line of inquiry into multiliteracies and argued for a shift in teaching methods. To promote social justice and identify prejudice and authorial intent, some academics (Janks, 2009; Sandretto, 2006) argue that students will need to use new technologies to decipher text's hidden meanings. Students will need these skills if they want to be involved in the political, cultural, and social life of the society that will be around in the future. Integrating 21st-century technologies in education transformed teaching and learning outside the contexts of China as well. The pace at which the digital landscape continues to change quickly opens up students' opportunities for participation in multiliterate assignments in university learning into myriad ways of communication digital to visual and textual modes. These tasks not only require the students to think and be imaginative but also prepare them to cope with the complexities of the modern workforce where fluency with technology and adaptability will become a necessity (Çimen, 2022). However, the effectiveness of higher education in terms of multiliteracies is a matter of debate, particularly concerning how such a piece of work can reach both the students and the educators. While they have been considered, on the one hand, as openings to improve learning experiences and better understand content, their challenges have recently attracted some, particularly as related to workload, accessibility, and adoption of new pedagogies. The study attempts to study Chinese university students and faculty's perceptions about the employment of multiliterate assignments that incorporate 21st-century technologies, focusing on their benefits and challenges, as well as the possibilities for positive impacts on learning outcomes. This study presents data that provide a glimpse into how similar projects might be improved to cater to the demands of both teachers and students in an increasingly digital world (Peña-Acuña & Navarro-Martínez, 2024).

PURPOSE OF THE RESEARCH

This research proposal seeks to examine and investigate perceptions by students and educators concerning multiliterate assignments that include 21st-century technologies in Chinese universities. With the inculcation of digital tools and multimodal approaches to learning within educational institutions in China, there is a need to understand how such innovations are regarded by the key stakeholders in the learning process. This study aimed to understand the implications and difficulties that come with multiliterate assignments in which students were asked to read/look/click, and it aimed to explore student and teacher perspectives as a way of eliciting insights into how these

assignments have the potential to change learning experiences, student engagement, and the skills students develop for navigating digital contexts. This study seeks further to explore the pedagogical implications of 21st-century technologies in higher education and points out areas where educators may require additional support or training before initiating such assignments. Finally, the recommendation of the research should be able to provide ways on how the design and delivery of multiliterate assignments are improved to effectively enhance learning outcomes and better align with the demands of a digitally connected world.

LITERATURE REVIEW

The term "21st-century skills" has recently become popular in educational settings and conferences for educators. Nowadays, the requirement for "21st-century skills" is mostly driven by the demands of businesses throughout the globe. As researchers compete on a worldwide scale, the firms are becoming more tech-savvy. The way researchers teach is evolving in tandem with our students and the world around us. Rather than concentrating just on imparting knowledge, educators should help students develop the abilities they'll need for success in post-secondary education and the workforce (Holloway & Qaisi, 2022). Traditional educational knowledge and the growth of 21st-century skills are necessary for adequately equipping our children for the demands of the current world. Proficiency in analytical and creative problem-solving across a wide range of academic disciplines is one description of "21st-century skills" among educators. Using multiliteracy methodologies, it is simpler to include these skills that are relevant to the current world in the classroom. The most important thing is that students apply what they learn in inquiry-based, interrelated, and reflective activities to real-world situations (Thornhill-Miller et al., 2023).

Proper learning settings are essential for students to acquire the 21st-century abilities they need to thrive in today's socially adaptive world. Providing pupils with such opportunities is the duty of educators (Yaşar, 2021). The qualities of teachers play a crucial role in education because they are constantly interacting with and having an impact on other factors that affect education quality. Additionally, students' development is greatly aided by teachers' knowledge and skills. Whether or whether educators are competent in imparting the necessary 21st-century abilities to their pupils is a critical factor. The ability to adapt to a globally interconnected environment is a critical competency for all students in the modern classroom. Numerous worldwide organisations, including P21CS, ATTCS, NETS, and ISTE, have conducted extensive research on this topic. These organisations utilised different taxonomies to define the core competencies they believe individuals would need to be successful in the contemporary world, and they coined the phrase "21st Century Skills" to express this collection of talents (Shi, 2023). There are a variety of approaches to categorising talents relevant to the modern workplace, but the Partnership for 21st Century Talents

Report's (P21) skill categorisation is widely accepted as the gold standard (2019). "Life and Career Skills" is the umbrella term for three categories of abilities. The ability to learn and innovate, proficiency with information, media, and technology. The first group of competencies consists of the following: adaptability and flexibility, independence and decisions, social and cultural awareness, accountability and productivity, management and responsibility, and skills for life and work. Learning and Innovation Skills lays forth the section's emphasis on thinking skills and cooperation under the headings of "Critical Thinking," "Communication," "Collaboration," and "Creativity" (Fernández-Corbacho et al., 2024). The fourth set of skills is information, media, and technology literacy, which includes media literacy as well as ICT (Information, Communications, and Technology) literacy. That classification was also employed by the researchers in this study. There is a severe lack of research in China that not only collects data based on teachers' opinions and perceptions of their ability but also uses these factors to evaluate their proficiency in the modern classroom. Researchers found that aspiring instructors were the primary subjects of these investigations (Ávila-López & Rubio-Alcalá, 2023).

A variety of experiences are necessary for the development of skills for the 21st century. Authenticity in solving problems, inventiveness, critical thinking, independent and collaborative education, meaningful learning using communication and information technology, and 21st-century learning have all emerged as six widely accepted approaches. The two main groups into which the six most important features of educational experiences fall are learning methods and thinking abilities. These characteristics are designed to help pupils learn by building their knowledge-production abilities (García-Barroso & Fonseca-Mora, 2023). By incorporating higher-order thinking abilities into the learning process, it aspires to enhance students' knowledge-creation capability. As part of their instruction on a certain topic, instructors provide their students with learning experiences, which may be characterised as a variety of instructional activities. Teaching experiences in the classroom have a direct impact on students' ability to learn in a classroom setting. Because of this, it is reasonable to say that modern students learn best when they are given agency over their learning and encouraged to reflect on and make sense of the world around them via their instructors' lessons (Huh & Tseng, 2022).
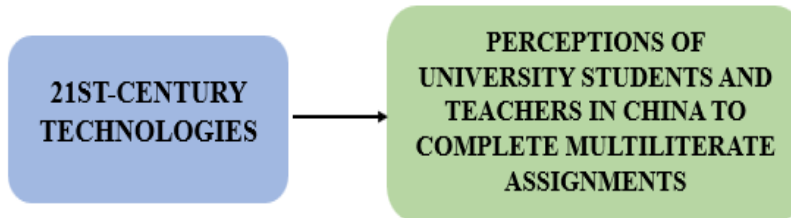
RESEARCH QUESTION

- What perceptions do students and teachers at the universities in China have toward multiliterate assignments about 21st-century technologies?

METHODOLOGY

A qualitative technique was used in this investigation. Through the use of "emerging questions and methods, data usually gathered in the environment of the participant, data analysis inductively constructing from particulars to broad themes, and the investigator making conclusions of the significance of the data," qualitative approaches aim to "explore and understand what people and organisations ascribe to a social or people problem." To better understand how university instructors and students saw the incorporation of 21st-century abilities into multiliterate tasks, this research set out to quantify views. Instead of concentrating only on the incorporation of abilities, the strategy shifted the attention to the overall impressions of the assignments and their usefulness in fostering skill development among both students and instructors. To get a feel for how people felt, the researchers included open-ended questions in the surveys. Researchers were able to learn more about participants' true intentions by asking them open-ended questions rather than closed-ended ones, which may have drowned out their opinions and voices. The researcher was able to gauge the participants' attitudes about their workplace and the tasks they had accomplished thanks to the use of open-ended questions. There was no pressure on either the students or the instructors to come up with a certain solution before they had time to consider the questions. This allowed us to get a feel for the participants' emotions and learn about their assumptions and biases. Data on students' and instructors' perspectives on the assignments and the issue were ultimately derived using this method. Out of a total of 560 students, just 80 are enrolled in classes at the institution where the study was carried out this semester. Students were required to bring a letter home with them to alert their parents about the research. Parents were then contacted by email, phone calls (to those without an email account), and progress updates that included information about the study. A total of six instructors were considered after reaching out to every teacher in the group, including the media and STEM coordinators. However, only three instructors were able to participate since they either did not return the completed permission forms or did not finish the survey within the given period. Two important tasks were a multigenre Julius Caesar project and a multimodal anti-bullying project that were both associated with The True Diary of a Part-Time. Each assignment included a pre-and post-survey, as well as a reflective writing component, all conducted using private Google Docs. The multimodal Gilgamesh project and the Romeo and Juliet project both adopted a similar approach. The teacher questionnaires were sent out at the end of March and were due by the beginning of May. The data was analysed when the survey was finished. A spreadsheet was used to record both the pre-and post-survey data, with the data being separated according to the kind of assignment (multigenre or multimodal). Researchers looked for similar themes in questions three and four and counted the number of times certain talents were mentioned in questions one and two. Researchers found and labelled all important talents for the twenty-first century. Before and after each task, students' opinions and expectations were compared. Researchers looked for recurring themes in the reflections, such as allusions to information and abilities appropriate to

the modern world. Similarly, survey data from teachers was examined, with replies broken down by assignment type. Common themes, especially those related to 21st-century abilities, were then found.

CONCEPTUAL FRAMEWORK

21ST-CENTURY TECHNOLOGIES → PERCEPTIONS OF UNIVERSITY STUDENTS AND TEACHERS IN CHINA TO COMPLETE MULTILITERATE ASSIGNMENTS
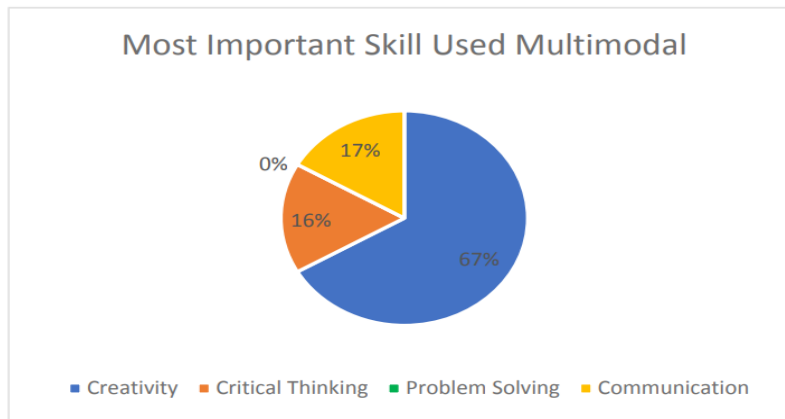
RESULTS

The use of the multimodal assignments was a familiar experience in class, using this kind of project for the second year. Students were hesitant to begin The True Diary of a Part-Time Indian, but they quickly warmed up to the project. Many requested that I extend the due date to perfect their video projects-the evidence of much investment in their work. I'd never had so little enthusiasm for an Epic of Gilgamesh project. Students remained hostile to the task and whined throughout, which always depresses me. While The True Diary was a good choice because of its colloquial nature and fairly interesting themes, Gilgamesh was discouraging because of its archaic language and complicated themes and hence was less interesting to the students and less coherent in their writings as well. Maybe, the reason lies in the texts themselves being either more or less exciting to them.

- **Post-Survey**

According to the post-survey, students said that for them to deliver the project, all four required skills would come in handy, with creativity being the most important. The participants found the following parts of the assignment particularly challenging: "being able to share the information where everyone can understand," creating a product that is "enjoyable not cheesy," encouraging people to interact with the final result, brainstorming new ideas for the video, and figuring out how to genuinely complete everything. The common themes emphasized were problem-solving, observed in students' comments on how to effectively communicate information, capture the audience's attention, design the product, and complete the task. Creativity was also evident in how students commented on ways of making the project interesting and

innovative. Among the takeaways that can be derived from the project include areas wherein students improved such as idea sharing, video editing, creativity, and communication. Many also reflected lessons of content such as the realization that "bullying is much worse than what was anticipated to happen and that small things make huge differences in people's feelings." Creativity is the aspect which students believe is prominent during this project, where they can effectively communicate to the audience. The project promoted a greater understanding of bullying, such that many students acknowledged it in the reflection, noting the different light thrown upon the issue by such a project therefore helping demonstrate conceptual and content knowledge.

Figure 1: Maximising the Use of Multimodal Post-Survey Skill

Most Important Skill Used Multimodal

0% · 17% · 16% · 67%

■ Creativity ■ Critical Thinking ■ Problem Solving ■ Communication

- **Teachers' Survey**

Every single teacher who took part in the study felt that all of the multimodal tasks gave students opportunities to practise one of four 21st-century skills: creativity, problem-solving, communication, or both. The successful completion of the projects, in their opinion, required a wide range of expertise. Next, researchers wanted to know what content the students would cover. A few examples of the possible answers were "developing digital competencies," "composing information in various formats to convince an audience," and "utilising technology to create a usable product." The relevance of the technical abilities, which respondents said will be beneficial to their future jobs, and the multimodal character of the assignments are both emphasised by these comments. In addition, educators spoke about how the initiatives integrated topic knowledge with abilities necessary for the modern world. An individual who participated in the survey had the opinion that "to research, organise, evaluate and communicate using technology" was the best approach, with a focus on analytical reasoning and matter solutions. Others stressed the need to communicate not just with one's colleagues but also with an audience. The instructors failed to address the

students' creativity in answering the questions. When asked which talent was most crucial for completing a project, two-thirds of the instructors cited problem-solving and one-third cited communication. There is a clear divergence between the two as far as approach is concerned. Teachers pointed out problem-solving, communication, and technology, while the students emphasized more on creativity and communication. This may very well be because the historical context of the teachers had placed more emphasis on non-technological aspects of education, whereas students, being well conversant with technology, ignored it while outlining. In addition, students suggested attention to time management, which neither appears from the views of teachers nor perhaps because teachers were not experiencing the process of this assignment. According to the results, students in the twenty-first century need to be able to think critically, solve problems, and communicate effectively to complete a multimodal project.

Figure 2: Teacher Survey on Multimodal Critical Competencies
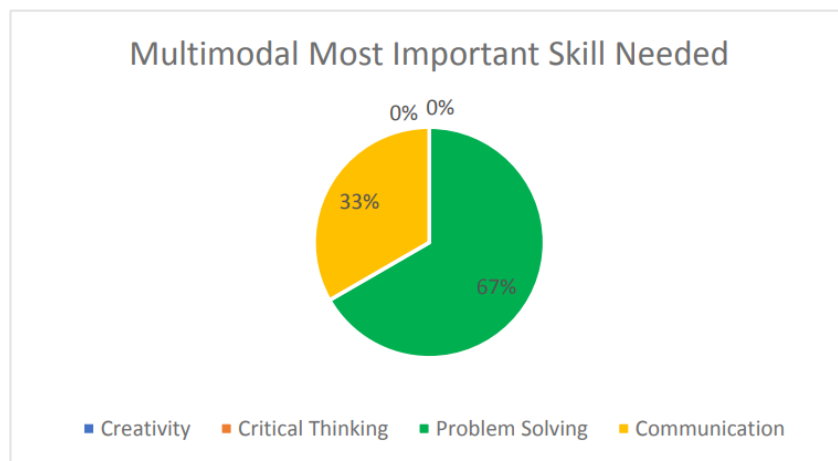
While the surveys did provide some information on the function of multimodal assignments in fostering the acquisition of skill sets appropriate to the modern world, they fell short of directly addressing the study issues. While students entered the project thinking that, surely, some of the skills referred to as 21st-century skills would be important, this ended up being one of the primary areas taken away from the post-survey. Specifically, students realized that creativity and problem-solving were integral parts of completing the anti-bullying multimodal project. By comparing the before and after, the initial expectations of students were that problem-solving would be the most frequently used skill, but it was less frequently given as a response in the post-survey. The post-survey, however, downplayed communication in the multimodal projects though creativity, problem-solving, and critical thinking formed the core. This is because the assignment itself lent itself to collaborations and students would therefore need to communicate effectively with one another. While communication constituted

one of the integral parts of the multimodal project, it did not represent as much in the views of the results in the survey since the multigenre project was much more individualistic. The teacher survey found an unmeasured but very critical skill: digital and technology literacy. According to teachers, students need to be proficient in utilising technology to develop and present their projects. This result aligns with a significant component of the Partnership for the 21st Century of Education framework, which emphasises the importance of students being able to create and utilise digital media effectively. However, teachers also stressed that students should make their content suitable for the needs and wants of their audience requirement which may be seen to belong among the things that communication is in future examinations. Overall, students and teachers agreed that multimodal assignments called upon 21st-century skills appropriately, though each assignment by its nature placed greater emphasis on one skill or another. For instance, the anti-bullying project lent itself more clearly to creativity and communication skills, whereas the multigenre project called for critical thinking. Indeed, these tasks imply that various assignments make varied uses of 21st-century abilities; hence, these multimodal projects seem to provide opportunities for both skill practice and subject knowledge development. The findings are that such pedagogy based on multiliteracies would only bring improvements in students' ability to apply those skills with increasingly sophisticated multiliterate assignments, thus enhancing the mastery of content and skills simultaneously.

DISCUSSION

The results provide light on how multimodal assignments impact college students' ability to acquire skills relevant to the modern world, particularly inside the Chinese higher education system. Teachers and students alike acknowledged the significance of including skills relevant to the modern world in the project. Nevertheless, the level of significance would vary depending on the nature of the work being performed. The kids' ability to think creatively and solve problems was a key component of the multimodal anti-bullying project, and many of them remarked on how these abilities helped to organise the material into an engaging and instructive whole. Creativity played out as the dominant skill in post-survey reflections by the students, while at the same time ironically, problem-solving resulted in less concerning expectations. This implies that the students only know the extent of skills required for this kind of project when they start with the task and reflect on the process. On the other hand, the teacher surveys stressed that technology literacy and communication skills are essential for multimodal assignments. According to the teachers, students had to be literate about using digital tools to create and communicate effectively from their projects. The connection here is between technology and modern education. This is in line with the 21st Century Learning Partnership's framework, which stresses the importance of digital capabilities in preparing students for the workforce. Communication was notably highlighted

because instructors said similar assignments were helpful in channelling student content for specific audiences. In particular, students mentioned that "good communication" was essential within the groups but didn't view it as important through their reflections perhaps because multimodal projects were inherently more collaborative than was the case with the surveys, which were more individually focused than the multigenre projects. One notable insight from this research is how different kinds of multiliterate assignments encourage different skills. In this project, the multimodal anti-bullying project supported creativity and communication more effectively while the multigenre project seemed to require more critical thinking. The varying skills the assignments emphasize lend support to the notion that multiliteracies-based pedagogy can be an effective strategy for the simultaneous development of both content knowledge and important 21st-century skills. However, the study highlights other challenges like the unwillingness of students to accept some projects-Such as The Epic of Gilgamesh and continuous support that has to be maintained to create an understanding of multifaceted assignments among students as well as teachers. The goal of these is to improve the curriculum in higher education so that students may acquire skills relevant to the modern world.

CONCLUSION

Valuable lessons can be learned in how technology-based, 21st-century multiliterate assignments might shape students' learning experiences at a Chinese university. Those tasks required students and instructors to use their imaginations, solve problems, communicate well, and think critically. The results show that the first-year students placed a greater emphasis on creativity, but after the course, they realised that the success of their anti-bullying and multigenre projects depended on their ability to solve problems and think critically. Such tasks would test the students' use of technologies, develop their digital competencies and practice them in authentic situations meant to facilitate a better understanding of the discipline and all those crucial 21st-century competencies. While instructors did bring up communication and problem-solving abilities, they ultimately concluded that digital literacy was the most important factor in preparing students for the difficulties of today's workforce. A shift in the focus of the earlier two groups of learners as compared to the latter group of learners is noticed where learners highlighted creativity, but the teachers' focus on problem-solving skills points towards the evolving role of a teacher as a facilitator in technology-enabled learning environments. In addition, it also reveals that there is a need to support educators more effectively and prepare them professionally to acquire 21st-century skills for their teaching practices, which was directed specifically toward fulfilling the needs of multiliterate tasks. In general, the outcome emphasises the value of technology-driven, multimodal assignments as a useful instrument for skill development in a society that is internationally linked and digitally connected. The integration of

such pedagogies into higher education offers great potential to improve the kind of academic and professional preparedness that students require for student development with knowledge but the critical, creative, and collaborative skills for the 21st century.

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