Evaluating the Effectiveness of Cross-Media Writing to Enhance Children's Language Competences: An Edu-communicative Study of Language Development in China

Ximeng Zhang. School of Foreign Languages, Hanjiang Normal University, Shiyan 442000, Hubei, China (China) (yourmona1982@163.com) (https://orcid.org/0009-0004-7512-4726)

ABSTRACT

Despite the extensive focus on language development, Chinese children are facing several types of difficulties in developing their linguistic skills in English, majorly due to their extensive character-based writing system and complex tonal language. It is observed that cross-media writing helps the children to promote level of engagement in English writing through multimodal language learning, creativity fostering, collaborative learning opportunities and transferable skills which lead to the promotion of language skills. To address these issues, this study proposed the importance of the effectiveness of cross-media writing in language development. The blended use of blogs, podcasts, TikTok's, videos, and Duolingo's in TV ads as education communicative practices was considered as cross media platform. A survey questionnaire was developed for data collection from the language development experts in various Chinese educational institutions. By considering a cross-sectional research design, 265 valid responses were received and used in data analysis by using Structural Equation Modeling (SEM). Findings of the study revealed the major contribution of cross-media writing to language development of Chinese children. This study provides valuable insights for the practitioners to promote language development among the Chinese children using cross-media in educational communication.

KEYWORDS

Cross-Media Writing, Language Development, Language Competence, Education Communicative Practices.

RESUMEN

A pesar de la gran atención que se presta al desarrollo del lenguaje, los niños chinos se enfrentan a varios tipos de dificultades para desarrollar sus competencias lingüísticas en inglés, debido, sobre todo, a su extenso sistema de escritura basado en caracteres y a su complejo lenguaje tonal. Se observa que la escritura crossmedia ayuda a los niños a promover el nivel de compromiso en la escritura en inglés a través del aprendizaje multimodal de la lengua, el fomento de la creatividad, las oportunidades de aprendizaje colaborativo y las habilidades transferibles que conducen a la promoción de las competencias lingüísticas. Para abordar estas cuestiones, este estudio propuso la importancia de la eficacia de la escritura crossmedia en el desarrollo lingüística. El uso combinado de blogs, podcasts, TikToks, vídeos y Duolingo en anuncios de televisión como prácticas comunicativas en la educación se consideró una plataforma crossmedia. Se elaboró un cuestionario de encuesta para recopilar datos de los expertos en desarrollo lingüístico de diversas instituciones educativas chinas. Al considerar un diseño de investigación transversal, se recibieron 2G5 respuestas válidas que se utilizaron en el análisis de datos mediante el uso de Modelos de Ecuaciones Estructurales (MES). Los resultados del estudio revelaron la importante contribución de la escritura crossmedia al desarrollo lingüístico de los niños chinos. Este estudio proporciona información valiosa para que los profesionales promuevan el desarrollo lingüístico entre los niños chinos utilizando crossmedia en la comunicación educativa.

PALABRAS CLAVES

Escritura Crossmedia, Desarrollo Lingüístico, Competencia Lingüística, Prácticas Comunicativas en la Educación.

1. Introduction

The expansion of information technology, video media, news media, community and all kinds of cross-media networks have resulted in multimedia resource promotion, affecting all domains of learning, with language learning as no exception. There are specific media and mobile digital media arising at this historic moment when the advancement of social economy and technology has started permeating into all aspects of the social realm (Ren, 2022). There exist numerous leaning models for different information text resources referred to as cross media. Online lessons, news articles, forum conversations, and digital compositions are some of these cross-media information text resources mentioned in previous studies (Avilés & Carvajal, 2008; Medentseva, 2019; Ren, 2022); however, it is rarely addressed in relation to language development process of Chinese students.

Language development is based on several elements which are important to improve language quality (Angelova & Zhao, 2016; Cooper, 2023; Reilly & McKean, 2023). Investigation about the educational communication is considered by previous studies (Jonassen et al., 2008; Wu et al., 2019), but it is not addressed in relation to the language development and cross-media writing except in popular literature showing the blended use of blogs, podcasts, TikTok's, videos, Duolingo's in TV ads etc. as education communicative practices, which barely have the potential to improve children's English language. There is a dire need to re-look at the cross-media resources in relation to educational communication and the role of Internet in achieving the objective. Educational communication through cross-media writing has the potential role to address problem of language development. The Internet penetration rate of China is 71.6% (Ren, 2022) which is a real advantage to promote language development through cross-media. The internet provides a treasure of information when it comes to cross-media writing materials.

Truly speaking, the problems being faced by the Chinese students can be resolved through cross-media writing. Additionally, if method of integrating media literacy instruction through cross-media writing methodology is actually implemented in writing instruction practices in China, it can not only cultivate students' writing ability, and expose them to media learning and improving their skills, but also enhance their thinking ability, problem-solving ability, constructive learning ability, and lifelong learning ability. The objective of the present study was, therefore, to address the problem of language development among Chinese students through cross-media writing. This study is a step to resolve the problem of language development among Chinese children through cross-media writing because it helps to promote enhanced engagement in English language through multimodal language learning, fostering the creativity, collaborative learning opportunities and transferable skills, which are the variables included in this study. Most importantly, this study shall have valuable insights for the academicians and practitioners to promote language development among the Chinese children.

2. Literature Review

2.1 Language Development

Language development is the process through which people learn to comprehend and communicate with one another through speech while they are young. (Pancsofar & Vernon-Feagans, 2006). A child can gradually comprehend fundamental language patterns and increase his vocabulary throughout this time before developing fluency. Language development in humans is a process that starts early. It underpins the social, cognitive and literacy development. Even though they are born without any linguistic abilities, newborns can comprehend speech sounds and engage in babbling by the time they are ten months old. Before acquiring the fluency, the development phase at pre-linguistic stage to the progressive stages of acquiring vocabulary and phonological perfection involves the influence of external factors in the form of communication environment and resources (Çetinçelik et al., 2021; Miller et al., 2023; Reeves et al., 2018; Wie et al., 2020).

The language development starts at the pre-birth phase where the fetus begins to distinguish the sound patterns of mother's speech. After the birth, receptive language skills typically emerge in children before verbal or expressive language skills (Atmowardoyo & Sakkir, 2021). Receptive language refers to the internalization and comprehension of words (Dada et al., 2021; Rocca, 2015). Expressive language slowly starts to emerge while receptive language keeps growing. Pre-verbal communication, in which newborns utilize gestures and vocalizations to communicate their intentions to others (Tait et al., 2001), is typically believed to be the precursor to productive/expressive language. A broad concept of development states that new forms eventually replace old functions, allowing children to learn words to communicate the same communicative functions they had previously represented by proverbial ways.

The conceptual understanding of language development is enrooted in Noam Chomsky's theory, characterized as a language development process, wherein children acquire language through the environment. According to Chomsky, children devise an innate language acquisition mechanism that enables them to learn language effectively in a steady manner (Chomsky, 2012). However, the development perspective emphasized that the children's development process is highly influenced by the environmental factors (Rosenberg, 1993). Therefore, distinction is made between the innate capacities of children to learn language and the role of external environment in developing the language skills. The language development as per this theoretical lens takes into consideration the environment as the culture that regulates children's language development at the infancy stage. Chomsky emphasized that during period of language development, the exposure to the target language enables the children to develop language effectively as the first language (Al-Harbi, 2020). It is argued by Chomsky that environment plays a significance role in development the elements of language in children. The theory argued that the innate language development feature gets activated by the environmental stimuli (Chomsky, 2002).

Language development is one of the major issues among children (Mostafa & Ahmed, 2018). Although a few instruments have been developed by practitioners to identify and resolve the problem of language development in children, there still exists shortcomings to overcome this problem. Utilization of an accessible screening instrument to adequately address the prevalent issue of development of language in children is a dire need, as this problem of language development is found even in industrialized nations. In realm of primary healthcare, the issue poses a dilemma. Social and intellectual success of a child are significantly influenced by their language development. Early detection of a language delay can result in prompt intervention, which has a diminishing effect on the child's functioning. Similar with various other nations, the problem of developing language is also very common in China (Verspoor & De Bot, 2022). There is a need, therefore, to address new ways to overcome problem of language development in various countries along with China.

2.2. Cross-media Writing

Cross-media writing is the process of producing information that is intended to be shared and enjoyed through several media channels or platforms (Medentseva, 2019). Fundamentally, it entails developing a tale, narrative, or form of communication that can cross conventional barriers and connect with audiences via a variety of platforms, including print, web, audio, video, social media, interactive experiences, and more. It involves multiple public communication channels (Tian et al., 2023). Cross-media coverage in newspapers, magazines, radio, and television is successful. Cross-media communication provides several opportunities for leading because it helps to promote English language skills. Communication at different platforms helps to learn language with effective communication (Gil, 2022; Wu et al., 2019).

Creative and storytelling components are frequently used in cross-media writing. Children's creativity and verbal expression can be stimulated by encouraging them to interact with imaginative content. The interaction of children over cross-media with the help of blended use of blogs, podcasts, TikTok's, videos and Duolingo's in TV ads as educommunication can promote language skills.

Two key points are made with the publication of the McBride's report by UNESCO in 1980: first, it institutionalized the need for a more equitable global communication model, allowing the marginalized countries including those in Latin America, to meaningfully participate in creation of messages; second, understanding of some media influences on people sparked a cross-disciplinary convergence between education and communication (Mateus & Quiroz Velasco, 2017). The trend of educommunication developed significantly worldwide after this. It was found beneficial for children because it aimed to connect education and communication while defending the individual's right to create and share information (Azqueta et al., 2023; Ruiz Chagna & Iglesias Rodríguez, 2023).

People read newspapers, listened to radio, and watch television, but they can also produce their own newspaper, radio stations, and television networks. The Latin American theoretical currents of popular communication, liberating pedagogy, and cultural studies helped to establish the subject of study known as educommunication (Mateus & Quiroz Velasco, 2017). Recognizing inter-subjectivity as a crucial component for comprehending how people interact with media is one of the core contributions of educommunication. Recent years have seen an increase in the identification of educommunication as a dialogue area on four issues: qualified reception, popular education, collective articulation for social change, and its recognition as a right that must be included into public policy.

3. Theoretical Framework and Hypotheses Development

A major challenge faced in accepting educommunicative trends in the process of language development is the presence of cross-media writing that deems to foster the language growth in early childhood. Generally speaking, two major kinds of motivations are at play in the process of developing second language skills: (1) Curiosity: A desire to better understand a group of people and their way of life, and (2) Empathy: Upon repeated exposure, one might come to the conclusion that this group of people has a more sensible handle on things, and thus identifies with them. Both these factors enable the children to identify the second language learning element from the environment and develop language skills over the period of time.

In contemporary research stream, abundance of literature makes it evident that there is no dearth of studies on language development. Similarly, the field of cross-media writing is also addressed abundantly by previous studies; however, the lack of research is felt in the domain of language development in association with cross-media writing, which was chosen as the rationale of conducting the current research. Therefore, this study aimed to fill the literature gap by considering the effect of cross-media writing on language development of Chinese students. For this purpose, an in-depth examination was made of the impact of second language acquisition in early childhood. The study also took into consideration the question of language learning which facilitated the language development during infancy, which is the critical period according to Noam Chomsky for the language to develop under the influence of the environment. It was interesting to find how environmental factors and other determinants external to language learning can be used to scale the language development in the children.

Figure 1 presents a brief overview of the theoretical framework designed for this study which shows the determents of language development. This framework is based on the effectiveness of cross-media writing as it determines the relationship (promotion of engagement) between cross-media effectiveness and language development. The effectiveness of cross-media writing is addressed through four important variables which include multimodal language learning, fostering creativity, collaborative learning opportunities and transferable skills. According to this study, all these variables have the positive role to promote children engagement in English writing which facilitates language development.

Figure 1 highlights the relationship between multimodal language learning, fostering creativity, collaborative learning opportunities, and transferable skills with promotion of engagement and language development.

Figure 1: Framework Showing the Relationship Between the Cross-media Determinants (Multimodal Language Learning, Fostering Creativity, Collaborative Learning Opportunities, Transferable Skills) and Promotion of Engagement and Language Development.
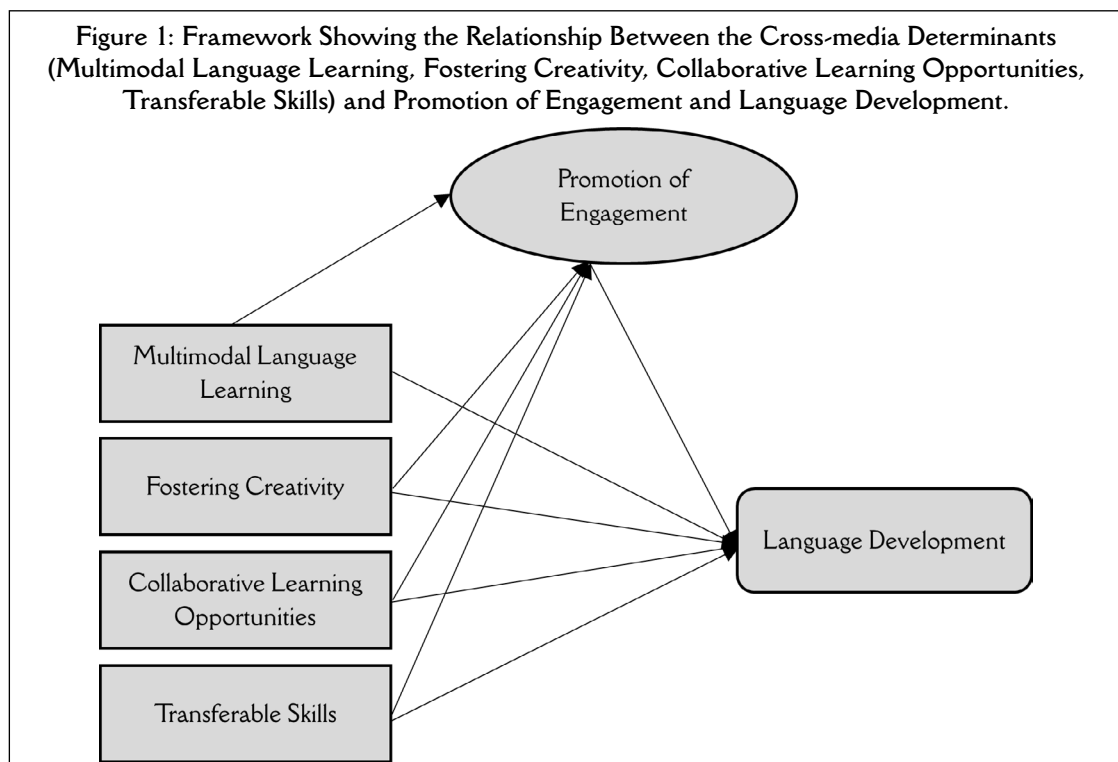
3.1 Promotion of Engagement

Engagement describes the writing habits and tactics that result from a person's motivation to write. Multimedia components including audio, video, and interactive aspects are all included in cross-media writing. Children can be motivated to actively participate in language exercises by using this multi-sensory technique to engage them in the learning process and catch their attention. The level of engagement of an individual in any task determines the success to achieve the task (Taskin et al., 2019). Similarly, the writing activity as a part of language development requires a significant level of engagement by the children to learn better (Lobo et al., 2022). A number of scholars have considered significance of engagement level in language learning studies (Hiver et al., 2021; Lobo et al., 2022), however engagement level in relation to the language development is not considered. Similarly, studies are also available on language development and engagement, however engagement is not considered in relation to the cross-media writing which has central role to promote English language development. Therefore, this study considered the level of engagement as an important element to promote language development among the Chinese children. Thus, it is hypothesized that:

Hypothesis 1 (H₁). Promotion of engagement has a positive influence on language development.

3.2 Multimodal Language Learning

Multimodality is the term used to describe the blending of numerous sensory as well as communicative modalities (Barton & Riddle, 2022), such as sight, sound, text, pictures, video, music, and so forth, that produce meaning in any given message. Every communication is multimodal in a sense because meaning was generated in oral communications using both language and paralinguistic techniques even in the pre-digital eras, in addition to font choices, graphics, page layout, etc. In the digital age, the value of multimodality in communication has expanded, and this is especially true for language learners who depend on the multiplicity of channels provided by screens to "pick up" meaning in a target language (Dressman, 2019). It is therefore a concept used frequently in language education theory and research to describe the coordination of several diverse signification systems in order to convey a single message or meaning, or at least one that is consistent (Edwards et al., 2020). It may be advisable to steer clear of concerns of process totally and instead concentrate on the visible results of multimodal interactions in order to examine the implications of multimodality for language learning because the dynamics of the phenomena are so challenging to understand. From this angle, a number of researchers and theorists define multimodality as an enabling circumstance where the fusion of meaning from two or more modes results in a measurable learning outcome. A general theoretical framework is urgently needed to help discussions across studies of how and why multimodality "works," or how using multiple modes of communication together results in language learning outcomes that are more effective than learning through any one mode and aid children in language development. This semiotic theoretical framework would describe how various modes and their various sensory inputs, primarily visual and auditory but potentially also tactile, olfactory, gustatory, and kinesthetic, produce meaning both singly and in combination. This all-encompassing method of language instruction promotes rounded language development. It has the potential to facilitate students to promote language learning capability. It has direct and indirect effect on engagement development. Indirectly, it influences positively on the engagement level of students which further causes to increase learning skills. Thus, it is hypothesized that:

Hypothesis 2 (H₂). Multimodal language learning has a positive influence on promotion of engagement.
Hypothesis 3 (H₃). Multimodal language learning has a positive influence on language development.

3.3 Fostering Creativity

Creativity is a quality or a process that produces something novel and worthwhile (Tajiki & Mousapour Negari, 2022). An intangible or tangible thing may be the result of the creative process. Psychology, education, business studies, and cognitive science are the main fields of study that are interested in creativity. It involves putting fresh, inventive concepts into practice. The ability to view things differently, uncover patterns, link seemingly unconnected events, and come up with solutions are all traits of creativity. Creative writing is an art form that transcends conventional writing and enables people to communicate their ideas, feelings, and thoughts via the power of words. At all linguistic levels, creative writing is a great tool for language learning. In an effort to express wholly personal meanings, it calls for students to manipulate the language in engaging and challenging ways (Craik & Lockhart, 1972).

Creativity in writing is characterized by a willingness to experiment with language. The enormous improvement in self-confidence and self-esteem that creative writing often fosters in students is perhaps the most remarkable. In addition, learners frequently make their own discoveries about the language and about themselves, which fosters both linguistic and personal development. These benefits invariably result in a comparable rise in positive motivation. As positive motivation has significant role in English writing (Bai et al., 2021; Sabti et al., 2019), therefore, these factors ultimately promotes the engagement level of children in English writing which causes to enhance language development. Few of previous studies also mentioned the significant relationship between creativity and engagement (Banegas & Lowe, 2021; Nicholes, 2016). This study proposed that fostering creativity among children can increase the level of engagement which further increased language development. Hence, following hypothesis is proposed:

Hypothesis 4 (H$_4$). Fostering creativity has a positive influence on promotion of engagement.

Hypothesis 5 (H$_5$). Fostering creativity has a positive influence on language development.

3.4 Collaborative Learning Opportunities

Cross-media writing can support classrooms where students work together and engage while tackling language-related material. This social engagement improves communication (Bruce, 2002) and language skills. In a group that is small enough to guarantee everyone participates, students engage in collaborative (or cooperative) learning activities or learning tasks. Students in the group may cooperate on a shared assignment or work on individual tasks that each contribute to the group's ultimate goal. People who participate in collaborative learning make use of one another's abilities and resources, as opposed to those who study independently. There are still many benefits to using a collaborative learning paradigm in an English language school (Anastasiades et al., 2010; Labonté & Smith, 2022). Furthermore, because collaborative learning encourages active learning and self-discovery, it can genuinely improve a person's employment abilities and engagement level. According to Hedge and Teachout (2000), students who collaborate with one another to work toward a common objective are not only accountable for their own learning processes but also for the learning processes of their peers. This study unequivocally demonstrates that greatness is the outcome when students are encouraged to engage in social interaction and collaborative learning activities. This demonstrates that when students feel empowered to alter their situation, they will be more driven to advance.

Collaborative learning hold that when there is a lively exchange of opposing ideas and perspectives, students will not only sharpen their critical-thinking abilities but also grow more engaged with the subject at hand. There is compelling evidence that students who engage in collaborative learning will think more deeply (Ehsan et al., 2019; Namaziandost et al., 2019), exhibit more complex thinking, and have better memory retention than those who choose to work alone or choose not to engage in these learning activities. Therefore, collaborative learning has influential role in language development which is also reported in several previous studies (Dongyu et al., 2013; Ko & Lim, 2021; Liu et al., 2018) because it has the potential to promote children engagement level. Thus, collaborative learning through cross-media has the ability to influence language development with the promotion of engagement level. Hence, following hypotheses are proposed:

Hypothesis 6 (H$_6$). Collaborative learning opportunities have a positive influence on promotion of engagement.

Hypothesis 7 (H$_7$). Collaborative learning opportunities have a positive influence on language development.

3.5 Transferable Skills

Writing skills refers to a set of specialized talents that authors use to communicate their ideas in relevant ways and engage readers on a deeper level. A variety of linguists have offered several definitions of writing. An activity that is the focus includes writing as a crucial component. The basics of writing are transferable skills: syntactic fluency, diction control, audience awareness, organizational skills, and mechanics like punctuation and spelling. Critical thinking, problem-solving, and digital literacy (Toker & Akbay, 2022) are just a few of the cross-media writing abilities that may be learned. These abilities go beyond language development and can be useful in many areas of a child's education and future aspirations. The use of cross-media in education (Liu & Ko, 2021) through blended use of blogs, podcasts, TikTok's, videos, and Duolingo's in TV ads as education communicative help to transfer the skills. Therefore, those students who use cross-media can transfer their skills through different ways over the internet which help to promote their command on

English language. The transfer of skills over cross-media writing through different platforms also promotes the level of engagement among the students. The promotion of engagement level among the children can promote language development. It has the potential to motivate the children to learn about English language which causes to improve skills in language learning. According to this study, cross-media writing has positive role on children's engagement level and language development through transferable skills, leading to the following hypotheses:

Hypothesis 8 (H$_8$). Transferable skills have a positive influence on promotion of engagement.
Hypothesis 9 (H$_9$). Transferable skills have a positive influence on language development.

4 Methodology
4.1 Scale Development and Pre-Test

A survey questionnaire was developed to measure the relationship between multimodal language learning, fostering creativity, collaborative learning opportunities, transferable skills, promotion of engagement and language development. A systematic process was followed to develop the questionnaire of all the variables. In the first step of scale development, this study reviewed the literature on these variables and identified 50 relevant scale items for all variables. In the next step, experts from different fields of linguistics were contacted for focus group discussions to discuss each scale item. In these discussions, experts recommended 30 scale items for all variables out of 50 scale items. Next, a panel of three reviewers was selected for the content validity and face validity of questionnaire items. Content and face validity confirmation is one of the important steps in the scale development process (Hardesty & Bearden, 2004). These reviewers were from different universities but belonged to the same field. Questionnaires were sent to them via e-mail. The minor changes proposed by the experts were incorporated in these scale items and all the scale items were finalized for pilot study. In the pilot study, 100 questionnaires were distributed among the respondents. The respondents were experts in language development in various educational institutions. 60 valid responses were received back to use in the pilot study. In this process, exploratory factor analysis (EFA) was also carried out to check the reliability of each scale item along with the reliability of the variables (Howard, 2016). While considering EFA, it was observed that seven scale items had a lower level of reliability. Therefore, these scale items were deleted from the study and finally 23 scale items were retained for final data collection. All the scale items are reported in Table 1.

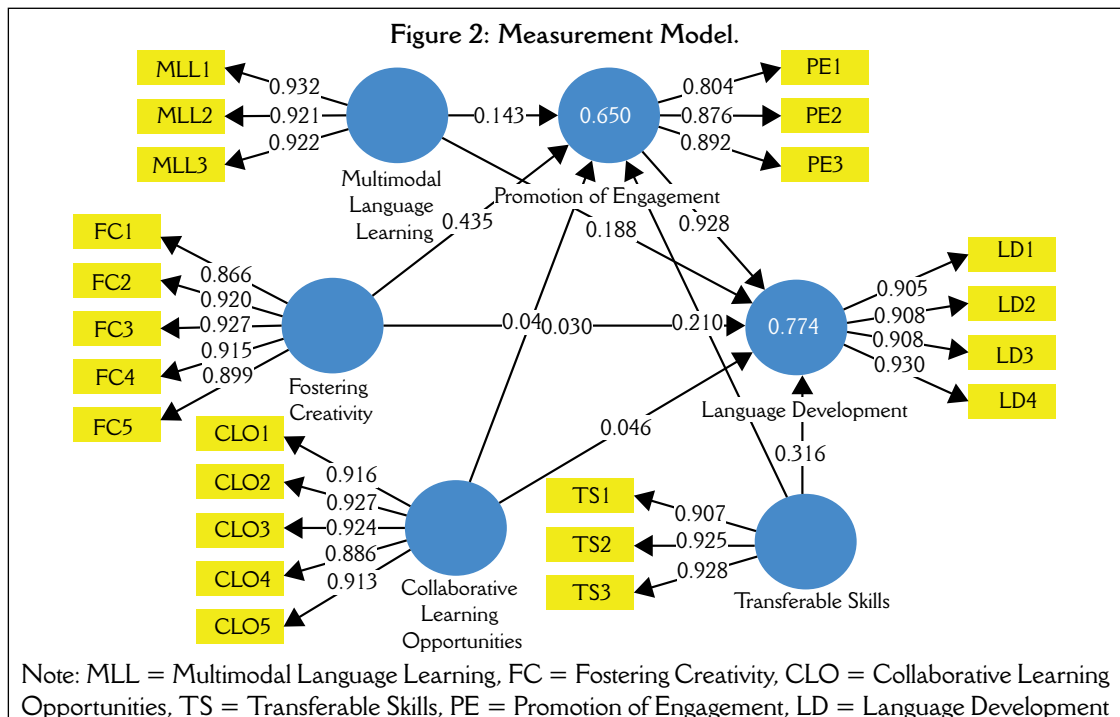| Table 1: Scale Items for Each Variable.	
Variables	Scale Items
Multimodal Language Learning	1. Combination of modes helps in learning. 2. Combination of modes helps in educational communication. 3. Combination of modes helps in learning through image and spoken text as in film.
Fostering Creativity	1. The blend use of media helps in ideas development. 2. Creative ideas help to promote the solution of problems. 3. The promotion of creative ideas helps in language skills. 4. The promotion of creative ideas promotes writing performance. 5. The promotion of creative ideas promotes children's speaking skills.
Collaborative Learning Opportunities	1. Collaboration is always helpful in learning. 2. Collaboration over the internet helps to promote the learning process. 3. Collaborative learning opportunities provide different ways of learning. 4. Children always get benefits from collaborative learning. 5. Collaborative learning helps to promote discussion leading to language skills improvement.
Transferable Skills	1. Transfer of skills assists the children in learning. 2. Use of blend media helps in transfer of skills which improve the learning. 3. Involvement of children in media helps to improve skills through transfer of expertise between children.
Promotion of Engagement	1. The higher interest of children in writing helps in language learning. 2. The higher intention of children in writing helps in language learning. 3. The higher willingness of children to write help in language learning.
Language Development	1. Vocabulary knowledge is most important in language learning. 2. Grammar and syntax are most important in language learning. 3. Listening comprehension is most important in language learning. 4. Reading proficiency is most important in language learning.

4.2 Sampling

Sampling technique is one of the important elements of data collection process (Taherdoost, 2016). Appropriate use of sampling is the most critical look at suitable response for data analysis. A number of studies considered several data collection techniques. Commonly, the probability and non-probability data analysis techniques are preferred by previous studies. The current study considered probability sampling because the population of the study was known. While considering the probability sampling, this study selected simple random sampling which has several advantages over other data collection techniques. Therefore, all the questionnaires were distributed randomly among the respondents of the study.

4.3 Sample Size and Data Collection

The current study considered previous studies in the same field to select sample size. Although a number of sample size selection methods are available in past literature, the sample size is determined by the nature of the study. It was observed that previous studies considered 250-275 as a good sample size, hence, the current study distributes 500 questionnaires among the language development experts in various educational institutions. The basic demographics of participants were set on two merits including the higher-level education in language development, the experience of a year or more than a year in the respective field. From the total distributed questionnaires 270 questionnaires were returned. All the questionnaires were not suitable to include in the data analysis, and 5 incomplete questionnaires were excluded from the study. Finally, 265 questionnaires were used in data analysis to achieve the study objective, which was appropriate.

5. Data Analysis and Findings

Partial Least Square (PLS) technique was employed in this study for data analysis (Hair Jr et al., 2016; Hair Jr et al., 2014). Grounded in the PLS, Structural Equation Modeling (SEM) was preferred which has been employed by several previous studies (Hair Jr & Sarstedt, 2019; Watanabe & Shafiq, 2023). First of all, convergent validity was considered which is used to examine the correlation between the scale items of each variable. The convergent validity was evaluated based on factor loadings, composite reliability, and average variance extracted (AVE). The measurement model was carried out to complete this process. The measurement model is shown in Figure 2 which highlights the factor loadings of each scale item. It was found that all the variables had composite reliability higher than 0.7 which is minimum threshold level in this study.

Figure 2: Measurement Model.

Note: MLL = Multimodal Language Learning, FC = Fostering Creativity, CLO = Collaborative Learning Opportunities, TS = Transferable Skills, PE = Promotion of Engagement, LD = Language Development

Furthermore, AVE was also found higher than 0.5 which is recommended by previous studies. In the case of factor loading, this study considered 0.5 as the minimum level of factor loading to retain the scale items. During this process none of the scale items were deleted because all the scale items had factor loading higher than 0.7. The achievement of satisfactory level by all these three measures confirmed the convergent validity. All the values of factor loadings, composite reliability and an AVE are given in Table 2. Furthermore, discriminant validity assessment was also carried out which evaluated to examine the correlation between the scale items of different variables as shown in Table 3. To confirm the discriminant validity, the method of AVE square root was considered. From this method, it is confirmed that the scale items of different variables have no correlation with each other.

Table 2: Convergent Validity.					
Construct	Items	Loadings	Alpha	Composite Reliability	AVE
Collaborative Learning Opportunities (CLO)	CLO1	0.916	0.95	0.962	0.834
	CLO2	0.927			
	CLO3	0.924			
	CLO4	0.886			
	CLO5	0.913			
Fostering Creativity (FC)	FC1	0.866	0.945	0.958	0.82
	FC2	0.92			
	FC3	0.927			
	FC4	0.915			
	FC5	0.899			
Language Development (LD)	LD1	0.905	0.933	0.952	0.833
	LD2	0.908			
	LD3	0.908			
	LD4	0.93			
Multimodal Language Learning (MLL)	MLL1	0.932	0.916	0.947	0.856
	MLL2	0.921			
	MLL3	0.922			
Promotion of Engagement (PE)	PE1	0.804	0.819	0.893	0.736
	PE2	0.876			
	PE3	0.892			
Transferable Skills (TS)	TS1	0.907	0.909	0.943	0.846
	TS2	0.925			
	TS3	0.928			

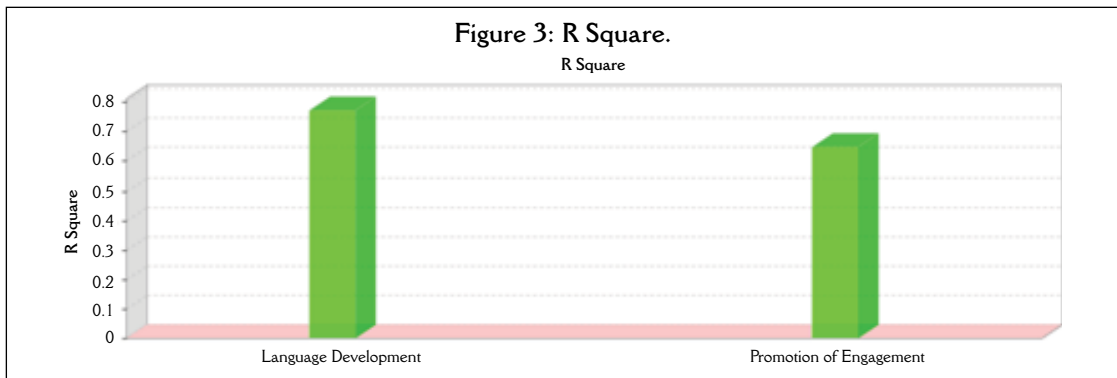| Table 3: Discriminant Validity.						
	Collaborative Learning Opportunities	Fostering Creativity	Language Development	Multimodal Language Learning	Promotion of Engagement	Transferable Skills
Collaborative Learning Opportunities	0.913					
Fostering Creativity	0.811	0.905				
Language Development	0.637	0.675	0.913			
Multimodal Language Learning	0.89	0.805	0.663	0.925		
Promotion of Engagement	0.76	0.794	0.671	0.761	0.858	
Transferable Skills	0.719	0.904	0.616	0.884	0.77	0.92

In the next step of data analysis, the relationship between the variables was examined with the help of hypothesis testing process as shown in Table 4. In this type of data analysis, hypotheses were tested based on the beta value t-value. Furthermore, p-value was also considered to check the significance of the relationship along with the t-value. The minimum threshold level of t-value in the current study is 1.96 and maximum threshold level of p-value is 0.05. Results show that multimodal language learning has a significant relationship with language development as the t-value is higher than 1.96 and p-value is below 0.05. Furthermore, fostering creativity, transferable skills and collaborative learning opportunities also have a significant relationship with language development. Similarly fostering creativity and collaborative learning opportunities have a significant relationship with engagement, however transferable skills and multimodal language learning has no relationship with promotion of engagement because the t-value is less than 1.96 and p-value is higher than 0.05.

Table 4: Relationship Between Variables.				
	Beta	T-Value	P-Values	Decision
Collaborative Learning Opportunities -> Language Development	0.046	2.725	0.004	Supported
Collaborative Learning Opportunities -> Promotion of Engagement	0.044	3.621	0	Supported
Fostering Creativity -> Language Development	0.03	1.999	0.046	Supported
Fostering Creativity -> Promotion of Engagement	0.435	3.816	0	Supported
Multimodal Language Learning -> Language Development	0.168	1.999	0.046	Supported
Multimodal Language Learning -> Promotion of Engagement	0.143	1.47	0.142	Not Supported
Promotion of Engagement -> Language Development	0.928	23.37	0	Supported
Transferable Skills -> Language Development	0.316	2.955	0.003	Supported
Transferable Skills -> Promotion of Engagement	0.21	1.927	0.055	Not Supported

Finally, this study reported the R-square value of language development and promotion of engagement variables, which is 0.774. This value is shown in Figure 3. This value indicated that all the variables are expected to bring 77.4% change in language development of Chinese children, through the use of all dependent variables acting as determinants.

Figure 3: R Square.

6. Discussion

To examine the effect of cross-media writing on Chinese children in schools, this study considered relationship between language development and promotion of engagement with determinants like multimodal language learning, fostering creativity, collaborative learning opportunities, and transferable skills. The effectiveness of cross-media writing is considered through all these determinants. For this purpose, nine hypotheses were proposed, the results of which are discussed in this section.

Hypothesis 1 identified the relationship between language development and promotion of student engagement in writing activities. Results of this hypothesis identified that promotion of engagement has a positive effect on language development. It can be further described as that with the increase in promotion of engagement of students in various language development activities, their language skills can be enhanced. This result is consistent with the positive role of student engagement in English writing found in (Lo & Hyland, 2007; Yang & Zhang, 2023; Yu et al., 2022). Therefore, it is really important for Chinese educational institutions to promote the level of engagement among students with the help of different activities and by adopting new ways of learning.

Hypothesis 2 considers the role of multimodal language learning in promotion of the engagement. These results highlighted that the combination of different modes of learning helps students to engage better in various English writing activities. Thus, it is really important to engage students in writing process with the help of different modes. Different modes include blended use of blogs, podcasts, TikTok's, videos, Duolingo's in TV ads etc.

Hypothesis 3 considered effect of multimodal language learning on development of language which is also significant and positive. Results of this hypothesis can be described as the promotion of multimodal language learning among Chinese institutions, which can work more in promotion of language development

among students. Therefore, multimodal language learning has direct effect on language development and indirect effect with the help of promoting level of engagement among children. Previous studies have also mentioned the positive role of multimodal in English language learning (Farías et al., 2007; Lee, 2014).

Hypothesis 4 and 5 highlighted the effect of fostering creativity on promotion of engagement and language development respectively. The results indicated that higher level of creativity achievement among the students can increase the level of engagement in writing which can help to enhance language development, which relates to hypothesis 5 which was also accepted. Thus, both hypothesis 4 and 5 identified the positive effect of fostering creativity in writing.

Similarly, hypothesis 6 is based on the relationship between collaborative learning opportunities among children and promotion of engagement. It is observed that increase in collaboration in learning activities between different students on different media platforms such as blogs, podcasts, TikTok's, videos, Duolingo's in TV ads etc., can increase language development and level of engagement. This is consistent with what is reported in the literature that creativity in English writing help to promote learning skills (Allison, 2004; Wang & Cheng, 2016).

Hypothesis 7 proved the positive effect of collaborative learning opportunities on language development. The direct effect of collaborative learning opportunities on language development is positively similar to the engagement level of children. In the same direction, Jeong (2016) reported positive role of collaborative learning in English writing.

Hypothesis 8 identifies the effect of transferable skills on the promotion of engagement which is positive. It is indicated that transferable skills on different cross media platforms can help to promote the level of engagement which ultimately has power to promote language skills.

Finally, hypothesis 9 identified the positive effect of transferable skills on language development. The promotion of transferable skills can promote language development directly and indirectly through promotion of engagement.

In conclusion, it is identified that cross media writing is a powerful tool to promote language development among Chinese children. The problem of language development among Chinese children can be managed with the help of cross media writing in educational communication with the help of blended use of blogs, podcasts, TikTok's, videos, Duolingo's in TV ads etc. The effectiveness of cross media writing with the help of multimodal language learning, enhancement of creativity, creation of collaborative learning opportunities and transferable skills has ability to engage children in English writing activities which ultimately help to promote language development.

7. Conclusion

Language development is one of the most critical factors in students' life and their academic career. Especially in China the focus on English language development is quite high because English is an international language, and it is the way of communication globally. Despite the special focus on language development of Chinese children, the highest level is not achieved. The current study has made it evident that language development can be promoted with the help of cross media writing as educational communication. It is reported that the use of cross media writing in educational communication, with the help of blended use of blogs, podcasts, TikTok's, videos, Duolingo's in TV ads, has potential to develop language skills among the children. The effectiveness of cross media writing through multimodal learning language, fostering creativity, collaborative learning opportunities and opportunity to transfer the skills on various platforms such as TikTok's, videos, Duolingo's in TV ads etc. can help to improve language skills. According to this study, engagements have a central role in promoting language development. A higher level of engagement by children in language learning can promote language development, which is possible with the help of cross media writing.

The promotion of language development among children's is addressed by several previous studies, however literature have not considered the important role of cross-media writing in language development. Therefore, this study has an important contribution to literature which has valuable implications for academicians and practitioners. According to the findings of this study, the practitioners should focus on Chinese children's language development with the help of cross media writing. The effectiveness of cross-media writing is proved by the current study, therefore, the implementation of cross media writing among the children has valuable importance to strengthen language skills of children. Management among the educational institutions should promote collaborative learning

opportunities. Language development experts among institutions should promote language development through cross-media writing by using blended use of blogs, podcasts, TikTok's, videos, and Duolingo's in TV ads as education communicative practices. The blended use of various medias has important contribution to that development of skills related to the English language. Furthermore, the need for training must also be emphasized. Teachers are more capable of serving as effective knowledge carriers when they have had enough training and exposure to a wide variety of teaching techniques. Given that instructors act as role models for students, it is important for them to have proper training so that they may better support by motivating them to pursue knowledge through cross-media writing. Besides, when the teaching strategy adopted takes into account the learners' motivation and interests, learning can be further enriched. The collaborative learning environment will increase student motivation. This is due to the fact that pupils will feel in control of and empowered by their own learning experience.

References

Al-Harbi, S. S. (2020). Language development and acquisition in early childhood. *Journal of education and learning (Edulearn)*, *14*(1), 69-73. https://doi.org/10.11591/edulearn.v14i1.14209

Allison, D. (2004). Creativity, students' academic writing, and EAP: exploring comments on writing in an English language degree programme. *Journal of English for Academic Purposes*, *3*(3), 191-209. https://doi.org/10.1016/j.jeap.2003.11.005

Anastasiades, P. S., Filippousis, G., Karvunis, L., Siakas, S., Tomazinakis, A., Giza, P., & Mastoraki, H. (2010). Interactive Videoconferencing for collaborative learning at a distance in the school of 21st century: A case study in elementary schools in Greece. *Computers & Education*, *54*(2), 321-339. https://doi.org/10.1016/j.compedu.2009.08.016

Angelova, M., & Zhao, Y. (2016). Using an online collaborative project between American and Chinese students to develop ESL teaching skills, cross-cultural awareness and language skills. *Computer Assisted Language Learning*, *29*(1), 167-185. https://doi.org/10.1080/09588221.2014.907320

Atmowardoyo, H., & Sakkir, G. (2021). Effects of best-practice based materials in receptive language learning behaviours in improving receptive language skills. *Linguistics and Culture Review*, *5*(S1), 1313-1334. https://doi.org/10.21744/lingcure.v5nS1.1604

Avilés, J. A. G., & Carvajal, M. (2008). Integrated and cross-media newsroom convergence: Two models of multimedia news production—The cases of Novotecnica and La Verdad Multimedia in Spain. *Convergence*, *14*(2), 221-239. https://doi.org/10.1177/1354856507087945

Azqueta, A., Martín-Gutiérrez, Á., & Rodríguez-Torres, A. F. (2023). Analysis of Radicalisation Prevention Policies From the Perspective of Educommunication in Mediterranean Countries. In *News Media and Hate Speech Promotion in Mediterranean Countries* (pp. 260-282). IGI Global. https://doi.org/10.4018/978-1-6684-8427-2.ch014

Bai, B., Wang, J., & Nie, Y. (2021). Self-efficacy, task values and growth mindset: What has the most predictive power for primary school students' self-regulated learning in English writing and writing competence in an Asian Confucian cultural context? *Cambridge Journal of Education*, *51*(1), 65-84. https://doi.org/10.1080/0305764X.2020.1778639

Banegas, D. L., & Lowe, R. J. (2021). Creative writing for publication: An action research study of motivation, engagement, and language development in Argentinian secondary schools. *Studies in Second Language Learning and Teaching*, *11*(3), 401-421. https://doi.org/10.14746/ssllt.2021.11.3.5

Barton, G., & Riddle, S. (2022). Culturally responsive and meaningful music education: Multimodality, meaning-making, and communication in diverse learning contexts. *Research Studies in Music Education*, *44*(2), 345-362. https://doi.org/10.1177/1321103X211009323

Bruce, B. C. (2002). Diversity and critical social engagement: How changing technologies enable new modes of literacy in changing circumstances. *New Literacies and Digital Epistemologies*, *7*. https://go.revistacomunicar.com/IPnara

Çetinçelik, M., Rowland, C. F., & Snijders, T. M. (2021). Do the eyes have it? A systematic review on the role of eye gaze in infant language development. *Frontiers in Psychology*, *11*, 589096. https://doi.org/10.3389/fpsyg.2020.589096

Chomsky, N. (2002). *On nature and language*. Cambridge University Press. https://doi.org/10.1017/CBO9780511613876

Chomsky, N. (2012). On the Nature, Use and Acquisition of Language. In *Language and Meaning in Cognitive Science* (pp. 1-20). Routledge. https://go.revistacomunicar.com/QPQ1t7

Cooper, V. (2023). *Income and African American Fathers' Parenting: Associations with Language Development in Early Childhood* [Doctoral Dissertation, The University of Arizona]. https://go.revistacomunicar.com/dari14

Craik, F. I., & Lockhart, R. S. (1972). Levels of processing: A framework for memory research. *Journal of Verbal Learning and Verbal Behavior*, *11*(6), 671-684. https://doi.org/10.1016/S0022-5371(72)80001-X

Dada, S., Flores, C., Bastable, K., & Schlosser, R. W. (2021). The effects of augmentative and alternative communication interventions on the receptive language skills of children with developmental disabilities: A scoping review. *International Journal of Speech–Language Pathology*, *23*(3), 247-257. https://doi.org/10.1080/17549507.2020.1797165

Dongyu, Z., Fanyu, B., & Wanyi, D. (2013). Sociocultural theory applied to second language learning: Collaborative learning with reference to the Chinese context. *International Education Studies*, *6*(9), 165-174. https://doi.org/10.5539/ies.v6n9p165

Dressman, M. (2019). Multimodality and language learning. In *The handbook of informal language learning* (pp. 39-55). John Wiley & Sons. https://doi.org/10.1002/9781119472384.ch3

Edwards, S., Mantilla, A., Grieshaber, S., Nuttall, J., & Wood, E. (2020). Converged play characteristics for early childhood education: multi-modal, global-local, and traditional-digital. *Oxford Review of Education*, *46*(5), 637-660. https://doi.org/10.1080/03054985.2020.1750358

Ehsan, N., Vida, S., & Mehdi, N. (2019). The impact of cooperative learning on developing speaking ability and motivation toward learning English. *Journal of Language and Education*, *5*(3), 83-101. https://doi.org/10.17323/jle.2019.9809

Farías, M., Obilinovic, K., & Orrego, R. (2007). Implications of multimodal learning models for foreign language teaching and learning. *Colombian Applied Linguistics Journal*, (9), 174-199. https://doi.org/10.14483/22487085.3150

Gil, I. (2022). National survey on educommunication in Spanish universities during the COVID-19 Pandemic: Methodology and Results. In *Communication and Smart Technologies: Proceedings of ICOMTA 2021* (pp. 314-324). Springer. https://doi.org/10.1007/978-981-16-5792-4_31

Hair Jr, J. F., Hult, G. T. M., Ringle, C., & Sarstedt, M. (2016). *A primer on partial least squares structural equation modeling (PLS-SEM)*. Sage Publications. https://doi.org/10.1016/j.acclit.2016.09.003

Hair Jr, J. F., & Sarstedt, M. (2019). Factors versus composites: Guidelines for choosing the right structural equation modeling method. *Project Management Journal*, *50*(6), 619-624. https://doi.org/10.1177/8756972819882132

Hair Jr, J. F., Sarstedt, M., Hopkins, L., & Kuppelwieser, V. G. (2014). Partial least squares structural equation modeling (PLS-SEM) An emerging tool in business research. *European Business Review*, *26*(2), 106-121. https://doi.org/10.1016/j.jfbs.2014.01.002

Hardesty, D. M., & Bearden, W. O. (2004). The use of expert judges in scale development: Implications for improving face validity of measures of unobservable constructs. *Journal of Business Research*, *57*(2), 98-107. https://doi.org/10.1016/S0148-2963(01)00295-8

Hedge, J. W., & Teachout, M. S. (2000). Exploring the concept of acceptability as a criterion for evaluating performance measures. *Group & Organization Management*, *25*(1), 22-44. https://doi.org/10.1177/1059601100251003

Hiver, P., Al-Hoorie, A. H., Vitta, J. P., & Wu, J. (2021). Engagement in language learning: A systematic review of 20 years of research methods and definitions. *Language Teaching Research*. https://doi.org/10.1177/13621688211001289

Howard, M. C. (2016). A review of exploratory factor analysis decisions and overview of current practices: What we are doing and how can we improve? *International Journal of Human-computer Interaction*, *32*(1), 51-62. https://doi.org/10.1080/10447318.2015.1087664

Jeong, K.-O. (2016). A study on the integration of Google Docs as a web-based collaborative learning platform in EFL writing instruction. *Indian Journal of Science and Technology*, *9*(39), 1-7. https://doi.org/10.17485/ijst/2016/v9i39/103239

Jonassen, D., Spector, M. J., Driscoll, M., Merrill, M. D., van Merrienboer, J., & Driscoll, M. P. (2008). *Handbook of Research on Educational Communications and Technology: A Project of the Association for Educational Communications and Technology*. Routledge. https://doi.org/10.4324/9780203880869

Ko, E. G., & Lim, K. Y. (2021). Promoting English learning in secondary schools: design-based research to develop a mobile application for collaborative learning. *The Asia-Pacific Education Researcher*, *31*, 307-319. https://doi.org/10.1007/s40299-021-00562-0

Labonté, C., & Smith, V. R. (2022). Learning through technology in middle school classrooms: Students' perceptions of their self-directed and collaborative learning with and without technology. *Education and Information Technologies*, *27*(5), 6317-6332. https://doi.org/10.1007/s10639-021-10885-6

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. https://go.revistacomunicar.com/mx5fdt

Liu, G. Z., Chen, J. Y., & Hwang, G. J. (2018). Mobile-based collaborative learning in the fitness center: A case study on the development of English listening comprehension with a context-aware application. *British Journal of Educational Technology*, *49*(2), 305-320. https://doi.org/10.1111/bjet.12581

Liu, H., & Ko, Y. C. (2021). Cross-media intelligent perception and retrieval analysis application technology based on deep learning education. *International Journal of Pattern Recognition and Artificial Intelligence*, *35*(15), 2152023. https://doi.org/10.1142/S0218001421520236

Lo, J., & Hyland, F. (2007). Enhancing students' engagement and motivation in writing: The case of primary students in Hong Kong. *Journal of Second Language Writing*, *16*(4), 219-237. https://doi.org/10.1016/j.jslw.2007.06.002

Lobo, J., Dimalanta, G., Bautista, C., Buan, E., & Al De Dios, D. (2022). TikTok Consumption and Level of Class Engagement of Performing Arts Students in the New Normal: Destructive or Beneficial? *American Journal of Education and Technology*, *1*(1), 1-9. https://doi.org/10.54536/ajet.v1i1.305

Mateus, J.-C., & Quiroz Velasco, M. T. (2017). Educommunication: A theoretical approach of studying media in school environments. *Revista Latinoamericana de Ciencias de la Comunicación*, *14*(26), 152-163. https://go.revistacomunicar.com/rGXQBp

Medentseva, N. (2019). Some Aspects of Usage Cross-media in Teaching Foreign Written Speech to the Students of Academic Lyceums in Uzbekistan. *European Journal of Research and Reflection in Educational Sciences*, *7*(12), 432-436. https://go.revistacomunicar.com/Od5wTC

Miller, C. M., Patel, S. W., & Ndebele, D. H. (2023). The Acquisition of Language by Children: How Do Children Learn Language So Quickly and Effortlessly? *Literature and Linguistics Journal*, *2*(1), 60-68. https://go.revistacomunicar.com/zsxali

Mostafa, E., & Ahmed, M. E.-R. (2018). Public awareness of delayed language development in Upper Egypt. *The Egyptian Journal of Otolaryngology*, *34*, 94-102. https://doi.org/10.4103/ejo.ejo_46_17

Namaziandost, E., Neisi, L., Kheryadi, & Nasri, M. (2019). Enhancing oral proficiency through cooperative learning among intermediate EFL learners: English learning motivation in focus. *Cogent Education*, *6*(1), 1683933. https://doi.org/10.1080/2331186X.2019.1683933

Nicholes, J. (2016). Measuring writing engagement and emotional tone in L2 creative writing: Implications for interdisciplinarity. *Journal of Creative Writing Studies*, *2*(1), 2. https://go.revistacomunicar.com/1yaIUi

Pancsofar, N., & Vernon-Feagans, L. (2006). Mother and father language input to young children: Contributions to later language development. *Journal of Applied Developmental Psychology*, *27*(6), 571-587. https://doi.org/10.1016/j.appdev.2006.08.003

Reeves, L., Hartshorne, M., Black, R., Atkinson, J., Baxter, A., & Pring, T. (2018). Early talk boost: A targeted intervention for three year old children with delayed language development. *Child Language Teaching and Therapy*, *34*(1), 53-62. https://doi.org/10.1177/0265659018755526

Reilly, S., & McKean, C. (2023). Creating the conditions for robust early language development for all—Part 1: Evidence-informed child language surveillance in the early years. *International Journal of Language & Communication Disorders*, *58*(6), 2222-2241. https://doi.org/10.1111/1460-6984.12929

Ren, R. (2022). Emotion Analysis of Cross-Media Writing Text in the Context of Big Data. *Frontiers in Psychology*, *13*, 835149. https://doi.org/10.3389/fpsyg.2022.835149

Rocca, C. (2015). Developing the musical brain to boost early pre-verbal, communication and listening skills: The implications for musicality development pre-and post-cochlear implantation. It is not just about Nursery Rhymes! *Cochlear Implants International*, *16*(sup3), S32-S38. https://doi.org/10.1179/1467010015Z.000000000277

Rosenberg, S. (1993). Chomsky's theory of language: some recent observations. *Psychological Science*, *4*(1), 15. https://doi.org/10.1111/j.1467-9280.1993.tb00549.x

Ruiz Chagna, C. A., & Iglesias Rodríguez, A. (2023). The worldview and interculturality in the training of entrepreneurs: a model of participatory edu-communication in Ecuador. *Humanities and Social Sciences Communications*, *10*(1), 1-11. https://doi.org/10.1057/s41599-023-01803-x

Sabti, A. A., Md Rashid, S., Nimehchisalem, V., & Darmi, R. (2019). The Impact of writing anxiety, writing achievement motivation, and writing self-efficacy on writing performance: A correlational study of Iraqi tertiary EFL Learners. *SAGE open*, *9*(4). https://doi.org/10.1177/2158244019894289

Taherdoost, H. (2016). Sampling Methods in Research Methodology: How to Choose a Sampling Technique for Research. *International Journal of Academic Research in Management (IJARM)*, *5*(2), 18-27. https://go.revistacomunicar.com/cof14H

Tait, M. E., Nikolopoulos, T. P., Lutman, M. E., Wilson, D., & Wells, P. (2001). Video analysis of pre-verbal communication behaviours: use and reliability. *Deafness & Education International*, *3*(1), 38-43. https://doi.org/10.1179/146431501790561106

Tajiki, Z., & Mousapour Negari, G. (2022). Fostering Pre-intermediate EFL Learners' Writing Confidence and Writing Fluency through Creative Writing: Investigating the Role of Personality. *Iranian Journal of English for Academic Purposes*, *11*(4), 39-52. https://go.revistacomunicar.com/TKKfzU

Taskin, Y., Hecking, T., Hoppe, H. U., Dimitrova, V., & Mitrovic, A. (2019). Characterizing comment types and levels of engagement in video-based learning as a basis for adaptive nudging. In *Transforming Learning with Meaningful Technologies: 14th European Conference on Technology Enhanced Learning, EC-TEL 2019, Delft, The Netherlands, September 16–19, 2019, Proceedings 14* (pp. 362-376). Springer. https://doi.org/10.1007/978-3-030-29736-7_27

Tian, H., Liu, J., Sun, J., Zhang, Y., & Li, T. (2023). Cross-media migration behavior of antibiotic resistance genes (ARGs) from municipal wastewater treatment systems (MWTSs): Fugitive characteristics, sharing mechanisms, and aerosolization behavior. *Science of The Total Environment*, *893*, 164710. https://doi.org/10.1016/j.scitotenv.2023.164710

Toker, S., & Akbay, T. (2022). A comparison of recursive and nonrecursive models of attitude towards problem-based learning, disposition to critical thinking, and creative thinking in an computer literacy course for preservice teachers. *Education and Information Technologies*, *27*(5), 6715-6751. https://doi.org/10.1007/s10639-022-10906-y

Verspoor, M., & De Bot, K. (2022). Measures of variability in transitional phases in second language development. *International Review of Applied Linguistics in Language Teaching*, *60*(1), 85-101. https://doi.org/10.1515/iral-2021-0026

Wang, H.-c., & Cheng, Y.-s. (2016). Dissecting language creativity: English proficiency, creativity, and creativity motivation as predictors in EFL learners' metaphoric creativity. *Psychology of Aesthetics, Creativity, and the Arts*, *10*(2), 205-213. https://doi.org/10.1037/aca0000060

Watanabe, W. C., & Shafiq, M. (2023). A Study on the Impact of Digital Marketing on Business Practices. *Business Review of Digital Revolution*, *3*(1), 1-10. https://go.revistacomunicar.com/7UuZIg

Wie, O. B., von Koss Torkildsen, J., Schauber, S., Busch, T., & Litovsky, R. (2020). Long-term language development in children with early simultaneous bilateral cochlear implants. *Ear and Hearing*, *41*(5), 1294-1305. https://doi.org/10.1097/AUD.0000000000000851

Wu, L. Y., Wu, S. P., & Chang, C.-Y. (2019). Merging science education into communication: Developing and validating a scale for science edu-communication utilizing awareness, enjoyment, interest, opinion formation, and understanding dimensions (SEC-AEIOU). *Sustainability*, *11*(17), 4551. https://doi.org/10.3390/su11174551

Yang, L. F., & Zhang, L. J. (2023). Self-regulation and student engagement with feedback: The case of Chinese EFL student writers. *Journal of English for Academic Purposes*, *63*, 101226. https://doi.org/10.1016/j.jeap.2023.101226

Yu, Z., Yu, L., Xu, Q., Xu, W., & Wu, P. (2022). Effects of mobile learning technologies and social media tools on student engagement and learning outcomes of English learning. *Technology, Pedagogy and Education*, *31*(3), 381-398. https://doi.org/10.1080/1475939X.2022.2045215