

## Studies in Second Language Learning and Teaching

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### *Digital multimodal composing: A synthesis of theory-research connections and justifications for task selection*

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#### Abstract

As human communications have grown increasingly digital and multimodal, so too, has scholarly interest in the topic of digital multimodal composing (DMC). Much research to date has explored various aspects of DMC tasks, including their capacity to affect second language (L2) learning processes and outcomes in the classroom. Despite this, two recurring limitations have surfaced across studies, which involve: (1) unclear connections between theory and research designs, and (2) missing justifications as to why a DMC task or activity was used in the study context. The current article opens with a brief overview of DMC literature, followed by a discussion of these limitations. To further explore their pervasiveness, a research synthesis was conducted of DMC studies published since 2023 ( $K = 42$ ). The findings of this synthesis show that although researchers often mention theory in their introduction and literature review sections, theory is rarely tied to an aspect of the research methods (e.g., instrument design, data analyses). Additionally, less than one-third of the studies reviewed contain explanations as to why a specific DMC task was adopted. Based on these findings, future recommendations are provided with the aim of fostering stronger connections between theory, research, and practice.

**Keywords:** digital genres; multimodal composition; research methods; TBLT; technology

## 1. Introduction

*Digital multimodal composing* (DMC) refers to the use of digital tools to manipulate linguistic text in addition to one or more non-linguistic modes (e.g., aural, gestural, spatial, and visual resources) for the purpose of conveying meaning. As a topic of scholarly inquiry, DMC has become increasingly popular in the fields of applied linguistics and education. Within these domains, second language (L2) writing researchers have been particularly active in investigating the potential applications of DMC in the language classroom. Although multimodality itself is not a new concept, much recent interest can be attributed to the current state of communication, and the growing realization that many human interactions (and writing, in particular) are now mediated by a range of digital tools. By extension, L2 writing scholars have noted that many of the genres, tasks, and activities that university students engage with are now digital and multimodal in nature (e.g., Belcher, 2023; Hafner, 2025; Huang & Xia, 2024; Lim, 2020; Lim & Polio, 2020; Tardy, 2005). For example, DMC genres such as digital videos, e-portfolios, infographics, and slideshow presentations, among others, are now ubiquitous across higher education contexts. As such, there is growing consensus among educators that for students to be successful at the university level and beyond, they must be able to leverage electronic devices and manipulate both linguistic and non-linguistic modes.

As such, DMC has emerged as a robust topic of inquiry over the past 20 years, with researchers investigating a range of phenomena. As will be discussed in what follows, prior studies have provided insights into the benefits and limitations of DMC when integrated into the L2 curriculum. However, many prior studies have also possessed limitations. In particular, two of these limitations involve: (1) unclear connections between theory and the research design of the study, and (2) missing justifications as to why a particular DMC task or activity was selected for use in a study context.

This article opens with a brief overview of the DMC literature to date, synthesizing popular topics of inquiry and key findings. The article then turns to a discussion of the two aforementioned limitations, including why they present specific challenges, particularly when it comes to linking the findings of related studies to pedagogical recommendations for the L2 writing classroom. Next, to further explore the pervasiveness of these issues, a research synthesis was conducted of DMC studies published since 2023 ( $K = 42$ ). In this synthesis, I examine the extent to which scholars have tied different theories of learning and communication to their research methods, along with the extent to which researchers have explained their choice of DMC task/activity.

Finally, it is important to note at the outset that the aim of this article is not simply to problematize prior research; instead, the aim is to raise awareness

of these issues, thereby improving future research practices involving DMC. Thus, beyond highlighting some of the limitations of prior studies, this article also showcases positive examples in which researchers have made clear and strong efforts in their work to connect theory, research, and practice.

## 2. Literature review

### 2.1. Overview of DMC research topics and trends

In this section, a brief overview of DMC literature and key findings is provided. Readers interested in a more comprehensive review are encouraged to see a research timeline by Lim and Kessler (2024), along with a review study by Zhang et al. (2023) and a book-length treatment by Kessler (2024). Relatedly, for those who are interested in developing future research ideas, multiple resources are available. For example, in Jiang and Hafner (2024), the authors propose future research directions involving the social dimensions of DMC, while Lim and Kessler (2022) propose several directions involving the cognitive dimensions of multimodal composing and L2 acquisition.

As referenced in the introductory section, DMC has become a robust topic of scholarly inquiry over the past two decades. Theoretically, DMC use is often motivated by a handful of theories, which stem from fields such as communication, education, psychology, and second language acquisition (SLA). These theories include (but are not limited to): systemic functional linguistics (SFL; Halliday, 1978), social semiotics (e.g., Jewitt & Kress, 2003; Kress, 2010), multiliteracies (New London Group, 1996), interactionist approaches (Long, 1996; Schmidt, 1990; Swain, 1993), and sociocultural theory (Vygotsky, 1978). While some of these theories specifically address aspects of multimodality and meaning making resources (e.g., SFL, social semiotics, multiliteracies), L2 researchers have sometimes relied on other theories to examine how students interact or negotiate for meaning when engaging in multimodal activities (e.g., interactionist approaches, sociocultural theory). As this list suggests, the grounding upon which DMC is justified is quite diverse; however, those who implement DMC for pedagogical purposes often make a more singular argument. This argument is as follows: Digital tools are now omnipresent in many humans' everyday lives, and these digital tools permit us to communicate multimodally via colors, gestures, images, text, sound, and more. Thus, while human communication has always been multimodal to some extent, it is now more so than ever. That being said, the increasing use of non-linguistic modes must be researched, particularly in terms of the capacity of various modes to be integrated effectively into L2 writing pedagogy.

When it comes to research, although a range of phenomena have been investigated, four main lines of inquiry have often been addressed. These areas include studies investigating: (1) aspects of students' composing processes and interactions when DMC tasks are integrated into the curriculum (e.g., Akoto & Li, 2025; Li et al., 2025; Shin & Cimasko, 2008; Shin et al., 2020; Tan, 2023); (2) students' and teachers' perceptions of these activities, including their general enjoyment of DMC and beliefs regarding its effectiveness (e.g., Cao & Mao, 2025; Ho, 2024; Kohnke et al., 2021; Pham & Li, 2023; Zhang et al., 2024); (3) DMC's capacity to influence individual differences, such as identity, ideology, motivation, and metacognition (e.g., García-Pastor & Calatayud, 2023; Henry, 2019; Jiang et al., 2020; Lin et al., 2025; Negretti & McGrath, 2018); and (4) DMC's ability to promote L2 acquisition by developing learners' individual reading, writing, speaking, and/or listening skills (e.g., Cho & Kim, 2021; Kim et al., 2023; Marino, 2025; Xu, 2023).

When synthesized, this body of research shows both limitations and affordances of DMC's use in the L2 classroom. In terms of limitations, although many teachers have voiced interest in DMC projects, teachers have also complained that these tasks can take too much time to implement and that institutional constraints often restrict them from using such tasks altogether (e.g., Kessler & Casal, 2024; Zhang et al., 2024). Students, too, have reported challenges. For example, studies have shown that some learners occasionally question the academic nature of DMC tasks, and students may struggle to leverage non-linguistic modes without explicit instruction and careful scaffolding from the instructor (e.g., Shin & Cimasko, 2008; Shin et al., 2020).

Despite such limitations, studies have also revealed multiple affordances. Many efficacy studies have shown either equivalent gains or positive gains, suggesting moderate advantages of DMC tasks when compared to traditional, monomodal writing tasks. For instance, studies have shown that groups who engaged in DMC tasks over a semester experienced greater gains from pretest-to-posttest on areas such as content, organization, and language (e.g., Kim et al., 2023), while other studies have shown that DMC groups outperformed monomodal groups on areas such as grammatical accuracy and language use in writing (e.g., Marino, 2025). Apart from learning gains, students have overwhelmingly reported positive perceptions of DMC tasks. In particular, students have consistently reported finding them to be enjoyable and motivating (e.g., Henry, 2019; Pham & Li, 2023). In terms of contributions, such studies – which have examined both objective outcome measures and subjective learner perceptions – tend to be positive. When aggregated, these findings signal that DMC tasks likely warrant increased attention in L2 writing classrooms, especially in environments where teachers have traditionally relied on monomodal writing activities and assessed linguistic forms-only.

## 2.2. Limitations of prior DMC research

Despite the strengths of previous studies and the insights they have provided, some scholars have voiced concerns. These concerns largely involve issues with study quality (see Plonsky, 2024, for a general discussion). For example, concerns range from issues involving the positively skewed framing of research questions (i.e., with findings intended to highlight the affordances of DMC rather than any drawbacks), to limitations involving the samples and methods used (see Kessler, 2024; Manchón, 2026). In this paper, two recurring issues are discussed. They involve: (1) unclear or missing connections between theory and research design, and (2) unclear or missing justifications as to why a DMC task or activity was selected for use in the instructional context of the studies under investigation. In this section, each issue is described in detail, including why they are important to consider in fields such as applied linguistics and SLA.

The first limitation that many DMC studies possess involves unclear or missing connections between theory and research design. Although some scholars' work is clearly grounded in a theory of SLA (e.g., interactionist approaches), of general learning and development (e.g., sociocultural theory), or communication (e.g., social semiotics), there are also many studies which lack theoretical grounding. For example, in Kessler (2024), it was noted that many empirical studies contain no mention of a theory. Similarly, some studies briefly mention a theory in their introductions or literature reviews, but that theory is not subsequently tied to any aspect of the study apart from that singular mention. That is, the theory mentioned in the introduction or literature review does not return to inform the design of the research question(s) being posed, the instruments that were developed (e.g., survey items, reflective journal prompts), or the data analyses that were conducted. Many studies also have claimed to be motivated by a "theory of multimodality" in the introduction/literature review without further elaboration. However, there is no such theory that currently exists. Multimodality, itself, is *not* a theory. It is simply a concept (i.e., a name) used to describe or account for a practice of communication. For example, it is not a theory that humans communicate via multiple modes such as using oral speech and hand gestures simultaneously.

Thus, much published DMC work can be described as *athoretical*. In a field such as applied linguistics – and particularly in a subfield like SLA – this is an issue. Theories themselves are statements about natural phenomena, which play a key role in science; theories have the capacity not only to explain what we observe, but also to predict phenomena (VanPatten et al., 2020). In other words, theories typically attempt to account for *what*, *how*, and/or *why* something happens. For researchers who employ quantitative methods in their work,

their studies often leverage a theory for testing hypotheses and making predictions. Conversely, for those who adopt qualitative methods, theory is a lens through which human behavior and interactions can be understood (see Paltridge & Phakiti, 2015; Phakiti et al., 2018). Therefore, having a theory to underpin one's work is often critical for motivating one's research, for making sense of the findings, and for being able to predict whether L2 learning and related outcomes (e.g., skills development, identity development, positive changes in motivation) will happen in similar contexts in the future. In essence, when a study lacks a clear connection between the theory and the research methods, the findings can be difficult to interpret in a meaningful way.

The second limitation that many DMC studies possess involves missing justifications as to why a specific DMC task or activity was selected for use in the study context. Unlike some other areas and topics within applied linguistics, research involving DMC is often pedagogically oriented, with studies taking place in classroom contexts. Thus, many authors' primary goal is to shed light on issues that are of interest to classroom teachers and their students, particularly when it comes to understanding how DMC may positively or negatively impact different L2 learning processes and outcomes. However, in a recent conference presentation by Kim (2025) at the L2 Writing Research Seminar, she noted that one issue with DMC studies is that many authors do not clearly explain *why* they have selected a specific DMC task to implement. In some cases, authors provide no explanation at all; in other cases, authors broadly refer to previous literature and make statements akin to "prior studies have suggested that X-type of task has been shown to be effective." However, important questions arise from such a statement, including: "Effective for whom? That is, has the activity been shown to be effective for children or adults (or both)? Has it been shown to be effective for learners in second or foreign language contexts (or both)? Additionally, what about the focal DMC task is deemed particularly relevant for the participants in the current study context?"

In L2 writing research, it is crucial for authors to justify: (a) why they are investigating a specific writing task, and/or (b) why they are using a certain type of writing task as a means of examining subsequent outcomes. The use of a writing task or activity may be grounded in different rationales. For instance, rationales may be grounded on local, practical needs such as those involving the curriculum (e.g., the task furthers a curricular goal or learning objective) or testing (e.g., the task reflects aspects of a writing assessment that students must take). Alternatively, rationales may be grounded on a more theoretical basis. For instance, within L2 writing, many authors use genre-based pedagogies or task-based language teaching (TBLT) to motivate their choices. With genre-based approaches, such as English for specific/English for academic purposes (ESP/EAP; Swales, 1990,

2004), focal genres are selected for their contextual relevance to the student's academic or professional life. Typically, a genre of interest will be justified through a needs analysis (i.e., a survey showing that the student needs to be able to produce it for school or work) (see Hyon, 2018 and Tardy, 2023, for more details). Relatedly, in TBLT approaches to language pedagogy, tasks are usually selected based on their meaningfulness and relevance to students' everyday needs. In other words, tasks should be needs-based, and they should reflect real-life situations and communicative exchanges that students currently encounter or might encounter in the near future (see Ellis et al., 2019).

Thus, Kim's (2025) observation is an important one, pointing out that when it comes to DMC literature, many studies often lack a clear rationale for their implementation. Once again, although there are multiple ways in which authors might justify their choice of writing task, the important thing is that they attempt to do so. Such transparency and clarity are critical for drawing conclusions about the findings and their relevance to similar instructional contexts. Likewise, by providing clear rationales and descriptions of the tasks (including why they were selected and how they were implemented), this also has the capacity to support more meaningful research-informed pedagogy (see Sato & Loewen, 2019, 2022).

### 3. Methods

#### 3.1. The current study

As discussed in the previous sections, although prior DMC research has numerous strengths, scholars have also argued that studies have often exhibited two recurring limitations. These limitations involve: (1) unclear connections between theory and research designs, and (2) missing justifications as to why a DMC task was used in the study context. As such, research is needed to further explore these issues and examine the extent to which researchers have addressed them in their work. The current study responds to this need, adopting a research synthesis design to analyze a sample of recently published DMC studies. The following research questions (RQs) guided this study:

- RQ1: To what extent have authors of empirical DMC studies discussed theory and tied theory to their research methods (e.g., instrument design, data analyses)? How have they done so?
- RQ2: To what extent have authors of empirical DMC studies explained their selection of DMC task/activity? What rationales have authors provided?

### 3.2. Selection of empirical studies

Kessler (2024) provides a comprehensive review of DMC literature published from 2005 through the end of 2022, including a breakdown of studies that have adopted certain theories of general education and SLA (see Chapter 2). For example, it is stated that:

(. . .) the theory of Multiliteracies is mentioned more than any other theory. In total, 36.1% of the studies reviewed in this book discuss Multiliteracies as being one of the theoretical drivers behind their work (with the next closest theory being Social Semiotics, which is referenced by 13.9% of the studies' authors). (Kessler, 2024, p. 17)

Thus, in the current synthesis, I opted not to include articles covered in Kessler (2024), and instead, to review articles published from 2023 onward. Apart from avoiding overlap between this study and those reviewed in Kessler (2024), the decision to focus on more recent DMC studies was also made due to developments in the field of applied linguistics. In particular, during the past several years, there has been a surge of interest in and awareness surrounding research methods – including methodological rigor and transparency – which is reflected in both scholarship (e.g., Plonsky, 2024) and the activities of professional organizations (e.g., the initiative of the American Association for Applied Linguistics to establish a conference strand on research methodology). Since reviewers' awareness of such issues and journal standards (e.g., the addition of reporting requirements for numerous journals) have changed significantly since the early 2000s, it was decided to focus this review on more recently published literature.

To locate potential studies for the current review, I searched for journal articles published from January 2023 through June 2025, with data extraction beginning in July 2025. Therefore, the current synthesis covers 2.5 years of publications (i.e., 2023, 2024, and the first half of 2025). To ensure a base level of quality, articles had to be published in peer-reviewed journals. Thus, I note here that the current synthesis is not intended to be an all-encompassing review, since books and book chapters were not included. Instead, the current synthesis is intended to provide a snapshot of current trends and practices in DMC literature (see Chong 2026, for more information on the types of research syntheses and how to conduct them).

Key search terms and criteria were first developed to locate and narrow down the selection of the studies. After analyzing a handful of prior publications and their titles for keywords, the following three keywords were selected due to their broad, encompassing nature: *DMC*, *multimodal compos\**, and *multimodal writ\**. To conduct the search, two established databases were used: the Linguistics and Language Behavior Abstracts (LLBA) database ([proquest.libguides.com/llba](http://proquest.libguides.com/llba)) and Google Scholar ([scholar.google.com](http://scholar.google.com)). These two databases were used over

databases such as Scopus and others since I had either open access to them or access through my home institution. When searching these databases, each term was entered individually into the online search function, with the year limited to include only those articles that appeared from 2023 to the present. LLBA was used first, followed by Google Scholar, as a means of seeing whether any articles might have been missed during the LLBA database search.

As an example of the initial search process, when using the LLBA database, the term *DMC* yielded 40 results, *multimodal compos\** yielded 80 results, and the term *multimodal writ\** yielded 145 results. To determine which articles to include, three criteria were developed, all of which had to be met. First, studies had to be published during the focal timeframe (i.e., January 2023 through June 2025). Second, studies had to be published in a peer-reviewed journal. Third and finally, studies had to be empirical in nature. That is, authors had to collect and analyze data pertaining to a DMC task or activity, rather than preparing an article that was a commentary or another type of synthesis/review piece.

Following this screening process, 42 total studies were found to have met the criteria. These 42 studies constituted the dataset and informed the synthesis. Of the articles, 16 were published in 2023, 16 in 2024, and 10 in 2025 (through June 2025). The complete list of articles is shown later in the section dealing with the findings. This list provides information regarding the year of publication, the authors' names, a DOI link to each article, and additional information.

### 3.3. Coding scheme

After finalizing the sample, the next step was to develop a coding scheme. The coding scheme was developed in accordance with the aims of the two RQs, which address the extent to which authors of empirical DMC studies have discussed and tied theory to their research methods (RQ1), and the extent to which authors have explained their selection of DMC task/activity (RQ2).

First, to provide some contextual information for the dataset, each article was coded for basic information involving the topic and methods used, such as the:

- (1) topic(s) being investigated;
- (2) design (i.e., quantitative, qualitative, or mixed methods);
- (3) number of participants;
- (4) target language being studied;
- (5) instructional context (i.e., K-12 or university);
- (6) number of instruments used for data collection/data analyses (along with the types of instruments);

Then, to address RQ1, each article was coded for:

- (7) whether a theory (or theories) was mentioned at some point during the introduction, literature review, and/or methods sections (e.g., a theory of education, SLA, or communication); and if so, what theory was mentioned;
- (8) whether a theory was explicitly tied to an aspect(s) of the methods used in the study (e.g., whether it was used to inform the design of an instrument or the data analyses); and if so, how the authors connected the theory to the methods.

Finally, for RQ2, each article was coded for:

- (9) the type of DMC task/activity used in the study;
- (10) whether authors provided a rationale or explanation as to why they selected that task/activity for use; and if so, what rationale was provided.

### 3.4. Data analyses

All studies in the dataset ( $K = 42$ ) were coded using the coding scheme described in the previous section. Once the coding scheme was piloted using a handful of studies, for reliability purposes, a second coder was recruited. This coder possessed a PhD in applied linguistics and was also an expert in multimodality and DMC. The coder was trained on the coding scheme, and afterwards, independently coded approximately 10% of the dataset for intercoder reliability purposes. A high intercoder reliability (90.4%) was achieved between the two coders using simple agreement. No coding category saw more than one instance of disagreement. Thus, any/all minor discrepancies were discussed. For instance, one disagreement that was discussed was whether to count a study as mentioning a theory in the introduction/literature review if the researchers had cited authors' works (e.g., Kress, 2010) but did not explicitly mention the theory by name in text (i.e., social semiotics); in this case, the decision was made not to count such instances. After reliability was achieved, I independently coded the remaining articles in the dataset.

In terms of data analyses, the coding resulted in both quantitative and qualitative data. In terms of quantitative data, in some instances, some of the coding categories were categorical in nature (e.g., *yes/no* distinctions of whether information was included, such as whether a theory was mentioned, or whether a justification was provided for the use of a DMC task). In other instances, quantitative data were interval in nature, typically when this involved

synthesizing previously reported information from published studies (e.g., number of participants, number of instruments used). Therefore, when applicable, descriptive statistics (e.g., medians, mean percentages, and SDs) are provided for the purposes of highlighting common trends among the synthesized literature.

Although most of the coding resulted in quantitative data which could be analyzed using descriptives, one of the coding categories for RQ2 resulted in qualitative data for analysis. Specifically, for RQ2, in addition to coding for whether authors provided a rationale as to why they selected a DMC task (a quantitative *yes/no* category), the follow-up category involved identifying the rationale(s) when authors had provided one. Thematic analysis was used for analyzing these qualitative data (Braun & Clarke, 2021). This process involved searching for common themes in authors' explanations across the different studies. In total, two major themes were discovered in authors' rationales, which are discussed further in the next section.

In the findings section that follows, I primarily provide descriptive statistics as a means of highlighting broader trends in the dataset; however, when applicable, these descriptive statistics are supplemented by qualitative excerpts to illustrate different themes in authors' rationales.

## 4. Findings

### 4.1. RQ1: Connections between theory and research methods in DMC studies

Prior to discussing the main findings for RQ1, some important contextual information is provided about the studies in the sample. This includes an overview of the study topics, study designs, number of participants, target languages being studied, and the types and number of instruments used for data collection/analysis. Table 1 presents an overview of all 42 studies in the synthesis.

Beginning with the study topics, many researchers (18, 42.9%) investigated more than one topic through the use of multiple RQs. In the 42 studies under investigation, the three most popular topics of inquiry were investigations involving teachers' and learners' perceptions (17), students' composing processes (11), and analyses of learners' products (10). Authors also explored several other topics, which included identity (5), learners' oral interactions during DMC (4), agency (2), L2 learning gains (2), motivation (2), power (2), goal setting (1), and willingness to communicate (1).

Table 1 Overview of studies ( $K = 42$ ) included in the synthesis (listed by year of publication)

| Year | Authors                     | DOI                                  | Design | P#  | TL      | Context          | DMC Tasks                                                                             |
|------|-----------------------------|--------------------------------------|--------|-----|---------|------------------|---------------------------------------------------------------------------------------|
| 2023 | Alrajhi                     | 10.4018/IJCALLT.317748               | Mixed  | 40  | English | University       | Blog                                                                                  |
| 2023 | Chen                        | 10.1080/17501229.2021.1895801        | QUAL   | 50  | English | University       | Slideshow presentation                                                                |
| 2023 | Deng et al.                 | 10.1080/02602938.2023.2227358        | QUAL   | 18  | English | University       | Digital video                                                                         |
| 2023 | Deroo and Ponzio            | 10.1080/15348458.2020.1863153        | QUAL   | 26  | English | University       | Visualization                                                                         |
|      | Férez Mora and              |                                      |        |     |         |                  |                                                                                       |
| 2023 | Coyle                       | 10.1515/iral-2022-0191               | QUAL   | 28  | English | University       | Digital storytelling                                                                  |
| 2023 | García-Pastor and Calatayud | 10.1558/cj.24237                     | QUAL   | 3   | English | K-12             | Digital storytelling                                                                  |
| 2023 | Kang and Kim                | 10.1111/ijal.12473                   | QUAL   | 5   | English | K-12             | Digital videos, slideshow presentation                                                |
| 2023 | Kim et al.                  | 10.1016/j.jeap.2023.101247           | QUANT  | 41  | English | University       | Storyboard, digital video                                                             |
| 2023 | Li et al.                   | 10.1558/cj.24502                     | Mixed  | 122 | English | University       | Infographic                                                                           |
| 2023 | Lim and Nguyen              | 10.1080/09500782.2022.2107875        | QUAL   | 12  | English | K-12             | Digital video                                                                         |
| 2023 | Michalovich                 | 10.1002/jaal.1286                    | QUAL   | 9   | English | K-12             | Digital video, video podcast                                                          |
| 2023 | Pham and Li                 | 10.1007/s40299-022-00687-w           | Mixed  | 185 | English | University       | Infographic                                                                           |
| 2023 | Xu                          | 10.1080/09588221.2021.1945635        | QUANT  | 96  | English | University       | Unclear (described only as "multimodal projects")                                     |
|      |                             | 10.18848/2327-0136/CGPV30i02/149-166 | Mixed  | 113 | English | University       | Summary texts, descriptive texts                                                      |
| 2023 | You and Han                 |                                      |        |     |         |                  |                                                                                       |
| 2023 | Zhang and Yu                | 10.1080/17501229.2022.2135712        | QUAL   | 15  | English | University       | Digital storytelling, digital video, advertisements, webpages, slideshow presentation |
| 2023 | Tan                         | 10.1016/j.jslw.2022.100958           | QUAL   | 8   | English | University       | Digital video                                                                         |
| 2024 | Alrajhi                     | 10.4018/IJCALLT.338399               | Mixed  | 60  | English | University       | Blog                                                                                  |
| 2024 | Amgott                      | 10.1080/15348458.2022.2057992        | QUAL   | 7   | French  | University       | Blog, Vlog                                                                            |
| 2024 | Chien                       | 10.1108/JARHE-05-2023-0196           | QUAL   | 34  | English | University       | Portfolios                                                                            |
| 2024 | Çolak                       | 10.1108/ETPC-11-2023-0148            | QUAL   | 2   | English | University       | Digital video                                                                         |
| 2024 | Ho                          | 10.1093/elt/ccae011                  | QUAL   | 47  | English | University       | Portfolio, digital video                                                              |
|      |                             | 10.1016/j.learninstruc.2024.101900   | QUAL   | 3   | English | K-12, University | Digital video, eBook narrative                                                        |
| 2024 | Jiang et al.                |                                      |        |     |         |                  |                                                                                       |
| 2024 | Jung                        | 10.1002/jaal.1378                    | QUAL   | 10  | English | K-12             | Digital video                                                                         |
| 2024 | Lam and Putri               | 10.1016/j.system.2024.103536         | QUAL   | 20  | English | University       | Digital storytelling                                                                  |
| 2024 | Shen et al.                 | 10.1080/01434632.2022.2086257        | QUAL   | 2   | English | University       | Digital storytelling                                                                  |
| 2024 | Tour et al.                 | 10.1080/09500782.2023.2203124        | QUAL   | 4   | English | K-12             | Digital book                                                                          |
| 2024 | Wang                        | 10.1075/dd.24016.wan                 | QUAL   | 155 | Chinese | University       | Digital video                                                                         |
| 2024 | Zhang et al.                | 10.1111/ijal.12560                   | QUAL   | 5   | English | University       | Digital video                                                                         |
| 2024 | Zuo and He                  | 10.1002/tesq.3252                    | QUAL   | 18  | English | University       | Digital video                                                                         |
| 2024 | Xia                         | 10.1016/j.jslw.2024.101163           | QUAL   | 15  | English | University       | Digital video                                                                         |
|      |                             |                                      |        |     |         |                  |                                                                                       |
| 2024 | Zhang and Yu                | 10.1016/j.system.2024.103219         | QUAL   | 15  | English | University       | Digital storytelling, digital video, advertisements, webpages, slideshow presentation |
| 2024 | Zuo                         | 10.1016/j.system.2024.103456         | QUAL   | 18  | English | University       | Digital video                                                                         |
| 2024 | Fu and Zhang                | 10.1177/07410883241303921            | QUAL   | 5   | English | University       | Digital video                                                                         |
| 2025 | Cao and Mao                 | 10.1016/j.jslw.2025.101210           | QUAL   | 20  | English | University       | Multimodal visualization Reflections                                                  |
| 2025 | Akoto and Li                | 10.1016/j.system.2024.103583         | QUAL   | 7   | French  | University       | Digital postcard                                                                      |
| 2025 | Jiang and Lai               | 10.1002/tesq.3390                    | Mixed  | 110 | English | K-12             | Digital video                                                                         |
| 2025 | Lai et al.                  | 10.1080/07908318.2025.2513894        | QUAL   | 11  | English | University       | Digital video                                                                         |
| 2025 | Li and Pham                 | 10.1177/13621688221102536            | QUANT  | 185 | English | University       | Infographic                                                                           |
| 2025 | Lin et al.                  | 10.1016/j.compcom.2024.102895        | Mixed  | 11  | Chinese | K-12             | Digital video, infographic                                                            |
| 2025 | Michalovich                 | 10.1080/09500782.2024.2374771        | QUAL   | 6   | English | K-12             | Digital video                                                                         |
| 2025 | Tan et al.                  | 10.1016/j.compcom.2024.102893        | QUAL   | 7   | English | University       | Photo essay                                                                           |
| 2025 | Zhang and Yu                | 10.1080/09588221.2023.2177310        | QUAL   | 44  | English | University       | Digital storytelling, digital video, advertisements, webpages, slideshow presentation |

Note. P# = number of participants; TL = target language

When examining these topics, most researchers adopted qualitative designs (32, 76.2%), while fewer adopted mixed-methods (7, 16.7%) or quantitative-only designs (3, 7.1%). In terms of the participants, in qualitative studies, the median number of participants was 11 (min = 2, max = 50). In mixed-methods and quantitative studies, the median number of participants was 103 ( $SD = 59.3$ , min = 11,

max = 185). With regards to target languages, English was by far the most studied language (38, 90.5%), followed by Chinese and French (2 each). Additionally, the majority of studies took place in university settings (33, 78.6%), while a smaller number of studies were conducted with participants in K-12 contexts (10, 23.8%).<sup>1</sup>

For the purposes of collecting and analyzing data, apart from analyzing the DMC products that students produced, most authors employed additional sources of data. Excluding the DMC products themselves, researchers used 2.0 instruments on average ( $SD = 1.1$ , min = 0, and max = 5). Table 2 provides a detailed breakdown of the most frequently used instrument types. As shown, interviews were used in over half of the studies (26). The next most adopted instruments were reflective writings produced by learners (11), followed by surveys/questionnaires (9), focus groups (8), and observations, which often occurred in classroom settings (8). Several other instruments were used, albeit less frequently.

Table 2 Types of instruments used in DMC studies ( $K = 42$ ) from 2023 to 2025

| Name of instrument                                           | Total studies (#) | Total studies (%) |
|--------------------------------------------------------------|-------------------|-------------------|
| Interviews (semi-structured and structured)                  | 26                | 61.9%             |
| Reflective writings (e.g., essay, journal, logs)             | 11                | 26.2%             |
| Surveys and questionnaires                                   | 9                 | 21.4%             |
| Focus groups                                                 | 8                 | 19.0%             |
| Observations                                                 | 8                 | 19.0%             |
| Field notes                                                  | 5                 | 11.9%             |
| Artifacts (e.g., emails, lesson plans, course syllabi)       | 4                 | 9.5%              |
| Screen recordings                                            | 4                 | 9.5%              |
| Pretests and posttests                                       | 3                 | 7.1%              |
| Histories (e.g., AI search histories, Google Docs revisions) | 2                 | 4.8%              |
| Think-alouds                                                 | 2                 | 4.8%              |

Note. The total number and percentage of instruments in the two columns exceed the number of studies reviewed since most authors leveraged multiple instruments

Now turning to the primary focus of RQ1, this question involved analyzing a) the extent to which authors have mentioned theory (or theories) in their papers, and also b) whether authors have explicitly tied a theory to their methods in some way. Following a review of the focal studies, a majority of authors were found to have discussed a theory in their papers. In particular, 30 studies (71.4%) mentioned a theory at some point during the introduction, literature review, and/or methods sections; however, 12 studies (28.6%) contained no mention of theory. For those that listed a theory, several articles mentioned multiple theories. The two most popular theories referenced were multiliteracies (21, 50%) and social semiotics (10, 23.8%). Following these, authors also discussed theories such as: investment (3), sociocultural

<sup>1</sup> One study by Jiang et al. (2024) was counted once for each context as it involved one teacher in a K-12 setting plus two teachers in a university setting.

theory (3), SFL (2), cognitive process theory (1), and polycentricity (1). Figure 1 shows a pie chart illustrating the distribution and popularity of these theories.

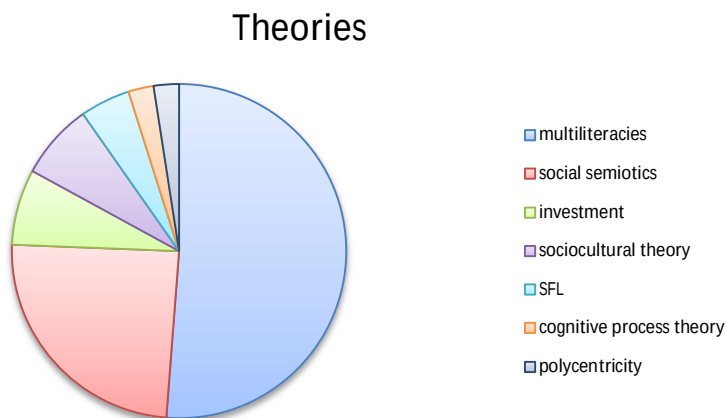


Figure 1 Most popular theories discussed in DMC studies from 2023 to 2025

Although many authors (30, 71.4%) mentioned a theory at some point in their articles, when it came to explicitly connecting it to the methods, the number of authors who did so decreased sharply. Only in 12 studies (28.6%) did authors tie a theory to an aspect of the methods. For the other 30 studies in the sample, there was no clear connection between a focal theory and the methods that were used. To avoid singling out specific authors, in this section, I have chosen not to highlight any of those studies where connections are lacking. Instead, I will showcase a handful of studies in which the connections between theory and an aspect of the research methods are transparent and clearly articulated.

The first example is Tan (2023). In this study, she adopted qualitative methods to investigate aspects of students' composing processes when engaging in either DMC or monomodal composing. Over the span of five weeks, one group of L2 English writers worked on a digital video project, while another group engaged with a monomodal essay task. Tan mentions two theories in her article – social semiotics and cognitive process theory – for the purposes of motivating her work. In addition to analyzing students' products, three data sources were collected, including screen recordings, think-alouds, and interviews. Crucially, Tan (2023) clearly explicates how she leveraged cognitive process theory to inform her data analyses. In the data analysis section, she explains how her coding scheme was developed based on prior work involving cognitive process theory (which is also discussed earlier in the paper within the literature review). She explains key coding categories that reflect constructs related to cognitive process theory, including what each coding category/term means, and how each construct pertains to her RQs and the overarching goals of her study

(see p. 5 of the original article, for a description). Thus, Tan's (2023) study is an example where the author clearly links theory with an aspect of the research methods.

The second example is Fu and Zhang (2025). In this qualitative study, the researchers explored aspects of learners' interactions, and in particular, how engaging with digital video projects might create various translanguaging spaces for L2 English learners in China. The authors use social semiotics as the focal theory motivating their work, with an entire section (appearing post-RQs) devoted to discussing its importance and relevance to their topic of translanguaging (see pp. 338-339 of their study, for more details). In this section, the authors also define key concepts, which return later in their methods section to inform their data analyses of participants' digital videos and interview responses. Specifically, Fu and Zhang (2025) explain how their coding of the data is related to social semiotics and frameworks from other prominent scholars (e.g., Bezemer & Jewitt, 2010) who have helped shape social semiotics as a theory of human communication and interaction. As such, their study is another clear example where the authors have made strong efforts to link theory with aspects of their research methods.

The third and final example provided is Akoto and Li (2025). Their study explored the oral interactions of L2 French learners as they collaborated on the composition of digital postcards. The researchers were interested in understanding the potential connections between students' collaborative discussions and the extent to which those discussions related to students' final products. In the first half of their paper, Akoto and Li (2025) mention three theories: multiliteracies, social semiotics, and sociocultural theory (SCT). However, they specifically use SCT as the primary driver of their work and RQs. This is explicitly stated in multiple places, including the abstract and the literature review, which has a section dedicated to the theoretical framework (see p. 2). Additionally, SCT is subsequently used as a motivation for analyzing and interpreting aspects of their data, which, in addition to students' digital postcards, included screen recordings and histories (Google Docs history/revision records). To understand students' collaborative interactions while creating the digital postcards, the researchers examined *language-related episodes*, a framework for analyzing learners' explicit discussions about language use; notably, this framework was inspired by SCT and by other L2 researchers who have used SCT in their work (see Swain & Lapkin, 1998). Thus, Akoto and Li's (2025) study is another example in which the researchers have clearly tied a theory to the research methods.

#### 4.2. RQ2: Justifications for DMC task selection

In turning to RQ2, once again, prior to reviewing the main findings, some important contextual information is provided. Table 3 shows the types and number

of DMC tasks that were used in the 42 studies. As this table indicates, 16 distinct DMC task types were used, with a final category labeled as *unclear* since the authors did not define what the task was and/or its nature. Of the 16 tasks that were used, digital videos were by far the most popular (23), being used in over half of the studies. The next most used DMC task types were digital storytelling (7), slideshow presentations (5), blogs or vlogs (4), and infographics (4). Additional DMC task types were implemented, albeit less frequently.

Table 3 Types of DMC tasks/activities used in studies (K = 42) from 2023 to 2025

| DMC task type                                              | Total studies (#) | Total studies (%) |
|------------------------------------------------------------|-------------------|-------------------|
| Digital video                                              | 23                | 54.8%             |
| Digital storytelling                                       | 7                 | 16.7%             |
| Slideshow presentation                                     | 5                 | 11.9%             |
| Blog or vlog                                               | 4                 | 9.5%              |
| Infographic                                                | 4                 | 9.5%              |
| Advertisement                                              | 3                 | 7.1%              |
| Webpage                                                    | 3                 | 7.1%              |
| Digital portfolio                                          | 2                 | 4.8%              |
| Descriptive or summary text (incl. images, diagrams, etc.) | 2                 | 4.8%              |
| Digital book                                               | 1                 | 2.4%              |
| Digital postcard                                           | 1                 | 2.4%              |
| Narrative eBook                                            | 1                 | 2.4%              |
| Photo essay                                                | 1                 | 2.4%              |
| Podcast (video podcast)                                    | 1                 | 2.4%              |
| Storyboard                                                 | 1                 | 2.4%              |
| Visualization                                              | 1                 | 2.4%              |
| Unclear (described only as "multimodal projects")          | 1                 | 2.4%              |

*Note.* The total number and percentages in the columns exceed the number of studies reviewed since some authors used more than one task. See Table 1 earlier, for more information regarding the specific DMC tasks used in each study

In terms of justifying why a specific DMC task or activity was utilized, most studies (29, 69.0%) did not contain an explanation. In contrast, authors of 13 studies (approximately 31.0%) provided a rationale. As was mentioned in the section describing the methods, the rationales from these 13 studies were coded to identify any potential themes that were present. This thematic analysis resulted in two themes, which involved authors justifying the use of a DMC task based on: (1) *relevance to curricular learning goals/objectives*, and (2) *authenticity and real-world relevance*.

The first theme, which was called *relevance to curricular learning goals/objectives*, was the most frequently used rationale, appearing in 9 of 13 studies. This involved the authors explaining that the focal DMC task was selected because certain features of the task were directly related to various L2 learning goals or objectives of the class that students were in, and thus, the task helped achieve those goals in different ways.

For example, in Férez Mora and Coyle (2023), the researchers adopted a digital storytelling task. Their qualitative study explored 28 EFL teachers' perceptions of the affordances of digital storytelling compared to face-to-face digital storytelling tasks. The authors justified their use of the digital storytelling task on the basis of its relevancy to the participants in their context, that is, preservice English teachers who intended to work in primary education settings. In their article, the authors stated that the digital storytelling task was related to "a course in EFL children's literature," which in their instructional context "is part of the primary education degree at a university in Spain" (p. 7). Thus, Férez Mora and Coyle (2023) grounded their choice of task in its relevancy to the curricular learning goals/objectives.

Another illustrative example of this theme can be found in Jiang and Lai (2025). In their study, the authors examined the extent to which GenAI tools might facilitate DMC, particularly in terms of how GenAI might impact the quality of students' products. The researchers adopted a digital video task (a documentary) to explore L2 English learners' composing processes and products. In their methods section, Jiang and Lai (2025) specifically note that the task was selected in consultation with the classroom teachers who would later implement it with 11-14-year-old learners. This particular class stressed media literacy and even had a "BYOD (bring your own device) policy" (p. 10). As such, the authors noted that the digital videos (along with the topics for those videos) "were selected by the teachers mainly considering the curricular objectives and student backgrounds" (p. 12). Thus, the digital video task was justified on the basis that it was relevant to the learning goals and objectives of the course.

The second theme, which appeared in 4 of 13 studies, was called *authenticity and real-world relevance*. This involved the authors attempting to justify their choice of DMC task in terms of its direct relevance to their students. This typically involved authors explaining that the task was something that learners either must do now or will encounter soon in their academic or professional lives.

The first study that exemplifies this theme is Kang and Kim (2023). Their study implemented multiple types of DMC tasks, including digital videos (e.g., argumentative, book reviews) and slideshow presentations. This qualitative study of five L2 English learners at a high school in South Korea explored aspects of learners' perceptions, along with the products they composed. In terms of justifying the use of digital videos and slideshow presentations, the authors provided detailed explanations. They stated that both the tasks and the prompts "were identified in the needs analysis;" the researchers then went on to state that they also selected specific genres because such genres "are genres that students engage in most frequently at their school (. . .) and everyday life" (p. 348). Thus, their explanation for using digital videos and slideshow presentations was based on real data in the form of a needs analysis, along with the instructor's

familiarity with the students and the types of tasks that are relevant to them academically and personally.

The second and final study discussed here by Li and Pham (2025) is also illustrative of the theme *authenticity and real-world relevance*. Li and Pham's quantitative study involved 185 L2 English learners in an ESP course who created infographics. The researchers' goal was to examine the quality of individually versus collaboratively produced infographics. Notably, the students in the ESP course were first-year medical students in Vietnam. The authors justified their use of the focal DMC task by arguing that infographics are an authentic task for pre-med students. They stated that "healthcare professionals use infographics to communicate medical information to their patients," and thus, "it is necessary for the medical students to get familiar with this new digital writing genre. Using the authentic tasks in language classrooms enables them to better prepare for their future healthcare career" (p. 1871). Therefore, similar to Kang and Kim's (2023) explanation, Li and Pham (2025) justified the use of the DMC task on the basis that it was authentic and meaningful to the student population in their study.

## 5. Discussion

In response to recent criticisms, the current study employed a research synthesis as a means of further exploring two issues. Specifically, this paper reviewed DMC studies published from 2023 to 2025 and examined the extent to which authors have discussed theory and connected it to aspects of their methods (RQ1), and the extent to which authors have provided justifications as to why DMC tasks were selected for use in their studies (RQ2).

In terms of RQ1, the synthesis showed that although a majority of authors (30, 71.4%) discussed theory at some point during their introduction, literature review, and/or methods sections, 28.6% of studies contained no mention of theory whatsoever. More crucially, in only 12 studies (28.6%) did authors subsequently tie a theory to some aspect of the methods (e.g., the design of an instrument, the data analytic framework). For most studies in the sample, there was no clear connection between theory and the methods. Thus, unfortunately, much published DMC work can be described as atheoretical. As discussed, having a theory is often critical for many reasons. Such reasons span from motivating one's work, to interpreting the findings, and (in quantitative and mixed-methods designs) to being able to predict whether L2 learning and related outcomes will happen in similar contexts in the future. When studies are atheoretical and lack solid connections between theory and the methods – particularly in the domain of SLA – the findings may be sharply criticized. The findings also

become challenging to interpret as little may be gleaned as to *what*, *how*, and/or *why* something might have happened.

As such, future studies involving DMC must strive to improve when it comes to selecting and adopting a focal theory. Future studies cannot simply superficially mention a theory in the opening sections of their papers without subsequently returning to it. Instead, the theory must be purposefully selected, transparently discussed, and meaningfully operationalized. As was discussed earlier in the literature review section, both methodological rigor and transparency are key pillars which contribute to study quality (see Plonsky, 2024). Notably, examples shown earlier in the findings section (e.g., Akoto & Li, 2025; Fu & Zhang, 2025; Tan, 2023) may serve as useful examples of how future researchers might approach selecting and operationalizing theory in their work. For instance, such examples demonstrated that theory can be used for motivating or constructing one's RQs, for developing components of an instrument (e.g., a questionnaire or interview questions), or for analyzing data (e.g., adopting a theory-driven analytical framework). Ideally, the theory that is selected will be used in multiple ways throughout the study. This way, the resulting data can be interpreted in the findings and discussion sections of such articles, and researchers and practitioners can draw subsequent conclusions from those findings. Those readers who are interested in learning more about developing connections between theory and research methods are encouraged to see Paltridge and Phakiti (2015) and Phakiti et al. (2018).

When it comes to RQ2 and the extent to which justifications have been provided for the use of specific DMC tasks in studies, the synthesis revealed that most studies (29, 69.0%) contained no explanation. Only 13 studies (approximately 31.0%) provided a rationale. Thus, these findings support Kim's (2025) observation and criticism, in which she called for authors of future DMC studies to clearly articulate their rationales for task adoption. As discussed earlier, the use of a writing task or activity may be grounded in different rationales. Such motivations could be based on local or practical needs (e.g., involving curricular goals, or testing needs) or on a more theoretical/pedagogical basis such as TBLT (e.g., Ellis et al., 2019) or EAP/ESP approaches (e.g., Tardy, 2023).

In this sense, the examples highlighted earlier in this paper might serve as useful and instructive guides. For example, following a thematic analysis of those 13 articles that provided rationales, most authors selected and justified their DMC tasks based on their *relevance to curricular learning goals/objectives* (e.g., Férrez Mora & Coyle, 2023; Jiang & Lai, 2025). However, other authors selected and defended their choices based on task *authenticity and real-world relevance* to their student population (e.g., Kang & Kim, 2023; Li & Pham, 2025).

These justifications reflect common practices in L2 writing research, in which authors often use genre-based pedagogies or TBLT to motivate their choices.

Of course, as mentioned, there are multiple ways in which authors can justify their choice of writing tasks. However, the most important thing is that they attempt to do so. Authors of future DMC studies are thus strongly encouraged to engage in critical, reflective practices (see Farrell, 2018), and specifically, to consider the question: *Why am I using this particular DMC task type?* In addition to critically considering this question in their studies, future researchers must clearly report both *what* task they selected and *why* they selected it (e.g., explaining why the task was deemed relevant for the focal learners). Once again, by providing clear rationales and descriptions of chosen tasks, this has the capacity to foster research-informed pedagogy (see Sato & Loewen, 2019, 2022).

## 6. Conclusion

The current study explored the extent to which authors have discussed theory and connected it to aspects of their methods, and the extent to which authors have provided justifications as to why DMC tasks were selected for use in their studies. This synthesis provided several insights into the current state of DMC research. Despite the strengths of this study, there are some limitations. For one, as mentioned, the current synthesis was intended to provide a snapshot of recent practices and trends involving DMC scholarship. As such, future studies might investigate broader time periods of DMC literature, and also examine the extent to which the two focal issues involving discussions of theory and task selection have evolved over time. A more sprawling review of this nature has the potential to provide interesting insights into the essence of DMC and L2 writing research more broadly, including the extent to which the methodological turn in applied linguistics has impacted researchers' reporting practices.

Relatedly, another limitation of the current study involves the use of only two databases – namely, LLBA and Google Scholar. These two databases, while powerful, likely did not capture all articles published in the field of applied linguistics during the designated timeframe. As such, future scholars who are interested in synthesis work may wish to search these two databases in addition to others, particularly if the researchers have access to funding and paid databases such as Scopus and Web of Science, among others (see Chong 2026, for more information on research syntheses).

Finally, as the current study suggests, there are clearly a number of limitations with DMC research, particularly when it comes to connecting theory with research methods and justifying why tasks are selected. Of course, the fact

that an article lacks such information does not simply mean that the authors never considered these issues. For instance, it is entirely plausible that some researchers purposefully selected a task, but then did not report that information in the resulting article. As such, when it comes to the use of theory and task selection, careful and critical selection are important, as is the clear reporting of this information. The reporting of task selection is particularly vital because it enables readers to draw pedagogical implications from each study. When task selections are clearly described, this can help practitioners determine the extent to which a DMC task might be relevant for their own instructional context and students. Thus, by addressing these reporting limitations in future studies, such practices will lead to improvements in study quality. Ultimately, these practices will also enable the L2 writing community to establish clearer connections between theory, research, and practice with DMC.

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