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The Use of Digital Storytelling in Bilingual/Multilingual Students' Meaning-making: A Systematic Literature Review

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A thesis submitted in partial fulfillment of the requirements for the Master of Arts degree in Education

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Abstract

This thesis is a systematic literature review of 24 empirical studies on using digital storytelling for bilingual/multilingual students' meaning-making. Through thematic and scientific analyses, this review identifies the contextual backgrounds of the reviewed studies; for example, most of them were conducted in secondary schools in America. The strength analysis reveals that more than half of the papers lack sufficient details in analyzing and presenting data, and this may impact the trustworthiness of the claimed results. The reported uses of digital storytelling for bilingual/multilingual students include supporting learners as designers, promoting education equity, and incorporating multiliteracies pedagogy. The review also reported the pertaining benefits of digital storytelling, such as enhancing students' identity investment, connecting learning domains, and supporting language learning. This thesis ends with implications for using digital storytelling as a pedagogy for diverse learners.

Keywords

systematic literature review, digital storytelling, bilingual education, multilingual education

Summary for Lay Audience

This study is a systematic literature review that focuses on empirical studies that investigated the use of digital storytelling in bilingual/multilingual students' meaning-making at different educational levels. The research questions are: (1) What are the trends of reviewed studies on using digital storytelling in bilingual/multilingual students' meaning-making? (2) What are the scientific strengths of these studies? (3) What are the reported uses of digital storytelling for bilingual/multilingual students? (4) What are the reported benefits and challenges of using digital storytelling for bilingual/multilingual students? This study is undergirded by multiliteracies pedagogy and translanguaging. Guided by literature search strategies and selecting criteria, this review included 24 qualitative studies published in English between 2013 and 2022 from five educational databases. Through thematic and scientific analyses, the findings showcase a variety of contextual backgrounds of these studies, such as geographical settings, language backgrounds, and educational levels identified in the studies. The strength analysis reveals that more than half of the papers only briefly discussed data analysis processes instead of providing details. These may impact the credibility and trustworthiness of the claimed results. The reported uses of digital storytelling for bilingual/multilingual students include supporting learners as designers, promoting education equity and social justice, and incorporating transformative pedagogies of multiliteracies and translanguaging. For the last research question, using digital storytelling is beneficial for learners in various aspects, for example, students' identity affirmation and investment, connections between school and home, global collaboration among students from different geographical and cultural backgrounds, and language learning support. Additionally, the reviewed studies documented some challenges of using digital storytelling in relation to school curriculum, different school policies to access social media and digital devices, and time differences in cross-border digital storytelling projects. This review intends to provide insights for researchers, educators, and practitioners into digital storytelling as a pedagogical tool for culturally and linguistically diverse students.

Co-Authorship Statement

This integrated article includes one research paper co-authored with my MA supervisor, Dr. Zheng Zhang. I, as the student researcher, conducted the major work in literature review, data collection, data analyses, and manuscript writing. Dr. Zheng Zhang provided full support and critical suggestions for me throughout the research. This article has been accepted as a book chapter by *Globalisation, Comparative Education and Policy Research* in July 2023.

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Chapter 1

1 Thesis Introduction

This MA thesis follows the format of an integrated-article thesis. Chapter one provides background information to contextualize the thesis.

Digital technologies have been used to support teaching and learning in the field of education for decades (Robin, 2016). Digital devices such as computers and video cameras have become commonplace in and outside classrooms in various contexts because it is relatively effective for students to share their experiences with multimedia objects, such as videos, images, and audio clips (Rossiter & García, 2010). Assembling digital elements in “storying” can help “unempowered populations make their voices heard” (Rossiter & García, 2010, p. 38), partly because today’s new Web 2.0 technologies make it possible to share stories with infinite audiences. Digital storytelling is, in this sense, a powerful pedagogical tool across social, cultural, and educational boundaries (Anderson et al., 2018).

Emergent literature has discussed the impacts of using digital storytelling for bilingual/multilingual students, such as negotiating their linguistic and sociocultural identities (e.g., Anderson et al., 2018; Angay-Crowder, 2013; Hirsch & Macleroy, 2020), understanding the tensions and disagreement that these students may encounter in intercultural settings (e.g., Priego & Liaw, 2017), and supporting their cultural heritage (e.g., de Jager et al., 2017; Lu et al., 2011). Despite the growth of studies on digital storytelling and bilingual/multilingual education, I have not found a literature review that systematically investigates the benefits and challenges of using digital storytelling in bilingual/multilingual learners’ meaning-making. Given that systematic literature reviews provide more substantive conceptions of this subject than individual investigations (Zhang et al., 2019), it is timely to systematically identify and synthesize what is known in the literature on the use of digital storytelling for bilingual/multilingual learners.

To accomplish such an objective, this study is informed by multiliteracies pedagogy and translanguaging. The New London Group (1996) initially introduced the notion of

multiliteracies in response to globalized societies. The New London Group (1996) highlighted the significance of building culturally and linguistically diverse learning conditions for students' changing working, public, and private lives. The New London Group proposed the term *design*, which consists of “Available Designs, Designing, and The Redesigned” (New London Group, 1996, p. 74), to accentuate the “what” of contemporary literacy pedagogies. Literacy teaching and learning should be viewed as a design process, where teachers and students are the designers of their pedagogical processes and environments. Education practices also require an interaction between the four components of the multiliteracies pedagogy framework, namely, *situated practice, overt instruction, critical framing, and transformed practice* (New London Group, 1996). Multimodality is a significant component of multiliteracies pedagogy. In addition to written texts, other forms of communication, such as visual images, gesture, music, and body movements have also been discussed and implemented in educational settings. Informed by multiliteracies and multimodality, this thesis examined what languages, media, and modes are promoted in digital meaning-making and what languages, media, and modes are privileged in a specific educational context.

In addition to multiliteracies and multimodality, translanguaging is the other theoretical lens of the systematic literature review because it provides researchers and practitioners with an inclusive and transformative perspective on bilingual/multilingual education (Prilutskaya, 2021). Translanguaging challenges linguistic, cultural, and racial hierarchies because these hierarchies “have delegitimized the language practices of those who are minoritized” (Vogel & García, 2017, p. 1). Pedagogical translanguaging differs from spontaneous translanguaging as the former purposefully facilitates students' language learning. Spontaneous translanguaging refers to bilingual/multilingual learners' natural usage of languages both inside and outside the school environment (MacSwan, 2017). Li (2011) also identified “translanguaging space” where students are welcomed to bring their own experience, history, and beliefs to meaning-making processes. Examining the studies through the lens of translanguaging, this thesis explored whether and how bilingual or multilingual students draw on their linguistic repertoires and identities for digital storytelling in and outside school.

This study follows the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) 2020 guideline (Page et al., 2021) and conducts thematic and strength analyses to answer the following research questions: (1) What are the trends of reviewed studies on using digital storytelling in bilingual/multilingual students' meaning-making? (2) What are the scientific strengths of these studies? (3) What are the reported uses of digital storytelling for bilingual/multilingual students? (4) What are the reported benefits and challenges of using digital storytelling for bilingual/multilingual students? This review is designed to add to understandings of using digital storytelling in culturally and linguistically diverse learners' meaning-making for researchers and educators.

This thesis consists of three chapters. Chapter one introduces the background information of the systematic literature review. Chapter two is an integrated article that details the context, theoretical lenses, methodology, findings, discussion and conclusion, and limitations and significance of the systematic literature review. Chapter three concludes the major findings of the study and provides implications for scholars in the field of language and literacy and school-related practitioners.

Chapter 2

2 Integrated Article

This chapter presents the integrated article that includes the context, theoretical underpinnings, research design, findings, discussion and conclusion, and limitations and significance of the systematic literature review.

2.1 Context

Digital storytelling, which our study defines as the creation of short narratives through a mix of multimedia, such as music, videos, and audio clips (Quah & Ng, 2021), has been viewed in the literature as having the capacity to empower people to promote “change, social justice and well-being” on a global scale (de Jager et al., 2017, p. 2549). Further, when shared online, digital stories have been seen in the literature as becoming a means for connecting people worldwide (de Jager et al., 2017). Recently, scholars have also foregrounded digital storytelling’s educational potentials. For example, according to Wu and Chen’s (2019) literature review of educational digital storytelling, 60% of their reviewed studies considered digital storytelling as a stand-alone pedagogy. Smeda et al. (2014) identified digital storytelling as an innovative pedagogical approach for constructivist learning, through which teachers provide instruction and guide students in creating digital stories step-by-step. Similarly, Torres et al. (2012) purported that digital storytelling can be seen as a pedagogical tool in second language acquisition (SLA). According to Torres et al. (2012), language teachers deploy digital stories based on specific topics for the purpose of their students learning about linguistic routines, such as greetings and leave-takings. Studies show that integrating digital-story creation into instructional practices could engage language learners in deep learning and improve their linguistic competencies, digital literacy, teamwork, and critical thinking skills (Gregori-Signes, 2008; Torres et al., 2012). The OECD (2018) also specified that implementing digital storytelling as a pedagogy is in line with the goals of nurturing “future-ready students” (p. 4) and providing these students with opportunities to develop a broader range of skills, such as “cognitive and meta-cognitive skills, social and emotional skills, and practical and physical skills” (p. 5). In the process of supporting digital story

construction, the literature documents that teachers can serve as facilitators as they scaffold their students' learning by explaining the importance of art-based texts (e.g., pictures and videos), providing technical support, and commenting on their students' digital stories (Smeda et al., 2014).

The literature, captured by de Jager et al.'s systematic review (2017), also shows a strand where digital storytelling is considered a research method in its own right. Digital storytelling oftentimes holds promise as a "decolonising research practice" because it emphasizes telling stories "from the inside out", meaning researchers' views will not be imposed on storytellers (de Jager et al., 2017, p. 2550, emphasis in original). Unlike many other types of media that allow those in positions of power to speak on behalf of minoritized groups (e.g., immigrants and refugees), digital storytelling as a methodology could provide minoritized people with opportunities to represent their own cultures and construct meanings that are reflective of their lives (de Jager et al., 2017; Hancox, 2012; Iseke & Moore, 2011).

Research studies on digital storytelling in bilingual/multilingual learners' meaning-making have begun to emerge (e.g., Angay-Crowder et al., 2013; Prada, 2022; Priego & Liaw, 2018). The literature contains numerous conceptualizations of "bilingual/multilingual learners" (e.g., Baker & Wright, 2017; García, 2009a; Grosjean, 1989; Grosjean, 2013; Turnbull, 2018); from these, our systematic literature review adopts García's (2009a) definition of bilingual/multilingual education and defines bilingual/multilingual learners as language learners using two or more languages together "in response to the social interaction among students, teachers, and other members of the educational community" (p. 31). Our reviewed studies have specifically attended to the impacts of digital storytelling for bilingual/multilingual learners, such as the power of digital texts in conveying messages, strengthened home-school-community links because of the incorporation of bilingual/multilingual students' heritage languages, and their perceptions of empowerment through investing their situated experiences and identities in digital storytelling (e.g., Angay-Crowder et al., 2013; Prada, 2022; Priego & Liaw, 2018). Drawing on their linguistic and cultural repertoires in the process of constructing digital stories could enhance bilingual/multilingual students' literate and linguistic competencies

(D'warte, 2020). However, what has been achieved when it comes to using digital storytelling as an innovative pedagogy (Smeda et al., 2014) in bilingual/multilingual learners' meaning-making and what benefits and challenges these learners have encountered in telling digital stories have not been systematically addressed in the literature. Compared to individual investigations, systematic literature reviews are more likely to provide substantive conceptualization of the pertaining subject (Zhang et al., 2019).

In reviewing the literature, I found three published systematic literature reviews that address the use of digital storytelling in educational contexts (Lim et al., 2022; Nair & Yunus, 2021; Wu & Chen, 2019). These studies focus on the general trends and outcomes of educational digital storytelling (Wu & Chen, 2019), students' English-speaking skills (Nair & Yunus, 2021), and on adolescent and adult language learning (Lim et al., 2022) respectively. Wu and Chen (2019) found that most of their 57 selected studies reported the positive outcomes of digital storytelling, as opposed to its challenges or negative results. The reason for this "rosy picture of positive outcomes" might be "publication bias" (Wu & Chen, 2019, p. 9), which means that positive results are more likely to be published compared to negative results. Therefore, Wu and Chen (2019) called for researchers to disseminate their outcomes of all kinds and more rigorous studies to account for nuanced positive effects of educational digital storytelling. Similarly, Lim et al. (2022) pointed to the absence of sufficient data which makes it difficult to draw conclusions about the effectiveness of digital storytelling in language learning. By contrast, Nair and Yunus's literature review (2021) analyzed the role of digital storytelling in improving students' English-speaking skills. They found that digital storytelling was beneficial for personalizing students' own experiences and increasing their motivation and engagement. Noteworthy, though, was that some of the participants in Nair and Yunus's (2021) reviewed studies were English-as-foreign-language (EFL) learners, and the authors did not differentiate between the effects of digital storytelling on these students and their monolingual counterparts. Given the different linguistic dynamism between monolinguals and bilinguals/multilinguals (García, 2009a), it would be worthwhile to further explore the effects of digital storytelling on bilingual/multilingual learners' meaning-making and language learning.

These three systematic literature reviews report varying degrees of effectiveness of digital storytelling on language and literacy learning, specifically on students' speaking and reading skills (Lim et al., 2022; Nair & Yunus, 2021; Wu & Chen, 2019). In sum, these three reviews also point out that digital storytelling has a significant impact on 21st century skills. Additionally, all three studies call for the expansion of digital storytelling studies to different educational levels and for more rigorous research methods in assessing the usefulness of digital storytelling. However, none of these reviews placed emphasis on students' cultural and linguistic diversity (e.g., first language and second language). According to the New London Group (1996), cultural and linguistic diversity has become a powerful classroom resource in the sense of forming new concepts of citizenship. None of these studies provide synthesized knowledge about how these diverse students' linguistic and cultural repertoires and their funds of knowledges (e.g., linguistic, cultural, and semiotic knowledge and resources [Zhang & Li, 2020]) function in the process of (re)constructing digital stories. Given those effects of digital storytelling on bilingual/multilingual learners identified by individual studies, it would be timely to conduct a systematic literature review to bring "together what is known from the research literature using explicit and accountable methods" (Gough et al., 2012, p. 1). Also, D'warte (2020) contended that bilingual/multilingual students' translingual and transcultural competencies will "enable them to draw on multiple resources, employ multilingual, multidialectal repertoires and cross registers and codes with flexibility, deploying them strategically for different relationships, contexts and purposes" (D'warte, 2020, p. 297). Hence, to address this gap in the literature, our SLR reviewed empirical studies published in English from 2013 to 2022 and related to the use of digital storytelling in bilingual/multilingual students' meaning-making at different educational levels. We ask: (1) What are the trends of reviewed studies on using digital storytelling in bilingual/multilingual students' meaning-making? (2) What are the scientific strengths of these studies? (3) What are the reported uses of digital storytelling for bilingual/multilingual students? (4) What are the reported benefits and challenges of using digital storytelling for bilingual/multilingual students?

2.2 Theoretical Lenses

Our systematic literature review is informed by the theories about multiliteracies, multimodality, and translanguaging. These three theoretical lenses provided conceptual insights to view bilingual/multilingual learners' meaning-making across languages, modes, and media.

2.2.1 Multiliteracies and Multimodality

The New London Group (NLG) (1996) coined the term *multiliteracies* to respond to the “increasingly globalized societies” (p. 61) where languages, cultures, and pluralistic communication modes collide and engage with each other. Befitting local diversity and global connectedness, multiliteracies pedagogy engages students in multiple forms of meaning-making across culturally and linguistically diverse discourses in different domains (e.g., home, school, and community) and discipline-specific literacies (Serafini & Gee, 2017). The NLG's (1996) manifesto differentiates *multiliteracies* from “mere literacy” (p. 64). Mere literacy focuses more on reading and writing in the national or dominant language in official, standardized, and printed forms, whereas multiliteracies pedagogy legitimates the non-official or non-standardized forms of literacy in the periphery (Zhang, 2012). For example, multiliteracies pedagogy foregrounded multilingual literacies, digital literacies, and various modes of representation (e.g., “the visual, the audio, the spatial, and the behavioral” [New London Group, 1996, p. 64]). Multiliteracies pedagogy also acknowledges students' differences in languages, cultures, and identities as “a resource for a more robust and inclusive society” (Serafini & Gee, 2017, p. 7).

Instead of passive learners, multiliteracies pedagogy positions students as knowledge producers and designers of their learning processes and environments (Cope & Kalantzis, 2009a). With the advent of digital technologies, students are capable of “accessing, recording, sharing, working collaboratively and publishing knowledge in their digital portfolios” (Cope & Kalantzis, 2009b, p. 78). On this front, the New London Group (1996) has created the notion of *design* and the related constructs of Available Designs, Designing, and The Redesigned. “Available Designs” refers to resources for meaning-

making (e.g., grammars and social and discursal experiences) and “orders of discourse” (p. 74). Orders of discourse represent a “set of conventions associated with semiotic activity...in a given social space” (p. 74). “Designing” implies a transforming process that is not a reproduction but a reconstruction of the known resources of “Available Designs”. “Designing” processes recognize the role of human agency (or subjectivity) in tapping into meaning-making resources established in “Available Designs” to creatively enact a new design (Cope & Kalantzis, 2009a). “The Redesigned” refers to new and transformed meaning-making resources (New London Group, 1996). Because the meaning-making processes are based on cultural and historical “patterns of meaning” (New London Group, 1996, p. 76), meaning-makers are active and dynamic rather than “something governed by static rules” (p. 74). In these processes, meaning-makers constantly renegotiate their identities. However, Leander and Boldt (2012) pointed to one of the limitations of *design* in that students’ meaning-making is shaped according to their teachers’ anticipated understandings of society’s future designers. According to them, multiliteracies pedagogy overlooks the emergence of unpredictable meanings and privileges texts that are pre-designed to achieve already-known goals. Leander and Boldt (2012) also critiqued the text-centric perspectives of multiliteracies, which undervalue the agency of bodies and objects in meaning-making. Therefore, our SLR also attended to reported findings about agency that was enacted through the entanglement of bilingual/multilingual meaning-makers, materials, and space.

The NLG scholars (1996) also proposed four components of multiliteracies pedagogy, namely, *situated practice*, *overt instruction*, *critical framing*, and *transformed practice*. These four components are not clear-cut demarcation, nor do they function in a sequential way. Instead, “when put together, they overlap and become contagious to each other” (Zhang et al., 2019, p. 35). Specifically, *situated practice* draws on students’ backgrounds and experiences. It aims to create an immersive learning environment where students acquire new knowledge and make new sense of meanings based on what they have already known and what they are mostly motivated by. *Overt instruction* emphasizes a systematic understanding of literacy learning. Teachers shall provide explicit instructions as “active interventions” (New London Group, 1996, p. 86) to foster students’ metalanguages and scaffold their learning activities. Students are then expected to be

consciously aware of teachers' interpretations (Zhang et al., 2019). *Critical framing* expects teachers to help students deconstruct their experiences and prior knowledge. Students are encouraged to be critical about what they have learned and to revisit the social and cultural contexts of their knowledge. The New London Group (1996) further articulated that “students should be able to show that they can implement understandings acquired through *Overt Instruction* and *Critical Framing* in practices that help them simultaneously to apply and revise what they have learned” (p. 87). *Transformed practice* allows students to bring their transformed meanings to other sociocultural sites and practice their mastered metalinguistic skills (Castañeda et al., 2018). Kalantzis and Cope (2000) also entailed the concepts of intertextuality and hybridity in the process of *transformed practice*. Hybridity accentuates articulation and combination within and between various forms and genres of texts. Intertextuality draws attention to the complex ways in which meanings are constituted through new relations between texts, discourse (or genres) of texts, and other modes of meanings (New London Group, 1996). This framework of multiliteracies pedagogy enabled our SLR to analyze how students become effective oral and written communicators as well as “creative and critical thinkers, intellectual risk-takers and innovators” (Cope et al., 2017).

As a significant component of multiliteracies, multimodality approaches “representation, communication, and interaction as something more than language” (Jewitt, 2009, p. 1). Cowan and Kress (2017) pointed out that multiliteracies framework challenges the notion of the “periphery”, where multimodal modes other than speech (or writing) used to be seen as marginal supplements to meaning-making. Language in this context has been dislodged from the centre of communication landscapes (Kress, 2000b). Language is no longer the dominant “carrier of all meaning” (Kress, 2000a, p. 339). After all, non-linguistic modes intertwine with speech and writing in communication (Jewitt, 2009).

Cope and Kalantzis (2009a, 2009b) used *synaesthesia* to portray mode-switching processes. *Synaesthesia* attends to the relationships between different modes and how people orchestrate modes to (re)represent meaning. Kress (2000b) contended that non-linguistic modes (e.g., body movements and music) should be the focus of communication, even though they still tend to be intentionally treated as peripheral in

institutional and/or non-institutional education. *Synaesthesia* emphasizes that all modes play equal roles in meaning-making (Cope & Kalantzis, 2009b). As Jewitt (2008) pointed out, “no one mode stands alone in the process of making meaning; rather, each plays a discrete role in the whole” (p. 247). *Synaesthesia* draws upon students’ capacities for multimodal meaning-making, encouraging them to use different representational modes as a whole and to “transfer meanings into new and as yet unfamiliar forms” (Cope & Kalantzis, 2009b, p. 78). Our SLR investigated “full multimodal ensemble” (Jewitt, 2008, p. 247) that bilingual/multilingual meaning-maker used in reviewed studies and how various modes contributed to the meaning construction.

Informed by multiliteracies and multimodality, our SLR also examined what languages, media, and modes are promoted in meaning-making, what languages, media, and modes are particularly significant for bilingual/multilingual students, what languages, media, and modes are privileged in a specific educational context, and how these students orchestrate multiple languages, media, and modalities in their meaning-making in the reviewed literature.

2.2.2 Translanguaging

In addition to multiliteracies and multimodality, our SLR was undergirded by translanguaging. Translanguaging represents “*multiple discursive practices* in which bilinguals engage in order to *make sense of their bilingual worlds*” (García, 2009a, p. 81, emphasis in original). It offers unique views of both bilingualism and multilingualism (Vogel & García, 2017). Instead of seeing bilingual/multilingual students operating in two or more independent language systems, translanguaging connotes unitary linguistic repertoires in making meaning (Vogel & García, 2017). Bilingualism/multilingualism have been conceptualized in various ways (e.g., García, 2009a; Baker & Wright, 2017; Turnbull, 2018). For example, Mackey (1987, as cited in Turnbull, 2018) defined bilingualism as “the knowledge and use of two or more languages”, whereas Grosjean (1989, as cited in Turnbull, 2018) emphasized the “use” of languages (p. 1042). Our systematic literature review adopted García’s (2009a) definition and referred bilingualism/multilingualism as “dynamic”, which means that a bilingual/multilingual person “‘languages’ differently...and has diverse and unequal experiences with each of

the two [or more] languages” (p. 80). García’s definition discards the monolingual view of seeing two or more languages of bilinguals/multilinguals as separated systems and emphasizes that students’ bilingual/multilingual practices entail one linguistic system for complex communications (García, 2009a). Noteworthy, though, are Turnbull’s (2018) critiques of García’s focal bilinguals, who mainly are elementary and secondary school students. Turnbull (2018) contended that this focused group needs to be extended to all ages and educational levels. Furthermore, in contrast to García and colleagues’ rejection of individual multilingualism, which does not consider individuals’ “internally differentiated linguistic systems” (MacSwan, 2017, p. 172), MacSwan (2017) proposed a multilingual perspective on translanguaging to acknowledge linguistic phenomena, such as individual multilingualism, codeswitching, and translation, and regards them as underlying theories of translanguaging. MacSwan’s (2017) multilingual perspective enabled our analysis of how bilingual/multilingual students leverage their language systems.

Translanguaging privileges bilinguals’ and multilinguals’ *actions* that include “the unbounded dynamic and fluid use of [their] entire linguistic repertoire[s]” (García & Kleifgen, 2019, p. 554). It is necessary to point out that each individual language cannot be socially equal; rather, the choice of language use is based on different purposes, contexts, and interlocutors (García, 2009a). In opposition to neoliberalism’s constant promotion of privileged international languages (e.g., English), translanguaging challenges the subordination of groups based on their less frequent use of legitimized and naturalized international languages.

According to Cen Williams (1994), pedagogical translanguaging, which differs from spontaneous translanguaging, is purposefully used to facilitate language learning. Pedagogical translanguaging shines light on minoritized bilingual/multilingual students’ dynamic and fluid language practices (García & Kleifgen, 2019). The interdependence between students’ heritage languages and school dominant languages should be valued (Cummins, 1979, as cited in García & Kleifgen, 2019). The goal of pedagogical translanguaging builds on Williams’ original concept of developing Welsh and English language skills and leverages learners’ entire semiotic repertoires, taking their linguistic

needs and competencies into consideration (Pacheco & Miller, 2015). The semiotic systems of bilinguals' and multilinguals' linguistic repertoires also include "multiple semiotic signs" (Vogel et al., 2018, p. 92). Such systems emphasize that "people draw not just on resources 'within them (e.g., the linguistic features of their repertoire), but also those that they embody (e.g., their gestures and posture), as well as those outside of themselves which through use become part of their bodily memory (e.g., computer technology)'" (Vogel et al., 2018, p. 92). Given that human communication is multimodal, translanguaging embraces multimodality as part of bilingual/multilingual students' social semiotic repertoires (e.g., García & Kleifgen, 2019; Vogel & García, 2017; Vogel et al., 2018; Li, 2018). These students employ not only linguistic but also textual, visual, and spatial resources in their meaning-making (Li, 2018). In this process, bilingual/multilingual students have the power to shuttle between various semiotic resources when making meaning and express their subjectivities in different contexts. To capitalize on bilingual/multilingual students' funds of knowledge, translanguaging researchers attend to the notion of translanguaging space (García & Kleigen, 2019). Li (2011) depicted "translanguaging space" as a social space where students are able to employ multiple semiotic resources to transform their lives. This translanguaging space focuses on spontaneous actions that students can bring "their personal history, experiences and environment, their attitude, belief and ideology, their cognitive and physical capacity" to ongoing meaning-making processes to eventually "generate new identities, values and practices" (p. 1223). It is also a space where "cultural translation" (Bhabha, 1994, as cited in Li, 2011, p. 1223) takes place. Cultural translation has been increasingly used by the humanities to describe communication processes by which different contemporary cultures are specifically transmitted and (re)interpreted by migrants (Young, 2012). It also emphasizes cultural hybridity and the power relations between conflicting cultures (Young, 2012).

Translanguaging, which serves as one of the theoretical lenses of our SLR, guides the analysis of bilingual/multilingual students' language- and identity-related issues. Through reviewing the studies, our SLR explored whether and how these students draw on their linguistic repertoires and identities for digital storytelling in and outside school.

2.3 Methodology

In this section, we outline the data collection and analysis methods of our systematic literature review.

2.3.1 Searching Strategies and Criteria for Inclusion and Exclusion

To conduct a transparent and comprehensive literature review, we followed the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) 2020 guideline (Page et al., 2021) to search and select scholarly publications that were eligible for our SLR. PRISMA 2020 is an updated reporting guideline provided for literature reviewers to “identify, select, appraise, and synthesise studies” (Page et al., 2021, p. 1). Based on the PRISMA 2020 flow diagram template, we generated a flow chart (see Figure 1) to document the literature search and selection.

The inclusion and exclusion criteria for our SLR were: (1) peer-reviewed articles published in English from 2013 to 2022; (2) journal articles accessible on five major ProQuest educational databases, including APA PsycInfo, Canadian Business & Current Affairs Database, Education Database, Educational Resources Information Center (ERIC), and Linguistic and Language Behavior Abstracts (LLBA). Peer-reviewed articles were targeted because the review tent for high-quality data in coding and thematic analysis (Prilutskaya, 2021). These five databases were chosen because they provided access to education-related scholarly journals. For example, ERIC database serves as the largest education database in the records of the world, containing an extensive educational-related literature (ERIC, n.d.). We then used groups of keywords, such as “digital storytelling”, “digital story making”, “bilingual”, “multilingual”, “foreign language learning”, “heritage language”, and “multiliteracies”, to conduct an initial literature search. As mentioned in the context section, there have been different definitions of terms “bilingual” and “multilingual” adopted in existing literature (Baker & Wright, 2017), and so we also used synonyms, such as “bilingualism” and “multilingualism” in this search. Because “digital storytelling” is one of the major focuses of our SLR, we employed two controlled keywords, namely, “digital storytelling” and “digital story making”. We then used Boolean Logic operators to combine them with

AND, OR, and NOT. For instance, we applied noft(“digital storytelling” OR “digital story making”) AND noft(multilingualism*) as a search.

The use of these searching criteria led to 48 articles from 2013 to 2022, which included non-empirical papers ($n=8$), empirical studies that used quantitative or mixed-methods research methods ($n=7$), and empirical studies that used qualitative research studies ($n=33$). We further narrowed down our SLR’s focus on empirical qualitative studies ($n=24$), which would provide a wealth of evidence for the research questions. Based on the same searching strategies and the same groups of keywords as the first literature search, we expanded the span of the second search from 2013-2022 to 2003-2022. After abstract screening and necessary text screening, we found three articles relevant to this SLR’s topic before the year of 2013. They were published in 2006, 2008, and 2010. As shown in Figure 2, the year 2013-2022 witnessed a growth in research studies regarding the use of digital storytelling in bilingual/multilingual students’ meaning-making. While no more than three studies were published per year prior to 2019, the number of papers published in the year of 2020 increased significantly ($n=8$). Therefore, we decided to select articles from the span of ten years. The literature search was carried out in mid-2022 so that there might be studies published in late 2022 that were not included in this review. As seen in Figure 1, out of 48 articles, a total of 24 articles (see Appendix 2) were reviewed in this SLR. The rest of 24 articles were excluded because, after abstract screening and necessary full-text screening, they were irrelevant to the topic of this SLR or did not match the inclusion criteria.

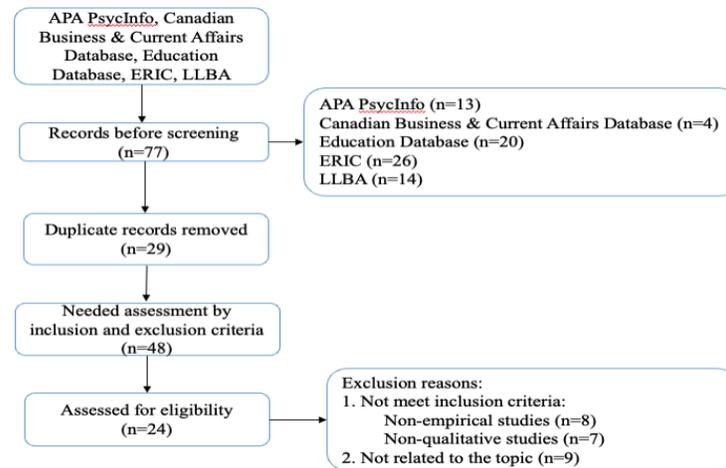


Figure 1: Search and Selection Procedures

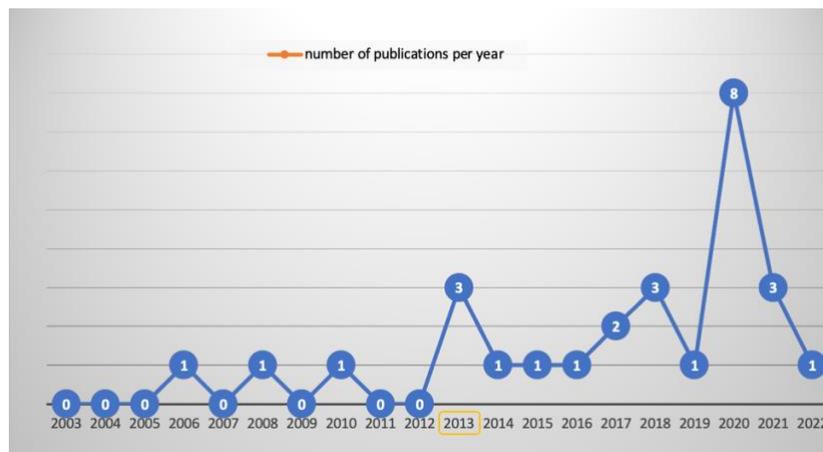


Figure 2: Number of Publications from 2003 to 2022

2.3.2 Data Analysis Methods

To respond to the research questions, we used deductive and inductive thematic analyses to review the selected studies. According to Boyatzis (1998), thematic analysis is “a process for encoding qualitative information” (p. 4) and is commonly used by researchers in the field of literature, sociology, psychology, etc. A code refers to a set of themes found in the information to maximize the interpretation of certain phenomena (Boyatzis, 1998). Because our SLR was informed by multiliteracies, multimodality, and translanguaging, deductive themes in correspondence with, for example, the four components of the multiliteracies pedagogy, the affordances of multi-modes used in

meaning-making processes, as well as the degree of using translanguaging were developed. In addition to deductive themes, we looked at the content of the data and inductively develop themes based on what were emerged from reported studies (Zhang et al., 2019).

Our SLR employed an intercoder reliability (ICR) check between the co-authors to improve the systematicity, transparency, and trustworthiness of the coding processes (O'Connor & Joffe, 2020). Specifically, we thoroughly scanned the original data for the first five studies and generated potential deductive and inductive themes. Subsequently, we negotiated the accuracy of these themes and subthemes through emails. Such negotiation was not a one-off exercise; rather, it was an ongoing process that included queries and revisions until both coders reached agreements (Barbour, 2014).

We used a five-point Likert scale to evaluate the scientific strengths of the reviewed studies: 1-extremely disagree, 2-disagree, 3-neutral, 4-agree, and 5-completely agree. Based on the evaluation criteria for qualitative research papers shown in Table 1, we blind-coded the first ten reviewed papers separately, considering that coding 10-20% of the dataset to calculate inter-coder reliability is a norm for qualitative studies (Campbell et al., 2013; Issenberg et al., 2005).

| Items | Content |
|-----------------------|---|
| Theory | Selected theories are appropriate to the research problem and are well articulated |
| Literature Review | Adequate literature review that locates well the study within the existent literature and justifies the conduct of the study |
| Context | The research is clearly contextualized with a) relevant information about the setting and participants and b) cases and variables being studied integrated in their social context rather than being abstracted or decontextualized |
| Ethical Consideration | Ethical issues have been adequately addressed (e.g., confidentiality; ethical ways of participant recruitment and data collection) |

| | |
|---------------------|--|
| Data Collection | Methods of data collection/modes of inquiry are appropriate to the nature of the research problem |
| Data Analysis | Methods and steps of data analysis are clearly stated (e.g., there is adequate information regarding how themes, concepts, and categories were derived from data; there is adequate information regarding validity of the findings [e.g., triangulation and providing feedback to participants]) |
| Data Presentation | Data are presented systematically with quotations and field notes identified in a way which enables the readers to judge the range of evidence being used |
| Data Interpretation | There is a clear distinction between the data and author's/authors' interpretation. Data interpretations are well grounded on presented data |
| Results/ Conclusion | Clear conclusions are drawn about the important findings regarding the research focus. Results are unequivocal and credible with (a) the results addressing the research question(s) and (b) sufficient original evidence |

Table 1: Evaluation Criteria for Qualitative Research Papers (e.g., Blaxter, 2013; Zhang et al., 2019)

We blinded to each other's rating decisions and were open to discussions about coding disagreements through Zoom meetings. The discussions were productive because we found that our differing understandings of the item content were the major cause of disagreements. Accordingly, we resolved such disagreements specifically for each item whose ratings had more than two-point discrepancies. For example, we rated same points (or within-one points) once we both acknowledged that, for "data collection" item, research processes, including what data were collected and for what purposes, should be clearly described. I then calculated the agreement following Issenberg et al.'s (2005) two notions of coding agreement: (1) perfect agreement, namely, "no discrepancy between the two ratings of each study item" (p. 19), and (2) two rating within one point on each appraised item, including perfect agreement and within-one-point discrepancy. Table 2 illustrates our detailed assessments and results. Our evaluations reached to a high level of agreement, which was in line with "the range of 25–35% among 'expert ratings of

manuscripts submitted for publication in scholarly journals and for quality judgments regarding research grant applications” (Cicchetti, 1991, p. 19, as cited in Zhang et al., 2019, p. 38).

| Rating/Items | No. of Perfect Agreement | Percentage of Perfect Agreement | No. of Two Ratings Within 1 Point (=perfect agreement +1 point discrepancy) | Percentage of Within 1 point Agreement |
|--------------------------|---------------------------------|--|--|---|
| 1. Theory | 7 | 70% | 10 (=7+3) | 100% |
| 2. Literature Review | 5 | 50% | 10 (=5+5) | 100% |
| 3. Context | 5 | 50% | 10 (=5+5) | 100% |
| 4. Ethical Consideration | 8 | 80% | 10 (=8+2) | 100% |
| 5. Data Collection | 7 | 70% | 10 (=7+3) | 100% |
| 6. Data Analysis | 7 | 70% | 10 (=7+3) | 100% |
| 7. Data Presentation | 3 | 30% | 10 (=3+7) | 100% |
| 8. Data Interpretation | 4 | 40% | 10 (=4+6) | 100% |
| 9. Results/Conclusion | 5 | 50% | 10 (=5+5) | 100% |

Table 2: Coding Agreement for Scientific Assessment

2.4 Findings

We detailed the reported findings that address the research questions in this section.

2.4.1 The Trends of Research on Digital Storytelling Use in Bilingual/Multilingual Students' Meaning-making

To start with, we briefly summarized the contextual backgrounds of 24 reviewed papers, such as years of publications, the geographical settings of the research, participants' educational levels, types of programs, language backgrounds, and methodology and method uses.

Figure 3 illustrated the percentage of studies on digital storytelling in bilingual/multilingual students' meaning-making published from 2013 to May 2022. As mentioned in the Methodology section, studies published after mid-May 2022 were not selected for this review. There was a fluctuation of publications experienced throughout the decade. The number noticeably increased since 2017 and peaked in 2020, despite no publications in 2019 in selected databases, including APA PsycInfo, Canadian Business & Current Affairs Database, Education Database, Educational Resources Information Center (ERIC), or Linguistic and Language Behavior Abstracts (LLBA).

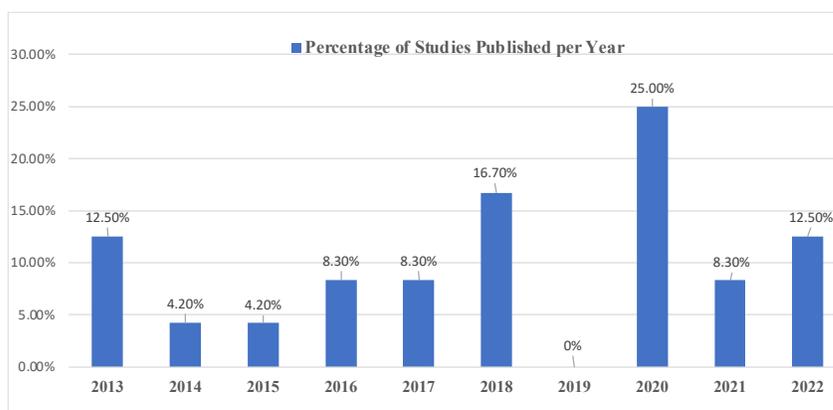


Figure 3: The Percentage of Studies Published per Year

Regarding the geographical settings, total eleven countries/regions were identified in twenty-four studies. Note that five of the twenty-four papers attended either global online/offline or cross-border projects (e.g., Anderson & Macleroy, 2017; Li & Hawkins,

2021; Oakley et al., 2018; Priego & Liaw, 2017; Zhang & Li, 2020), and so their research sites were distributed in different countries/regions. The majority of reviewed studies were conducted in the United States (33.3%). Studies based in Canada and England represented the identical percentage of 16.7% in the research corpus, followed by Mainland China (12.5%) and Taiwan (12.5%). Australia (8.3%), Taiwan (4.2%), Greece (4.2%), Cyprus¹(4.2%), Indonesia (4.2%), South Africa (4.2%), and Uganda (4.2%) also drew scholars' attention to digital storytelling during this 10-year timeframe (see Figure 4).

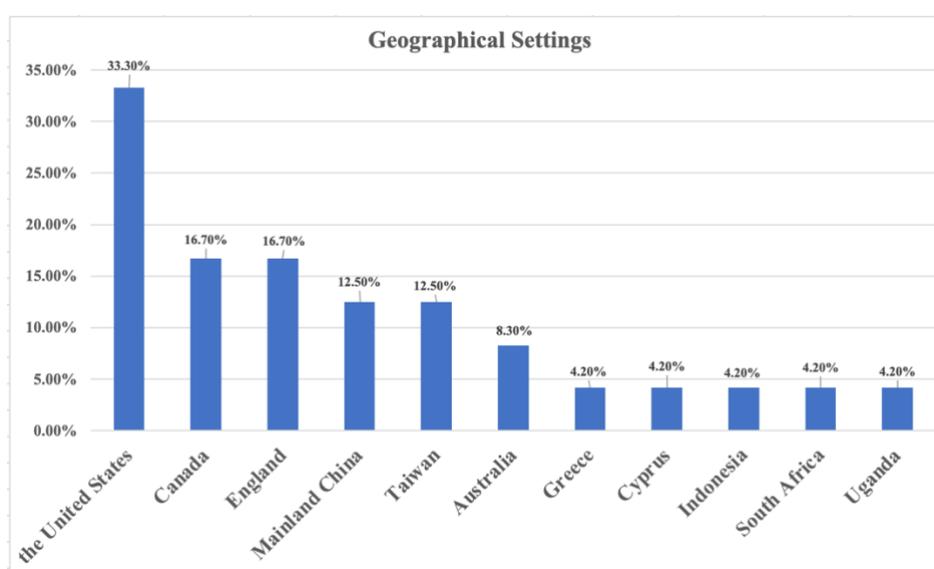


Figure 4: Geographical Settings

The reviewed studies targeted a wide range of participants' levels of education (see Figure 5). Specifically, middle/secondary schools were the most concern of the reviewed papers (58.3%), followed by studies on primary/elementary schools (29.2%) and those on university/college education (20.8%). The research on using digital storytelling in bilingual/multilingual students' meaning-making also extended to pre-service teacher education (4.2%) and the "other" education level representing military cadets (4.2%). No

¹Cyprus is geographically considered a part of Western Asia, even though it is inclined to a Southeastern European country when it comes to cultures and geopolitics.

reviewed studies were conducted in the early years. Five of the twenty-four studies included learners from multiple age groups or school years (e.g., Anderson et al., 2018; Anderson & Macleroy, 2017; Emert, 2013; Mills et al., 2016; Priego & Liaw, 2017).

The subjects and/or programs that employed digital storytelling included: (1) Various English classes, including English language as an Additional Language (EAL, 4.2%), English as a Second Language (ESL, 4.2%), and English as a Foreign Language (EFL, 12.5%) programs/courses; (2) Programs in outside of school settings, such as summer literacy camp (8.3%) and community- and family-based projects (12.5%); (3) Cross-border online programs (29.2%); (4) Projects involved heritage language learners (12.5%); and (5) Indigenous school community (4.2%).

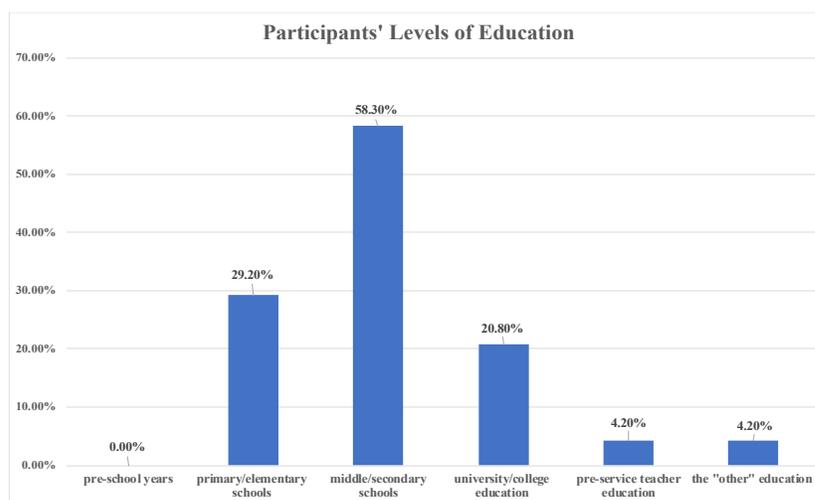


Figure 5: Participants' Levels of Education

In addition to English, the reviewed studies included other languages: Spanish, Bengali, Cypriot Greek (CG), Standard Modern Greek (SMG), Mandarin, French, Tagalog, Arabic, Croatian, German, Luganda, isiXhosa, Zulu, Bahasa Indonesia, Yuggera, Jagera, and Ugarapul. Most of these languages were learners' heritage languages. There are three studies that involved Spanish-speaking students.

We also zoomed in to methodology and methods used in each reviewed study. Because we only included qualitative studies in our SLR based on our research questions, the research methods were specifically identified here (see Figure 6). Most of the papers

employed the ethnographic approach (33.3%) and case study (33.3%) to collect data through observations, interviews, digital narrative portfolios, questionnaires, and survey. The remaining papers applied action research (8.3%), grounded theory (4.2%), cross-cultural participatory approach (4.2%), activity system analysis (4.2%), and netnography (4.2%), despite that five papers did not identify the use of research methods. Four of the twenty-four studies employed two methods (e.g., ethnographical approach and case study) for data collection.

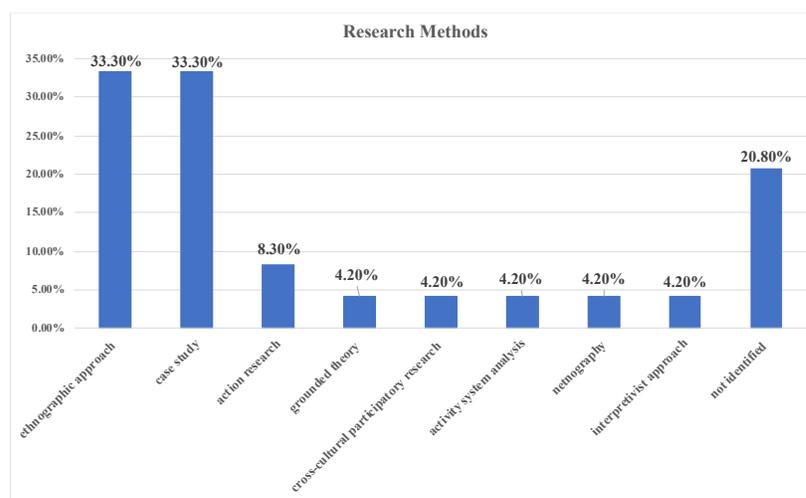


Figure 6: Research Methods

2.4.2 The Scientific Strengths of These Reviewed Studies

After accomplishing the ratings of the first ten papers, I took over the rating and finished evaluating the rest of the papers. I also calculated the Mean and Standard Deviation of each appraised item based on my own evaluation of all twenty-four studies (see Table 3).

Based on our evaluation, the researchers of the reviewed studies showed strength in context articulation ($M=4$, $SD=1.06$), locating their own studies in the existing literature ($M=3.88$, $SD=0.99$), grounding theoretical underpinnings ($M=3.54$, $SD=1.38$), and interpreting data ($M=3.54$, $SD=1.32$). However, we noted insufficient information on ethical considerations ($M=1.75$, $SD=2.19$) and data analysis ($M=2.67$, $SD=2.10$) in the reviewed papers. For instance, 79.17% of the papers ($n=19$) did not clearly specify the ethics approval for their studies (e.g., “official informed consent, voluntary participation,

anonymity, and confidentiality” [Arifin, 2018]). 54.17% of the papers ($n=13$) only briefly discussed data analysis processes instead of providing details or examples of how data were analyzed. Inadequate development of themes, concepts, or categories could not substantiate the trustworthiness of findings.

| Main Assessment Categories of Reviewed Studies (n=24) | M | SD |
|--|----------|-----------|
| Theory | 3.54 | 1.38 |
| Literature Review | 3.88 | 0.99 |
| Context | 4 | 1.06 |
| Ethical Consideration | 1.75 | 2.19 |
| Data Collection | 3.21 | 1.93 |
| Data Analysis | 2.67 | 2.10 |
| Data Presentation | 3.33 | 1.34 |
| Data Interpretation | 3.54 | 1.32 |
| Results/Conclusion | 3.46 | 1.22 |

Table 3: Results of Scientific Significance Assessment Scale

We also found that 29.17% of the papers ($n=7$) lacked sufficient examples when presenting data (e.g., five papers received a ranking of 2 on this item and two papers received a ranking of 1). It is suggested that future research studies show rich data to

support their interpretations and claimed results to establish the credibility of studies (Lincoln & Guba, 1985).

2.4.3 The Reported Uses of Digital Storytelling in Bilingual/Multilingual Students' Meaning-making

To answer the third research question, we generated the ensuing five themes, namely, learners as designers, education equity and social justice, multiliteracies pedagogy, translanguaging, and tensions between dominant languages and learners' heritage languages.

2.4.3.1 Learners as Designers

Cope and Kalantzis (2009b) highlighted the notion that learners were conceived as meaning designers because of the development of new media and contemporary social/personal needs. Fifty percent of the reviewed papers ($n=12$) positioned learners as designers in digital storytelling processes (e.g., Anderson et al., 2018; Anderson & Macleroy, 2017; Castañeda et al., 2018; Emert, 2013; Fokides, 2016; Kendrick et al., 2022; Kusumaningputri, 2020; Lee, 2014; Prada, 2022; Priego & Liaw, 2017; Stacy & Aguilar, 2018; Zhang & Li, 2020). For example, Anderson and Macleroy (2017) documented a classroom environment where bilingual/multilingual people could relate what mattered to them. Specifically, one French and one Syrian girl chose war and immigration as their story theme because they were interested in how children would think under such uncertainty. In this case, these two female participants were entrusted with making their voices heard, thus enabling their learning autonomy. As reported by Anderson et al. (2018), when participant teachers reflected on the digital story making processes, they were constantly stunned by their students' self-motivation in story production, language manipulation, and meaning representation forms in a beginners' French class. One of the teachers, when recollecting the project, said, "step by step I just realised how much they are learning without me dominating everything (Teacher, HHCS)" (Anderson et al., 2018, p. 205). Findings from Kendrick et al.'s (2022) study recognized that youth participants became "autonomous producers of powerful texts that affirmed their identities" (p. 970).

2.4.3.2 Education Equity and Social Justice

Embracing education equity and social justice was one of the themes that inductively emerged from the data. There were eight papers with an explicit research goal of social equity advocacy (e.g., Anderson et al., 2018; Anderson & Macleroy, 2017; Castañeda et al., 2018; Hirsch & Macleroy, 2020; Kendrick et al., 2022; Li & Hawkins, 2021; Prada, 2022; Stavrou et al., 2021). For example, Castañeda et al. (2018) invited nine economically-disadvantaged Latinx ELL learners to a digital storytelling project. The project was knitted into a summer literacy camp to avoid the phenomenon of summer loss, by which they meant that economically-challenged children might “lose academic ground over the summer, while their middle-class and affluent peers gain in reading and hold their own in math” (Bracey, 2002, p. 12). This workshop also aimed to increase parental involvement in children’s learning processes by inviting parents to the premiere of the storytelling. Such parental involvement was important considering that marginalized Spanish-speaking parents, in this context, were more likely than their upper- or middle-class counterparts to have to address additional challenges, such as cultural differences and language barriers. Latinx heritage language learners in Prada’s (2022) study were also encouraged to exert their full linguistic repertoires in collaborative digital story creation and in making sense of their ideas, peer discussions, and feedback. Prada intended to de-centre monolingual policies and valued students’ bilingualism/multilingualism and funds of knowledge through digital storytelling.

2.4.3.3 Multiliteracies Pedagogy

Findings in four papers explicitly recognized digital storytelling as multiliteracies pedagogy practices (e.g., Angay-Crowder et al., 2013; Assaf & Lussier, 2020; Burke & Hardware, 2015; Castañeda et al., 2018). Four sub-themes were developed pertinent to the multiliteracies pedagogy, namely, as is apparent below, situated practice, overt instruction, critical framing, and transformed practice.

2.4.3.3.1 Situated Practice

Situated practice was “a part of pedagogy that was constituted by immersion in meaningful practices within a community of learners who were capable of playing

multiple and different roles based on their backgrounds and experiences” (New London Group, 1996, p. 85). Situated practice came into effect when learners brainstormed what to tell for their digital stories. Learners were encouraged to bring their interests and experiences to the first stage of story creation. For example, Lorenzo, one of the participants in Castañeda et al.’s (2018) descriptive case study, reminisced several meaningful moments with his sister and how taking care of his sister influenced his own personal growth. Lorenzo took the ownership in constructing his narratives, digitally and orally. As in the qualitative study by Angay-Crowder et al. (2013), instructors facilitated their students in critically reflecting on the potential topics of digital stories, such as, sociocultural issues and personal interests, based on their sense of purpose and their potential audience. Situated practice also served as a connection between students’ prior knowledge and school literacy practices. Burke and Hardware’s (2015) qualitative case study included eight Grade-eight ESL learners from visible minoritized backgrounds. These participants activated their knowledge about helmet laws, death, and grief when their teacher read a novel named *Mick Harte Was Here*, which described a man who died in a bicycle accident. In the class for the preparation of digital storytelling, these students related the content of the novel to their own cultural views and commented on the reasons behind the novel protagonist’s death.

2.4.3.3.2 Overt Instruction

The researchers and teacher participants of the four reported studies employed overt instruction for topic selection, metalanguage development, and software instruction throughout bilingual/multilingual learners’ digital story creation. For instance, Castañeda et al. (2018) created story circles where Spanish-speaking learners provided feedback for their peers’ story designs with appropriate vocabulary and clear syntax. Such expressions like “If it were my story I would include a picture of ...” and “I would talk more about the specific day your family...” (p. 7) were observed throughout the creation of digital stories. Moreover, Angay-Crowder et al. (2013) offered two presentations about how to use recommended software, Photostory3, in digital storytelling and how to use a variety of non-linguistic semiotic modes. The authors mentioned that the purpose of such overt

instruction about technology use was to inspire participants about the differences and similarities between print-based and digital storytelling.

2.4.3.3.3 Critical Framing

Four studies showed that bilingual/multilingual learners were engaged in interrogating the content of their stories and choosing preferable modes in a systematic and critical way. For example, participant Yonela in Assaf and Lussier's (2020) study changed her dream career from environmental engineer to medical doctor after she critically analyzed the status quo of medical care service in her community. Findings in Burke and Hardware's (2015) study indicated that ESL learners used their funds of knowledge to examine their new literacies. Specifically, these learners discussed about the differences in helmet laws between their home countries and Canada. These learners finally used visual collages over words to express their understandings of the novel. Larry, one of the student participants, shared that pictures were more effective than texts when it came to delivering meanings. Critical framing was also observed in students' collaboration. For example, Yohanna and Beatriz, two Latinx participants in Castañeda et al.'s (2018) study, intensively listened to each other's stories and offered productive feedback on narratives during story circles because they had a strong sense of responsibility for their story construction.

2.4.3.3.4 Transformed Practice

Those four studies reported that bilingual/multilingual learners appropriately and creatively transformed meanings and applied them in new contexts through multiple modes. Two papers (e.g., Angay-Crowder et al., 2013; Castañeda et al., 2018) showed that multiple modes could forward transformed practice. Specifically, in Angay-Crowder et al.'s (2013) study, student participants re-organized their free-writing drafts into storyboards, through which they formulated a variety of modes to convey meanings. Castañeda et al. (2018) also observed that students were committed to transit written narratives into digital forms using pictures, sounds, and audio clips, a process that allowed students to successfully become not only authors but directors of their digital stories.

2.4.3.4 Translanguaging

Out of twenty-four reviewed studies, the phenomenon of translanguaging was explicitly addressed in four papers (e.g., Anderson et al., 2018; Prada, 2022; Stacy & Aguilar, 2018; Stavrou et al., 2021). For example, Anderson et al., (2018) employed translanguaging in their findings and referred it as a bilingual aspect of digital story construction. The authors described a process in which learners code-switched and translated as needed at the beginning of the project and then evidently represented themselves through their linguistic repertoires by the time of presenting their digital stories. The learners had raised metalinguistic awareness and better understandings of purposeful language use. A translanguaging space in Prada's (2019) study afforded 18 bilingual Latinxs opportunities to work on their ongoing narrative drafts and receive bilingual and multimodal feedback from their peers and the university course instructor. These students applied both of their home and school literacies in their "Mi bilingüismo"²(Prada, 2019, p. 176) digital stories.

However, we found that seven papers used the terms "translation" and "code-switching" when it came to participants' language use in digital storytelling (e.g., Anderson & Macleroy, 2017; Angay-Crowder et al., 2013; Assaf & Lussier, 2020; Fokides, 2016; Li & Hawkins, 2021; Macleroy & Shamsad, 2020; Priego & Liaw, 2017). Findings from the five of the studies showed that participants were encouraged to use their heritage languages (e.g., Anderson & Macleroy, 2017; Angay-Crowder et al., 2013; Assaf & Lussier, 2020; Li & Hawkins, 2021; Macleroy & Shamsad, 2020). For example, Assaf and Lussier (2020) observed student participants translating between isiXhosa, Zulu, and English as needed. Specifically, many of the students talked about the projects with others in English while narrating their final stories in isiXhosa. Students codeswitched between named languages when taking notes and designing storyboards. Similarly, Angay-Crowder et al. (2013) requested their secondary-level multilingual participants to switch between their heritage languages and English when creating narratives, although

² This is translated to "My bilingualism" in English.

one participant insisted on using only English because he thought that his heritage language was non-legitimate at school.

2.4.3.5 Tensions between Dominant Languages and Learners' Heritage Languages

When we analyzed data, one of the silent themes that emerged was the tensions between school languages (usually English) and learners' heritage languages (e.g., Li & Hawkins, 2021; Stacy & Aguilar, 2018). Stacy and Aguilar (2018) pointed out that two participants used only English to respond to the researchers and to construct stories. Li and Hawkins (2021) further questioned the tensions between the use of bilinguals/multilinguals' heritage languages and the status quo of English dominance in school systems. Compared to code-switching and translation, which were based on the monoglossic view, translanguaging “posit[ed] the linguistic behavior of bilinguals as being always heteroglossic (see Bailey 2007; Bakhtin 1981), always dynamic, responding not to two monolingualisms in one but to one integrated linguistic system” (García & Lin, 2017, p. 120).

2.4.4 The Reported Benefits and Challenges of Using Digital Storytelling for Bilingual/Multilingual Students

To address the fourth research question, in this section, we report six themes, namely, identity affirmation and investment, connections of learning domains, the reconfiguration of meaning-making across space and time, supporting language learning, multimodality affordances, and active global citizenship development.

2.4.4.1 Identity Affirmation and Investment

Findings from sixteen papers showed that the creation of digital stories opened up a space for bilingual/multilingual students' identity affirmation and investment throughout meaning-making processes (e.g., Anderson et al., 2018; Anderson & Macleroy, 2017; Angay-Crowder et al., 2013; Assaf & Lussier, 2020; Emert, 2013; Fokides, 2016; Hirsch & Macleroy, 2020; Honeyford, 2013; Kendrick et al., 2022; Li & Hawkins, 2021; Macleroy & Shamsad, 2020; Maqueda, 2022; Mills et al., 2016; Prada, 2022; Stacy & Aguilar, 2018; Stavrou et al., 2021). A quarter of these sixteen papers ($n=4$) pointed to

the affordances of digital storytelling in shaping participants' bicultural/multicultural identities (Anderson & Macleroy, 2017; Emert, 2013; Macleroy & Shamsad, 2020; Prada, 2022). For example, at the pre-production stage of creating a digital story themed "language fairness", six Bengali students in Macleroy and Shamsad's (2020) study visited local places such as Bengali restaurants, mosques, and Shaheed Minar Monument at one of the museums in London. Being able to discover the profound stories behind these places and cultural artifacts helped the students develop a strong sense of community and reveal their vibrant multi-cultural identities, including Muslim, Bengali, and British. As one of the authors stated: "These students see their identities in a small block – at home, as Bengali; at the mosque, as Muslim; at school, as British – and in most cases do not crossover these images, but the project allowed them to break the boundaries and explore identity as a whole person. (Shamsad, field notes, 2019)" (Macleroy & Shamsad, 2020, p. 487). Anderson and Macleroy (2017) captured student participants' intercultural narratives representing different ethnic groups in Taiwan. These students developed a sense of local identity as they interweaved photographs, figures, and paintings into their digital narratives. They also increased their intercultural sensitivity by exploring the local places of the Pingpu Indigenous Peoples.

In six papers, participants attended to the "as-if" realm by exploring their self-customized magical characters (identities) during the process of digital storytelling (Assaf & Lussier, 2020; Honeyford, 2013; Kendrick et al., 2022; Li & Hawkins, 2021; Mills et al., 2016; Stavrou et al., 2021). For example, Gabriel, a seven-year-old immigrant youth in Honeyford's (2013) ethnographic case study, selected several artifacts, such as an angelic winged teddy, to expand time and space from real life to figured worlds in his poem titled "My Name Is" (p. 20). Gabriel imagined himself having the same abilities as the teddy, flying to places where immigrant rights were recognized by not only the law but also schools and communities. Similarly, Shegofa, one of the participants in Kendrick et al.'s (2022) case study, reflected on her identity from remembering destructive wars in Afghanistan to advocate for human rights around the world. Another case study conducted by Stavrou et al. (2021) explored the power of drama in which student participants could negotiate and transform the images of both themselves and a fantastical

refugee character named Irene. The participants went beyond themselves and stood in Irene's shoes to make sense of her life in the imagined reality.

2.4.4.2 Connections of Learning Domains

Findings from more than fifty percent of the reviewed papers ($n=14$) echoed the “holistic” view of the multiliteracies pedagogy (Cope & Kalantzis, 2009a, p. 167) that engaged literacy practices in various domains, such as schools, homes, communities, and online learning spaces (e.g., Anderson et al., 2018; Anderson & Macleroy, 2017; Angay-Crowder et al., 2013; Assaf & Lussier, 2020; Castañeda et al., 2018; Kusumaningputri, 2020; Li & Hawkins, 2021; Macleroy & Shamsad, 2020; Mills et al., 2016; Oakley et al., 2018; Prada, 2019; Stacy & Aguilar, 2018; Stavrou et al., 2021; Zhang & Li, 2020). For example, Bengali-English learners in Macleroy and Shamsad's (2020) study stepped into local communities, visited landmarks, and refreshed their memories of their Bengali and British histories and cultures. This field trip enlightened the ways learners framed their stories. During the story editing stage, 18 bilingual Latinos in Prada's (2019) study invited their friends and relatives to comment on story drafts. Assaf and Lussier (2020) documented the premiere day of the digital storytelling project, which invited community members, such as doctors, politicians, and engineers, to celebrate such a milestone and share their experiences and thoughts with story makers. In Castañeda et al.'s (2018) study, parents and other family members of participants expressed their excitement and gratitude for finding a joint language learning space with their children. In addition to onsite learning communities, Zhang and Li (2020) built virtual spaces via Seesaw and Skype for both Canadian and Chinese bilingual learners. These learners developed creative skills and a sense of community through virtual interactions with their peers. As Adam, one of the participants, stated in a post-research interview: “A lot of the peers in China would give a lot of suggestions that I haven't considered before, and I think that really helps with my creativity and in the future, I could look a concept in broader ways” (Zhang & Li, 2020, p. 557).

2.4.4.3 The Reconfiguration of Meaning-making across Space and Time

Newfield and Bozalek (2018) argued that literacy could not be taught autonomously but was related to time periods, histories, locations, memories, and emotions. Findings from six papers emphasized global connections built among students with different geographical and ethnic backgrounds (e.g., Anderson et al., 2018; Anderson & Macleroy, 2017; Li & Hawkins, 2021; Oakley et al., 2018; Priego & Liaw, 2017; Zhang & Li, 2020). For example, Li and Hawkins (2021) described their Global StoryBridges project, in which online asynchronous communication occurred between Chinese and Ugandan youth. These two groups of meaning makers would leave comments and questions for each other regarding the stories posted on the project website. Students developed a sense of global citizenship through such encounters across languages, cultures, time, and space. However, Priego and Liaw (2017) foregrounded tensions and disagreements between Canadian pre-service French-as-a-second-language (FSL) teachers and Taiwanese EFL students in an intercultural telecollaborative storytelling project. For this co-constructive process of digital storytelling, the authors identified three areas of disagreement, namely, the use of communication tools, project-related rules, and the way the students divide their labor. It was suggested that coming up with effective resolutions to these disagreements was one way these students strengthened intercultural communication among their global peers.

2.4.4.4 Supporting Language Learning

Thirteen reviewed papers demonstrated the use of digital storytelling for learners' language proficiency, eleven of which related to English learning (e.g., Anderson et al., 2018; Anderson & Macleroy, 2017; Assaf & Lussier, 2020; Castañeda et al., 2018; Emert, 2013; Hirsch & Macleroy, 2020; Kendrick et al., 2022; Kusumaningputri, 2020; Lee, 2014; Oakley et al., 2018; Priego & Liaw, 2017). For example, in Oakley et al.'s (2018) digital storytelling project, Chinese participants' English writing and speaking, and three sub-skills (e.g., vocabulary, grammar, and pronunciation) were significantly improved based on the results of quizzes in an English classroom. Chinese students processed more complex English and received more authentic learning experience from

working with their Australian counterparts. Kusumaningputri (2020) recruited five university EFL students from an English reading course in Indonesia. These students shared their reading portfolios through digital stories in and outside the classrooms and gained intermental (i.e., reading dialogues initiated from social interactions) and intramental (i.e., reading dialogues generated within individual themselves) practices. The participants enhanced their understandings about reading as not only a personal but also social practice. South African learners in Assaf and Lussier's (2020) study shared that their English language skills were improved because they participated in the authentic speaking, reading, and writing activities in the Dream Camp.

However, we noted that merely three of the thirteen papers touched on bilingual/multilingual learners' heritage language development (e.g., Hirsch & Macleroy, 2020; Macleroy & Shamsad, 2020; Stavrou et al., 2021). Young children in Stavrou et al.'s (2021) case study evaluated the legitimacy of employing both Cypriot Greek (CG) and Standard Modern Greek (SMG) in their film. From embarrassment about using their heritage language to a willingness to embrace their language varieties, these children raised a critical awareness of language and power. Similarly, Macleroy and Shamsad (2020) emphasized that their participants became more confident speaking their mother tongue when they learned more about their own cultural heritage. Note that these three papers were inclined to emphasize the maintenance of students' heritage languages instead of learning heritage language itself.

2.4.4.5 Multimodality Affordances

Kress (2000a) contended that, in addition to written and oral linguistic modes, other modes, such as visual, audio, and spatial, increasingly contributed to everyday communication and representation. Findings from twenty-three reviewed studies reported the affordances of incorporating diverse semiotic modes and media, to varying degrees, in bilingual/multilingual meaning-making (e.g., Anderson et al., 2018; Anderson & Macleroy, 2017; Angay-Crowder et al., 2013; Assaf & Lussier, 2020; Burke & Hardware, 2015; Castañeda et al., 2018; Emert, 2013; Fokides, 2016; Hirsch & Macleroy, 2020; Honeyford, 2013; Kendrick et al., 2022; Kusumaningputri, 2020; Lee, 2014; Li & Hawkins, 2021; Macleroy & Shamsad, 2020; Maqueda, 2022; Mills et al., 2016; Oakley

et al., 2018; Prada, 2022; Priego & Liaw, 2017; Stacy & Aguilar, 2018; Stavrou et al., 2021; Zhang & Li, 2020).

First, orchestration multiple modes and media promoted a wide range of skills, including cognitive skills (e.g., creative thinking, critical thinking, and divergent thinking); socio-emotional skills (e.g., empathy, collaboration, and communication); and digital literacies (e.g., Anderson et al., 2018; Anderson & Macleroy, 2017; Angay-Crowder et al., 2013; Hirsch & Macleroy, 2020; Kendrick et al., 2022; Kusumaningputri, 2020; Oakley et al., 2018; Prada, 2019; Stavrou et al., 2021; Zhang & Li, 2020). For example, Hirsch and Macleroy (2020) documented that poetry and film were considered important tools for student participants' collaboration. These students generated ideas, shaped poem lines, and brainstormed how to make the film as a team. The authors highlighted the use of the word "we" (Hirsch & Macleroy, 2020, p. 53) throughout the film-making process. Zhang and Li (2020) also described Jenny, one of their participants, who developed her creative thinking skills through orchestrating Chinese zither music, cut-out figures, and lights to construct a traditional Chinese poem. In this way, Jenny restored the artistic moods of "the original gloomy and desolate loneliness" (p. 561) in the poem for her audience.

Second, integrating multiple modes in digital stories is an alternative and powerful way for students to use their funds of knowledge and make their voices heard (e.g., Anderson & Macleroy, 2017; Angay-Crowder et al., 2013; Castañeda et al., 2018; Emert, 2013; Fokides, 2016; Honeyford, 2013; Kendrick et al., 2022; Lee, 2014; Li & Hawkins, 2021; Mills et al., 2016; Stacy & Aguilar, 2018). For example, the participant of Fokides's (2016) case study employed actual photos of her house and schoolyard and texts to describe her experiences in her home country because she was intended to showcase a comprehensive illustration of her life. Similarly, Lee's (2014) study showcased how a Chinese-speaking EFL student used images to enrich his writing about his dog during the initial stage of digital story creation. The dog, Chiu-chiu's photographs, in this case, became the central mode of meaning-making, and the texts were designed to interpret the photos.

Third, multimodal storytelling helped students affirm and invest their identities (e.g., Anderson et al., 2018; Anderson & Macleroy, 2017; Angay-Crowder et al., 2013; Assaf & Lussier, 2020; Emert, 2013; Honeyford, 2013; Kendrick et al., 2022; Lee, 2014; Mills et al., 2016; Stavrou et al., 2021). For instance, Shegofa as one of the participants in Kendrick et al.'s (2022) study invested her social identity as a “resilient Afghani (-Canadian) youth” (p. 975) by telling the Afghanistan war in her digital story. Shegofa employed words, images, and music to present a contrast between after-war devastating situations and the beauty of her country. Similarly, Joshua, an Indigenous student from “Hymba Yumba Community Hub in Springfield, Queensland” (Mills et al., 2016, p. 3) in Mills et al.'s (2016) study extended his cultural identity through connecting his placed memories with his family members' stories about the islands.

Fourth, incorporating semiotic modes in digital stories can also increase student engagement (e.g., Anderson et al., 2018; Anderson & Macleroy, 2017; Assaf & Lussier, 2020; Fokides, 2016; Hirsch & Macleroy, 2020; Kendrick et al., 2022; Kusumaningputri, 2020; Stacy & Aguilar, 2018; Zhang & Li, 2020). For example, Hirsch and Macleroy (2020) described a changing process among student participants from being apathetic toward the digital storytelling at the beginning to being presented behind the camera, even the quietest students, in the final day of the project. Participants in Kusumaningputri's (2020) study felt engaged and enjoyable with reading and writing courses because they treated digital story creation as a learning objective.

Last, orchestrating various modes in digital storytelling could build up learners' confidence in literacy practices (e.g., Assaf & Lussier, 2020; Emert, 2013; Fokides, 2016; Kendrick et al., 2022; Lee, 2014). African multilingual learners in Assaf and Lussier's (2020) study felt more confident about their future goals through making sense of their own imaginative characters in digital stories. Lin was one of the participants in Lee's (2014) study, and after integrating the animation figures and narratives in his digital stories, he gained a great deal of confidence and willingness to share his hobbies and ideas. Based on the post-research survey, Lin had gained much confidence in his English learning and stated: “I will become better and better” (Lee, 2014, p. 69).

2.4.4.6 Active Global Citizenship Development

The New London Group (1996) proposed a progressive literacy pedagogy, through which learners' cultural and linguistic diversity is actively recognized in response to civic pluralism. Learners negotiate such diversity and expend their cultural and linguistic repertoires to serve as participatory citizens. Two of twenty-four reviewed papers pointed out that digital storytelling played a significant role in developing bilingual/multilingual students' sense of active global citizenship (Anderson et al., 2018; Anderson & Macleroy, 2017). For example, multilingual learners in Anderson et al.'s (2018) study expressed their appreciation for other cultures, became supportive of their peers, and enhanced the intercultural ways of thinking by producing and sharing digital stories at film festivals. One of the teacher participants stated: "They found that [film festivals] really useful as a tool to looking into the lives of other people of their age across the world. (Teacher, SMGS)" (Anderson et al., 2018, p. 203).

However, we noticed that the reviewed studies barely mentioned the challenges of implementing digital storytelling in either formal or informal settings. The challenges identified in reported papers were in relation to the current curriculum framework, school policies, and time differences (e.g., Castañeda et al., 2018; Oakley et al., 2018; Priego & Liaw, 2017). For example, Castañeda et al. (2018) stated their concerns about the implementation of digital storytelling in formal school settings, arguing that teachers who worked in "a crowded curriculum" (p. 12) might be hesitant to incorporate comprehensive digital storytelling projects. The authors, however, did not elaborate on this potential challenge. In terms of school policies, Oakley et al. (2018) reported several challenges in cross-border digital storytelling projects. For example, schools in Australia and China had different policies when it came to the use of digital devices and social media. The different levels of access to social sharing sites, such as YouTube and Facebook, impeded effective communication and collaboration between these two groups of students. These reported challenges sporadically emerged in the studies, necessitating future studies that deeply investigate the constraints of using digital storytelling in bilingual/multilingual learners' meaning-making.

2.5 Discussion and Conclusion

To investigate how bilingual/multilingual students' cultural and linguistic repertoires play a role in meaning-making through digital storytelling, we carried out this qualitative systematic literature review. Initially, we were guided by PRISMA 2020 (Page et al., 2021) inclusion and exclusion criteria and followed a multi-phase procedure for our literature search and selection, culminating in the identification of 24 empirical studies. We conducted thematic and strength analyses to answer our research questions: (1) What are the trends of research that focuses on using digital storytelling in bilingual/multilingual students' meaning-making? (2) What are the scientific strengths of these studies? (3) What are the reported uses of digital storytelling for bilingual/multilingual students? (4) What are the reported benefits and challenges of using digital storytelling for bilingual/multilingual students?

We noted that these analyzed studies focused mostly on the elementary and secondary students in English language classes. No reviewed studies involved pre-school learners. This finding is similar to Rahiem's (2021), who argued that, even though the advantages of using digital storytelling in education have been documented, its use is not yet prevalent in early childhood contexts. The reasons behind this might be that researchers and educators are concerned about the negative impacts of digital technologies on younger children (e.g., Blackwell et al., 2014; Canadian Paediatric Society, 2017; Zimmerman & Christakis, 2007). For example, Canadian Paediatric Society (2017) stated their concerns about the amount of time spent, and the content children access, when using digital technologies, such as TVs and tablets. However, O'Byrne et al. (2018) recognized that kindergarten children could develop communication skills by digitalizing and sharing their stories with their peers. Given such insufficient investigation into digital storytelling in early childhood educational settings, our literature review foresees the need to systematically synthesize the uses, benefits, and challenges of digital storytelling for preschoolers in the scholarly research.

Methodologically, more than half of the reviewed studies employed either ethnography or case study approaches. The reason for this might be that case studies are designed for contextualized inquiry, with the purpose of investigating real-life activities or phenomena

(Yin, 2009). Likewise, according to Reeves et al. (2013), ethnography is adopted to study social interactions and behaviors over time. These attributes of ethnographical and case studies are suitable for in-depth studies, in which researchers explored bilingual/multilingual students' meaning-making processes in various domains (e.g., homes, schools, and communities). Researchers of the reviewed studies also used various data collection tools, such as observations throughout digital storytelling processes, interviews, and students' digital story portfolio collection.

The scientific analysis results of the reviewed papers point to the necessity of future studies on using digital storytelling in bilingual/multilingual students' meaning-making that emphasize their ethical considerations and strengthen their data analysis procedures. According to Arifin (2018), considering ethical issues in qualitative studies is crucial because participants need to have “a power of freedom of choice to involve in the study” (p. 32). Future research needs to be clear and transparent regarding participant recruitment and knowledge dissemination processes to protect participants' privacy while not deceiving readers (Arifin, 2018). Also, we agreed with Zhang et al. (2019) that methodologically strong studies would lead to more credible research findings. We suggest that future research studies clearly elaborate on their data analysis steps to increase the credibility of their results.

Based on our findings, half of the reviewed papers emphasized that digital storytelling can be used to support bilingual/multilingual learners as designers in their own powerful meaning-making processes. Jewitt (2008) defined the notion of design as “how people make use of the resources that are available at a given moment in a specific communicational environment to realise their interests as sign makers” (p. 252).

Designing, which highlights equal access to all available modes (e.g., textual, visual, and spatial), encourages students to embrace digital advances in meaning communication and representation (Bomer et al., 2010; Kyser, 2021). In the reviewed studies, learners became autonomous producers who actively (re)built knowledge, drawing on a variety of semiotic resources, through digital storytelling with peers and families and within their communities (Cope & Kalantzis, 2009b). Teacher participants in the reviewed studies were surprised by the fact that their students took the lead in experimenting with semiotic

modes (e.g., languages, images, and videos) to make sense of what mattered to them (e.g., Anderson & Macleroy, 2017; Anderson et al., 2018; Emert, 2013). As Kyser (2021) stated, by infusing digital technologies into literacy pedagogy, students are likely to be transformed from readers and writers to designers. Bilingual/multilingual learners' sense of ownership and responsibility was engendered when it came to what and how they conveyed in their digital stories (e.g., Hirsch & Macleroy, 2020; Priego & Liaw, 2017).

Moreover, findings in one third of the reviewed papers showed that researchers and teachers employed digital storytelling to create a pedagogical space for students from minority groups, such as refugees, immigrants, and language-minoritized students (e.g., Anderson et al., 2018; Anderson & Macleroy, 2017; Castañeda et al., 2018; Hirsch & Macleroy, 2020; Kendrick et al., 2022; Li & Hawkins, 2021; Prada, 2022; Stavrou et al., 2021). These studies intended to address the issues of inequity and social injustice through empowering students' voices. Students were encouraged to tap into their funds of knowledge to create and transform meanings through digital stories (Tolisano, 2015). Kendrick et al. (2022) contended that students are likely to be successful in language and literacy learning when "the rich resources inherent in students' knowledge and experiences are empowered and accessed through different modes in digital spaces" (p. 979). Our reviewed studies provided empirical evidence on how to involve minoritized students and centralize them in their learning through multimedia techniques (Robin, 2016; Staley & Freeman, 2017). Findings showed that digital storytelling played an empowering role in validating students' experiences and mitigating their marginalization from mainstream education (Jiang et al., 2020). These findings support Vu et al.'s (2019) statement that digital storytelling may be empowering for minority groups, who are able to draw on their cultural and linguistic repertoires and integrate their out-of-school practices into digital stories.

Our literature review also found that a handful of reviewed papers ($n=4$) employed digital storytelling to explore a space for translanguaging in bilingual/multilingual students' meaning-making, and yet the evidence was not strong. Researchers and teachers in the reviewed studies enacted translanguaging spaces (Li, 2018) for students to make multilingual and multimodal stories. Notably, none of these papers differentiated

pedagogical translanguaging from spontaneous translanguaging (Williams, 1994). MacSwan (2017) clarified that spontaneous translanguaging is a positive view of bilingualism/multilingualism as it permits students to naturally use languages both at schools and homes and in their communities. Most of the reviewed papers simply documented their focal participants' abilities to shuttle back and forth between multiple languages but ignored "the complexity of language exchanges among people with different histories" (García & Li, 2014, p. 21). In other words, participants code-switched between languages instead of using languages in a dynamic and holistic way. Differentiating translanguaging from code-switching requires researchers and teachers to centre bilingual/multilingual students' agency and assets in languaging (Yilmaz, 2019). Those four reviewed studies draw readers' attention to the practical application of translanguaging in digital storytelling projects. Also, translanguaging aims to build an equitable learning environment for language-minoritized students because it challenges the monoglossic ideology that undergirds one "standard" language at schools as the language of power and high social status (García, 2014; García & Kleifgen, 2019). Given the insufficient empirical results identified in our review, more research is needed to better understand how language-minoritized students use their interconnected multimodal resources, such as languages, signs, and modes, from pre- to post-production of digital stories.

Our last research question is related to the benefits and challenges of digital storytelling. Findings from sixteen reviewed studies showed that, through digital storytelling, students' funds of knowledge were activated and their linguistic, social, and cultural capital in learning were validated. Digital storytelling enabled these students to create their multimodal identity texts. Students were provided with the opportunities to affirm and invest in their bicultural/multicultural identities through, for example, artefacts, languages, discourses, and digital media. Pertaining findings reinforce the initial hope of the New London Group, which was to acknowledge the differences and diversity of students' languages, cultures, and identities (Serafini & Gee, 2017). Such differences are also viewed as a resource for learning and developing an inclusive society. Compared with coercive learning environments, multilingual and multimodal contexts allow students to interrogate societal power relations and invest their identities to "achieve

more” (Zhang, 2015, p. 108). In a similar vein, Cummins and his colleagues brought up the notion of “identity texts” (Cummins & Early, 2011, p. 3) to articulate the link between identity investment and literacy engagement. When students’ perceptions of their bicultural/multicultural selves are affirmed in educational settings, students are more likely to be engaged and invest their identities in learning (Cummins & Early, 2011). As Hirsch and Macleroy’s (2020) study observed, bilingual learners became more enthusiastic when they were entrusted and welcomed in making their own films to express their understandings of belonging.

Furthermore, we note that six papers emphasized the role of imagination in the semiotic designing and meaning-making processes (Hassett & Wood, 2017). Findings showed that bilingual/multilingual learners tended to use objects to link their real-life selves with imaginative characters, thereby enacting their identities and making sense of their real lives. Hassett and Wood (2017) indicated that imagination functions in every aspect of design processes. For example, based on students’ interests and experiences, their imaginations can be used as an available design to consider and interpret meanings within specific social and cultural contexts. As our review shows, bilingual/multilingual students use artifacts to connect with their future selves and interpret their current issues. These students’ digital storytelling practices serve to “explain, problem-solve or talk back to the issues” (Hassett & Wood, 2017, p. 184) in real-life situations.

Fourteen papers indicated that, driven by digital storytelling, literacy practices occur across and within different learning domains (e.g., school, home, and community). Lim et al. (2021) argued that multiliteracies pedagogy highlights not only the focus of multimodal meaning-making in literacy but also the connection between in- and out-of-school literacy practices. Out-of-school literacies were once considered deficiencies that were coded in students’ families and cultures (Valencia, 2010). ’t Gilde and Volman (2021) challenged this deficit paradigm associated with immigrant and minoritized groups. The authors valued students’ funds of knowledge and posited that students develop their skills and knowledge through their life experiences outside school. Current research also found that digital storytelling was used to build the connections between caregivers and children through intertwining their stories (e.g., Flottemesch, 2013; Pahl,

2011; Prins, 2016, 2017). Children developed stories rooted within their home cultures, and adult family members' perspectives and experiences were validated through digital storytelling (Prins, 2016). Similarly, bilingual/multilingual students in the reviewed studies explored local places to refresh their cultural identities. These students were also encouraged to invite their parents and community members to digital story creation projects. Adult participants were willing to support and provide productive feedback, so the students became more engaged in literacy learning.

Thirteen reviewed papers in total addressed the issue of English and heritage language learning, with eleven focusing on students' English language proficiency. Bilingual/multilingual learners improved English vocabulary, grammar, and reading and writing skills through digital storytelling. However, only three papers mentioned students' heritage language development. The reason might be related to the existing linguistic hierarchies between English dominance and students' heritage languages (García, 2014; Yilmiz, 2021). Because schools lack explicit policies that acknowledge and value students' heritage languages, society's and schools' acceptance of minority students might depend on whether they renounce their heritage languages and cultures (Leonard et al., 2020). Sporadic findings from three reviewed studies also suggest that learners' bilingual/multilingual identities and skills are strengthened through digital storytelling because they had a space to use heritage languages to represent meanings. This finding also echoes Anderson et al.'s (2018) study in that few endeavors have contributed to digital storytelling in heritage language learning. However, the existing literature foregrounds more in-depth studies on incorporating students' heritage languages in digital storytelling, which could help develop students' literacy skills, awareness of heritage language maintenance, and ethnolinguistic identity (e.g., Choi, 2015; Parra et al., 2018; Zapata, 2018). Our literature review, therefore, calls for more empirical studies to further enrich the affordances and constraints of digital storytelling in heritage language classrooms.

Twenty-three studies reported the affordances of multiple semiotic resources in constructing digital stories. In the reviewed studies, these intertwined modes played a significant role in promoting a wide range of skills, initiating students' funds of

knowledge in an alternative and powerful way, helping students affirm and invest their identities, increasing students' engagement, and building up students' confidence in literacy practices. Multimodality pertains to not only the collection of available modes (e.g., images, videos, soundtracks, gestures, and written texts) but also “the assumption that meaning is always realized by ‘collection’ of modes, or multimodal complexes” (Cowan & Kress, 2017, p. 57). Kim and Li (2021) pointed out that multimodality allows students to synthetically tap into more than one mode, which might convey similar meanings, in creating meaning through multimedia. By connecting the nature of mode orchestration and humans' inherent “multiness” (Cope & Kalantzis, 2009, p. 423) expression, Cope and Kalantzis developed the concept of “synesthesia” to further describe such mode orchestration in learning processes. Learners can manipulate different modes, either independently or simultaneously, in making their meanings (Cope & Kalantzis, 2013). This cognitive process of moving between modes and deploying one to complement the others helps students deepen their learning (Cope & Kalantzis, 2013). Given the insufficient evidence on synesthesia in the reviewed studies, our review calls for future studies to explicitly examine how bilingual/multilingual learners orchestrate modes for powerful meaning-making.

2.6 Limitations and Significance

Our systematic literature review has its limitations. Firstly, given how the views of bilingualism and multilingualism vary from precolonial to egalitarian bilingual/multilingualism (Lin, 2015), our selected studies for the literature review may not have the same underpinnings of bilingualism/multilingualism. Turnbull (2018) indicated that many scholars have proposed their own definitions of bilinguals in their research. Different conceptualizations of the terms “bilingual” and “multilingual” would affect the findings that related to our research questions, especially when these studies only “applied a generic label and provided a sparse description of the participants” (Surrain & Luk, 2019, p. 409).

Also, Creswell and Creswell (2018) pointed out that researchers' biases and positions, to some extent, affect their inquiries. For our SLR, a second limitation was that our “biases, values, and personal background, such as gender, history, culture, and socioeconomic

status (SES)” (Creswell & Creswell, 2018, p. 260) were likely to shape the focuses of our review. We might lean to certain themes and actively interpret data to support our positions.

Additionally, we included articles published in English only and excluded non-English publications, which might potentially lead to “English-language bias” (Jackson & Kuriyama, 2019, p. 1388) and reduce generalizability of findings. Taking time, cost, and our language expertise into account, therefore, our SLR included only English articles.

Notwithstanding these limitations, our SLR has potential significance. Firstly, our scientific analysis and scrutiny of the reviewed studies have the potential to inform researchers of the quality of the research findings with regards to using digital storytelling for bilingual/multilingual students. Also, our review contributes to the field of research on language and literacy learning by synthesizing knowledge reported by empirical studies regarding the use of digital storytelling in bilingual/multilingual students’ meaning-making. Moreover, our study helps school-related stakeholders understand the effectiveness of digital storytelling from multiple perspectives. Educators can also be aware of the pedagogical implications presented in the existing literature and summarized in this review.

Chapter 3

3 Thesis Conclusion

This chapter concludes the integrated-article thesis, and summarizes the major findings, and addresses the implications of the systematic literature review.

3.1 A Recap of the Findings

This integrated-article thesis systematically reviewed 24 empirical studies on the use of digital storytelling as a pedagogy tool in bilingual/multilingual students' meaning-making in five ProQuest educational databases from 2013 to May 2022.

Based on the findings of the trends of the reviewed studies, this study found that most of these studies were conducted in English language classes in elementary and secondary schools in the United States. Methodologically, ethnography and case studies were mostly identified in the literature.

Half of the reported papers lacked sufficient details when analyzing and presenting data. The findings also indicate that it is necessary for future empirical studies to be explicit and transparent about their ethical consideration to ensure the protection of participants' privacy.

In regard to the uses of digital storytelling for bilingual/multilingual learners' meaning-making in the literature, findings showcased various aspects of using digital storytelling in educational settings, such as supporting students as designers, connecting different learning domains (e.g., home, school, and community), and addressing equity and social justice through empowering students' voices.

The reviewed literature documented that using digital storytelling in bilingual/multilingual education has positive impacts on students' identity affirmation and investment. It is also helpful in building connections among learners from diverse backgrounds across time and space. Digital storytelling also provided spaces for learners to be engaged in multimodal texts to make sense of what matters to them. However, three of twenty-four reviewed studies reported the challenges of digital storytelling

implication, including different school policies to access social media and digital devices (e.g., Oakley et al., 2018), teachers' hesitation in incorporating digital storytelling projects into the current curriculum in formal schools (e.g., Castañeda et al., 2018), and time zone differences of cross-border projects (e.g., Priego & Liaw, 2017).

3.2 Implications

This systematic literature review has its implications for both researchers and educators. The findings indicate that the majority of the reviewed studies were conducted in elementary and secondary school settings. Therefore, it is suggested for researchers to systematically explore the uses, affordances, and constraints of digital storytelling in early childhood education and other educational levels. In addition, 79.17% of the empirical studies did not explicitly describe research ethics. 29.17% of the studies were not specific about data analysis and presentation processes. We suggest that future researchers address these aspects to ensure research transparency and finding credibility.

In terms of pedagogical implications, findings revealed a variety of uses, benefits, and challenges of digital storytelling for bilingual/multilingual learners. For example, selected studies show that digital storytelling can serve as a pedagogical tool to support learners as designers in their meaning-making processes, promote education equity and social justice, incorporate multiliteracies and translanguaging pedagogy, and challenge the tension between dominant school language and learners' heritage languages (see 2.4.3). These results encourage educators to explore the potential of integrating digital storytelling into their daily practices. As Anderson and Macleroy (2017) emphasized, instead of adopting narrow and instrumental approaches, implementing an approach that prioritizes learners' voices, agency, and powerful digital media is necessary for students' meaning-making. Furthermore, digital storytelling plays an important role in the affirmation and negotiation of bilingual/multilingual students' identities, the connections of learning domains, reconfiguration of meaning-making across space and time, language learning support, multimodality orchestration, and global citizenship development (see 2.4.4). We, therefore, suggest that language and literacy teachers acknowledge and celebrate students' identities by incorporating multiple modes in learning. The reviewed literature also helps educators understand an innovative approach for culturally and

linguistically diverse learners. However, considering the major challenges of using digital storytelling in bilingual/multilingual education, which are in relation to current curriculum in formal schools (Castañeda et al., 2018), different school policies to access to social media and digital devices (Oakley et al., 2018), and time differences in cross-border projects (Priego & Liaw, 2017), educators and schools are encouraged to extend and embed bilingual/multilingual digital storytelling in their curricula and receive professional training to deal with such challenges (Anderson et al., 2018).

References

- Anderson, J., Chung, Y., & Macleroy, V. (2018). Creative and critical approaches to language learning and digital technology: Findings from a multilingual digital storytelling project. *Language and Education*, 32(3), 195-211. <https://doi.org/10.1080/09500782.2018.1430151>
- Anderson, J., & Macleroy, V. (2017). Connecting worlds: Interculturality, identity and multilingual digital stories in the making. *Language and Intercultural Communication*, 17(4), 494-517. <https://doi.org/10.1080/14708477.2017.1375592>
- Angay-Crowder, T., Choi, J., & Yi, Y. (2013). Putting multiliteracies into practice: Digital storytelling for multilingual adolescents in a summer program. *TESL Canada Journal*, 30(2), 36-45. <https://doi.org/10.18806/tesl.v30i2.1140>
- Arifin, S. R. (2018). Ethical considerations in qualitative study. *International Journal of Care Scholars*, 1(2), 30-33.
- Assaf, C. L., & Lussier, K. (2020). Dream camp: Drawing on community cultural wealth capital to make sense of career dreams. *Language, Culture, and Curriculum*, 33(1), 84-99. <https://doi.org/10.1080/07908318.2019.1569020>
- Bailey, B. (2007). Heteroglossia and boundaries. In M. Heller (Ed.), *Bilingualism: A social approach* (pp. 257-276). Basingstoke: Palgrave.
- Baker, C., & Wright, W. E. (2017). *Foundations of bilingual education and bilingualism* (6th ed.). Multilingual Matters.
- Bakhtin, M. (1981). *Dialogic imagination: Four essays*. Austin: University of Texas Press.
- Barbour, R. S. (2014). Quality of data analysis. In U. Flick (Ed.), *The SAGE handbook of qualitative data analysis* (pp. 496-509). Los Angeles, CA: SAGE Publications.
- Bhabha, H. (1994). *The location of culture*. Routledge.
- Blackwell, C. K., Lauricella, A. R., & Wartella, E. (2014). Factors influencing digital technology use in early childhood education. *Computers and Education*, 77, 82-90. <https://doi.org/10.1016/j.compedu.2014.04.013>
- Blaxter, M. (2013). Criteria for the evaluation of qualitative research papers. *Medical Sociology Online*, 7(1), 4-7. Retrieved from http://www.medicalsociologyonline.org/resources/Vol7Iss1/7.1-Criteria-for-evaluating_Blaxter.pdf
- Bomer, R., Zoch, M. P., David, A. D., & Ok, H. (2010). New Literacies in the Material World. *Language Arts*, 88(1), 9-20.
- Boyatzis, R. E. (1998). *Transforming qualitative information: Thematic analysis and code development*. Sage Publications.
- Bracey, G. W. (2002). Summer loss: The phenomenon no one wants to deal with. *Phi Delta Kappan*, 84, 12-13. <https://doi.org/10.1177/003172170208400105>

- Burke, A., & Hardware, S. (2015). Honouring ESL students' lived experiences in school learning with multiliteracies pedagogy. *Language, Culture, and Curriculum*, 28(2), 143-157. <https://doi.org/10.1080/07908318.2015.1027214>
- Campbell, J. L., Quincy, C., Osserman, J., & Pedersen, O. K. (2013). Coding in-depth semistructured interviews: Problems of unitization and intercoder reliability and agreement. *Sociological methods & research*, 42(3), 294-320. <https://doi.org/10.1177/0049124113500475>
- Creswell, J. W., & Creswell, J. D. (2018). *Research design: Qualitative, quantitative, and mixed methods approaches*. Sage, Los Angeles.
- Canadian Paediatric Society. (2017). Screen time and young children: Promoting health and development in a digital world. *Paediatrics & Child Health*, 12(8), 461-468.
- Castañeda, M. E., Shen, X., & Claros Berlioz, E. M. (2018). This is my story: Latinx learners create digital stories during a summer literacy camp. *TESOL Journal*, 9(4), 1-14. <https://doi.org/10.1002/tesj.378>
- Choi, J. (2015). A heritage language learner's literacy practices in a Korean language course in a U.S. university: From a multiliteracies perspective. *Journal of Language & Literacy Education*, 11(2), 116-133.
- Cicchetti, D. V. (1991). The reliability of peer review for manuscript and grant submissions: A cross-disciplinary investigation. *Behavioral and Brain Sciences*, 14, 119-135.
- Cope, B., & Kalantzis, M. (2009a). "Multiliteracies": New literacies, new learning. *Pedagogies: An International Journal*, 4(3), 164-195. <https://doi.org/10.1080/15544800903076044>
- Cope, B., & Kalantzis, M. (2009b). New media, new learning. In D. R. Cole & D. L. Pullen (Eds.), *Multiliteracies in motion: Current theory and practice* (pp. 87-104). Routledge.
- Cope, B., & Kalantzis, M. (2009). A grammar of multimodality. *The International Journal of Learning*, 16(2), 361-425. <http://www.Learning-Journal.com>
- Cope, B., & Kalantzis, M. (2013). Towards a new learning: The scholar social knowledge workspace, in theory and practice. *E-Learning and Digital Media*, 10(4), 332-356. <http://dx.doi.org/10.2304/elea.2013.10.4.332>
- Cope, B., & Kalantzis, M., & Abrams, S. S. (2017). Multiliteracies: Meaning-making and learning in the era of digital text. In F. Serafini & E. Gee (Eds.), *Remixing multiliteracies: Theory and practice from new London to new times* (pp. 35-49). Teachers College Press.
- Cowan, K., & Kress, G. (2017). Documenting and transferring meaning in the multimodal world: Reconsidering "transcription". In F. Serafini & E. Gee (Eds.), *Remixing multiliteracies: Theory and practice from new London to new times* (pp. 50-61). Teachers College Press.
- Creswell, J. W., & Creswell, J. D. (2018). *Research Design: Qualitative, Quantitative, and Mixed Methods Approaches*. Sage, Los Angeles.

- Cummins, J. (1979). Cognitive/academic language proficiency, linguistic interdependence, the optimum age question, and some other matters. *Working Papers on Bilingualism*, 19, 121-129.
- Cummins, J., & Early, M. (2011). *Identity texts: The collaborative creation of power in multilingual schools*. Trentham Books.
- de Jager, A., Fogarty, A., Tewson, A., Lenette, C., & Boydell, K. M. (2017). Digital storytelling in research: A systematic review. *Qualitative Report*, 22(10), 2548-2582.
- D'warte, J. (2020). Recognizing and leveraging the bilingual meaning-making potential of young people aged six to eight years old in one Australian classroom. *Journal of Early Childhood Literacy*, 20(2), 296-326.
<https://doi.org/10.1177/1468798418769361>
- Emert, T. (2013). "The Transpoemations Project": Digital storytelling, contemporary poetry, and refugee boys. *Intercultural Education (London, England)*, 24(4), 355-365. <https://doi.org/10.1080/14675986.2013.809245>
- ERIC. (n.d.). ERIC. ProQuest. <https://about.proquest.com/en/products-services/eric/>
- Flottemesch, K. (2013). Learning through narratives: The impact of digital storytelling on intergenerational relationships. *Academy of Educational Leadership Journal*, 17(3), 53-60.
- Fokides, E. (2016). Using autobiographical digital storytelling for the integration of a foreign student in the school environment: A case study. *Journal of Information Technology Education. Innovations in Practice*, 15(1), 99-115.
<https://doi.org/10.28945/3526>
- García, O. (2009a). *Bilingual education in the 21st century. A global perspective*. Maiden: Wiley-Blackwell.
- García, O. (2014). Countering the dual: Transglossia, dynamic bilingualism and translanguaging in education. In R. Rubdy & L. Alsagoff (Eds.), *The global-local interface, language choice and hybridity* (pp. 100-118). Bristol, UK: Multilingual Matters.
- García, O., & Li, W. (2014). *Translanguaging: Language, bilingualism and education* (1st ed.). Palgrave Macmillan UK.
- García, O., & Kleifgen, J. A. (2019). Translanguaging and literacies. *Reading Research Quarterly*, 55(4), 553-571.
- García, O., & Lin, A. M. Y. (2017). Extending Understandings of bilingual and multilingual education. In O. García., A. M. Y. Lin., & S. May (Eds.), *Bilingual and multilingual education* (3rd edition, pp. 1-20).
- Gough, D., Thomas, J., & Oliver, S. (2012). Clarifying differences between review designs and methods. *Systematic Reviews*, 1(28), 1-9.
- Gregori-Signes, C. (2008). Integrating the old and the new: Digital storytelling in the EFL language classroom. *GRETA*, 16(1&2), 43-49.

- Grosjean, F. (1989). Neurolinguists, beware! The bilingual is not two monolinguals in one person. *Brain and Language*, 36(1), 3-15. [https://doi.org/10.1016/0093-934X\(89\)90048-5](https://doi.org/10.1016/0093-934X(89)90048-5)
- Grosjean, F. (2013). Bilingualism: A short introduction. In F. Grosjean & P. Li (Eds.), *The psycholinguistics of bilingualism* (pp. 5-25). John Wiley & Sons.
- Hancox, D. (2012). The process of remembering with the forgotten Australians: Digital storytelling and marginalized groups. *Human Technology*, 8(1), 65-76. <https://doi.org/10.17011/ht/urn.201205141653>
- Hassett, D. D. & Wood, C. L. (2017). Imagination, creativity, and design. In F. Serafini & E. Gee (Eds.), *Remixing multiliteracies: Theory and practice from New London to new times* (pp. 175-186). New York: Teachers College Press.
- Hirsch, S., & Macleroy, V. (2020). The art of belonging: Exploring the effects on the English classroom when poetry meets multilingual digital storytelling. *English in Education*, 54(1), 41-57. <https://doi.org/10.1080/04250494.2019.1690394>
- Honeyford, M. A. (2013). The simultaneity of experience: Cultural identity, magical realism and the artefactual in digital storytelling: The simultaneity of experience. *Literacy (Oxford, England)*, 47(1), 17-25. <https://doi.org/10.1111/j.1741-4369.2012.00675.x>
- Iseke, J., & Moore, S. (2011). Community-based indigenous digital storytelling with elders and youth. *American Indian Culture and Research Journal*, 35(4), 19-38. <https://doi.org/10.17953/aicr.35.4.4588445552858866>
- Issenberg, S. B., McGaghie, W. C., Petrusa, E. R., Lee Gordan, D., & Scalese, R. J. (2005). Features and uses of high-fidelity medical simulations that lead to effective learning: A BEME systematic review. *Medical Teacher*, 27(1), 10-28.
- Jackson, J. L., & Kuriyama, A. (2019). How often do systematic reviews exclude articles not published in English? *Journal of General Internal Medicine: JGIM*, 34(8), 1388-1389. <https://doi.org/10.1007/s11606-019-04976-x>
- Jewitt, C. (2008). Multimodality and literacy in school classrooms. *Review of Research in Education*, 32(1), 241-267. <https://doi.org.proxy1.lib.uwo.ca/10.3102/0091732X07310586>
- Jewitt, C. (2009). An introduction to multimodality. In C. Jewitt (Ed.), *Introduction to multimodal analysis* (pp. 14-27). Hodder Arnold.
- Jiang, L., Yang, M., & Yu, S. (2020). Chinese ethnic minority students' investment in English learning empowered by digital multimodal composing. *TESOL Quarterly*, 54(4), 954-979. <https://doi.org/10.1002/tesq.566>
- Kalantzis, M., & Cope, B. (2000). A multiliteracies pedagogy: A pedagogy supplement. In B. Cope & M. Kalantzis (Eds.), *Multiliteracies: Literacy learning and the design of social futures* (pp. 237-246). Routledge.
- Kendrick, M., Early, M., Michalovich, A., & Mangat, M. (2022). Digital storytelling with youth from refugee backgrounds: Possibilities for language and digital literacy learning. *TESOL Quarterly*, 56(3), 961-984. <https://doi.org/10.1002/tesq.3146>

- Kim, D., & Li, M. (2021). Digital storytelling: Facilitating learning and identity development. *J. Comput. Educ.*, 8(1), 33-61. <https://doi.org/10.1007/s40692-020-00170-9>
- Kress, G. (2000a). Multimodality: Challenges to thinking about language. *TESOL Quarterly*, 34(2), 337-340.
- Kress, G. (2000b). Multimodality. In B. Cope & M. Kalantzis (Eds.), *Multiliteracies: Literacy learning and the design of social futures* (pp. 182-202). Routledge.
- Kusumaningputri, R. (2020). Engaging dialogues to experience a bigger picture: The potential of portfolios, digital storytelling with video shows for reading activities. *Malaysian Journal of ELT Research*, 17(1), 21-37.
- Kyser, C. (2021). The designing workshop: A pedagogy of multiliteracies in a third grade classroom. *Texas Journal of Literacy Education*, 9(2), 30-57.
- Leander, K., & Boldt, G. (2013). Rereading “a pedagogy of multiliteracies”: Bodies, texts, and emergence. *Journal of Literacy Research*, 45(1), 22-46. <https://doi.org/10.1177/1086296X12468587>
- Lee, H-C. (2014). Using an arts-integrated multimodal approach to promote English learning: A case study of two Taiwanese junior college students. *English Teaching: Practice and Critique*, 13(2), 55-75.
- Leonard, D., Vitrella, A., & Yang, K. (2020). Power, Politics, and Preservation of Heritage Languages. In *Coalition of Asian American leaders (CAAL) and education evolving* (pp. 1-26).
- Lim, N. Z. L., Zakaria, A., & Aryadoust, V. (2022). A systematic review of digital storytelling in language learning in adolescents and adults. *Education and Information Technologies*, 27(5), 6125-6155. <https://doi.org/10.1007/s10639-021-10861-0>
- Lim, F. V., Weninger, C., & Nguyen, T. T. H. (2021). “I expect boredom”: Students’ experiences and expectations of multiliteracies learning. *Literacy (Oxford, England)*, 55(2), 102-112. <https://doi.org/10.1111/lit.12243>
- Lincoln, Y. S., & Guba, E. G. (1985). *Naturalistic inquiry*. Beverly Hills, CA: SAGE Publications.
- Lin, A. M. Y. (2015). Egalitarian bi/multilingualism and trans-semiotizing in a global world. In W. E. Wright., S. Boun., & O, García (Eds.), *The handbook of bilingual and multilingual education* (pp. 19-37). John Wiley & Sons, Inc.
- Li, R., & Hawkins, M. R. (2021). Figured worlds in transnational transmodal communications. *TESOL Quarterly*, 55(1), 5-28. <https://doi.org/10.1002/tesq.569>
- Li, W. (2011). Moment Analysis and translanguaging space: Discursive construction of identities by multilingual Chinese youth in Britain. *Journal of Pragmatics*, 43(5), 1222-1235. <https://doi.org/10.1016/j.pragma.2010.07.035>
- Li, W. (2018). Translanguaging as a practical theory of language. *Applied Linguistics*, 39(1), 9-30.

- Lu, F., Tian, F., Jiang, Y., Cao, X., Luo, W., Li, G., & Wang, H. (2011). ShadowStory: Creative and collaborative digital storytelling inspired by cultural heritage. *Conference on Human Factors in Computing Systems-Proceedings*, 1919-1928. ACM. <https://doi.org/10.1145/1978942.1979221>
- Mackey, W. F. (1987). Bilingualism and Multilingualism. In U. Ammon, N. Dittmar, and K. Matheier (Eds.), *Socio-linguistics/soziolinguistik: An international handbook of the science of language and society* (pp. 699-713). Berlin: de Gruyter.
- Macleroy, V., & Shamsad, S. (2020). A moving story from Dhaka to London: Revealing vibrant identities in young people's intercultural encounters with mobile art, embroidery and artefacts. *Language and Intercultural Communication*, 20(5), 482-496. <https://doi.org/10.1080/14708477.2020.1775846>
- MacSwan, J. (2017). A multilingual perspective on translanguaging. *American Educational Research Journal*, 54(1), 167-201. <https://doi.org/10.3102/0002831216683935>
- Maqueda, C. H. (2022). Digital synesthesia in heritage and second language writing during collaborative and individual digital storytelling. *Languages (Basel)*, 7(3), 1-24. <https://doi.org/10.3390/languages7030222>
- Mills, K. A., Davis-Warra, J., Sewell, M., & Anderson, M. (2016). Indigenous ways with literacies: Transgenerational, multimodal, placed, and collective. *Language and Education*, 30(1), 1-21. <https://doi.org/10.1080/09500782.2015.1069836>
- Nair, V., & Yunus, M. M. (2021). A systematic review of digital storytelling in improving speaking skills. *Sustainability (Basel, Switzerland)*, 13(17), 1-15. <https://doi.org/10.3390/su13179829>
- Newfield, D., & Bozalek, V. (2018). A thebuwa hauntology, from silence to speech: Reconfiguring literacy practices. In C. Kuby., K. Spector., & J. Thiel (Eds.), *Posthumanism and literacy education: Knowing/becoming/doing literacies* (pp. 37-54).
- New London Group. (1996). A pedagogy of multiliteracies: Designing social futures. *Harvard Educational Review*, 66(1), 60-92.
- Oakley, G., Pegrum, M., Xiong, X. B., Lim, C. P., & Yan, H. (2018). An online Chinese-Australian language and cultural exchange through digital storytelling. *Language, Culture, and Curriculum*, 31(2), 128-149. <https://doi.org/10.1080/07908318.2017.1386193>
- O'Byrne, W. I., Houser, K., Stone, R., & White, M. (2018). Digital storytelling in early childhood: Student illustrations shaping social interactions. *Frontiers in Psychology*, 9, 1-14. <https://doi.org/10.3389/fpsyg.2018.01800>
- O'Connor, & Joffe, H. (2020). Intercoder reliability in qualitative research: Debates and practical guidelines. *International Journal of Qualitative Methods*, 19(January-December 2020), 1-13. <https://doi.org/10.1177/1609406919899220>
- Organisation for Economic Co-operation and Development (OECD). (2018). *The future of education and skills Education 2030*.

[https://www.oecd.org/education/2030/E2030%20Position%20Paper%20\(05.04.2018\).pdf](https://www.oecd.org/education/2030/E2030%20Position%20Paper%20(05.04.2018).pdf)

- Pacheco, M. B., & Miller, M. E. (2015). Making meaning through translanguaging in the literacy classroom. *The Reading Teacher*, 69(5), 533-537.
<https://doi.org/10.1002/trtr.1390>
- Page, M. J., MaKenzie, J. E., Bossuyt, P. M., Boutron, I., Hoffmann, T. C., Mulrow, C. D., Shamseer, L., Tetzlaff, J. M., Akl, E. A., Brennan, S. E., Chou, R., Glanville, J., Grimshaw, J. M., Hróbjartsson, A., Lalu, M. M., Li, T., Loder, E. W., Mayo-Wilson, E., McDonald, S., ... Moher, D. (2021). The PRISMA 2020 statement: An updated guideline for reporting systematic reviews. *BMJ(Online)*, 372, 1-9.
- Pahl, K. (2011). My family, my story: Representing identities in time and space through digital storytelling. *National Society for the Study of Education*, 110(1), 17-39.
- Parra, M. L., Araceli O., Rosa F., & Marguerite, L. (2018). Designing a comprehensive course for advanced Spanish heritage learners: Contributions from the Multiliteracies Framework. In G. C. Zapata and M. Lacorte (Eds.), *Multiliteracies pedagogy and language learning. Teaching Spanish to heritage speakers* (pp. 27-66). London: Palgrave Macmillan.
- Parra, M. L. (2021). Strengthening writing voices and identities: Creative writing, digital tools and artmaking for Spanish heritage courses. *Languages (Basel)*, 6(3), 1-19.
<https://doi.org/10.3390/languages6030117>
- Prada, J. (2022). Articulating translanguaging as pedagogy of empowerment for racialized, language-minoritized bilinguals: From concepto to proyecto through digital storytelling. *TESL Canada Journal*, 38(2), 171-185.
<https://doi.org/10.18806/tesl.v38i2.1353>
- Priego, S., & Liaw, M-L. (2017). Understanding different levels of group functionality: Activity systems analysis of an intercultural telecollaborative multilingual digital storytelling project. *Computer Assisted Language Learning*, 30(5), 368-389.
<https://doi.org/10.1080/09588221.2017.1306567>
- Prilutskaya, M. (2021). Examining pedagogical translanguaging: A systematic review of the literature. *Languages*, 6(4), 180-198.
<https://doi.org/10.3390/languages6040180>
- Prins, E. (2016). Digital storytelling in adult education and family literacy: A case study from rural Ireland. *Learning, Media and Technology*, 42(3), 308-323.
<https://doi.org/10.1080/17439884.2016.1154075>
- Prins, E. (2017). Digital storytelling in adult basic education and literacy programming. *New Directions for Adult and Continuing Education*, 2017(154), 29-38.
<https://doi.org/10.1002/ace.20228>
- Quah, C. Y., & Ng, K. H. (2022). A systematic literature review on digital storytelling authoring tool in education: January 2010 to January 2020. *International Journal of Human-Computer Interaction*, 38(9), 851-867.
<https://doi.org/10.1080/10447318.2021.1972608>

- Rahiem, M. D. H. (2021). Storytelling in early childhood education: Time to go digital. *International Journal of Child Care and Education Policy (Seoul)*, 15(1), 1-20. <https://doi.org/10.1186/s40723-021-00081-x>
- Reeves, S., Peller, J., Goldman, J., & Kitto, S. (2013). Ethnography in qualitative educational research: AMEE guide No. 80. *Medical Teacher*, 35(8), e1365-e1379. <https://doi.org/10.3109/0142159X.2013.804977>
- Robin, B. R. (2016). The power of digital storytelling to support teaching and learning. *Digital Education Review*, 30(1), 17-29.
- Rossiter, M., & Garcia, P. A. (2010). Digital storytelling: A new player on the narrative field. *New Directions for Adult and Continuing Education*, 2010(126), 37-48. <https://doi.org/10.1002/ace.370>
- Serafini, F., & Gee, E. (2017). Introduction. In F. Serafini & E. Gee (Eds.), *Remixing multiliteracies: Theory and practice from the new London to new times* (pp. 1-16). Teacher College Press.
- Smeda, N., Dakich, E., & Sharda, N. (2014). The effectiveness of digital storytelling in the classrooms: A comprehensive study. *Smart Learning Environments*, 1(6), 1-21. <https://doi.org/10.1186/s40561-014-0006-3>
- Stacy, J., & Aguilar, J. (2018). Connection, culture, & creativity: Using mobile technology as a medium for storytelling in an intergenerational classroom. *Multicultural Education (San Francisco, Calif.)*, 25(2), 28-35.
- Staley, B., & Freeman, L. A. (2017). Digital storytelling as student-centred pedagogy: empowering high school students to frame their futures. *Research and Practice in Technology Enhanced Learning*, 12(1), 21-17. <https://doi.org/10.1186/s41039-017-0061-9>
- Stavrou, S., Charalambous, C., & Macleroy, V. (2021). Translanguaging through the lens of drama and digital storytelling: Shaping new language pedagogies in the classroom. *Pedagogy, Culture & Society*, 29(1), 99-118. <https://doi.org/10.1080/14681366.2019.1692058>
- Surrain, S., & Luk, G. (2019). Describing bilinguals: A systematic review of labels and descriptions used in the literature between 2005–2015. *Bilingualism: Language and Cognition*, 22(2), 401-415. <https://doi.org/10.1017/S1366728917000682>
- 't Gilde, J., & Volman, M. (2021). Finding and using students' funds of knowledge and identity in superdiverse primary schools: a collaborative action research project. *Cambridge Journal of Education*, 51(6), 673-692. <https://doi.org/10.1080/0305764X.2021.1906845>
- Tolisano, S. R. (2015, August 18). Digital storytelling: What it is... and... what it is not. *Langwitches: The magic of learning*. <https://langwitches.org/blog/2015/08/18/digital-storytelling-what-it-is-and-what-it-is-not/>

- Torres, A. R., Ponce, E. P., & Pastor, M. D. G. (2012). Digital storytelling as a pedagogical tool within a didactic sequence in foreign language teaching. *Digital Education Review*, 22(1), 1-18.
- Turnbull, B. (2018). Reframing foreign language learning as bilingual education: Epistemological changes towards the emergent bilingual. *International Journal of Bilingual Education and Bilingualism*, 21(8), 1041-1048. <https://doi.org/10.1080/13670050.2016.1238866>
- Valencia, R. R. (2010). *Dismantling contemporary deficit thinking: Educational thought and practice*. New York, NY: Routledge.
- Vu, V., Warschauer, M., & Yim, S. (2019). Digital storytelling: A district initiative for academic literacy improvement. *Journal of Adolescent & Adult Literacy*, 63(3), 257-267. <https://doi.org/10.1002/jaal.962>
- Vogel, S., & García, O. (2017). Translanguaging. *Oxford Research Encyclopedia of Education*. 1-21. <https://doi.org/10.1093/acrefore/9780190264093.013.181>
- Vogel, S., Ascenzi-Moreno, L., & García, O. (2018). An expanded view of translanguaging: Leveraging the dynamic interactions between a young multilingual writer and machine translation software. In J. Choi & S. Ollerhead (Eds.), *Plurilingualism in teaching and learning: Complexities across contexts* (pp. 89-106). Routledge.
- Williams, C. (1994). *Arfarniad o Ddulliau Dysgu ac Addysgu yng Nghyd-Destun Addysg Uwchradd Ddwylieithog* [An Evaluation of Teaching and Learning Methods in the Context of Bilingual Secondary Education]. Unpublished Ph.D. thesis, University of Wales, Bangor, UK.
- Wu, J., & Chen, D. V. (2019). A systematic review of educational digital storytelling. *Computer & Education*, 147, 1-16. <https://doi.org/10.1016/j.compedu.2019.103786>
- Yilmaz, T. (2021). Translanguaging as a pedagogy for equity of language minoritized students. *International Journal of Multilingualism*, 18(3), 435-454. <https://doi.org/10.1080/14790718.2019.1640705>
- Yin, R. K. (2009). *Case study research: Design and methods*. SAGE Publications.
- Young, R. J. (2012). Cultural translation as hybridisation. *Trans-Humanities Journal*, 5(1), 155-175.
- Zhang, Z. (2012). *Mapping the contact zone: A case study of an integrated Chinese and Canadian literacy curriculum in a secondary transnational education program in China* [Doctoral dissertation, The University of Western Ontario]. Electronic Thesis and Dissertation Repository. 930. <https://ir.lib.uwo.ca/etd/930>
- Zhang, Z. (2015). Chinese and Canadian teachers implement a hybrid Sino-Canadian curriculum: A multiliteracies perspective. *Teaching and Teacher Education*, 48, 106-116. <https://doi.org/10.1016/j.tate.2015.02.006>

- Zhang, Z., & Li, W. (2020). Enacted agency in a cross-border, online biliteracy curriculum making: Creativity and bilingual digital storytelling. *McGill Journal of Education*, 55(3), 550-567. <https://doi.org/10.7202/1083422ar>
- Zhang, Z., Nagle, J., McKishnie, B., Lin, Z., & Li, W. (2019). Scientific strengths and reported effectiveness: A systematic review of multiliteracies studies. *Pedagogies: An International Journal*, 14(1), 33-61.
- Zapata, G. (2018). The role of digital, learning by design instructional materials in the development of Spanish heritage learners' literacy skills. In G. C. Zapata., & M. Lacorte (Eds.), *Multiliteracies pedagogy and language learning. Teaching Spanish to heritage speakers* (pp. 67-106). London: Palgrave Macmillan.
- Zimmerman, F. J., & Christakis, D. A. (2007). Associations between content types of early media exposure and subsequent attentional problems. *Pediatrics (Evanston)*, 120(5), 986-992. <https://doi.org/10.1542/peds.2006-3322>

Appendices

Appendix 1: Thematic Analyses (as Adopted Zhang et al., 2019, p. 55)

| Themes | Study ID of studies addressing themes in findings | Exemplary direct quotes from the reviewed studies about findings |
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| Learners as designers | 1, 2, 6, 7, 8, 11, 12, 13, 19, 20, 21, 24 | <p>“Reflecting on the process of making a digital story based on a spoof cookery programme, a lower intermediate student of Arabic as a foreign language at the Peace School explained how having something to say that matters, helps you find the words to express yourself: ‘When you’re in the real world and you need to say it, it just comes out of your mouth’ (Student, PS). As other studies have revealed (Castaneda 2013), the sense of responsibility and ownership engendered by digital storytelling, when students are entrusted with making their voice heard, is a powerful stimulus for learning and one to which we return below” (Anderson et al., 2018, pp. 201-202).</p> <p>“After the audio narration in week 7, we gathered all students to discuss the use of images in their story. We gave students the option of drawing pictures, bringing either electronic or physical pictures from home, and searching for copyright-free images online” (Castañeda et al., 2018, p. 7).</p> <p>“It was telling that in the composing process, students did not conform to the commonly adhered to steps in creating a digital story (see e.g., Lambert, 2018) but instead took ownership and developed strategies, points of access, steps, and processes that worked for them as individuals” (Kendrick et al., 2022, p. 970).</p> |
| Educational equity and social justice | 1, 2, 6, 9, 11, 14, 19, 22 | <p>“The digital stories discussed below are moving across borders, for example, illustrating the blurring of boundaries between sites of learning, and shifting between students’ personal, home and</p> |

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| | | <p>community knowledge and interests and issues of equity” (Anderson & Macleroy, 2017, pp. 503-504).</p> <p>“As has been made clear above, our work is founded on an educational philosophy which embraces social justice as a core principle and sets out to challenge coercive relations of power inscribed within government policy and translated into practices in school” (Anderson et al., 2018, p. 199)</p> <p>“Our collaborative analysis is shaped by our own investment in addressing issues of equity, diversity, and inclusion in education systems in Canada and beyond” (Kendrick et al., 2022, p. 966).</p> <p>“Because of these and other reasons, and in hopes of moving towards equity in the education of racialized, language-minoritized multilingual students, educators must gain the necessary perspectives and skills to shift from classroom spaces that oppress and divide to classroom spaces that empower and uplift” (Prada, 2022, p. 172).</p> |
| Situated practice | 3, 4, 5, 6 | <p>“The students brainstormed potential topics for their digital stories based on initial conversations about their interests. They worked individually or in pairs on various topics of their choice ranging from sociopolitical issues (e.g., immigration policies and environmental issues) and their heritage (e.g., introduction to their home country) to personal interests (e.g., Six Flags theme parks, video games, and sports). In this situated practice, we challenged the students to reflect critically on their topic selection and to reframe their choices while raising questions that helped them think harder about whether their topics could serve their purposes and entertain their audience” (Angay-Crowder et al., 2013, pp. 39-40)</p> <p>“Others relied on their own academic and social abilities to inform their future selves. Yonela explained, ‘I improved in my maths</p> |

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| | | <p>and science scores’ and therefore ‘I want to be an agricultural engineer.’ For Nwabisa she ‘loved meeting with people and communicating with people ... so I will be a good tour guide’” (Assaf & Lussier, 2020, p. 93)</p> <p>“Upon completion of the read-aloud of the novel she posed the question (referring to the main character’s death), ‘What makes this loss of life so terrible?’ One student, Matay, blurted out that ‘no one expected him to die, it just happened’. Students delved further into discussion around their beliefs about death, the afterlife and grieving processes in their own and others’ lives. Another student Jia shared, ‘they [the victim’s family] cannot forgive themselves so they are in pain’. In agreement, another student named Larry made reference to the novel: ‘like the sister, feels guilty for not being there’.” (Burke & Hardware, 2015, pp. 149-150).</p> |
| Overt instruction | 3, 4, 5, 6 | <p>“We made and presented a PowerPoint presentation about a definition of digital storytelling, as well as 10 key steps and strategies to consider for a great digital story: (a) find your story; (b) map your story; (c) capture your audience’s attention right away and keep it; (d) tell your story from your unique point of view; I use fresh and vivid language; (f) integrate emotions—yours and audience’s; (g) use your own voice in the script and in the audio; (h) choose your images and sounds carefully; (i) be as brief as you can be; and (j) make sure your story has a good rhythm. We then briefly demonstrated how to download and use the computer software Photostory 3 and showed some examples of digital stories, followed by a critique of each” (Angay-Crowder et al., 2013, p. 40).</p> <p>“The novel was conducted as an in-class read-aloud to the students, and Marnie would often pause as she read and invite students to draw connections from their</p> |

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| | | <p>own lives” (Burke & Hardware, 2015, p. 149).</p> <p>“With a topic in mind, on the second and third weeks of the workshop the students set out to write a first draft of their stories. While some students needed assistance starting the stories, others needed help selecting one of the many stories that came to mind. The authors and volunteers assisted the students by asking about meaningful experiences with their families and by probing more deeply into the topics posed. Once the story’s central theme was established, students wrote their first drafts. Some students wrote more independently, especially the older students, but some wanted and needed more assistance, especially the younger students. Students were encouraged to seek out feedback from volunteers and workshop directors at various points throughout the first draft process. The first draft feedback centered on content and capturing the audience’s attention” (Castañeda et al., 2018, p. 6)</p> |
| Critical framing | 3, 4, 5, 6 | <p>“In this situated practice, we challenged the students to reflect critically on their topic selection and to reframe their choices while raising questions that helped them think harder about whether their topics could serve their purposes and entertain their audience” (Angay-Crowder et al., 2013, p. 40).</p> <p>“When asked about their career dreams during year two interviews, three of the oldest participants revised their career dreams based on a more nuanced understanding of their community and family needs, illustrating how the process of designing their digital stories provided opportunities for critical framing and transformed learning. For instance, Yonela decided she wanted to become a medical doctor instead of an environmental engineer because she had become more aware of the lack of medical support in her community. She described ‘the clinic opens</p> |

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| | | <p>one day a month and even skips several months, forcing my family and others to hire transportation to the nearest clinic [60 kilometres away]’. Yonela’s dream changed because she became more aware of community inequities such as inconsistent health care and the cost of transportation” (Assaf & Lussier, 2020, p. 93).</p> <p>“Through discussing a series of questions, such as why you love your family, how your story tells the audience that you love your family, and why the photos you choose support your ideas, the workshop directors assisted students in critically evaluating their stories and choices” (Castañeda et al., 2018, p. 9).</p> |
| Transformed practice | 3, 4, 5, 6 | <p>“Importantly, students’ engagement with re-structuring text-based free writing into a storyboard, which required them to formulate various modes of expression, was a transforming practice” (Angay-Crowder et al., 2013, p. 40)</p> <p>“When asked about their career dreams during year two interviews, three of the oldest participants revised their career dreams based on a more nuanced understanding of their community and family needs, illustrating how the process of designing their digital stories provided opportunities for critical framing and transformed learning. For instance, Yonela decided she wanted to become a medical doctor instead of an environmental engineer because she had become more aware of the lack of medical support in her community. She described ‘the clinic opens one day a month and even skips several months, forcing my family and others to hire transportation to the nearest clinic [60 kilometres away]’. Yonela’s dream changed because she became more aware of community inequities such as inconsistent health care and the cost of transportation” (Assaf & Lussier, 2020, p. 93).</p> |

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| | | <p>“Transformation was also observed during the transition from written narratives to the technological aspects of the digital story. Learners were sent with their own iPad to complete the audio recording, search for pictures, upload pictures, add sound, and so on. The workshop directors noticed that students stayed on task—not once was a student observed searching the internet, chatting, or gaming. The commitment to the digital story was surprising given the nature of the program, an optional summer literacy bridge program. The transition from author to movie director was palpable” (Castañeda et al., 2018, p. 10).</p> |
| Translanguaging | 1, 2, 3, 4, 8, 14, 15, 19, 20, 21, 22 | <p>“As the participants took notes and designed storyboards for their digital stories, we encouraged them to codeswitch in isiXhosa and English. In our field notes, we identified many instances each day when the South African learners were singing and teaching isiXhosa words and phrases to the preservice teachers. They shared South African music videos and TV clips mostly in isiXhosa and Zulu. Additionally, many of the participants narrated their final digital stories in isiXhosa. All of the community guest speakers spoke to the participants in isiXhosa and the learners often translated for the preservice teachers after each visit. In a few other occasions, Phumza and peers would translate information in English and isiXhosa as needed” (Assaf & Lussier, 2020, p. 95).</p> <p>“During the video, all community members, including project youth, were speaking to each other in Luganda, their local language. Between each step, the video makers inserted transitions and they also displayed subtitles in English to organize their video” (Li & Hawkins, 2021, p. 18).</p> <p>“A key message conveyed during this session was the translanguaging nature of the proyecto. Students were encouraged to</p> |

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| | | <p>hacerlo suyo (make it their own) and use their repertorios lingüísticos (linguistic repertoires) fully. They were encouraged to explore creative ways of conveying meaning beyond “academic” monolingual Spanish or “academic” monolingual English. This was a space to break old rules and formulate new ones through translanguaging, but also through assembling different semiotic resources in powerful ways” (Prada, 2022, p. 177).</p> |
| <p>Tensions between dominant languages and learners’ heritage languages</p> | <p>14, 21</p> | <p>“On the other hand, given the English language capacity as one of the key factors for students, not only in China but also across Uganda, the United States, and many other countries to enter prestigious educational institutions and colleges, we are also aware of the complex conflicts between the translingual transmodal project goal and English dominance in current educational systems situated in different figured worlds and societies” (Li & Hawkins, 2021, pp. 23-24).</p> <p>“Instead, we hope to raise questions about the different lenses that must be considered as we study and analyze transnational transmodal engagement in diverse figured worlds” (Li & Hawkins, 2021, p. 24).</p> <p>“It is common that multilingual communities are often over powered by the dominant language, English, for a number of reasons. While learning English is necessary to experience success in school and in the larger society, folks are denied an opportunity to become fully bi/multilingual and bi/multiliterate in the language they first learned in their homes” (Stacy & Aguilar, 2018, p. 32).</p> |
| <p>Identity affirmation and investment</p> | <p>1, 2, 3, 4, 7, 8, 9, 10, 11, 14, 15, 16, 17, 19, 21, 22</p> | <p>“<i>Our Activities</i> video to redefine the legitimate model of being a polite project member by using English to introduce themselves and the content included in the video. It was noticeable that their identities as GSB project members included using English, but also their own language (Mandarin Chinese) to communicate while</p> |

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| | | <p>playing sports games with peers and reciting Tang Dynasty poetry in the video. The languages were interwoven to shape their multilayered translocal and transnational sense of self. In those communications, with or without intervention by adults, meanings were navigated together through not just words but also worlds (Freire, 1970)” (Li & Hawkins, 2021, pp. 25-26).</p> <p>“As a result, the final digital stories were tailored to each person’s cultural practices as opposed to stagnate heritage characteristics affiliated with their ethnic identity” (Stacy & Aguilar, 2018, p. 31).</p> <p>“The claim to his name is made in part as an acceptance of the complex convergences of his identity” (Honeyford, 2013, p. 22).</p> |
| Connections of learning domains | 1, 2, 3, 4, 6, 12, 14, 15, 17, 18, 19, 21, 22, 24 | <p>“The learners were excited and eager, and they invited their parents, aunts, uncles, and siblings. The feeling was mutual as numerous family members chose to attend; some took the day off work. The parents approached the workshop directors and expressed gratitude about the project itself and conveyed how much the learners had enjoyed the process. One parent in particular approached the workshop directors in disbelief. She asked if her child had “done this all by herself.” She was surprised by the English language proficiency of her child who had recently arrived in the United States. The workshop director reiterated that, though the learner received mentoring, she had completed the story by herself. The workshop director showed the story script to the parent, and it was then that the parent teared up and thanked us for our work” (Castañeda et al., 2018, p. 10).</p> <p>“During the pre-production stage these girls stepped into their culture anew and scrutinised their identity in familiar places: community institutions named after famous Bengali personalities (Osmani Centre, Osmani School, Shapla Primary School,</p> |

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| | | <p>Bongobondhu Primary school, Kobi Najrul Centre); Bengali books and newspapers displayed in shops and local libraries; restaurants selling Bengali food; the oldest Bengali grocery shop; and Bengali clothes and music” (Macleroy & Shamsad, 2020, p. 490).</p> <p>“In the post-research interview, Adam from Canada reported how cross-border collaboration helped shape his creativity in the digital storytelling: ‘A lot of the peers in China would give a lot of suggestions that I haven’t considered before, and I think that really helps with my creativity and in the future, I could look a concept in broader ways’. As the interview data show, all the focal biliteracy learners discussed how intra-actions through reflection and feedback provision nurtured their sense of community building and awareness of a global audience” (Zhang & Li, 2020, p. 557).</p> |
| The reconfiguration of meaning-making across space and time | 1, 2, 14, 18, 20, 24 | <p>“However, agreeing on how to communicate to discuss ideas and co-create the story was a source of tension for some groups. It was in particular the case of groups 3, 9, and 10 in which the Canadian students refused the Taiwanese students’ suggestion to use Facebook” (Priego & Liaw, 2017, p. 380).</p> <p>“Constantly intra-acting with materials, Adobe Illustrator, and teachers and peers from both Canada and China, Adam used Seesaw to document how his storyline evolved from his first-version storyboard to his second-version storyboard, bilingual scripts, and animation making through Adobe Illustrator” (Zhang & Li, 2020, p. 557).</p> <p>“In an interview, one of the Chinese facilitators told us that the Chinese youth were “surprised” while watching how the grass was turned into brooms by the Ugandan youth because their cleaning tools could be purchased from markets, such as those they call “plastic brooms” or</p> |

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| | | “vacuum cleaner” (Skype interview, April 24, 2019)” (Li & Hawkins, 2021, p. 20) |
| Supporting language learning | 1, 2, 4, 6, 8, 9, 11, 12, 13, 18, 20 | <p>“Andile explained, ‘The English I learn from you guys is different from the English I learn from school like they show us something then give us some class works but here it is different. We are talking a lot and working on a project.’ And Bonani believed the best part of participating in the camp was that he improved his English skills” (Assaf & Lussier, 2020, p. 94).</p> <p>“This also showcased the fact that peer interactions with out-of class participants in an EFL context with the tasks established dialogical patterns that was based on meaningful content negotiation. Feedback on grammar and structure were minimum and the participants engaged in language production more” (Kusumaningputri, 2020, p. 32).</p> <p>“Such data manifest the unequal power relations in language use that exist in the local context. It is clear that SMG was considered the powerful and ‘official’ language implying that it should be used in the film while words in CG should not be used at all. Students were actually offering their opinion and critique moments in the film by using both of their linguistic varieties. Over time students realised the legitimacy of both of their language options and became aware of the different ways (Stavrou et al., 2021, 111).</p> |
| Multimodality affordances | 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 24 | <p>“In the first part, the story was accompanied by her favorite song when she was living in her homeland, while in the other two parts she used her favorite Greek song. For all the dialogues she recorded her own voice, slightly changing it when someone else was “speaking”. Even though all dialogues and thoughts were written in Greek, they were “spoken” in Spanish with the exception of her message to her classmates in the last scene” (Fokides, 2016, p. 105).</p> |

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| | | <p>“There was also no denying that using images provided Chen with an alternative and richer way to voice his thoughts and construct meanings. Chen was starting to evolve into a more confident English learner” (Lee, 2014, p. 64).</p> <p>“The sensory entanglement of human and more-than-human entities in her digital story reconfigures the world that is conveyed by the well-known Chinese classic poem and enables the original gloomy and desolate loneliness to emerge” (Zhang & Li, 2020, p. 561).</p> |
| Active global citizenship development | 1, 2 | <p>“At a more practical level the bilingual approach has meant that stories can be shared and responded to within and across schools in the UK and internationally, establishing an important community of practice and developing skills required for active global citizenship: ‘Creating the film for real people made me break the fear of speaking aloud in German and expressing myself’ (Student, SBS)” (Anderson et al., 2018, p. 205).</p> <p>“The process of creating and sharing multilingual digital stories enhanced active citizenship and intercultural ways of thinking as well as making Critical Connections across sites of learning” (Anderson et al., 2018, p. 207).</p> <p>“The project has been greatly enhanced by the participation of schools overseas which has brought new dimensions to the project, presenting differing views of cultures, broadening students’ horizons and developing their sense of themselves as global citizens” (Anderson & Macleroy, 2017, p. 513).</p> |

Appendix 2: Reference List of All Reviewed Papers

1. Anderson, J., Chung, Y., & Macleroy, V. (2018). Creative and critical approaches to language learning and digital technology: Findings from a multilingual digital storytelling project. *Language and Education*, 32(3), 195-211. <https://doi.org/10.1080/09500782.2018.1430151>
2. Anderson, J., & Macleroy, V. (2017). Connecting worlds: Interculturality, identity and multilingual digital stories in the making. *Language and Intercultural Communication*, 17(4), 494-517. <https://doi.org/10.1080/14708477.2017.1375592>
3. Angay-Crowder, T., Choi, J., & Yi, Y. (2013). Putting multiliteracies into practice: Digital storytelling for multilingual adolescents in a summer program. *TESL Canada Journal*, 30(2), 36-45. <https://doi.org/10.18806/tesl.v30i2.1140>
4. Assaf, C. L., & Lussier, K. (2020). Dream camp: Drawing on community cultural wealth capital to make sense of career dreams. *Language, Culture, and Curriculum*, 33(1), 84-99. <https://doi.org/10.1080/07908318.2019.1569020>
5. Burke, A., & Hardware, S. (2015). Honouring ESL students' lived experiences in school learning with multiliteracies pedagogy. *Language, Culture, and Curriculum*, 28(2), 143-157. <https://doi.org/10.1080/07908318.2015.1027214>
6. Castañeda, M. E., Shen, X., & Claros Berlioz, E. M. (2018). This is my story: Latinx learners create digital stories during a summer literacy camp. *TESOL Journal*, 9(4), 1-14. <https://doi.org/10.1002/tesj.378>
7. Emert, T. (2013). "The Transpoemations Project": Digital storytelling, contemporary poetry, and refugee boys. *Intercultural Education (London, England)*, 24(4), 355-365. <https://doi.org/10.1080/14675986.2013.809245>
8. Fokides, E. (2016). Using autobiographical digital storytelling for the integration of a foreign student in the school environment: A case study. *Journal of Information Technology Education. Innovations in Practice*, 15(1), 99-115. <https://doi.org/10.28945/3526>
9. Hirsch, S., & Macleroy, V. (2020). The art of belonging: Exploring the effects on the English classroom when poetry meets multilingual digital storytelling. *English in Education*, 54(1), 41-57. <https://doi.org/10.1080/04250494.2019.1690394>
10. Honeyford, M. A. (2013). The simultaneity of experience: Cultural identity, magical realism and the artefactual in digital storytelling: The simultaneity of experience. *Literacy (Oxford, England)*, 47(1), 17-25. <https://doi.org/10.1111/j.1741-4369.2012.00675.x>
11. Kendrick, M., Early, M., Michalovich, A., & Mangat, M. (2022). Digital storytelling with youth from refugee backgrounds: Possibilities for language and digital literacy learning. *TESOL Quarterly*, 56(3), 961-984. <https://doi.org/10.1002/tesq.3146>
12. Kusumaningputri, R. (2020). Engaging dialogues to experience a bigger picture: The potential of portfolios, digital storytelling with video shows for reading activities. *Malaysian Journal of ELT Research*, 17(1), 21-37.
13. Lee, H-C. (2014). Using an arts-integrated multimodal approach to promote English learning: A case study of two Taiwanese junior college students. *English Teaching: Practice and Critique*, 13(2), 55-75.
14. Li, R., & Hawkins, M. R. (2021). Figured worlds in transnational transmodal communications. *TESOL Quarterly*, 55(1), 5-28. <https://doi.org/10.1002/tesq.569>

15. Macleroy, V., & Shamsad, S. (2020). A moving story from Dhaka to London: Revealing vibrant identities in young people's intercultural encounters with mobile art, embroidery and artefacts. *Language and Intercultural Communication*, 20(5), 482-496. <https://doi.org/10.1080/14708477.2020.1775846>
16. Maqueda, C. H. (2022). Digital synesthesia in heritage and second language writing during collaborative and individual digital storytelling. *Languages (Basel)*, 7(3), 1-24. <https://doi.org/10.3390/languages7030222>
17. Mills, K. A., Davis-Warra, J., Sewell, M., & Anderson, M. (2016). Indigenous ways with literacies: Transgenerational, multimodal, placed, and collective. *Language and Education*, 30(1), 1-21. <https://doi.org/10.1080/09500782.2015.1069836>
18. Oakley, G., Pegrum, M., Xiong, X. B., Lim, C. P., & Yan, H. (2018). An online Chinese-Australian language and cultural exchange through digital storytelling. *Language, Culture, and Curriculum*, 31(2), 128-149. <https://doi.org/10.1080/07908318.2017.1386193>
19. Prada, J. (2022). Articulating translanguaging as pedagogy of empowerment for racialized, language-minoritized bilinguals: From concept to project through digital storytelling. *TESL Canada Journal*, 38(2), 171-185. <https://doi.org/10.18806/tesl.v38i2.1353>
20. Priego, S., & Liaw, M-L. (2017). Understanding different levels of group functionality: Activity systems analysis of an intercultural telecollaborative multilingual digital storytelling project. *Computer Assisted Language Learning*, 30(5), 368-389. <https://doi.org/10.1080/09588221.2017.1306567>
21. Stacy, J., & Aguilar, J. (2018). Connection, culture, & creativity: Using mobile technology as a medium for storytelling in an intergenerational classroom. *Multicultural Education (San Francisco, Calif.)*, 25(2), 28-35.
22. Stavrou, S., Charalambous, C., & Macleroy, V. (2021). Translanguaging through the lens of drama and digital storytelling: Shaping new language pedagogies in the classroom. *Pedagogy, Culture & Society*, 29(1), 99-118. <https://doi.org/10.1080/14681366.2019.1692058>
23. Wolfel, R. L., Watson, J., & Gregory, E. J. (2020). Cross-cultural encounters and foreign language learning, assessment and reflection: Using digital storytelling as an assessment and reflective tool. *Journal of Higher Education Theory and Practice*, 20(2), 122-134. <https://doi.org/10.33423/jhetp.v20i2.2847>
24. Zhang, Z., & Li, W. (2020). Enacted agency in a cross-border, online biliteracy curriculum making: Creativity and bilingual digital storytelling. *McGill Journal of Education*, 55(3), 550-567. <https://doi.org/10.7202/1083422ar>

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Research strength analysis, pedagogical components, and effectiveness of translanguaging: A systematic literature review [Paper presentation]. The 51st Annual

Conference of Canadian Society for the Study of Education (CSSE), 2023. (Faculty's Students Internal Conference Grant)

Publications:

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