Arab World English Journal
INTERNATIONAL PEER REVIEWED JOURNAL ISSN: 2229-9327

Arab World English Journal (AWEJ) Volume 16. Number 1, March 2025 Pp.366 -383
DOI: https://dx.doi.org/10.24093/awej/vol16no1.23

Multimodal Digital Storytelling as Literacy Learning and Moral Cultivation Practices for University EFL Students *

Huan Wang
School of Foreign Languages
Jiangsu University of Science and Technology
Zhenjiang, Jiangsu, China, 212100
Email: hwangselena@126.com

Received:12/19/2024 Accepted:03/14/2025 Published: 03/20/2025

Abstract

This study examines how first-year English majors in a Chinese university engage with a theme-based multimodal digital storytelling (DST) project with the assistance of computers or helpful digital devices, their perceptions of the process, and its impact on their literacy skills and moral development. The study also explores how individual and collaborative traits emerge in students' digital literacy practices and whether these contribute to their moral construction or reconstruction. This study explores the potential of digital storytelling to support moral development and improve literacy skills among English as a Foreign Language (EFL) students. By applying the concept of transmediation, the study examines how students transfer meanings across different semiotic modes—images, video, audio, and text—through creative and critical engagement. The study found that students positively participated in creating digital stories by promoting critical thinking and decision-making abilities. These English majors' print-based literacy skills, including reading, speaking, writing, translation, and digital literacy proficiency, such as composing multimodal digital texts, all improved. Students' social responsibility and commitment to building a harmonious shared future have also been inspired. Future research could investigate EFL learners' decision-making, identity construction or reconstruction, as well as peer assessment processes and outcomes, during their digital story creation or modification processes.

Key Words: EFL learners, identity construction, moral cultivation, multimodal DST, transmediation.

How to cite: Wang, H. (2025). Multimodal Digital Storytelling as Literacy Learning and Moral Cultivation Practices for University EFL Students. *Arab World English Journal*, *16*(1):366 -383. https://dx.doi.org/10.24093/awej/vol16no1.23

Introduction

Background of the Study

Storytelling has long been adopted as one of the forms of knowledge transfer and is considered an effective but original way of knowledge construction and literacy accumulation (Duveskog et al., 2012). Unlike conventional storytelling, where listeners are passively informed, digital storytelling audiences and creators act as listeners and learners who combine the art of digital media, interact with one another, and shape an original story. Multimodal DST is a multimedia practice by which ordinary people construct short narratives on personal affairs combining voice, images, and sometimes music (Alonso et al., 2013).

The advancement of technology and artificial intelligence (AI) has led to a diversification of the forms and methods of knowledge acquisition, while also posing challenges to knowledge production and dissemination among college students. Therefore, college students in the AI era must cultivate knowledge, skills, attitudes, emotions, values, and other aspects to develop core literacy skills effectively. The construction of core literacy skills is conducive to cultivating high-quality and all-around talents and establishing a comprehensive talent training model, which significantly impacting students' personal growth and adaptation to future careers and lives.

Accordingly, the learning style of college students in the AI era has undergone tremendous changes, mainly reflected in the shift from passive to autonomous learning, from standardized to personalized development, and from temporary to lifelong learning (Zhang, Y. Q. & Zhang, Y. L., 2017). Technology innovation and the shift in learning styles make it imperative to understand the approaches of current college students' literacy learning practices. Thus, the investigating of digital-based literacy practices proves indispensable in EFL students' language and literacy classrooms.

This study aims to investigate the digital-based literacy practices in a language and literacy classroom with a group of Chinese university EFL students while connecting these students through their involvement in literacy learning via digital devices. In particular, this study aims to examine students' capacity for independent and collaborative learning, their ability to analyze and synthesize theme-related content, and their proficiency in creating narrative stories using digital tools or applications. This study also investigates the representation of students' moral status and their personal or collective characteristics of independent and collaborative literacy practices. Additionally, students' self-perception about the course, themselves, and their learning outcome evaluation are valuable references and helpful indicators to guide the instructor's selection of materials, techniques, and methods to update the evaluation procedures, thus being studied.

With the above purposes, three research questions guided this study: firstly, how did first-year college English major students accomplish a theme-based multimodal DST project in a comprehensive English course, and what do these independently or collaboratively created multimodal digital stories look like? Secondly, how did these English majors perceive this DST project, their digital story products, and themselves in digital story creation? Thirdly, what types of individual or collaborative traits, as well as manifestations of students' moral construction or reconstruction, have been revealed or developed through their digital literacy practices?

Literature Review

Multimodal Digital Storytelling

Due to the multimodal nature of narrative production and multi-faceted meaning expression, researchers categorized DST as a stand-alone pedagogy or in combination with other pedagogies

in the humanities and social science contexts in five orientations: *appropriative, agentive, reflective, reconstructive,* and *reflexive,* and these have eight types of outcomes: *affective, cognitive, conceptual, academic, technological, linguistic, ontological, and social* (Wu & Chen, 2020).

Multimodal DST has gained significant attention in EFL classrooms due to its potential to enhance language learning through diverse semiotic resources. Studies have shown that DST can improve students' speaking competence, reading comprehension, and motivation to learn English. For instance, Fu et al. (2021) explored the impacts of DST on EFL learners' speaking skills, demonstrating that this approach can significantly enhance students' language proficiency. Similarly, Zainuddin and Perera (2021) found that DST positively affected students' understanding and motivation in EFL reading comprehension.

Educational Digital Storytelling

DST has been popular in education since the 1990s, when it was initially introduced as a brief narrative video in workshops at the Centre of Digital Storytelling (CDS) in Berkeley, California. An Educational Digital Story (EDS) produces a short digital story in an academic setting and is often presented as a powerful, technology-enhanced learning approach. An EDS usually contains a mixture of digital images, text, recorded narration, and/or music to achieve the purpose of literacy teaching and/or learning and reflects its educational benefits.

For example, researchers commented that an EDS enables students to develop 21st-century literacies, such as digital, technological, informational, and visual (communication through images) literacies (Robin, 2008), as well as creativity and co-creativity (Schmoelz, 2018). Similarly, Ohler (2008) suggested that EDS blends the digital, art (design), oral, and written literacies. Barrett (2006) indicated that EDS creation facilitates the convergence of student-centered learning strategies such as technology integration, student engagement, reflection for deep learning, and project-based learning. Studies have investigated the differences in EFL learners' achievement between traditional lecture-type instruction and using EDS as a significant instructional strategy. Researchers found that EDS participants performed significantly better than lecture-type participants regarding English achievement, critical thinking, and learning motivation (Yang & Wu, 2012).

Educational DST has also been adopted within the past decade as a powerful teaching and learning format that can engage educators and their students. Smith, Shepherd, Johnson, and Johnson (2013) indicated that when educators engage undergraduate students in active learning, inquiry, cooperative education, and team-building projects, they offer essential learning opportunities. Team building and critical thinking require developing strategies, planning, and organizational skills. The benefits of teaching these skills remain debated, and Chinese students in higher education continue to demonstrate a lack of critical thinking skills. Evidence suggests that educators must take a holistic approach when introducing educational pedagogy, including clear definitions and thorough explanations of the scope and sequence within curricula development and lesson planning (Jing & Low, 2009). In this case, the outcomes of a particular pedagogy could be tested systematically to direct the refining and refreshing of future pedagogies.

In addition, DST offers the possibility to implement creative thinking elements in China's educational reform, which promotes team building, communication, and collaboration, to lead to effective ways to orchestrate strategies that will implement organizational change in the classroom (Tuckman & Jensen, 2010). DST highlights a new trend in the education field in China and

indicates a shift in educational perspectives to include student interaction and personal stories based on learner-centered constructivist environments (Beldarrain, 2006). The emergence of DST suggests a learning-by-doing objective that benefits educators, students, and teaching outcomes. Notably, DST demonstrates its educational value as both the instructor and students reported that DST increased students' understanding of course content, willingness to explore, and ability to think critically, which is essential in preparing students for an ever-changing 21st century (Yang & Wu, 2012).

More recent studies have contributed to the understanding of DST in educational contexts. For instance, Dincelli and Yayla (2022) provided a hybrid-narrative review of immersive virtual reality in the age of the Metaverse, highlighting the potential of DST in virtual environments. Similarly, Hwang et al. (2023) explored a peer assessment-enhanced DST approach to promoting young students' information literacy, self-efficacy, and critical thinking awareness. These studies, while providing valuable insights, also highlight the need for further research on the specific impacts of DST on moral cultivation and learner autonomy (Al-Shaye, 2021).

Identity, Agency, and Autonomy

Identity, agency, and autonomy are central to understanding how students engage with DST. Some studies focused on developing digital learner autonomy in successful English as a Second Language (ESL) learners and the entanglement of L2 digital literacy practices, identities, agencies, and livelihoods. Study results showed that agency, competence, and self-efficacy played critical roles in autonomy development, which inextricably intertwined with emergent identities and identity construction and reconstruction realized through the practice of digital literacies (Han & Reinhardt, 2022; Lewis Ellison, 2017). The findings shed light on the potential role of language educators in designing activities in digital literacy practices for formal learning purposes.

Studies also focused on learners' volitional exercise of agency in choosing, creating, and co-constructing digital literacy practices of interest that require social use and learning of the language of study (Godwin-Jones, 2019). Marginalized English learners, sometimes including international English learners, were also studied to look for their after-school agentive literacy practices regarding multimodal composing as well as DST (Lewis Ellison & Wang, 2018; Wang, 2022). These studies found various identity expressions and representations in the multimodal composing processes and products.

Moreover, research has shown that DST can provide a platform for students to explore and express their identities, enhancing their sense of agency and autonomy. For example, Lambert (2018) highlighted how DST can capture lives and create community, allowing students to share their stories and perspectives. However, conflicting findings regarding the impact of DST on learner autonomy suggest that more research is needed to understand how this approach can effectively support students' self-regulated learning (Yan et al., 2024).

Literacy Learning and Moral Cultivation

The integration of DST in literacy learning has been shown to positively affect students' language skills and cultural understanding. Recent studies have emphasized the importance of multimodal approaches in literacy education, suggesting that combining different modes of communication can deepen students' learning experiences (Ma & Zhang, 2024). However, the connection between DST and moral cultivation in literacy learning remains underdeveloped. While some studies have explored the potential of DST to foster social and ethical values, there is

a need for more research that explicitly examines how this approach can contribute to moral cultivation in EFL classrooms (Al-Shaye, 2021; Ma & Zhang, 2024).

Limitations and Inconsistencies in Past Research

Despite the growing body of research on DST, several limitations and inconsistencies remain. While some studies suggest that digital storytelling can significantly enhance students' self-regulated learning, others report mixed results, indicating the need for more robust and context-specific research (Yan et al., 2024). Additionally, while DST has been widely recognized for its educational benefits, the area of moral cultivation through DST in EFL classrooms remains underexplored, with few studies specifically addressing how this approach can promote social responsibility and ethical values (Al-Shaye, 2021; Ma & Zhang, 2024).

Moral cultivation, which involves the development of social responsibility and ethical values, is a crucial aspect of education that has not been fully addressed in DST. Recent studies have begun to touch on this area, suggesting that DST can empower students to express their identities and experiences, fostering a sense of social responsibility (Ma & Zhang, 2024). However, further research is needed to explore how DST can be specifically designed to promote moral values and social responsibility in EFL classrooms. Therefore, this study aims to contribute to this area by exploring the potential of digital storytelling to foster moral cultivation and enhance literacy learning for EFL students.

Theoretical Framework

Transmediation

Transmediation emerges as a highly relevant and comprehensive framework for the current study. It refers to how content is adapted and transformed across different media forms, allowing for a deeper understanding of how narratives are re-imagined and re-contextualized in multimodal digital environments. Utilizing transmediation across various sign systems to generate new meanings requires students to engage in innovative activities, including critical thinking (McCormick, 2011; Siegel, 2006). By examining how stories are translated and adapted from one medium to another, transmediation provides valuable insights into the dynamic interplay between content, form, and audience engagement, making it an essential lens to study multimodal DST.

Four fundamental tenets explain how DST practices are affected in transmediation:

1. Transmediation involves the process of going beyond reproducing ideas or knowledge. For instance, retelling a story through drawings or transforming meanings through the drawing of a storyboard in responding to or creating a video of a story requires thinking about multimodal implications (Mills, 2015; Smith, Kiili & Kauppinen, 2016).

2. Transmediation redefines students' intentions to exploit the affordances of using specific digital devices (Beach & Smith, 2023). For example, students use drawings on a storyboard to create a digital video and thus think about the affordances associated with considering how those drawings may mediate employing digital video/editing tools in making a video.

3. Transmediation also emphasizes understanding how to transfer multimodal features, such as images, video, audio, music, text, etc., across texts based on particular design and aesthetic practices (Beach et al., 2017). By responding to visual effects and sequenced ideas in text forms, students then transfer that experience to creating their digital videos.

Transferring multimodal features involves using meta-language to reflect on reasons for employing certain features to achieve desired audience responses (Jenkins, 2006). In creating a

video based on an endangered animal species, students employed meta-language to describe how they used specific images, including hand-drawn pictures and texts, to generate videos containing various scenes. In the process, students may also reflect on how they employ similar practices across modes. For example, a student noted how, in writing stories, she predicted the procedures to generate the script in creating various scenes based on shifts in time and locations.

Methodology

Participants

Situated in an 18-week semester-long Comprehensive foundation English course at a university located on the east coast of China, 40 first-year Chinese undergraduate English major students—some local and some non-local students coming from 12 provinces embarked on blending and extending their English proficiency skills by creating a digital story independently or in groups. The university's Institutional Review Board approved this study with the approval number 1072932203, which the Human Research Protection Program required. Students were provided with appropriate informed consent before the research so that they were clear about the research procedures. Students also consented to withdraw from the study at any time due to issues or challenges.

Research Design

Over the semester, students engaged in exploratory activities to gain mastery-level knowledge and skills in English language and literacy. Native Chinese English learners participated in classroom and out-of-classroom activities to demonstrate their mastery of English language and literacy skills. These course goals are indicated in the DST project through the independent and collaborative composing of a digital story of students' choosing to advocate the protection of endangered species in China. This theme came from the course textbook. The digital composition of animal stories also arouses students' awareness of environmental protection and the global community with a shared future, which is part of their moral education in the curriculum.

Students were asked to select an endangered animal species in China, conduct research on it, and create a digital story about the animal using computer software or relevant digital devices. Students could work in groups or independently to accomplish a less than 3-minute digital story. They were then instructed to allocate responsibilities to write scripts to tell the story of the selected animal. Students also searched for pictures, sound effects, and music to go with the words to make a digital story from the written scripts. They were given four weeks, including four 10-minute discussion sessions in class under the researcher's supervision and other flexible working hours of students' own choice out of class to prepare and complete the digital story before they presented their products in class.

Data Collection and Analysis Procedures

This DST project attempted a different approach to inspiring literacy production from the course. The digital stories collaboratively or independently created with the assigned theme were collected and reviewed. Also, the hand-drawn brainstorming process of each group was collected, saved, and revisited. To investigate students' reflections on the DST project, the researcher conducted ten follow-up, semi-structured interviews with each group, focusing on their processes, the products of the digital stories, and ideas for improvement.

All data sources were saved and reviewed multiple times to determine common themes, similarities, and differences. Close examination of the data and generalization of common themes were extracted from the data through coding (Charmaz, 2006). The data analysis process involved three steps: 1) the researcher reviewed the story scripts multiple times and saved all scripts in a table to generate codes; 2) the researcher reviewed the digital stories multiple times to look for the frequency of multiple modes in each digital story and through all ten stories in the class; 3) all follow-up interviews were transcribed; common themes were labeled, noted and coded.

Findings

Digital Story Analysis

Story Scripts

From the story scripts collaboratively and independently composed by each group, students revealed their focus on the content rather than the form. Although grammatical errors occasionally occurred, each group primarily focused on content and idea expression when composing their scripts. In addition, written scripts showed different writing styles: two groups wrote in the tone of a persuasive essay, three groups wrote in the tone of a public advertisement to arouse people's attention, four groups applied the voice of their targeted animals to write self-statements to narrate their living experiences, difficulties and need of protection from human beings. An Example of tabulated digital story scripts and analysis of major themes and codes is displayed in Figure One.

Group Number	Script	Animal Species	Writing Style	Tone	Major Themes
1	South China Tiger has round head and short ears, powerful limbs, long tail, orange body with black strips. They live in South China. It is one of the top ten endangered animal in China and the national first class protected animal. This species is extremely endangered. There are only about 100 South China Tiger on earth, and most live in the zoo. Why is the situation getting so serious? First and foremost, there is not enough food for wild tigers. Additionally they don't have a safe place to live because farmers are going bigger and they take away their land and forests; and there isn't enouth clean water. As part of the nature, human beings should be responsible to make a clean envrionment to ensure a safe place for South China Tiger. If the enviornment is improved, South China tiger and all other animals will live	South China Tiger	Persusive	Third-person	Animal's shape; food; living environment; threat; human's responsibility to protect the animal and the environment
2	Togay, I am going to introduce our national treasure-the giant panda. Have you ever seen a real panda in the wild or in the zoo? The giant panda is plump and bear-like with a round head and short tail, and its head and body are black and white. China panda live in high mountains and deep valleys in the upper reaches in the Yangzte river in China. The climate in their living places are warm, cool and humid. China pandas are not afraid of cold and wet and they never hibernate. 99% of pandas' food is bamboo. Sometimes they may eat some wild flowers, weeds, honey or even some meat. However, the number of giant panda is small. There are about 1500 giant pandas in existence. However, it is difficult to breed the pandas naturally. If you are looking for something to do to protect the giant panda, please join the National Panda Protection Team to provide your efforts. When more and more people join the protection team,	Giant Panda	Adversiting	Third-person	Animal's shape; food; living space; difficulties; humans collaboratively protect the animal and the environment
3	Hello. I am a beautiful cat-like animal. I live in cold snowy mountainous areas in China. I live with partners and catch small or medium-sized berbivores as our food. However, since the temperature on the earth rises every year, the snow melts in the mountains; our living spaces greatly reduce, and there is a short supply of the food. So we are in a dangerous situation for several years. However, we are lucky to hear that our country have implemented supportive policies to protect us as endangered animal species. It is also good news that we are not the only animal species to be protected. A lot of other animals are also protected, so it means that we have a good supply of food. The protection of animal species also fosters the quality of our living environment. When our living environment is improved, the global eco-system will be improved as well. We are so happy to see all of the positive changes in our lives	Snow Panther	Animal's voice	First-person	Animal's shape; food; living environment; threat; our country has taken responsibility to protect the animal and the environment

Figure 1. An Example of tabulated digital story scripts and analysis

Awareness of ecological environment protection

Based on the review of digital stories, all groups revealed in their story narrations their awareness of protecting not only the endangered animals but also the local environment the particular animal lives in, as well as the global ecological system that may impact the existence of animals from a holistic and universal perspective. Five groups even expressed concern about the possibility of animal extinction, which would also affect human beings. However, the three groups did not include direct persuasive words about environmental protection, and they adopted animal's voices to predict what animal's future lives would look like without human actions to protect the ecological system.

Images and soundtracks

Students in each group found images online or created images by hand drawing. In almost every video, the pictures and the sounds synchronized with the sounds describing the pictures. However, in the two videos, the images and the sound do not coordinate perfectly well; it seems that the sound is behind the pictures, so it appears awkward to watch the images but hear a delayed introduction. Eight groups chose to apply background music throughout the narration of digital stories. Five out of these eight groups shifted music clips multiple times. The general information about these digital stories is presented in Table One (see Appendix One).

Emotions

In creating animations using computer or smartphone apps, students identified how they portrayed the character's emotions by using specific visual images to engage their audiences (Mills & Unsworth, 2018). In this process, they learned to employ metalanguage to express animal's emotions, such as joy, sadness, or anger, through words, images, sounds, gestures, or embodied actions through drawing, revising, and selecting animations.

Brainstorm Process Analysis

Each group was asked to demonstrate their brainstorming processes after receiving this project. They could either type or manually display how each group member collaboratively or independently completed this DST project (see Figures Two, Three, and Four).

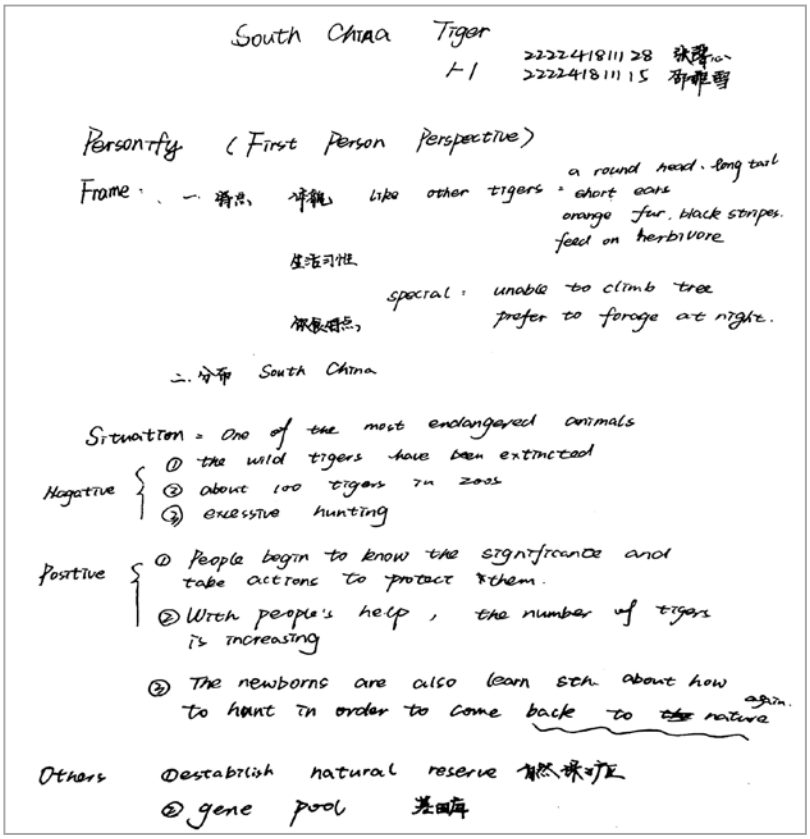


Figure 2. Brainstorming process of group 1 South China Tiger

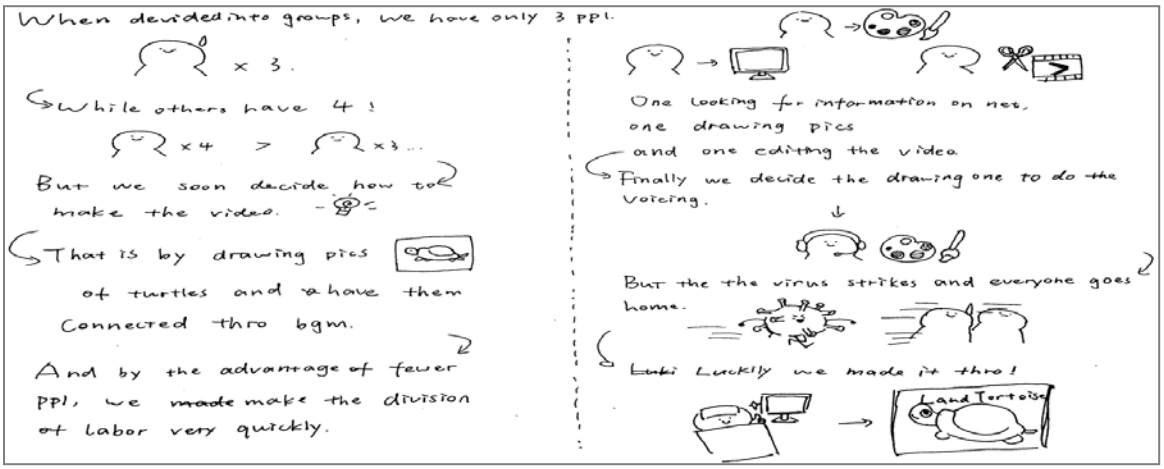


Figure 3. Brainstorming process of group 3 Snow Panther/Leopard

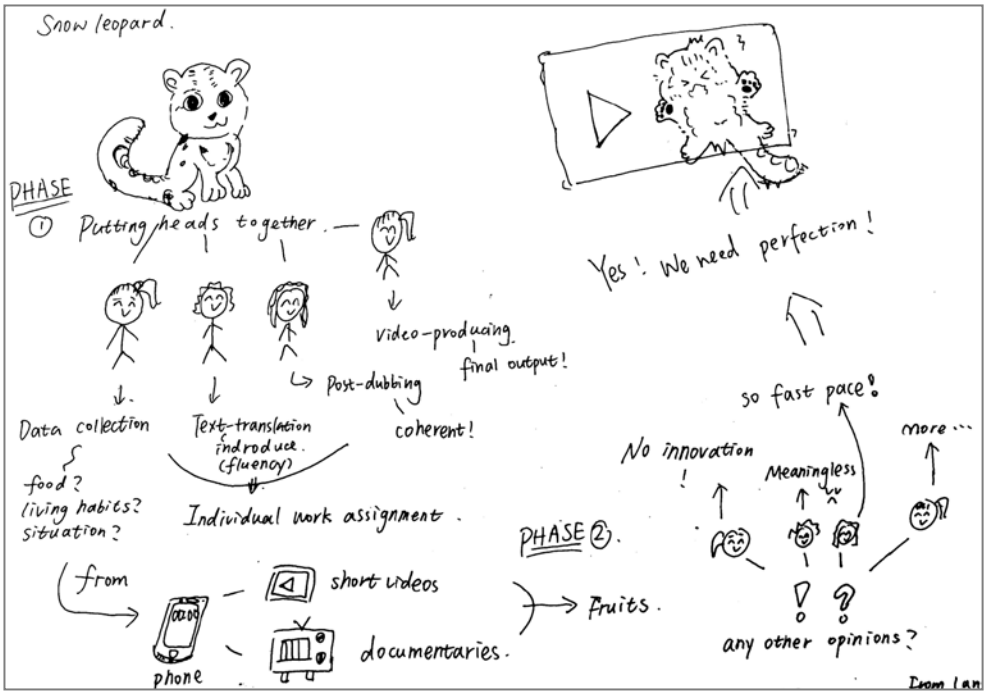


Figure 4. Brainstorming process of group 10 Land Tortoise

Through the reviewing and analyzing of students' brainstorming processes, six major themes have been found:

1. Distribution of different tasks has been noted;
2. Either searching or drawing images have been addressed;
3. The main content covered in the particular digital story is discussed;
4. Possible issues or difficulties have been predicted;
5. Steps to complete the digital story and possible results have been mentioned;
6. The voice used to tell the story, especially the first or third "person" narrative, has been noted.

Major themes discovered in each group have been displayed in the following chart (see Table Two).

Table 2. *Major themes found in group brainstorming processes*

From Table Two, six significant themes have been revealed. Not all groups included the six themes in their brainstorming processes, as some themes were missing, indicating that different groups may focus on various aspects to approach the creation of stories. However, all ten groups included the theme "content to be covered," which shows that content is one of the most significant aspects for all groups to consider in their story-making processes.

Themes	Distribution of tasks	Searching or drawing images	Content to be covered	Issues or difficulties	Steps and results	First or third "Person" narrative
Group 1	√		√	√		√
Group 2		√	√		√	
Group 3	√		√	√	√	
Group 4	√		√		√	√
Group 5		√	√	√		
Group 6	√		√	√	√	
Group 7	√	√	√			√
Group 8	√	√	√			
Group 9	√		√		√	√
Group 10	√		√	√		

Follow-up Interview Transcripts Analysis

Six notable themes were found through the repeated review of interview transcripts.

Digital literacy skills have been tested and enhanced.

Students expressed that digital devices could be used to make stories about animals. In addition, they liked to be assigned tasks incorporating digital tools to produce and reproduce the English language they had learned with a combination of their digital literacy abilities. Moreover, students revealed little difficulty dealing with the video-making process. Most students said they did not worry about making a video from their written scripts because there was a *computer genius* in their group. Others mentioned that even when they encountered difficulties in creating the video, they could always seek help from others or find solutions online. Most groups expressed their purpose of creating an "almost perfect" story about an endangered animal; however, they sometimes could not always make a "cool" or "fancy" video to express what was precisely in their mind, but they never gave up trying before the deadline of the assignment.

Skills in Collaborative Creativity of English Texts have improved.

Students expressed that they assigned different tasks to group members in making digital stories according to their literacy strengths and talents. Several students claimed that their English writing and editing skills had slightly improved in writing and editing the story scripts. Others mentioned that their English speaking skills had improved significantly since they were tasked with telling the stories, repeatedly practicing the scripts, checking the pronunciation of each word,

and delivering the narratives fluently. Some students said that they found a lot of resources in Chinese, so they had first to compose the script in Chinese and then translate it into English. In the translation process, they also gained knowledge and practical skills in translation. Eventually, a DST product was created by combining multimodal resources, including images, sound, music, and written scripts displayed as voice-over subtitles. In composing each multimodal product, students revealed the acquisition of group dynamics and learned group management skills.

Awareness of environmental protection has inspired.

Most students expressed a theme about "humans and nature, humans and animals" being a hot issue, and they are glad to do something to protect the endangered animal species in China. Even though they could not go to the wild to protect animals, they believe it is equally essential to arouse people's awareness of animal protection through digital media. Most groups expressed that their awareness of environmental protection has been inspired by the research of resources about animals, including but not limited to written text, pictures, video clips, documentaries, news items, etc.

Critical thinking and decision-making abilities increased.

Most students chose to work in groups of four except for one group containing three, and another with five. During the interviews, students revealed their reasons: most students chose to work in groups of four because they foresaw the tasks could be roughly distributed into four parts: a resource researcher, a scriptwriter, a storyteller, and a video composer. Students expressed that creating a digital story is not only about writing a script. It is also about using their critical thinking to decide what to include and not to include in their stories. This opportunity for decision-making does not usually happen in the other classes they took. One student said:

It is not easy to create a digital story. You know, I am given this topic to write about, and my purpose is to tell people to protect an endangered animal in China. So, I had to work with my group members to think hard to choose what to put in the video. We learned much from this process (Lu, post-interview, May 10).

When asked how they decided to go through various steps to accomplish the project, several groups said they discussed collaboratively. Each member shared their thoughts and ideas, and then they voted. Other groups determined a leader type of person in their groups, and this person usually suggested ideas. The rest of the group members would agree or disagree with this person, and a final decision was made. When an issue arose, this leader would elicit ideas from group members and suggest a possible solution.

Consciousness of social responsibility and commitment have aroused

Finally, some groups uploaded their digital stories to social media networks such as Bilibili, a cultural community and video website highly populated by young generations in China. When asked about posting their videos to the website, most students said they would like to draw more people's attention to protecting endangered species. One student said:

I think more people should know the story about the Yangtze alligator. You know, not only students should be aware of the protection, but other responsible adults should also do something to protect them. I think it is an effective way to post the video online so that more young people can see it. Another reason is that I drew all the pictures in the video, so it is original. I did not copy anybody's pictures or use anybody's video clips up there; I created all the images in our video. Therefore, I believe it will not raise any copyright issues. (Ping, follow-up interview, May 14)

However, not all groups were satisfied with their digital stories or comfortable posting videos on the website. When asked if they were confident with the digital stories and how to evaluate their videos on a 100-score scale, most groups said they would give themselves scores between 75 and 85. In particular, several groups said, "I think we should improve the video quality before we post it on social media. We should be responsible for the quality of the video. We want to show the audience a better video with a touching story" (Kai, follow-up interview, May 15).

Identity perception

Six out of ten groups revealed their identity as correspondents to use their English language skills to deliver the message of protecting endangered species to the world. Four groups perceived themselves as ecological protection advocates by using words and corresponding images to vividly unfold the lives of endangered animal species and inspire individuals' responsibility to protect this shared world and future.

Discussion

The significant aspects explored in this study are the emergence of DST as a framework and the team-building and critical thinking elements this format fostered. Students searched for, assessed, and combined available and appropriately selected information to produce new ideas through digital stories and share individual strengths to contribute substantially to the story creation process. DST provides a unique approach to communication within the differentiated classroom environment. By using DST as a tool in the classroom, the researcher promoted a project-based educational learning environment that allowed participatory engagement to cater to learners' interest in multimedia learning that involves visual, audio, and kinesthetic styles.

Through the process of creating digital stories, students learned to work collaboratively as well as independently to achieve their collective goals. They played roles as group leaders, researchers, information collectors, writers, editors, translators, and digital story composers who contributed all significantly to their group tasks. When students were offered autonomy in their choices, they took advantage of it and voluntarily assigned responsibilities within groups to accomplish their tasks. In this case, the agency was found to be a notable phenomenon during each digital story's creation and production processes.

Students' various choices regarding the meanings of images, objects, or sound effects associated with specific emotions could respond to the created multimodal texts associated with continuities across time and space. These associated emotions address questions, such as "What is important to us? What is salient? What matters? What is desirable? What is judged to be normal versus novel?" (Lemke, 2012, p. 65).

In this study, multimodal DST, transmediation, and collaboration are interconnected themes that enrich the theoretical framework of transmediation. Transmediation, as defined by Jenkins (2006), involves the flow of stories and information across multiple modalities, requiring learners to navigate and create content across different media (González-Martínez et al., 2019). This concept aligns with multimodal learning, which emphasizes using various semiotic resources to deepen language comprehension and cultural understanding. Collaboration further enhances this process by promoting peer interaction and the co-construction of knowledge, as demonstrated in studies where collaborative multimodal activities have been shown to improve language proficiency and motivation (Anis & Khan, 2023).

In the context of language learning, these themes are particularly relevant. Multimodal DST allows students to combine different forms of communication to develop their narratives, enhancing language proficiency and cultural knowledge (Anis & Khan, 2023). This approach not only encourages students to use language authentically but also fosters critical thinking and creativity. Moreover, integrating collaborative activities within multimodal learning environments encourages students to share ideas and perspectives, enriching their learning experiences (Anis & Khan, 2023).

Regarding moral cultivation and social responsibility, transmediation and multimodal learning allow students to explore diverse cultural values and perspectives. Through collaborative storytelling, students can reflect on universal moral values such as respect, cooperation, and public-spiritedness, essential for fostering social responsibility (Musling et al., 2022). This has significant implications for future educational practices, indicating that integrating transmediation and multimodal learning can foster more inclusive and culturally responsive learning environments. Mainly, transmediation, multimodal learning, and collaboration are integral to the literacy practices of multimodal digital storytelling. They offer innovative ways to enhance language learning, cultural understanding, and social responsibility, pointing toward promising directions for future educational practices.

Implications and Limitations

One of the significant challenges of massively applying multimodal digital stories for literacy classroom instruction and assessment is that the prevailing evaluations continue to revolve around print literacy practices, thus marginalizing the creation of multimodal texts that are now prevalent in students' lives outside of school (DePalma & Alexander, 2015; Quinlan & Curtin, 2017; Ranker, 2015).

Another challenge is that the assessment criteria for students' multimodal responses and productions may not be inclusive and apply to all students' multimodal texts. On the one hand, teachers need to allow creativity and personal identity to be reflected in students' multimodal composing processes and products; on the other hand, course-related multimodal texts need to be evaluated and transferred to represent students' academic performance. In this regard, the assessment criteria need to be flexible, inclusive, and rigorous, which differ from the evaluation criteria to respond to the production of print texts.

One factor limiting the shift to classroom multimodal instruction and production is that the prevailing large-scale standardized tests driving university curricula are based primarily on print-based literacy practices, for example, the test for English majors (TEM Band 4 and Band 8) and the college English test (CET Band 4 and Band 6). However, this increased use of print-based literacy instruction and assessment that includes creativity and responses to multimodal/digital texts will probably promote an increased instructional focus on creating multimodal/digital texts central to students' daily lives outside school.

The limitation of the study may lie in the fact that the researcher plays dual roles as both a classroom teacher and an investigator. When collecting data from follow-up interviews, students may not fully express their critical evaluation of this project, which, from their perspectives, may affect their grades. However, the researcher has informed all students that this DST project was not part of their grades and thus would not affect the teacher's evaluation of students. Therefore, students demonstrated positive attitudes in participating, and made detailed descriptions and

relatively "high-quality digital stories" to the best of their abilities. The dual identity of the teacher and researcher did not adversely affect the data collection and analysis procedures.

Conclusion

This study aimed to investigate the multimodal DST practices in a first-year comprehensive English foundation course at a Chinese university. The primary objectives were to examine how students accomplished a theme-based multimodal DST project, their perceptions of the project and their digital story products, and the impact of these practices on their digital literacy and moral construction.

Study findings revealed that students actively created digital stories, demonstrating enhanced critical thinking and decision-making abilities. Through transmediation, students translated meanings across various sign systems, incorporating multimodal features into their stories. This process not only enhanced their print-based literacy skills, such as reading, speaking, writing, and translation, but also significantly improved their digital literacy proficiency in creating multimodal digital texts. Moreover, the study highlighted that students' social responsibility and commitment to building a harmonious shared future were positively influenced by these DST practices. The results suggest that integrating multimodal DST projects into language education can foster linguistic and digital literacy while promoting moral values and social responsibility among EFL students.

In conclusion, this study underscores the potential of multimodal digital storytelling to enhance students' comprehensive literacy skills and moral development. Future research should further investigate the long-term impact of digital storytelling (DST) practices on students' language proficiency and social responsibility, as well as the role of collaborative learning in these processes.

*This paper is based on the author's research project: Research on the Multimodal Construction of Ideological Education in English Courses Based on the Type of University of Science and Technology"

About the Author

Dr. Huan Wang is now an English lecturer, and department chair at the School of Foreign Languages at Jiangsu University of Science and Technology in Zhenjiang, China. Her research interests include but are not limited to EFL and ESL students' multimodal literacy practices and the integration of traditional culture in the language and literacy instruction of EFL learners.
ORCID ID: https://orcid.org/0000-0001-6718-9723

Funding: This research is not funded.

Acknowledgments: Not applicable.

Authenticity: This manuscript is an original work

Conflicts of Interest: There is no conflict of interest.

Artificial Intelligence Statement: AI assisted technologies were not used.

References

Alonso I., Molina, S., & Porto, M. D. (2013). Multimodal digital storytelling-integrating information, emotion, and social cognition. *Review of Cognitive Linguistics, 11*(2), 369–387.

Al-Shaye, S. (2021). Digital storytelling for improving critical reading skills, critical thinking skills, and self-regulated learning skills. *Kıbrıslı Eğitim Bilimleri Dergisi*, *16*(4), 2049–2069.

Anis, M., & Khan, R. (2023). Integrating multimodal approaches in English language teaching for inclusive education: A pedagogical exploration. *Universal Journal of Educational Research*, *2*(3), 241-257. https://doi.org/10.18844/cjes.v16i4.6074

Barrett, H. (2006). Researching and evaluating digital storytelling as a deep learning tool. In C. Crawford et al. (EDS.), *Proceedings of Society for Information Technology and Teacher Education International Conference 2006* (pp. 647–654). Chesapeake, VA: AACE.

Beach, R., Castek, J., & Scott, J. (2017). Acquiring processes for responding to and creating multimodal digital productions. In D. Hinchman & D. Appleman (Eds.), *Adolescent Literacies: A Handbook of Practice-Based Research (*pp. 292–309). Guilford Press, New York.

Beach, R., & Smith, B. E. (2023). Responding to and creating multimodal texts. *International Encyclopedia of Education, 4*(10), 503-517. doi.org:10.1016/B978-0-12-818630-5.07029-9

Beldarrain, (2006). Distance education trends: Integrating new technologies to foster student interaction and collaboration, *Distance Education, 27*(2), 139-153, DOI: 10.1080/01587910600789498

Charmaz, K. (2006). *Constructing Grounded Theory: A practical guide through qualitative analysis*. Sage.

DePalma, M. J., & Alexander, K. P. (2015). A bag full of snakes: negotiating the challenges of multimodal composition. *Computer & Composition*. *37*, 182–200.

Dincelli, E., & Yayla, A. (2022). Immersive virtual reality in the age of the Metaverse: A hybrid-narrative review based on the technology affordance perspective. *Journal of Strategic Information Systems*, *31*(2), 101717. https://doi.org/10.1016/j.jsis.2022.101717

Duveskog, M., Tedre , M., Sedano, C. I., & Sutinen, E. (2012). Life Planning by Digital Storytelling in a Primary School in Rural Tanzania. *Educational Technology & Society, 15*(4), 225–237.

Fu, Y., Li, H., & Wang, X. (2021). The impact of digital storytelling on EFL learners' speaking skills: A mixed-methods study. *Journal of Educational Technology & Society*, *24*(3), 123-138.

Godwin-Jones, R. (2019). Riding the digital wilds: Learner autonomy and informal language learning. *Language Learning & Technology*, *23*(1), 8–25. https://doi.org/10125/44667

González-Martínez, J., Esteban-Guitart, M., Rostan-Sanchez, C., Serrat-Sellabona, E. & Estebanell-Minguell, M. (2019). What's up with transmedia and education? A literature review. *Digital Education Review, 36*, 207-222. http://greav.ub.edu/der/

Han, Y., & Reinhardt, J. (2022). Autonomy in the digital wilds: Agency, competence, and self-efficacy in the development of L2 digital identities. *TESOL Quarterly*, *56*(3), 985-1015.

Hwang, G. J., Zou, D., & Wu, Y. X. (2023). Learning by storytelling and critiquing: A peer

assessment-enhanced digital storytelling approach to promoting young students' information literacy, self-efficacy, and critical thinking awareness. *Educational Technology Research and Development*, *71*(3), 1079–1103.

Jenkins, H. (2006). *Confronting the Challenges of Participatory Culture: Media Education for the 21st Century*. The MacArthur Foundation, Chicago. Retrieved from http://tinyw. in/xB75.

Jing, T., & Low, D. (2009). Critical thinking and Chinese university students: A review of the evidence, *Journal of Language, Culture, and Curriculum*, 61-76.

Lambert, J. (2018). *Digital storytelling: Capturing lives, creating community* (5th ed.). Routledge.

Lemke, J. L. (2012). Thinking about feeling: affect across literacies and lives. In: Erstad, O., Sefton-Green, J. (Eds.), *Identity, Community, and Learning Lives in the Digital Age* (pp. 57–69). Cambridge University Press, New York, NY, .

Lewis Ellison, T. (2017). Digital participation, agency, and choice: An African American youth's digital storytelling about Minecraft. *Journal of Adolescent & Adult Literacy, 61*(1), 25–35. doi: 10.1002/jaal.645

Lewis Ellison, T., & Wang, H. (2018). Resisting and Redirecting: Agentive Practices Within an African American Parent–Child Dyad During Digital Storytelling. *Journal of Literacy Research*, *50*(1), 52–73. https://doi.org/10.1177/1086296X17751172

Ma, Q., & Zhang, Z. (2024). The use of digital storytelling in bilingual/multilingual students' meaning-making: A systematic literature review. In J. Zajda & S. Majhanovich (eds) *Globalisation, Cultural Diversity and Schooling. Globalisation, Comparative Education and Policy Research*, vol 41. Springer, Cham. https://doi.org/10.1007/978-3-031-53219-1_3

McCormick, J. (2011). Transmediation in the language arts classroom: creating contexts for analysis and ambiguity. *Journal of Adolescent & Adult Literacy, 54*(8), 579–587.

Mills, K. A. (2015). *Literacy Theories for the Digital Age: Social, Critical, Multimodal, Spatial, Material and Sensory Lenses*. Channel View Publications, Bristol, UK.

Mills, K.A., & Unsworth, L. (2018). IPad animations: powerful multimodal practices for adolescent literacy and emotional language. *Journal of Adolescent & Adult Literacy, 61*(6), 609–620.

Musling, M. N., Ismail, M. Z., Darmi, R., Kamaruddin, A. Y., & Jaffar, M. N. (2022). Summary of possible universal moral values in language pedagogy: A systematic review. *Journal of Language and Linguistic Studies*, *18*(1), 40-57. Doi: 10.52462/jlls.165

Ohler, J. (2008). *Digital storytelling in the classroom: New media pathways to literacy, learning and creativity*. Thousand Oaks, CA: Corwin Press.

Quinlan, A., & Curtin, A. (2017). Contorting identities: Figuring literacy and identity in adolescent worlds. *Ir. Educational Studies*, *36*(4), 457–470. https://doi.org/10.1080/ 03323315.2017.1362352.

Ranker, J. (2015). Redesigning the everyday: recognizing creativity in student writing and multimodal composing. *Language and Arts*, *92*, 359–365.

Robin, B. R. (2008) Digital storytelling: A powerful technology tool for the 21st century classroom, Theory Into Practice, *47*(3), 220-228, doi: 10.1080/00405840802153916

Schmoelz, A. (2018). Enabling co-creativity through digital storytelling in education. *Thinking Skills and Creativity*, *28*, 1-13.

Siegel, M. (2006). Rereading the signs: Multimodal transformations in the field of literacy education. Language Arts, 84(1), 65–77.

Smith, K. A., Shepherd, S. D., Johnson, D. W., & Johnson, R. T. (2013). Pedagogies of engagement: Classroom-based practices. *Journal of Engineering Education*, *94*(1): 1-15. doi.org/10.1002/j.2168-9830.2005.tb00831.x

Smith, B. E., Kiili, C., & Kauppinen, M. (2016). Transmediating argumentation: students composing across written essays and digital videos in higher education. *Computer Education*, *102*, 138–151.

Tuckman, B. W., & Jensen, M. C. (2010). Stages of small-group development revisited. *Group Facilitation: A Research & Applications Journal*, *10*, 43-48.

Wang, H. (2022). International English Learners' Perspectives on Multimodal Composing and Identity Representation Via Multimodal Texts. *SAGE Open*, *12*(2). https://doi.org/10.1177/21582440221103526

Wu, J., & Chen, D. V. (2020). A systematic review of educational digital storytelling. *Computers & Education, 147*, 1-35. https://doi.org/10.1016/j.compedu.2019.103786.

Yan, Y., Zheng, Y., & Ye, X. (2024). The impact of IVR-ADDIE-based digital storytelling teaching mode on students' self-regulation ability and self-efficacy. *Education and Information Technologies*. https://doi.org/10.1007/s10639-024-13070-7

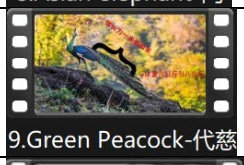
Yang, Y. C., & Wu, W. I. (2012). Digital storytelling for enhancing student academic achievement, critical thinking, and learning motivation-A year-long experimental study. *Computers and Education*, *59*, 339-352.

Zainuddin, Z., & Perera, C. J. (2021). Digital storytelling in EFL reading comprehension: The effects on students' understanding and motivation. *Language Learning & Technology*, *25*(2), 103-125.

Zhang, Y. Q., & Zhang, Y. L. (2017). Cultivating college students' core literacy from the perspective of new trends in technological development, *Journal of Higher Education Research*, *38*(12), 73-80.

Appendix One Table 1 General information on digital stories

Animal Species	Group Number	Cover Images	Length of Time	Number of images	Number of Soundtrack effects	Narration word count
South China Tiger	1		1 minute 56 seconds	20	0	582
Giant Panda	2		1 minute 53 seconds	21	1	565
Snow Panther	3		1 minute 29 seconds	39	3	520

Golden Monkey	4		1 minute 31 seconds	22	1	537
Chinese White Dolphin	5		1 minute 36 seconds	25	0	543
Yangtze Alligator	6		2 minute 27 seconds	33	2	658
Tibetan Antelope	7		1 minute 33 seconds	28	1	528
Asian Elephant	8		1 minute 41 seconds	31	2	545
Green Peacock	9		1 minute 55 seconds	35	3	587
Land Tortoise	10		1 minute 37 seconds	26	2	519