



Investigating the impact of digital multimodal composing on Chinese EFL learners' motivation

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Abstract

As digital tools reshape literacy and communication, writing increasingly incorporates multimodal resources. Although research on the impact of digital multimodal composing (DMC) on learners' writing development has grown, the motivational mechanisms underlying DMC remain underexplored. To address this gap, this mixed-methods study examined changes in students' motivation under DMC pedagogy and investigated the factors contributing to these changes. The study was conducted with second-year university students enrolled in an 18-week writing course. Using an explanatory sequential design, motivation questionnaires were administered as pre- and post-tests to generate quantitative data, followed by semi-structured interviews to provide qualitative insights. Four intact classes were randomly assigned into two groups (experimental and control groups). The experimental group (n = 66) received DMC-based instruction, whereas the control group (n = 62) followed a traditional text-based approach. Quantitative analyses revealed significantly greater gains in overall motivation and four expectancy–value dimensions (expectancy, intrinsic value, attainment value, and cost) in the experimental group, with utility value not reaching statistical significance. Semi-structured interviews with 18 students further illuminated the mechanisms underlying these motivational changes. Students perceived DMC as enjoyable and meaningful, beneficial for the development of writing skills and future professional relevance. It was also seen as supportive of confidence and personal growth, although it involved effort-related costs. These findings highlight the potential of DMC to reshape motivational dynamics in EFL writing instruction.

Keywords: Digital multimodal composing, EFL writing, expectancy-value theory, motivation

Introduction

Motivation plays a crucial role in EFL writing by initiating learners' engagement and sustaining their effort throughout the learning process (Shafiee Rad & Alipour, 2023). In EFL learning, writing is widely regarded as one of the most demanding skills for English as a Foreign Language (EFL) learners to master (Teng, 2025; Zamani & Morady Moghaddam, 2025). Writing remains a crucial means of academic achievement and international communication, serving as a key indicator of learners' language proficiency and critical thinking (Gao & Wang, 2023). Under such cognitively and affectively demanding conditions, learner motivation plays a pivotal role in sustaining engagement, persistence, and performance in writing tasks (Li, 2023). Without sufficient motivation, learners may fail to apply their linguistic knowledge effectively, leading to suboptimal outcomes even when they possess the necessary language skills. In this context, motivation should be understood not merely as an auxiliary factor but as a core determinant of successful writing development (Yang et al., 2025).

Writing instruction is shaped by high-stakes assessments, rigid curriculum requirements, and predominantly teacher-centred approaches, limiting learners' opportunities for authentic communication and creative expression (Alzubi & Nazim, 2024). As a result, writing is frequently framed as a task for evaluation rather than a medium for meaning-making, which has been linked to decreased motivation and heightened writing anxiety (Wang, 2025). These challenges are particularly pronounced in China, where writing instruction has traditionally emphasized grammatical correctness, vocabulary accumulation, and examination performance (Huang et al., 2025). Teachers often adopt an authoritative role, reinforcing exam-driven and teacher-centred practices that limit opportunities for authentic communication, creativity, and self-expression. As a result, many students perceive writing as a compulsory academic requirement rather than a meaningful communicative act, leading to decreased motivation and reduced confidence in applying their linguistic knowledge effectively (Lee & Mao, 2025; Zhang & Hu, 2025). Against this backdrop, identifying pedagogical approaches that can enhance learners' motivation and support effective writing development has become a pressing research priority in the Chinese EFL context.

In response to these challenges, recent years have witnessed a pedagogical shift towards incorporating digital and multimodal resources into language instruction. The emergence of digital technologies has reshaped the landscape of literacy practices, shifting them from traditional print-based writing towards digital and multimodal forms of expression (Jiang & Hafner, 2025). Digital multimodal composing (DMC) is defined as the process by which learners employ digital platforms and software to produce texts that integrate written language with multiple semiotic resources, such as visuals, audio narration, video clips, and layout design (Jiang, 2017, p. 60; Smith et al., 2021, p. 2). This approach has been increasingly recognized as an effective pedagogical practice in EFL writing, as it allows learners to combine textual, visual, and auditory modes to construct meaning, thereby fostering creativity, engagement, and authentic communication. By engaging in DMC, learners are positioned as active meaning-makers rather than passive recipients of knowledge, which contributes to more meaningful writing experiences (Liu et al., 2025).

Recent research has provided growing evidence that DMC can have various advantages in enhancing writing quality and digital literacy (Jiang & Hafner, 2025) showing positive influence on learners' writing performance (Xu, 2023), cultivating students' multimodal literacy and identity change (Pan & Lei, 2025), self-efficacy and affective responses (Alzubi & Nazim, 2024). Nevertheless, existing studies have largely approached DMC from an outcome-oriented perspective, with comparatively less attention paid to the motivational processes that sustain

learners' engagement in writing. In particular, there remains limited empirical evidence elucidating how and through what mechanisms DMC shapes learners' writing motivation, especially in examination-oriented EFL contexts such as those in China. The present study draws on Expectancy-Value Theory (EVT) as a theoretical lens to examine how DMC affects learners' motivation in EFL writing. EVT posits that learners' engagement and achievement-related choices are shaped by their expectancy beliefs—how confident they are in succeeding—and the subjective value they attach to tasks, including attainment, intrinsic, and utility values, as well as perceived cost (Eccles & Wigfield, 2002). While EVT has been widely applied to explain learning motivation in general educational contexts, its application to complex writing tasks, particularly DMC, has not yet been fully explored. Accordingly, this study integrates EVT to examine how DMC pedagogy influences learners' motivation, considering both their confidence in completing writing tasks and the value they assign to them. Specifically, learners' motivation is compared before and after instruction in an experimental group using DMC and a control group following a traditional writing approach.

The study aims to extend EVT into digital multimodal literacy research and to offer pedagogical insights for enhancing motivation in Chinese EFL writing classrooms. To achieve this, two research questions were formulated:

1. How did DMC pedagogy influence Chinese EFL students' motivation, particularly in terms of expectancy, intrinsic value, attainment value, utility value and cost?
2. How did students perceive DMC pedagogy after its implementation?

To answer these questions, the study adopts a mixed-methods design to examine EFL learners' motivation towards DMC and to explore students' perceptions. By integrating pre- and post-tests and comparing an experimental group (using DMC pedagogy) with a control group (traditional writing instruction), this research aims to provide empirical, EVT theory-driven evidence on how DMC affects multiple dimensions of motivation.

Literature Review

Motivation in EFL Writing

Motivation plays a critical role in EFL learning, particularly in writing, as it influences learners' engagement, persistence, and self-regulation in tasks that require sustained cognitive effort and ongoing revision (Alamer & Alrabai, 2023; Dörnyei & Ushioda, 2021). Previous studies consistently show that motivation affects both the quantity and quality of EFL writing (Bai & Wang, 2020; Kormos, 2012). However, in many educational contexts, motivation in EFL writing is undermined by traditional product-oriented instruction that prioritizes fixed models and examination requirements over creativity and communicative purpose (Huang et al., 2025; Hyland, 2003). Such approaches limit learners' opportunities for self-expression and reduce task meaningfulness, leading learners to perceive writing as a burdensome academic exercise and diminishing their willingness to invest effort in improving their writing skills (Alzubi & Nazim, 2024; Wu et al., 2023).

Several studies have reported that Chinese EFL students demonstrate low levels of motivation toward writing (Shen & Bai, 2024). The lack of motivational support in Chinese writing classrooms not only diminishes learners' interest but also restricts their long-term development as competent writers (Bai et al., 2024). Even when students possess sufficient linguistic knowledge, their writing outcomes often fall short because they lack the motivation to engage deeply with the writing process or to take risks in experimenting with language. In other words,

motivational barriers can limit the extent to which learners are able to transform their linguistic competence into effective communicative performance (Zhang, 2024). Therefore, addressing motivation in writing is not merely a desirable pedagogical goal but a crucial requirement for fostering sustainable improvements in EFL learners' writing skills.

Given these challenges, scholars have called for the implementation of innovative pedagogical approaches that can make writing more meaningful, engaging, and relevant to learners' lives (Hyland, 2019). In particular, approaches that integrate authentic purposes, learner autonomy, and creative expression have been found to enhance students' motivation and positive attitudes towards writing (Radil et al., 2023; Song & Song, 2023).

DMC in Language Education

The rise of digital technologies and new media has reshaped how literacy is conceptualised and practised. Traditional print-based literacy is increasingly complemented by multimodal literacies that integrate written, visual, audio, and interactive elements (Jewitt, 2008; Kress, 2009). Within this shift, DMC has emerged as a pedagogical approach that enables learners to construct meaning through multiple semiotic resources in more dynamic and authentic ways.

Research has identified several benefits of DMC in second language education, including expanded opportunities for expression and creativity, enhancing students' sense of ownership of their work (Wang, 2022), scaffolding, and authentic audience awareness, as learners often design multimodal texts for peer sharing or public dissemination (Lankshear & Knobel, 2011) and its potential to support language development (Hafner & Ho, 2020; Jiang & Hafner, 2025). Furthermore, DMC has been associated with higher learner engagement and more positive attitudes towards writing, as multimodal projects provide authentic purposes and audiences that foster motivation, creativity, and enjoyment (Yang & Wu, 2012). Compared with conventional essay assignments, learners often perceive multimodal tasks as more interesting and relevant, which can increase their willingness to invest time and effort in writing (Choi & Yi, 2016).

Among the limited studies examining the effects of DMC on motivation, Hava (2021) investigated the impact of digital storytelling on EFL learners' motivation and satisfaction. The results indicated significant improvements in students' self-confidence and engagement following digital storytelling activities. Similarly, Jiang and Luk (2016), drawing on Malone and Lepper (1987) motivation theory, explored how DMC could enhance student motivation through the integration of diverse semiotic resources. While these studies provide valuable insights into the potential of DMC to enhance motivation, they also reveal notable limitations. Both studies have methodological limitations: one adopted a mixed-methods design but employed an experimental approach without a control group, while the other relied on a qualitative design. In addition, the small sample sizes in both studies limited the generalizability of their findings. Therefore, there is a growing need to employ diverse research methodologies to further investigate the underlying mechanisms through which DMC influences EFL learners' motivation.

Expectancy-Value Theory in L2 Learning

Gardner (1985) defines motivation as "the extent to which the individual works or strives to learn the language because of a desire to do so and the satisfaction experienced in this activity". Motivated students typically show greater willingness and persistence in language learning, whereas learners with lower motivation often face obstacles in acquiring new skills (Zhang, 2024). To explain how learners make achievement-related choices and sustain effort, Eccles (1983) proposed the EVT, which has since been widely applied across educational contexts, including mathematics, reading, science, and language learning (Geng et al., 2023; Zhang & Jiang, 2025). EVT posits that learners' choices, persistence, and performance are determined

by two key factors: expectancy beliefs and task values. Expectancy beliefs reflect learners' confidence in successfully completing a task, while task values capture the perceived importance or benefits of engaging in the activity. Task values include attainment value (the personal significance of doing well), intrinsic value (enjoyment derived from the task), utility value (relevance to future goals), and cost (perceived effort or trade-offs involved) (Wigfield & Eccles, 2000). Together, these constructs provide a coherent framework for examining how learners decide to engage in and sustain effort towards learning activities, including language and writing tasks.

In recent years, scholars have increasingly applied EVT to language learning, as it provides a nuanced understanding of learners' motivational processes (Gu & Man, 2025). Research suggests that expectancy beliefs influence learners' confidence in using the target language, while task values shape learners' perception of writing as meaningful, enjoyable, or relevant to their goals (Wigfield et al., 2009). Cost reflects perceived effort or trade-offs and may reduce motivation when tasks are overwhelming or anxiety-inducing (Liem et al., 2008). Despite the potential of EVT to illuminate motivational dynamics in L2 writing, its application in EFL contexts remains limited, particularly regarding learners' motivation in complex writing tasks. Few studies have examined the effect of a writing pedagogy on expectancy beliefs, task values, and these have primarily focused on general L2 writing or feedback-oriented interventions, leaving motivational processes largely underexplored (Gu & Man, 2025; Raoofi, 2019).

Methodology

Research Design

The present study employed a sequential explanatory mixed-methods design. Quantitative data were first collected through pre- and post-intervention questionnaires to examine overall motivation and its five dimensions based on EVT. This was followed by qualitative data collection through semi-structured interviews, which explored students' perceptions of task value, expectations, and challenges experienced in DMC activities. The integration of these methods provided a comprehensive understanding on both the impact of DMC on learners' motivation and the ways in which learners perceived and engaged with multimodal writing tasks.

Participants and Context

The study was conducted at a university in northern China, involving 128 sophomore students from four parallel classes. This university was selected because it represents a typical Chinese EFL context, where traditional, exam-oriented writing instruction is prevalent, allowing the study to examine the effects of innovative pedagogies like DMC within a realistic educational setting. Four intact classes were randomly divided into two groups, experimental group ($n = 66$) and the control group ($n = 62$). A pre-test was conducted to assess baseline motivation, and results indicated no significant differences between the groups, ensuring comparability in initial motivational levels. The sample was predominantly female (92%), with male students comprising 8%, and the mean age was 19.52 years. Participants' English proficiency ranged from intermediate to upper-intermediate (B1–B2), as measured by scores on the College English Test Band 4 (CET-4) and the Intensive English course exam.

Informed consent was obtained from all participants prior to the study. Both groups were taught by the same experienced instructor, who holds a master's degree in Applied Linguistics and has extensive experience in English teaching. All participants were enrolled in a mandatory English writing course that spanned 18 weeks, with one 90-minute session per week. The course syllabus included course orientation, writing standards, sentence construction, paragraph development, and practical writing skills. The experimental group received instruction

integrating DMC pedagogy, which involved projects requiring students to combine text with images, audio, video, and interactive elements to create multimodal essays and presentations. In contrast, the control group followed a traditional writing curriculum focused on text-based essays, without the inclusion of DMC activities.

Instruments

Questionnaires adapted from the existing Expectancy and Value Beliefs Scale (EVBS) were used in this study (Chen, 2024). The EVBS comprised a total of 16 items and was designed for general communicative contexts. To better align with the specific objectives of the present study, it was adapted into a Motivation Questionnaire consisting of 23 items: four on expectancy, 15 on various value dimensions, and four on cost. The Motivation Questionnaire was validated through exploratory factor analysis (EFA) and confirmatory factor analysis (CFA) using SPSS and AMOS software. The motivation questionnaire demonstrated strong psychometric properties. All dimensions showed good internal consistency (Cronbach's $\alpha > 0.70$), and the data were suitable for factor analysis (KMO = 0.825, Bartlett's test $p < .001$). EFA supported the hypothesized five-factor structure, with all items loading on their intended constructs (loadings > 0.57). CFA indicated acceptable overall model fit ($\chi^2/df = 1.50$, CFI = 0.914, TLI = 0.901, RMSEA = 0.063). Convergent validity (AVE > 0.50 , CR > 0.90) and discriminant validity (the square root of AVE for each construct exceeded its correlations with all other constructs) were both established, supporting the use of the questionnaire in subsequent analyses.

To explore students' experiences, perceptions, suggestions, and challenges related to DMC projects, 10–13-minute semi-structured interviews were conducted face-to-face with 18 students from the experimental group. The interviewees were selected using a maximum variation sampling strategy, comprising four male and fourteen female students, to reflect diversity in gender representation. The semi-structured interviews were designed in alignment with the research questions and informed by the quantitative findings related to DMC pedagogy. The interview protocol consisted of five semi-structured questions designed to elicit participants' expectancy, attainment value, intrinsic value, utility value, and perceived cost related to English writing. Both the questionnaire and the semi-structured interview protocol were validated by two experts holding doctoral degrees in Applied Linguistics.

Data Analysis

A total of 128 pre- and post-test questionnaires were analysed using SPSS 29. The experimental group included 66 students and 62 students in the control group, both exceeding the commonly recommended minimum sample size of 30 for parametric analyses. Following Stevens (2009), mixed ANOVA is considered robust to violations of normality with relatively large sample sizes. Descriptive statistics (e.g., mean and standard deviation) and visualization methods (e.g., histograms and Q–Q plots) confirmed that the data approximately followed a normal distribution. A mixed-design ANOVA was conducted with group (experimental vs. control) as the between-subjects factor and time (pre-test vs. post-test) as the within-subjects factor to assess changes in overall motivation. When a significant interaction between group and time was observed, t-tests were performed to examine between- and within-group differences. To know the effect of DMC more specifically, differences across the five motivational dimensions were analysed as well. These analyses addressed the first research question by investigating whether DMC pedagogy led to statistically significant changes in EFL learners' motivation compared to traditional instruction.

To gain deeper insights into students' perceptions of DMC, a deductive thematic analysis was conducted on qualitative data from semi-structured interviews. NVivo 15 was used to analyse themes and categories. The interviews were conducted in Chinese to facilitate fluent expression, then translated into English and validated through member checking and expert review. To enhance reliability and validity, approximately 20% of the qualitative data from each category were independently coded by two coders. Inter-coder reliability for all categories exceeded 85%, and discrepancies were resolved through discussion until consensus was reached.

Results

Impact of DMC on Students' Motivation

Table 1 shows the descriptive statistics of pre-test and post-test motivation scores of the experimental group and the control group.

Table 1. Descriptive statistics of learning motivation across time points

Group	Mean	Std. Deviation
Pre-test mean		
Experimental	3.579	0.480
Control	3.607	0.353
Total	3.593	0.422
Post-test mean		
Experimental	4.090	0.397
Control	3.745	0.470
Total	3.923	0.465

The overall motivation scores were approximately normally distributed, and given the robustness of ANOVA to moderate deviations from normality with relatively large and balanced sample sizes (Field, 2024). A mixed-design ANOVA was first conducted to examine the interaction between group and time. The results revealed significant main effects of time, $F(1, 126) = 46.63, p < .001, \eta^2_p = .270$, and group, $F(1, 126) = 7.18, p = .008, \eta^2_p = .054$. Importantly, the time $\times$ group interaction was also significant, $F(1, 126) = 15.39, p < .001, \eta^2_p = .109$ (see Table 2). Accordingly, post hoc within- and between-group analyses were conducted to further examine the nature of these significant effects.

Post hoc analyses were conducted to further examine the interaction effects. Independent-samples t -tests indicated no significant difference between the experimental and the control group on the pre-test, $t(126) = -0.38, p = 0.704$. In contrast, a statistically significant difference was observed on the post-test, $t(126) = 4.49, p < 0.001$ with a significant increase in the experimental group (see Table 3). As shown in Table 4, paired-samples t -tests revealed a significant increase in learning motivation for students in the experimental group over the semester, $t(65) = -7.88, p < 0.001$, but no significant change was found for the control group, $t(61) = -1.98, p = 0.052$.

Table 2. Results of Mixed ANOVA

Effect	F	df1	df2	p	η^2_p
Time	46.628	1	126	<0.001	0.270
Group	7.18	1	126	0.008	0.054
Time*group	15.389	1	126	<0.001	0.109

Note: $\eta^2_p = 0.01$ represents a small effect, $\eta^2_p = 0.06$ indicates a medium effect, and $\eta^2_p = 0.14$ corresponds to a large effect (Cohen, 1988; Lakens, 2013).

Table 3. Results of independent samples t-test for motivation between experimental and control groups

Constructs		Levene’s Test for Equality of Variances		t-test for Equality of Means						
				t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
		F	Sig.						Lower	Upper
Pre-test mean	Equal variances not assumed	5.379	0.022	-0.381	119.27	0.704	-0.028	0.074	-0.175	0.119
Post-test mean	Equal variances assumed	0.139	0.710	4.494	126	<0.001	0.345	0.077	0.193	0.497

Note: Levene’s test indicated unequal variances for the pre-test ($p < 0.05$), so the Welch t-test was used. For the post-test, equal variances were assumed ($p > 0.05$), and the standard independent samples t-test was applied. All tests were two-tailed.

Table 4. Results of paired samples t-test for motivation among experimental and control groups

Class	Mean Difference (Pre-test Mean–Post-test Mean)	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference		t	df	Sig. (2-tailed)
				Lower	Upper			
Experimental	-0.511	0.527	0.065	-0.641	-0.382			
Control	-0.138	0.549	0.070	-0.277	0.001	-1.983	61	0.052

Scores for each dimension showed non-normal distributions. This pattern is common in Likert-scale data, where composite scores tend to approximate normality due to aggregation effects, whereas subscale scores based on fewer items are more prone to skewness (Field, 2024). Accordingly, Mann–Whitney U tests were used to examine differences between groups across dimensions. As presented in Table 5, the experimental group consistently showed higher mean ranks than the control group across all five dimensions. Statistically significant differences were observed for expectancy ($U = 1155.00$, $Z = -4.307$, $p < 0.001$, $r = 0.381$), attainment value ($U = 1636.50$, $Z = -1.974$, $p = 0.048$, $r = 0.174$), intrinsic value ($U = 1248.00$, $Z = -3.821$, $p < 0.001$, $r = 0.338$), and cost ($U = 1360.50$, $Z = -3.307$, $p = 0.001$, $r = 0.292$), indicating that the experimental group outperformed the control group on these dimensions. Effect sizes ranged from small to moderate, with expectancy showing a moderate-to-large effect, intrinsic value a moderate effect, and attainment value and cost demonstrating small to moderate effects. In contrast, no statistically significant difference was found for utility value ($U = 1701.50$, $Z = -1.689$, $p = 0.091$, $r = 0.149$), although the experimental group exhibited slightly higher mean ranks, corresponding to a small effect size. Overall, while both groups demonstrated comparable levels of utility value, the experimental group achieved significantly higher levels in expectancy, intrinsic value, attainment value, and cost.

Table 5. Results of Mann–Whitney U test on motivation of each dimension

Variable	Group	N	Mean	SD	Mean Rank	U	Z	p	r	Effect Size
Expectancy	Experimental	66	3.39	0.52	78	1155	−4.307	<0.001	0.381	moderate-to-large
	Control	62	2.91	0.57	50.13					
Attainment value	Experimental	66	4.56	0.43	70.7	1636.5	−1.974	0.048	0.174	small
	Control	62	4.37	0.63	57.9					
Intrinsic value	Experimental	66	3.88	0.67	76.59	1248	−3.821	<0.001	0.338	moderate
	Control	62	3.39	0.71	51.63					
Utility value	Experimental	66	4.44	0.50	69.72	1701.5	−1.689	0.091	0.149	small (ns)
	Control	62	4.20	0.72	58.94					
Cost	Experimental	66	3.96	0.53	74.89	1360.5	−3.307	0.001	0.292	moderate
	Control	62	3.60	0.74	53.44					

Note: Means and standard deviations are reported for descriptive purposes, while group differences were examined using the Mann–Whitney U test. Effect size (r) was calculated as Z divided by the square root of the total sample size (Fritz et al., 2012). Cohen’s criteria (0.1, 0.3, and 0.5) were used as approximate guidelines for interpreting effect sizes (Cohen, 1988).

Perceptions of Students after Implementing DMC Pedagogy

The researchers conducted semi-structured interviews on this part based on five main perspectives, which complemented quantitative results and corresponded to expectancy-value theory. To protect their confidentiality and anonymity, each of the participants was assigned a numerical code (e.g., S1, S2, etc.) in place of their real names, in accordance with ethical standards in qualitative research.

Growing Sense of Fulfilment and Joyfulness

As for intrinsic value, students reported a sense of accomplishment, satisfaction, passion, interest, and enjoyment. While some initially found the process challenging, the completion of their projects often led to feelings of pride, satisfaction, and motivation to continue improving. S11 described initial struggles, stating:

“At the beginning, it felt quite complicated and troublesome to do because I wasn’t used to combining writing with visuals, narration, and editing. However, as I worked through the first project, what first felt like a challenge turned into a meaningful learning experience that helped me improve my writing and creativity.”

This account illustrates how students’ initial struggles were transformed into intrinsic motivation as they mastered the multimodal composing process, highlighting the potential of DMC to foster engagement, enjoyment, and personal satisfaction in EFL writing tasks.

Practical Relevance and Significance on Skill Enhancement

Another significant theme identified was attainment value—the perceived importance and relevance of the DMC tasks to students’ academic, professional, and personal goals. Many participants recognized that engaging in DMC activities could enhance essential skills and contribute meaningfully to their development, especially in language-related fields. For instance, S11 emphasized the broader relevance of DMC in the context of contemporary media and professional communication: “Whether you want to become an English teacher or work in a language-related field, in today’s media-driven world, this kind of skill is indispensable.” Another six students also expressed the belief that writing, especially in a multimodal form, plays a crucial role in enhancing various competencies such as logical thinking, language fluency, and content organization. Furthermore, S3 shared that DMC helped them articulate their thoughts more clearly: “DMC helps me express ideas more clearly, and that’s very important.”

Future-Oriented Utility and Professional Relevance

A recurring theme across the interviews was the utility value students attributed to DMC tasks—namely, how these experiences could be useful for future employment, career development, and real-world communication. Participants emphasized that the skills gained through DMC were not just relevant for academic purposes, but also practical in broader, future-oriented contexts. S6 highlighted the technical skill development gained through DMC: “It improves my technical ability, which might help me at any moment in future work.” S4 mentioned that the experience with DMC would be valuable when they need to express ideas dynamically in the workplace: “In future jobs, if there’s a situation where I need to express something dynamically—like giving a presentation, creating digital content, or communicating ideas clearly—the DMC training I’ve had will definitely be useful.”

Expectations of Personal Growth and Confidence Enhancement through DMC

The expectancy of DMC tasks emerged as a key theme, with many students expressing strong desires to improve their writing skills and enhance their ability to express themselves effectively. Most students had high expectations for their personal growth through DMC and were motivated by the belief that these tasks would help them achieve their goals. S1 reflected on how their expectations evolved over time, saying, “My expectations were becoming higher during

the process". This shows how, as students became more familiar with DMC, they set increasingly higher goals for their work. Students such as S11 and S12 highlighted the role of multimedia in boosting their ability to communicate more clearly and richly. S11 stated, "Before, I wrote based on past experiences, but now, using media, I am expecting to express more with the media element." S2 also highlighted: "I hope to express my ideas in richer formats, such as video voiceovers, intonation, and video content." These insights reflect the students' growing expectations for their language proficiency and creative expression through DMC. Additionally, the DMC creation process gave them the confidence to create quality work. As S3 noted, "Through DMC, I feel like I can write a good article because DMC improves my writing skills."

Perceived Costs of DMC: Time and Effort in Relation to Skill Acquisition

A prevalent theme among the interviewees was the cost in terms of time and effort that DMC tasks require. While some students felt the task was time-consuming, others emphasized that the benefit of acquiring new skills and expressing ideas outweighed the time investment. The trade-off between time spent and the value gained was a key aspect of their responses. S1 expressed that DMC tasks often required more time and energy compared to other subjects, particularly due to the intricacies of the tasks and the busy academic schedule: "It takes more time, and I need to allocate more effort compared to other subjects because it's a detailed task. Our school schedule is quite tight, especially on Mondays..." S3 also acknowledged that the DMC process could be more time-consuming, especially with the various steps involved such as script writing, voice recording, image searching, and editing. However, several students felt that the time and effort invested was worthwhile. S6 pointed out that although DMC tasks require more time and effort, the new skills gained make it worthwhile: "The process pushed me to plan carefully, think creatively, and pay attention to both language and design. Although it was challenging at times, I feel that the extra effort led to deeper learning and stronger overall language skills."

Discussion

The current study found that the experimental group showed a significant increase in overall motivation, while the control group exhibited only a marginal change over the semester. Specifically, mixed ANOVA revealed a significant interaction effect, indicating that motivational changes over time differed between the experimental and control groups. Independent samples t-tests further indicated that the two groups were comparable at baseline, with no significant difference at the pre-test, whereas the experimental group demonstrated significantly higher motivation at the post-test. This is further supported by the paired-samples t-test results, which confirmed a significant increase in motivation within the experimental group. It is also worth noting that the control group showed a marginal change ($p = 0.052$), suggesting a slight trend of motivational development even without DMC instruction. This pattern indicates a modest influence of general learning experiences, while highlighting the stronger effect of the DMC intervention. These findings are consistent with previous research demonstrating the effectiveness of DMC in enhancing students' writing motivation (Liu et al., 2023; Vandommele et al., 2017). Moreover, they provide further evidence, within the EVT framework, of how DMC influences different motivational dimensions, thereby addressing the research gaps identified in the introduction.

On expectancy of success, according to EVT, expectancy beliefs are closely tied to self-efficacy and prior experiences of success (Eccles & Wigfield, 2002). In this study, DMC enhanced these beliefs by offering multiple modes of expression that aligned with students' individual strengths. Engaging in the DMC project strengthened students' self-assurance and gave them a sense of

accomplishment in producing high-quality work. This multimodal engagement increased students' sense of ownership and autonomy over their writing (Lyu & Salam, 2025; Panwale & Vijayakumar, 2025), which in turn strengthened their self-efficacy, as students' reflections on how their expectations evolved throughout the DMC process. As students experienced greater competence and control while completing tasks, their expectations of success were reinforced. The use of multimedia enhanced their ability to communicate ideas more clearly and expressively, which encouraged them to convey their thoughts more confidently. Moreover, DMC lowered traditional linguistic barriers, allowing students with weaker language skills to participate more (Bai & Guo, 2021). Together, these mechanisms illustrate how DMC can systematically foster expectancy beliefs by providing meaningful, successful, and self-directed writing experiences. From a pedagogical perspective, these findings suggest that teachers should provide clear and transparent rubrics that value both linguistic accuracy and multimodal expression. Such assessment practices can help students experience early success and build confidence, which is particularly important in exam-oriented Chinese EFL contexts where learners may otherwise doubt their writing ability.

DMC enhanced students' intrinsic motivation as they perceived the tasks to be enjoyable, meaningful, and personally fulfilling. The study further corroborates that DMC fostered a cognitively stimulating and affectively engaging learning environment. The multimodal composition process allowed students to express themselves creatively, leading to feelings of pride, satisfaction, and accomplishment—emotions that directly strengthen intrinsic motivation (Kim & Li, 2021; Zhang & Yu, 2023). Furthermore, the use of individually completed DMC tasks in this study, rather than collaborative ones, further deepened students' sense of personal investment and ownership (Jiang & Luk, 2016), thereby amplifying the perceived value of the task itself. Based on the interview responses, participants indicated that, compared with traditional monomodal writing assignments—which some students found uninteresting—DMC projects were consistently described as more engaging and enjoyable (Hafner & Miller, 2018; Hafner et al., 2013). These quantitative and qualitative findings not only support previous research but also reveal a more detailed and clearer mechanism compared with earlier qualitative studies conducted by Hava (2021) and Jiang and Luk (2016). The results not only confirm the integrated application of DMC and EVT but also provide a more nuanced explanation of the utility of DMC. Pedagogically, teachers are encouraged to adopt process-oriented feedback that emphasises not only linguistic accuracy but also creativity and message delivery. This can be implemented through staged feedback across drafting and revision phases, supported by clear criteria or rubrics. Such feedback can sustain students' enjoyment, reinforce their sense of accomplishment, and further strengthen intrinsic motivation in writing tasks.

DMC also enhanced students' attainment value by helping them recognize writing as both personally and academically meaningful. Through multimodal projects that supported identity expression and cultural relevance, students gained a deeper appreciation of writing beyond its instrumental function (Jiang & Hafner, 2025). Unlike conventional assignments with rigid formats, DMC encouraged original thinking and authentic expression, reinforcing the intrinsic and extrinsic worth of writing. As students connected process of creating DMC projects with professional development by emphasizing that in modern digital world, DMC's combination with various media enables people to deliver ideas more clearly. This addresses a key challenge noted by Zhang and Yu (2023), who observed that students often struggle to perceive the broader importance of writing. By shifting the focus from exam-driven tasks to more spontaneous and self-relevant learning experiences, DMC reframed writing as a meaningful pursuit rather than a mere academic requirement. In classroom practice, this implies that teachers should design DMC tasks that connect writing with students' personal experiences, cultural

identities, and real-world communication purposes. Such task design can enhance students' sense of relevance and importance, thereby strengthening attainment value.

As for utility value, students in the DMC group did not show a statistically significant increase. EVT suggests that perceiving tasks as useful enhances motivation and engagement (Harackiewicz et al., 2012). However, this does not imply that DMC lacks practical relevance, as evidenced by students' responses in the interviews. DMC characterized by its integration of multiple modes of communication, closely mirrors real-world professional demands, especially in teaching and public presentation contexts. The lack of change in utility value might be attributed to the fact that the participants in the present study were in their second year of study and not yet focused on future career prospects. Thus, it further explains the study of Ho (2024) that it can be challenging for students at this stage to connect DMC tasks with the development of digital literacy and technical skills. As qualitative findings showed, DMC was perceived as useful for developing technical skills that could benefit their future careers. The process of creating digital multimodal texts allowed them to enhance their digital literacy and gain hands-on experience with various technological tools (Huang & Xia, 2024; Yu & Zadorozhnyy, 2022). The cross-skill benefits illustrate how DMC supports comprehensive language development, even if students were not fully aware of these advantages (Zhang & Yu, 2025). Therefore, teachers should make the practical relevance of DMC more explicit by linking tasks to future academic, professional, or digital communication contexts (e.g., presentations, teaching materials, or online content creation). Making these connections visible can help students better recognise the utility value of DMC activities.

In terms of cost, although DMC tasks were more time-consuming and technically demanding than traditional writing, students generally did not perceive them as overly burdensome and regarded their efforts as worthwhile. Therefore, the notion of cost in this study is viewed from a different angle—not as a negative factor, but as a constructive one—emphasizing the investment of time and energy as valuable for enhancing the quality of their project work. Through the repetitive operations during editing the projects, students' familiarity with digital tools and platforms reduced the perceived difficulty (Zhang & Yu, 2023). They recognized the effort as worthwhile due to the practical skills and sense of achievement gained. As students advanced through the DMC process, they gained not only confidence in expressing complex ideas but also practical skills such as planning, multimodal design, and critical thinking. It aligns with Zuo (2024) study that the investment of time was seen as justified through personal development and tangible outcomes. In the present study, students' remarks suggest that enjoyment alone was not the sole driver. Students' growing sense of competence and perceived progress also reinforced their motivational investment. As the case in Jiang (2018) study, DMC process facilitates students' transformation from passive learners to active meaning-makers by stimulating students' writing skills and enhancing their confidence. Such changes reflect both students' evolving self-valued positions and the constraints of the high-stakes testing environment. While DMC encourages learners' transformation from passive participants to active creators, this process also involves navigating trade-offs shaped by both individual and contextual factors. To manage perceived cost effectively, teachers can scaffold DMC tasks by breaking them into manageable stages (e.g., planning, scripting, designing, and revising) and by providing technical support, step-by-step guidance, and exemplars for each stage. Such scaffolding can reduce cognitive and technical load while maintaining students' motivation and engagement.

Limitations and Recommendations

The study demonstrates the theory's relevance and adaptability while providing robust empirical evidence of how DMC shapes motivational dimensions in EFL writing. Despite these

contributions, several limitations should be acknowledged. First, all participants were drawn from a single university in China, which restricts the generalisability of the findings. Institutional culture, regional characteristics, and curriculum design may have influenced learners' experiences in ways that differ from other EFL contexts. Future studies should therefore adopt multi-site or cross-regional designs to enhance external validity.

Second, although the use of a single instructor ensured instructional consistency, potential teacher effects were not explicitly examined. Instructor beliefs, pedagogical style, and feedback practices may have influenced students' engagement and motivation, making it difficult to attribute observed outcomes solely to the DMC pedagogy.

Finally, students' motivation may have been influenced by factors beyond the scope of this study, such as concurrent coursework or out-of-class, self-directed literacy practices (Kim et al., 2023). Future research could adopt longitudinal designs or learning logs to better capture the interaction between classroom-based DMC instruction and learners' broader literacy experiences. Moreover, investigating learners with varying levels of language proficiency and educational backgrounds would deepen understanding of how different learner groups respond to DMC-based instruction.

Conclusion

Recognizing the expanding role of digital technology in EFL education, this study examined the effects of DMC on Chinese EFL learners' writing motivation through the lens of EVT. Using an explanatory sequential mixed-methods design, the study first identified motivational changes quantitatively and then explored learners' perceptions qualitatively across expectancy, task values, and perceived cost.

The findings indicate that DMC enhances learners' writing motivation not merely by increasing enjoyment, but by strengthening expectations for success, reinforcing the perceived importance of writing, and reducing motivational costs. Quantitative results showed significant gains in expectancy, intrinsic value, attainment value, and cost, while qualitative data provided explanatory depth. Learners reported heightened engagement, a sense of pride, and stronger authorship as they composed multimodal texts, illustrating how emotional and cognitive shifts align with EVT's core constructs.

Notably, while DMC was effective in enhancing overall motivation and most value components, improvements in utility value were less pronounced. This suggests that connecting multimodal writing activities to long-term academic or career goals may require more explicit pedagogical alignment and sustained instructional support. Overall, this study contributes to EFL motivation research by situating EVT within a digital multimodal context and demonstrates how DMC can function as a pedagogically meaningful approach to fostering motivated, engaged EFL writers.

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