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# The Effect of Narrative Intervention in Korean-English Bilingual Children: Crosslinguistic Interaction View

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This work was supported by the Ministry of Education of the Republic of Korea and the National Research Foundation of Korea (NRF-2021S1A3A2A01096102). Objectives: The primary objective of this study was to identify the effectiveness of narrative intervention in Korean (L1)-English (L2) bilingual children. To achieve this, the groups were classified based on their L1 and L2 vocabulary performance, providing a comprehensive understanding of the impact of narrative intervention on bilingual children. Methods: Nineteen Korean-English bilingual preschool children (aged 5-6) participated and were divided into two groups: 1) language delay bilingual (LD; N=9) and 2) typically developing bilingual (TD; N = 10). Participants completed the story generation task pre- and post-intervention and underwent eight sessions of narrative intervention in their L1. Results: After eight sessions of narrative intervention in their L1, both the LD and TD groups showed statistically significant increases in their post-intervention story grammar (SG), number of different words (NDW), and mean length of utterance in words (MLUw) in L1. Additionally, both groups demonstrated statistically significant increases in their post-intervention SG and NDW in L2. A significant correlation was found between L1 MLUw and both L1/L2 expressive and receptive vocabulary. Furthermore, L1 expressive vocabulary skills were significantly correlated with their L2 post-intervention SG and MLUw. Conclusion: The findings of this study are significant, confirming that L1 narrative intervention not only significantly enhances L1 narrative skills (SG, NDW, and MLUw) but also L2 narrative skills (SG and NDW). Moreover, it identified positive correlations between L1 expressive vocabulary and L2 narrative performance post-intervention. These results underscore the crucial role of L1 intervention in supporting the development of L2 narrative skills, thereby highlighting the cross-linguistic association in Korean-English bilingual children.

Keywords: Narrative, Narrative intervention, Bilingual, SLI, Cross-linguistic

Bilingual children receive consistent exposure to two or more languages during the pivotal period of language development (Kohnert, 2010). Some individuals become simultaneous bilinguals, acquiring two languages from birth, whereas others, known as sequential bilinguals, acquire one language from birth and subsequently acquire a second language (L2) in childhood. Children who acquire two languages from birth are termed simultaneous bilinguals. They commence exposure to two distinct languages from their family members and caregivers shortly after birth. Consequently, their initial word utterances and language combinations for communication manifest like those of monolingual children (Petitto et al., 2001). Conversely, sequential bilingual children are initially exposed to a single language (L1) in their home environment from birth. Their exposure to a second language (L2) progressively increases during the preschool years, coinciding with their entry into educational institutions or broader community interactions. Sequential bilingual children typically demonstrate greater proficiency in their first language (L1) while acquiring

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This is an open-access article distributed under the terms of the Creative Commons Attribution Non-Commercial License (https://creativecommons.org/licenses/by-nc/4.0) which permits unrestricted noncommercial use, distribution, and reproduction in any medium, provided the original work is properly cited. their second language (L2). The age of three serves as a significant criterion for distinguishing between simultaneous and sequential bilinguals (McLaughlin, 1978). Accordingly, bilingual children exposed to their second language (L2) before the age of three are categorized as simultaneous bilingual. In contrast, those exposed to L2 after this threshold are classified as sequential bilinguals.

Language serves as a conduit for transmitting the culture, values, and beliefs of the family (Gutierrez-Clellen, 1999). Bilingual children typically communicate with family members in their home language; while in broader society, they acquire and utilize the language of education and societal integration. Despite bilingualism's cultural richness, some parents and educators harbor concerns regarding potential language confusion and developmental delays attributed to bilingualism. (McCardle & Hoff, 2006). Furthermore, some scholars express apprehension regarding the impact of bilingualism on the acquisition of the community language (Hwang, 2018; Yim, Kim, Han, Kang, & Lee, 2020). Additionally, there are concerns that bilingual children may face challenges in mastering either language due to the perceived cognitive burden of learning two languages compared to monolingual peers, potentially leading to language delays (Kohnert, 2010). Nevertheless, research consistently indicates that bilingual children proficient in their home and community languages often foster strong family and cultural ties, with higher high school graduation rates than monolingual counterparts (Feliciano, 2001; Protes & Hao, 2002). Moreover, employing the home language as the primary medium for affectionate and academic communication correlates positively with children's perceptions of their proficiency in both their first (L1) and second (L2) languages (Yim, Baek, Kim, & Han, 2020). Conversely, the neglect or loss of the home language may result in adverse effects, including decreased familial interaction, erosion of cultural identity (Kohnert, Yim, Nett, Kan, & Duran, 2005), and challenges in communication with caregivers (Wong Fillmore, 1991).

Cummins (1980) further underscores the significance of utilizing the first language, as advocated in the developmental interdependence hypothesis. This hypothesis posits that the development of bilinguals' first language (L1) and second language (L2) is interconnected, operating through a shared underlying mechanism. Cummins (1979) contends that the solid foundation of L1, established in the early stages of language development, positively influences the acquisition of L2. In addition, research demonstrates a positive correlation between children's verbal proficiency in L1 and early literacy (Dickinson, McCabe, Clark-Chiarelli, & Wolf, 2004) and a significant relationship between receptive vocabulary in L1 and expressive vocabulary in L2 (Kan & Kohnert, 2005). Moreover, supporting L1 is beneficial for the academic achievement of school-aged bilingual children (Campos, 1995), and literacy skills in L1 positively impact L2 literacy skills (Greene, 1997). Numerous studies thus indicate that maintaining the mother tongue positively influences the acquisition and proficiency of a second language.

Two primary explanations exist for the cross-language associations observed in bilingual children: (1) the surface or structural level and (2) the cognitive-linguistic interface. The surface or structural level theory posits that the typological features of two languages have interlingual effects. This theory suggests that the tangible characteristics of the two languages spoken by children influence phonology, lexical semantics, and morphosyntax. Studies on bilingual children speaking Spanish-English and German-English, which have similar typological features, have confirmed cross-lingual transfer effect in phonology (Gildersleeve-Neumann, Kester, Davis, & Peña, 2008), vocabulary (Cunningham & Graham, 2000), and grammar and syntax structure (Döpke, 2000). Additionally, cross-lingual transfer effects have been observed in narrative abilities. For instance, Fiestas and Peña (2004) conducted a study where Spanish-English bilingual children were shown wordless picture books and asked to perform storytelling tasks in both Spanish and English, demonstrating the transfer effect on storytelling ability.

Another theory, the cognitive-linguistic interface, explains the positive or negative effects between languages through the mediation of central concepts and processing mechanisms. This theory posits that the transfer effect between languages occurs due to a shared general conceptual or processing mechanism. It accounts for why bilingual children experience transfer effects in various linguistic domains, as the underlying cognitive processes that manage both languages interact and influence each other. This means that bilingual children use a common cognitive resource in developing both languages (Cummins, 1979). The shared underly-



ing mechanisms between the two languages can result in linguistic elements positively or negatively interfering with each other. Several studies on sequential bilingual children have revealed a positive correlation between spoken language proficiency in L1 and initial reading skills in L2 (Dickinson et al., 2004; Lopez & Greenfield, 2004; Miller et al., 2006). These findings support the positive facilitating effect of the common underlying abilities of the two languages on each other. A study by Kan and Kohnert (2008) further elucidated the cognitive resource mediation in bilingual children by demonstrating a significant relationship between receptive vocabulary in L1 and expressive vocabulary in L2 among early school-aged bilingual children speaking Hmong (L1)-English (L2), despite the different language structures. Therefore, this study adopts the theory that Korean-English bilingual children utilize a common cognitive resource in developing both languages despite the different tangible characteristics of Korean and English.

#### Narrative

Narrative is a type of discourse that refers to causally and/or temporally related events (Hughes, McGillivray, & Schmidek, 1997; Peterson, 1990). Constructing cohesive narratives requires integrating linguistic and pragmatic knowledge with cognitive skills (Boudreau, 2007). Since the narrative is based on mental schema (Stein & Glenn, 1979), a high level of complexity in discourse is required, and we can observe this complexity increasing with age (Crais & Lorch, 1994). At the age of two, children begin to talk about past events and they can talk about one or more events using story structure elements by the age of three to four (Kim, 2014). Children around age four begin to reflect on their experiences, feelings, and thoughts in their narratives (Stein, 1988). It is reported that at the age of five to seven, children begin to tell structured stories, including introductions, background, and outcomes (Morrow, 1985). At this age, they can include 'where', 'when', and 'who' information as they start to comprehend the concept of time, and therefore, they can logically make the story according to the event's purpose (Kim, 2014).

Narrative skills play an essential role in children's communication with various people around them. Through narrative, children engage in conversations with their parents (Nation, Clarke, Marshall, & Durand, 2004) and peers (Petersen, Gillam, & Gillam, 2008). Additionally, children acquire the traditions and values of the society to which they belong (Minami, 2002). In addition, narratives are essential in language, cultural, and academic fields (Petersen et al., 2008). Furthermore, their ability to use narratives predicts academic success and literacy outcomes (Bishop & Edmundson, 1987; Fazio, Naremore, & Connell, 1996; Fey, Catts, Proctor-Williams, Tomblin, & Zhang, 2004; O'Neill, Pearce, & Pick, 2004).

Narrative is the result of contextual interaction within sociocultural norms that form the premise and expectation of the speaker and the listener (Owens, 2016). When looking at the narrative performance of multicultural-multilingual children with different cultures and languages, it was confirmed that there may be cultural differences in the narrative structure (Champion, 1998; Gillam, Gillam, & Reece, 2012; Gorman, Fiestas, Pena, & Reynolds Clark, 2011; Mills, Watkins, & Washington, 2013; Tappe & Hara, 2013; Westby, 1994). However, the basic framework of the narrative structure is similar across various languages (Mandler, Scribner, Cole, & DeForest, 1980). A study examining the development patterns of children's personal and fictional narratives in Korea and the United States also confirmed that the ability to produce narratives varies from person to person. However, most were similar to previous studies (Lee & Lee, 2005).

Children's narratives are analyzed in terms of macro- and micro-structures (Justice et al., 2006). A representative method of analyzing macro-structure is 'Story Grammar (SG)', which helps to analyze the overall hierarchical structure of the story (Bamberg, 1987), and to understand the degree of organization of the story. On the other hand, micro-structures examine the ability to produce complex characteristics of language and it is analyzed based on vocabulary diversity (the number of words), linguistic complexity (sentence length), morpheme analysis, syntax, and cohesion. Previous research found narrative patterns in two groups of bilingual children: those with normal and delayed language development. Although there were differences between them in the results, it was also confirmed that there were differences in vocabulary diversity, such as the number of different words (NDW), and grammatical complexity, such as the mean length of utterance in words (MLUw) (Kapantzoglou, Fergadiotis, & Restrepo, 2017; Simon-Cereijido & Gutiérrez-Clellen, 2009).

# Narrative Intervention

Narrative intervention is a language intervention method in which the interventionist deliberately includes targeted linguistic elements and features in a narrative, prompting the child to tell or retell the story (Spencer & Petersen, 2020). Narrative intervention is conducted using an approach that acquires and develops narrative structure based on the SG framework of Stein and Glenn (1979). This is supported by a body of research confirming the effectiveness of narrative language intervention across various populations, including individuals with language impairment (Hayward & Schneider, 2000; Hessling & Schuele, 2020), children with autism spectrum disorder (Gillam, Hartzheim, Studenka, Simonsmeier, & Gillam, 2015), preschool and school-age children (Gillam, Olszewski, Fargo, & Gillam, 2014; Spencer, Weddle, Petersen, & Adams, 2017), and bilingual children (Spencer, Petersen, Restrepo, Thompson, & Gutierrez Arvizu, 2019). Furthermore, it has been revealed that a bilingual intervention approach fosters beneficial effects, including a positive attitude towards both languages and the use of L1 to facilitate L2 learning (Thordardottir, Weismer, & Smith, 1997).

Several studies have revealed that narrative intervention for bilingual children is more effective when conducted in their first language (L1) rather than their second language (L2). The previous research conducted on Spanish (L1)-English (L2) children with typical development (Schoenbrodt, Kerins, & Gesell, 2003) divided the participants into two groups: the experimental group received intervention in their L1, while the control group received the intervention in their L2, examining the efficacy of the intervention. All participants underwent the intervention, which was administered once a week over eight weeks. To compare pre- and post-intervention improvements, narrative samples were obtained and analyzed for communication unit (CU) clauses, number of words, SG, and narrative style using both retelling and generation tasks. The results indicated that the experimental group showed a statistically significant improvement in communicative competence. Additionally, the experimental group demonstrated more significant success in the narrative style than the control group.

Another study identified the effectiveness of narrative intervention in improving vocabulary skills among 16 English (L1)-Hebrew (L2) preschool bilingual children, both typically developing (TD) and those with language impairment. The narrative intervention was conducted using Puente de Cuentos (Spencer, Petersen, & Restrepo, 2017), a translated version of Story Champs, the method utilized in this study. The intervention was administered twice a week, with six sessions in L1 and six sessions in L2, following a block design. The results indicated improvements in vocabulary in both languages. However, following the intervention in L1, enhancement was observed not only in L1 but also in L2 vocabulary. Thus, the study identified a language interaction effect wherein L1 intervention positively influenced L2 intervention outcomes. However, the opposite result-enhancement in L1 after L2 intervention- was observed only in children with high proficiency in their L1. It was further suggested that when children conceptualize using their L1 and translate into L2, the semantic connections are more rapid and robust compared to the opposite scenario.

Petersen, Thompsen, Guiberson, and Spencer (2016) discovered a cross-language interaction effect among bilingual Spanish (L1) and English (L2) children when employing narrative intervention in their L2. The study utilized Story Champs (Spencer & Petersen, 2016) which employs the same methodology as the current experiment. Participants were divided into experimental and control groups. In the results, bilingual children with typical development in the experimental group exhibited significant improvements in causal subordination and SG. Thus, the study demonstrated the interactive efficacy of intervention effectiveness from L2 to L1. On the other hand, children with language impairments in the experimental group did not exhibit a significant cross-language interaction effect. However, these children scored higher than those with language impairments in the control group. This suggests that children with language impairments in the experimental group might experience cross-language interaction with increased exposure and repetition.

As the multicultural-multilingual population has increased, about half of the world's children are bilingual or multilingual at home or in their community (Place & Hoff, 2011). Statistics Korea's multicultural population statistics show that the proportion of babies born into multicultural families accounted for 4.3% of all newborns in 2009. However, it increased to 5.9% in 2019 (Statistics Korea, 2020), and multicultural infants and toddlers surged from about 58,000 in 2008 to about 108,000 in 2009 (Park, Park, & Cho,



2020). Therefore, it is necessary to pay attention to providing appropriate services to multicultural-multilingual children.

As the multicultural population increases both domestically and abroad, many researchers have paid attention to providing appropriate services to multicultural and Korean-English bilingual children in the field of Speech-Language Pathology (Cho & Yim, 2020; Kang & Yim, 2022; Kim, Park, & Kim, 2019; Lee, 2020). Accurately identifying language development delays in bilingual children and providing the appropriate service is crucial, given the unique linguistic characteristics of bilinguals. Various studies have focused on accurate evaluation for Korean-English bilingual children (Han & Yim, 2018; Hong & Yim, 2014; Hong & Yim, 2019; Jo & Yim, 2017; Yim, Yoon, & Lee, 2016). However, the intervention of bilingual children is relatively recent in Korea (Cho & Yim, 2024), and speech therapists provide services based on their own experiences rather than clinical decisions based on evidence (Yang & Hwang, 2022).

Therefore, this study explored whether narrative intervention by L1 (Korean) improves children's first language skills and facilitates their transfer to L2 (English). Children's performance in the narrative is analyzed by the macro- and micro-structure of both L1 and L2. The research questions are as follows:

- 1. Is there a statistically significant difference in macro-/microstructure in Korean between TD children and children with language delay (LD) according to pre-/post intervention?
- 2. Is there a different degree of cross-language transfer in English between TD children and children with LD who receive Korean narrative intervention?
- 3. Are there significant correlations between children's Korean and English vocabulary skills and their Korean and English narrative performance?

# **METHODS**

#### Participants

Nineteen Korean-English bilingual children between the ages of 5 and 6 years participated in this study. Bilingual children with LD were 9 (M=5, F=4) and TD bilingual children were 10 (M=5, F=5). The age did not differ significantly across groups (LD: M=70.44, SD=8.18; TD: M=72.80, SD=8.30). All participants cur-

rently lived in Canada or the U.S.A. and attended preschool, where English was spoken as a primary language. For the primary caregivers of the study subjects, data on the overall development of the children were gathered by having them complete the Korean Brief Parent Report (KBPR; Han & Yim, 2018), a parent report-type child language ability evaluation tool, along with Parental Language Environment Questionnaire (PLEQ; Yim et al., 2020) in an online format. The criteria for selecting bilingual children based on the parent-reported child language ability evaluation tool are as follows. All participants met the following criteria: 1) After being born in South Korea or English-speaking countries, Korean was spoken as the primary language with caregivers at home, 2) have lived in English-speaking countries for at least one year during the language developing period, 3) attend preschool or kindergarten which English is a primary language in English speaking countries, 4) have no history of parental concern including hearing impairment, cognitive delays, or neurological deficits regarding their language development. The subjects' consistent and meaningful exposure to the second language averaged 35.8 months. At the time of the survey, the subjects' average daily exposure to English was 7.19 hours per day, ranging from 4 hours per day for the least exposed children to 16 hours per day for the most exposed children. Fourteen subjects reported using English as the primary language with their friends, while two children communicated by mixing Korean vocabulary with English sentences. Three children primarily used their native language when communicating with friends. However, it was noted that all children utilized both their native language and English, indicating that they did not experience significant difficulty in communicating in the second language.

Children were classified based on their language performance. To assess the children's Korean and English language performance, the Korean receptive and expressive vocabulary test (Kim, Hong, Kim, Chang, & Lee, 2009), Peabody picture vocabulary test-IV (PPVT-IV; Dunn & Dunn, 2007), and expressive one-word picture vocabulary test-IV (EOWPVT-IV; Martin & Brownell, 2010) were used. Since bilingual children exposed to diverse cultural and linguistic environments can be excessively diagnosed with language impairment (Kayser, 1995; Langdon, 1992), conceptual scoring was used to consider children's language ability (Yim, Chung, Han, Baek, & Lim, 2022).

All participants with LD met the following criteria: (a) Korean receptive or expressive conceptual score is below -1.25 SD, (b) English receptive or expressive conceptual score is below 14%ile, (c) scored -1 SD (85) higher on the nonverbal scale of Kaufman brief intelligence test-second edition. All participants with TD met the following criteria: (a) above -1 SD in conceptual score among three of four language tests (Korean and English receptive and expressive test), (b) scored -1 SD (85) higher on the nonverbal scale of Kaufman brief intelligence test-second edition. The non-verbal scale did not differ significantly across groups (LD: M = 104.67, SD = 21.28, TD: M =106.30, SD = 11.75). The *t*-test results for the participants' chronological age, nonverbal scale, and Korean and English receptive and expressive scores by group are presented in Table 1.

## Measures and Materials

Language proficiency assessment task

To assess the children's proficiency in both Korean and English, the Korean receptive and expressive vocabulary test (REVT; Kim et al., 2009), the Peabody picture vocabulary test-IV (PPVT-IV; Dunn & Dunn, 2007), and the expressive one-word picture vocabulary test-IV (EOWPVT-IV; Martin & Brownell, 2010) were utilized. To verify the presence of vocabulary concepts in the children's lexicon, each test began with the first question, with the ceiling point established when children provided incorrect responses to Korean and English words (Bedore, Peña, García, & Cortez, 2005; Pearson, Fernández, & Oller, 1993).

For conceptual scoring, the Korean Receptive Vocabulary Test

(REVT-R; Kim et al., 2009) and the English Receptive Vocabulary Test (PPVT-IV; Dunn & Dunn, 2007) used translations from previous studies (Yim et al., 2022). The Korean expressive vocabulary test (REVT-E; Kim et al., 2009) and the English expressive vocabulary test (EOWPVT-IV; Martin & Brownell, 2010) were translated into different languages. The task validity of both tests was confirmed as follows: First, vocabulary translation was conducted based on dictionary meanings. Two students who completed coursework in a master's program in speech-language pathology, including a researcher, recorded translations from the first to the maximum third meaning provided by the Naver dictionary (http:// dict.naver.com). Each translation was limited to a single word. Next, each question's corresponding picture was presented to two native English speakers with at least five years of experience in early childhood education institutions in English-speaking countries. The correspondence between the translated vocabulary and their response was evaluated using the fill-in-the-blank method and by assessing their answers to questions. In the third stage, two master' s students with a second-level language rehabilitation certificate in Korean speech-language pathology, along with a bilingual individual fluent in Korean-English and holding an English-speaking national language rehabilitation certificate, assessed the appropriateness of the translation based on the results of the second stage.

#### Narrative task

The multilingual assessment instrument for narratives (MAIN; Gagarina et al., 2019) was used to assess children's narrative abilities before and after intervention. MAIN is designed to evaluate

Table 1. Mean	performance and	differences o	n the	lanquage t	est used	for a group	classification

	LD (N=9)	TD (N = 10)	t	p
Age (mo)	70.44 (8.10)	72.80 (8.30)	625	.540
Nonverbalª	104.67 (21.28)	106.30 (11.75)	210	.836
KOR_R <sup>b</sup>	58.67 (12.37)	68.00 (10.92)	-1.747	.099
KOR_E <sup>b</sup>	50.78 (7.29)	64.80 (6.27)	-4.508	.000**
ENG_R <sup>°</sup>	74.33 (21.20)	93.40 (19.14)	-2.061	.055
ENG_E <sup>d</sup>	51.11 (7.11)	68.60 (9.42)	-4.524	.000**

Values are presented as mean (SD).

<sup>a</sup>Korean Kaufman Brief Intelligence Test-Second Edition (K-BIT-2; Moon, 2020).

<sup>b</sup>Korean Receptive and Expressive Vocabulary Test (REVT; Kim et al., 2009).

<sup>c</sup>Peabody Picture Vocabulary Test-IV (PPVT-IV; Dunn & Dunn, 2007).

<sup>d</sup>Expressive One-word Picture Vocabulary Test-IV (EOWPVT-IV; Martin & Brownell, 2010). \*\*p < .001.



the narrative skills of children exposed to multiple languages from birth. Based on a preliminary study involving 550 monolingual and bilingual children, MAIN measures and analyzes story comprehension and expression abilities in children aged 3-10 years. This tool is particularly suited for children from culturally and linguistically diverse backgrounds. MAIN comprises four stories (Cat, Dog, Baby Birds, Baby Goats), each illustrated with six pictures. Each study focuses on a single character and is structured around five key SG elements: initiating events, internal reactions, attempts, outcomes, and endings. In this study, 'Cat' and 'Dog' stories were utilized to collect pre-narratives, while 'Baby Birds' and 'Baby Goats' were used for post-narratives. The analysis of the SG in English narratives utilized the scoring sheet provided by MAIN (Gagarina et al., 2019). An original scoring sheet was developed to analyze the Korean narrative SG. Due to copyright concerns, only a representative image is presented in Figure 1.

The task validity of the revised version was confirmed through the following process: Initially, a researcher who completed coursework in a master's program in speech-language pathology translated it into English. In the second stage, a bilingual individual fluent in Korean-English, holding an English-speaking national language rehabilitation certificate, and currently enrolled in a master's program in speech-language pathology in Korea, reviewed the translation to assess the appropriateness of content adaptation. In the third stage, the validity and reliability of the adaptation were confirmed by a language therapist with a master's degree in speech-language pathology, along with two speech-lan-



Figure 1. An example of a multilingual assessment instrument for narratives (MAIN; Gagarina et al., 2019).

guage pathologists holding first-degree language rehabilitation certificates. Additionally, the reliability of the adaptation was further confirmed by a professor of speech-language pathology.

#### Narrative intervention program

The intervention program utilized in this study, Story Champs® 2.0 (Spencer & Petersen, 2016), was adapted for use in Korean, employing an organized method that reflects the SG structure outlined by Stein and Glenn (1979). Each intervention session utilized the online digital presentation provided by Story Champs. Story Champs is a structured intervention program designed to teach SG structures to children of all ages, facilitating the acquisition of linguistically complex elements in the process. Each story incorporates five essential components of SG: character, initiation, internal reaction, attempt, and ending. The program employs a method that initially presents and gradually removes icons to aid children in comprehending both the story's picture and grammar. This process follows the mediator modeling the story based on the individualized intervention strategy outlined in the program, followed by three retellings of the story. The protocol was implemented by selecting a protocol from the Story Champs' manuals.

Each intervention cycle comprises four steps. Initially, the interventionist presents five illustrations on screen and reads the story translated into Korean. Simultaneously, the interventionist places SG icons-character, problem, feeling, action, and ending- on the illustrations while narrating the story. After the modeling, the interventionist leaves the illustrations and icons on the screen and prompts the child to retell the story. Corrections or expansions are provided immediately by the interventionist in response to any errors the child makes during the retelling. After the child retells the story with the illustrations and icons, the interventionist removes the illustration but leaves the icon in place. The child is then prompted to retell the story again, with the option to receive assistance from the interventionist in the same manner as in the previous stage. In the final stage, the interventionist removes the icons, prompting the child to retell the story without illustrations or icons. Unlike previous stages, the final stage does not involve correcting errors the child makes.

If a child encounters difficulty speaking during the mediation process, the interventionist utilizes 4-step prompts to assist children in successfully retelling stories (Petersen et al., 2016). After the mediator models the storytelling process, the supportive cues gradually diminish, and the child is prompted to retell the story three times. During this stage, if the child encounters difficulty in storytelling, the mediator employs a four-step facilitation strategy to aid the child in narrative expression. The facilitation strategies are administered as follows.

Step 1, Prompts are provided by asking indirect questions (e.g., "Then what happened?"-"다음에 무슨 일이 일어났어?"), which is considered the least restrictive approach.

Step 2, The interventionist gives direct questions (e.g., Who was the story about? Why was he sad?-누구에 대한 이야기였어? 민수 의 기분은 어땠을까?") and provides direct prompts about the target SG elements (e.g., "You need to tell me about the problems."- "여기에서 무슨 일이 일어났어요?").

Step 3, The interventionist uses cloze procedures prompts (e.g., "Minsu fell and hurt his knee. Now he felt\_\_\_\_\_. Minsu was sad (why?) \_\_\_\_\_."- "민수가 넘어져서 무릎을 다쳤어. 그래서 민수는 기분이…. 민수는 슬펐어 왜냐하면….").

Step 4. The most restrictive prompts are given, involving modeling of targets (e.g., "He felt sad because he got hurt. Now you say that."-"민수는 다쳐서 슬펐어. 선생님 따라해보자.")

Adapting the story in the intervention program into Korean followed a structured process. Initially, a researcher who completed coursework in speech-language pathology at the master's level undertook the adaptation of the Story Champs narrative. Subsequently, in the second step, the validity and reliability of the adaptation were assessed by a first-grade language rehabilitation speech-language pathologist proficient in both Korean and English, alongside an English-speaking national language rehabilitation speech-language pathologist. Finally, the reliability of the adaptation was confirmed by a professor of speech-language pathology who was fluent in both Korean and English. Due to copyright concerns, only a representative image is presented in Figure 2 and a story translated into Korean is provided in Appendix 1.

# Procedures

The experiment was conducted over two months using Zoom's online conference platform (http://www.zoom.us/). The researcher recruited bilingual children in Canada and the United States



Figure 2. An example of an online digital presentation in the story champs (Spencer & Petersen, 2016).

through online communities and local Korean language schools. Before each session, the child's parents received the meeting access link via email and instructions to ensure that evaluation and intervention took place in a quiet, noise-free environment to facilitate smooth communication between children and mediators. When caregivers were present during the sessions, they were instructed not to influence the child's responses by avoiding actions such as sitting next to or diagonally behind the child, pointing with a finger, or displaying expressive reactions.

In the initial meeting with each subject, the K-BIT-2, REVT, PPVT-IV, and EOWPVT-IV assessments were conducted in oneon-one sessions with the child. On the first day, following the administration of the K-BIT-2, the assessments were conducted in the following order: REVT-E, EEOWPVT-IV, REVT-R, and PPVT-IV. For conceptual scoring, if the child responded or could not answer during the administration of expressive vocabulary tests, they were prompted to indicate if they knew the word in another language. While administering receptive vocabulary tests, testing was halted if the child made more than 15 erroneous responses, and they were subsequently asked if they knew the incorrect response in another language. Thus, during the initial meeting on the first day, the REVT-E was initially administered in Korean. If the child could not respond in Korean, they were asked if they knew the word in English. After completing the EOWPVT-IV, the REVT-R and PPVT-IV were administered. If the child exceeded the error threshold in Korean, their familiarity with the incorrectly responded questions was assessed in English. When presenting incorrect re-



sponse questions in another language, the child's responses were collected using a ratio of positive responses to misleading responses at 1:5. The screening process in each language took approximately 70 minutes. Screening tests for L1 and L2 were conducted on separate days, with L2 tests administered one week after the completion of the L1 test. However, for subjects for whom conducting tests for each language in a single day was challenging, the evaluation was divided into two to three sessions over one week, with the first test undertaken initially.

After dividing the experiment group based on their language test score, each child's oral narrative was obtained in Korean and English using the multilingual assessment instrument for narratives (MAIN; Gagarina et al., 2019). The first narrative sample was collected from each subject as a pre-test, before the initiation of the intervention. A second narrative sample, using the same procedures as the pre-test was obtained as a post-test after the completion of the intervention. The order of languages and the pre-/posttest story was counterbalanced; half of the children in each group were tested in Korean and Cat story first, the other half in English and Cat story first, and the post-test vice versa. The experimenter provided instructions in the same language as the child's starting language. The entire narrative sample was recorded in both audio and video formats.

Following the pre-test, the narrative intervention was conducted twice a week for 4 weeks. The online digital presentation provided by Story Champs (Spencer & Petersen, 2016) was used in each intervention session. All intervention sessions were conducted in Korean and took 15 minutes each. The intervention was constructed so children could learn SG implicitly by retelling each story. The intervention cycle comprises four distinct steps, during which the interventionist employs 4-step prompts to assist children in effectively retelling stories.

# Coding and Analysis

The first authors transcribed narratives using the child language data exchange system software (CLAN; MacWhinney, 2000) and then reviewed them. For 20% of the data, recordings were transcribed and analyzed again and compared to the original transcriptions to ensure interrater reliability, which was found to be 95%. Utterances were analyzed according to the previous research (Hoffman, 2009; Hughes et al., 1997; Kim, 1997). The narratives were coded for macrostructure (SG) and microstructure (NDW and MLUw).

#### Macrostructure

Macrostructure followed the MAIN scoring protocol (Gagarina et al., 2019). The MAIN story structure scoring focuses on story content such as SG. The maximum score is 20 points, consisting of five points for setting and characters and fifteen points for macrostructural components (Chung et al., 2023). In the three episodes, one point is given for each of the five macrostructural components (internal state as initiating event, goal, attempt, outcome, internal state as reaction). The scoring protocol is translated into Korean and applied to score children's Korean story structure. The translated version is checked by a research assistant (native speaker of English and Korean) and carefully checked. The scoring protocol is provided in Appendix 2.

#### Microstructure

Microstructure was analyzed regarding the NDW and mean length of utterances-word (MLUw). For the analysis of Korean NDW and MLUw, verbs were coded to verb roots.

#### Utterance errors

To examine the error characteristics of children's utterances between groups assessed in the pre- and post-evaluation, an additional analysis of speech error characteristics was conducted. The tasks employed for gathering children's utterances remained consistent; however, there was variation in the number of language sample utterances produced by the children.

In the context of Korean, errors falling within the defined error analysis criteria were categorized as "developmental errors," which either manifested in or were absent from adult language (e.g., 사람 '이기', 집'으고'). Put differently, instances, where utterances deviated from basic grammar but aligned with the colloquial language used by adults, were not considered errors during analysis (e.g., 나 타니카지고). In analyzing utterances, the total number of suffix and particle errors was calculated based on the criteria outlined in the suffix analysis (Lee & Choi, 2009) and particle analysis (Lee & Choi, 2008). The error characteristics were categorized into suffix and particle errors, and the overall error rate for the total number of outputs was established (Park, 2003; Yim, 2001).

In the context of English speech, the error analysis criteria utilized in the study by Altman, Armon-Lotem, Fichman, and Walters (2016) were examined to assess morphosynthetic errors in Korean-English bilingual children. Similar to the analysis conducted for Korean speech errors, the analysis of English speech errors involved tallying the total occurrences of syntactic morphology in each child's speech while controlling for the number of utterances produced by the children. Only those containing subjects and verbs were included in the analysis of utterances, starting from the initial utterance. Utterances listed solely as nouns (e.g., 'cat' and 'the boy') were excluded from the error analysis. The error rate was determined by calculating the total number of grammatically correct morphemes produced by the child within the limited utterance, followed by an assessment of the overall error rate calculated by the child. The detailed analysis results are presented in Appendix 3.

#### Analysis

Data were prepared for statistical analysis using IBM SPSS statistics ver.27 (SPSS Inc., Chicago, IL, USA). A Two-way mixed ANOVA was used to compare SG and NDW in both languages and MLUw in English. Korean MLUw, whose normality test is not required by the Kolmogorov-Smirnov test and Shapiro-Wilk test, was analyzed by the Mann-Whitney U-Test and Wilcoxon signedranks test. Spearman's Correlation was used to examine associations between vocabulary and narrative performance.

# RESULTS

# Intervention Efficacy in Korean

The performance of the Korean narrative for children with and without LD is presented in Table 2.

## Story grammar

A two-way mixed ANOVA was conducted to examine the differences in SG performance between time (pre- vs. post-) and group (LD vs. TD). The main effect of time was significant ( $F_{(1, 17)} = 11.108$ , p < .05). However, the main effect of group was not statistically sig-

	LD (f	V = 9)	TD (N=10)		
	Pre M (SD)	Post M (SD)	Pre M (SD)	Post M (SD)	
Story grammar	7.00 (2.00)	8.56 (1.59)	7.70 (1.64)	8.80 (1.99)	
NDW	25.78 (7.22)	33.22 (11.08)	26.30 (5.46)	31.50 (4.70)	
MLUw	5.41 (1.02)	7.48 (1.93)	5.92 (0.50)	7.31 (1.30)	

nificant ( $F_{(1, 17)} = .416, p > .05$ ), nor was the Group\* Time interaction ( $F_{(1, 17)} = .327, p > .05$ ).

#### The number of different words

A two-way mixed ANOVA was conducted to examine the differences in the number of words between time (pre- vs. post-) and group (LD vs. TD). The main effect of time was significant ( $F_{(1, 17)} =$ 14.613, p < .05). However, the main effect of group was not statistically significant ( $F_{(1, 17)} = .49$ , p > .05), nor was the Group\* Time interaction ( $F_{(1, 17)} = .423$ , p > .05).

The mean length of utterance-words

There were non-normal distributions for the MLUw in Korean, as confirmed by the Shapiro-Wilk test. Due to the non-normal distribution, the Mann-Whitney *U* test was conducted to identify differences in MLUw between pre-and post-intervention results. In the pre-test, the TD group generated higher MLUw (Z = 6.08, quartile = 5.51) than the LD group (Z = 5.56, quartile = 4.61); however, there was no statistical difference between the groups (Z = -.941, *p* >.05). In the post-test, the TD group again generated higher MLUw (Z = 7.05, quartile = 6.45) than the LD group (Z = 6.92, quartile = 6.06). However, there were no significant differences between the groups (Z = -.082, *p* >.05).

Wilcoxon signed-ranks tests were conducted to compare MLUw's pre-and post-test scores. The results revealed a significant difference between pre-and post-intervention results in both the LD group (Z=-2.547, p<.05), and the TD group (Z=-2.497, p<.05). Therefore, it can be interpreted that the Korean MLUw of both groups of children significantly improved after the intervention compared to before the intervention.

#### Cross-linguistic Influence from Korean to English

The performance of narrative in English, attributed to crosslinguistic influence for children with and without LD, is presented



in Table 3. To compare the difference in narrative performance between the LD and TD groups on each measure of SG, NDW, and MLUw, a two-way mixed ANOVA was conducted with 'time' (pre- vs. post-) as a within-subjects factor and 'group' (LD vs. TD) as a between-subjects factor.

## Story grammar

The results indicated that the main effect between groups was not significant ( $F_{(1, 17)} = .032$ , p > .05). However, there was a significant main effect for time ( $F_{(1, 17)} = 7.239$ , p < .05). In other words, both LD and TD groups made significantly greater gains on the post-test (M=8.14, SD=2.86) compared to the pre-test (M=6.59, SD=1.85). The Group\* Time interaction was not significant ( $F_{(1, 17)} = .911$ , p > .05).

#### The number of different words

The results indicated that the main effect between groups was not significant ( $F_{(1, 17)} = .034$ , p > .05). However, there was a significant main effect for time ( $F_{(1, 17)} = 6.573$ , p < .05). In other words, both LD and TD groups made significantly greater gains on the post-test (M=22.09, SD=9.16) compared to the pre-test (M=28.43, SD=11.89). The Group × Time interaction was not significant ( $F_{(1, 17)} = .034$ , p > .05).

Table 3. Means and standard deviation for narrative performance in English

	LD (1	V = 9)	TD (N=10)		
	Pre M (SD)	Post M (SD)	Pre M (SD)	Post M (SD)	
Story grammar	6.78 (2.05)	7.78 (3.60)	6.40 (1.65)	8.50 (2.12)	
NDW	21.67 (11.10)	27.56 (12.07)	22.50 (7.21)	29.30 (11.70)	
MLUw	5.12 (2.29)	5.33 (7.99)	6.32 (1.79)	6.81 (1.59)	

The mean length of utterance-words

The results indicated that the main effect was not significant between groups ( $F_{(1, 17)} = 2.511, p > .05$ ) or for time ( $F_{(1, 17)} = .972, p > .05$ ). The Group × Time interaction was also not found ( $F_{(1, 17)} = .142, p > .05$ ).

#### Correlational Analysis: Vocabulary Skills and Narrative

Table 4 displays the results of the correlational analysis for all Korean-English bilingual children. First, Korean MLUw in the pre-test was positively correlated with all vocabulary skills, including Korean expressive vocabulary skills (r = .662, p < .01), Korean receptive vocabulary skills (r = .582, p < .01), English expressive vocabulary skills (r = .472, p < .05), and English receptive vocabulary skills (r = .468, p < .05).

Among the narrative results in the post-test, Korean expressive vocabulary skills were positively correlated with English SG (r = .514, p < .05) and English MLUw (r = .590, p < .01). Additionally, English expressive vocabulary skills were positively correlated with English MLUw (r = .530, p < .05).

#### DISCUSSION

In this study, we first aimed to determine whether a 15-minute Korean (L1) narrative intervention would lead to a significant increase in both macro and micro-level performance in Korean narrative among Korean-English bilingual children. The results showed a statistically significant difference in the gains of the Korean SG, NDW, and MLUw between the pre-and post-test, indicating that narrative intervention in L1 effectively enhanced their L1 narrative skills in both macro- and microstructure. This find-

Table 4. Correlations among vocabulary skills in Korean and English, and pre- and post-narrative skills in Korean and English

	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
1	.516*	.600**	.565*	.114	.106	.341	.106	.662**	.236	.143	.514*	.021	.303	.257	.590**
2		.462*	.711**	.080	017	.167	.020	.582**	.033	.235	.449	.165	.388	.050	.443
3			.527*	.119	.132	079	.017	.472*	053	.080	.331	.183	.378	.366	.530*
4				094	.032	.047	.166	.468*	.167	.060	.388	246	.299	121	.356

1=Korean expressive vocabulary skills; 2=Korean receptive vocabulary skills; 3=English expressive vocabulary skills; 4=English receptive vocabulary skills; 5=Korean pretest Story grammar; 6=Korean post-test Story grammar; 7=Korean pre-test NDW; 8=Korean post-test NDW; 9=Korean pre-test MLUw; 10=Korean post-test MLUw; 11=English pre-test Story grammar; 12=English post-test Story grammar; 13=English pre-test NDW; 14=English post-test NDW; 15=English pre-test MLUw; 16=English post-test MLUw.

\*p<.05, \*\*p<.01.

ing is consistent with previous research demonstrating the efficacy of narrative intervention in improving children's narrative performance, including SG, NDW, and communication units (Armon-Lotem, Rose, & Altman, 2021; Schoenbrodt et al., 2003). Furthermore, previous studies have reported the efficacy of narrative intervention with Spanish-English bilingual children, who exhibit a higher degree of language typology (Schoenbrodt et al., 2003). Thus, our research suggests that narrative intervention is a valuable approach for improving the narrative skills of children whose languages have a lower degree of typological similarity, such as Korean and English.

On the other hand, there was no statistically significant difference between the LD and TD groups across the macro- and microstructure (SG, NDW, and MLUw). These results differ from previous studies that confirmed significant differences in narrative skills, including NDW and MLUw, between TD and LD bilingual children (Kapantzoglous et al., 2017; Simon-Cereijido & Gutierrez-Clellen, 2009). Hence, we also analyzed utterance errors in children's pre- and post-narrative performances in both Korean and English. Further details can be found in Appendix 3. The results revealed differences in error rates between groups, particularly in Korean suffix and particle errors. These findings suggest that the narrative task employed in this experiment may not have provided sufficient detail for analyzing children's utterances in depth. Furthermore, it may imply considering different factors when evaluating the language abilities of bilingual children based on their L1 and L2. In previous research, MLUw was an important factor in distinguishing TD and LD Spanish-English bilingual children with a high degree of typological similarity between the two languages (Kapantzoglous et al., 2017; Simon-Cereijido & Gutierrez-Clellen, 2009). However, in this study, SG, NDW, and MLUw did not show statistically significant differences between the groups with lower typological similarity. Additionally, SG has been identified as a distinguishing factor between TD children and language-delayed children from various cultural backgrounds learning English as a second language, but not in Russian (L1)-Hebrew (L2) bilingual children with and without specific language impairment (Fichman, Altman, Voloskovich, Armon-Lotem, & Walters, 2017). Therefore, qualitative factors such as error analysis should be considered when evaluating the language abilities of Korean-English bilingual children (Hong & Yim, 2019; Park, Park, & Seok, 2007).

The second research question addressed whether there was cross-linguistic transfer to the language that was not intervened in. The findings showed no significant differences between the LD and TD groups in SG, NDW, and MLUw. This suggests that the lack of substantial differences in both L1 and L2 performances between TD and LD groups may influence the results of cross-linguistic transfer. Additionally, it implies that when assessing the cross-linguistic transfer effect in Korean-English bilingual children, other factors may need to be considered to differentiate between groups effectively. However, statistically, significant differences were found in SG and NDW before and after the intervention. These results align with previous research, specifically the only narrative intervention study for bilingual children found by the researcher. In that study, TD Spanish-English bilingual children in the treatment group made significantly greater gains from pre- to post-test compared to the control group. However, children with language impairments in both the treatment and control groups did not show significantly different interactions (Petersen et al., 2016). This suggests that intervention in children's L1 has a partial mediating effect on the L1 and a transfer effect on the L2 in terms of SG and NDW. These results are consistent with previous studies demonstrating the transfer effect of L1 intervention on L2 in bilingual children (Armon-Lotem et al., 2021; Gutiereez-Clellen, 1999; Peña & Kester, 2004; Thordardottir et al., 1997). Furthermore, previous research suggests that L1 intervention can be expected to have long-term effects on L2 (Baker, 2000; Coltrane, 2003; Cummins, 2000). Unlike previous studies focusing on Spanish-English bilingual children, these clinical findings suggest that the transfer effect of L1 intervention is observable in Korean-English bilingual children, even considering the low typological similarity between the two languages.

Finally, we examined the correlation between vocabulary skills and narrative abilities in Korean and English. The results indicated a correlation between MLUw in Korean during the pre-test and both receptive and expressive vocabulary in both Korean and English. However, in the post-test, a significant correlation was observed between Korean expressive vocabulary and English SG, as well as between Korean expressive vocabulary and English MLUw. Furthermore, a significant correlation was observed between English expressive vocabulary and English MLUw. These results align with previous studies demonstrating a significant correlation between the depth of L1 language proficiency, including superordinate vocabulary, and L2 proficiency, particularly in individuals with limited L2 vocabulary skills, as evidenced in prior research (Ordóñez, Carlo, Snow, & McLaughlin, 2002). Thus, it can be inferred that the child's proficiency in L2 vocabulary is significantly correlated with their performance in L2. Moreover, these findings reinforce previous research by highlighting the significance of L1 vocabulary proficiency in children within a subtractive bilingual environment (Ordóñez et al., 2002).

In conclusion, the study results suggest that narrative intervention appears effective in enhancing both macro-structure aspects, such as SG, and micro-structure components, including the NDW and mean length of utterance-word. Furthermore, our findings indicate that the intervention conducted in children's L1 exhibits cross-linguistic influence from the home language (L1) to the school language (L2). Finally, we observed a significant correlation between children's Korean expressive vocabulary and pre-test mean length of utterance-word in both Korean and English, as well as post-test English SG and mean length of utterance-word. These findings suggest that children's L1 expressive vocabulary plays a crucial role in facilitating cross-linguistic transfer effects.

The limitations of this study and suggestions for future research are as follows. First, this study identified group differences based on children's vocabulary proficiency using standardized L1 and L2 composite scoring tests. However, no statistically significant differences were found in the narrative abilities of children between groups. Therefore, future studies should include additional factors, such as discourse analysis, to accurately differentiate children's language abilities and vocabulary proficiency. This would allow for more generalizable research on preschool bilingual children.

Secondly, this study collected narrative samples through a structured storytelling task. As no significant differences in narrative abilities were found between the pre-and post-tests for the LD and TD groups, we analyzed the error rates in the children's speech before and after the intervention to identify any differences between the groups. However, because the analysis used the minimum number of utterances as the criterion, the number of speech samples analyzed was limited. Children who produced longer utterances may not have had their speech error rates accurately reflected. Hence, in future studies, analyzing children's speech in detail, encompassing both spontaneous speech situations and structured tasks, may reveal more sensitive factors for evaluating the language abilities of Korean-English bilingual children.

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한국어-영어 이중언어 아동의 이야기 말하기 능력 향상을 위한 내러티브 중재효과: 언어 간 상호작용 관점 • 강민지 외

# Appendix 1. The example of intervention script-John story

어느 날, 존은 자전거를 타고 길을 내려가고 있었어요. 왜냐하면 자전거 타기는 존이 가장 좋아하는 일이었기 때문이에요. 존은 자전거를 정말 빨리 탔어요. 그러다 우연 히 바위에 부딪혔어요. 존은 무릎을 다쳤어요. 존은 너무 아파서 슬펐어요. 존은 집으로 달려가 엄마에게 말했어요. "(엄마) 반창고가 필요해요." 엄마는 존의 상처에 반 창고를 붙여줬어요. 반창고를 붙이고 나니 존의 무릎은 좀 나아졌어요.



# Appendix 2. Scoring sheet for story grammar

Scoring sheet for story grammar in Korean-Cat story

		정반응 예시	점수
A1	배경	시간 & 장소 & 인물 언급 시간 예시: 옛날 옛적에, 어느 날, 오래 전에 장소 예시: 호수 옆에서/호수에서/강가에서/물 옆에서/물가에서/들판에서 인물 예시: 고양이/야옹이/나비/벌레/소년/남자아이/삐삐 등 이야기 산출에서 일관되게 사용되는 경우	시간 1 장소 1 고양이 1 나비 1 소년 1
		에피소드 1: 고양이(등장인물: 고양이와 나비)	
A2	계기 사건	고양이는 노는 걸 좋아했어요/호기심이 많았어요. 고양이가 나비를 봤어요.	01
A3	목적	고양이는 나비를 잡고/쭟고 싶었어요. 고양이는 나비와 놀고 싶었어요. 동사(예: 잡다/놀다)+ ~하려고	01
Α4	시도	고양이는 앞으로 점프했어요. 고양이는 쫓았어요/쫓기 시작했어요. 고양이는 동사(예: 잡다)+ ~하려 했어요.	01
A5	결과	고양이는 덤불에 넘어졌어요/걸렸어요/나비를 잡지 못했어요/놓쳤어요/나비를 잡을 수 있을 만큼 빠르지 못했어요. 나비는 도망갔어요/날아갔어요/너무 빨랐어요.	0 1
A6	내적반응	고양이는 실망했어요/화가 났어요/아팠어요. 나비는 행복했어요/기뻤어요/다행이라고 생각했어요.	0 1
		에피소드 2: 소년(등장인물: 소년)	
A7	계기 사건	소년은 슬펐어요/기쁘지 않았어요/공이 걱정됐어요. 소년은 물에 빠진 공을 보았어요.	0 1
A8	목적	소년은 공을 되찾고 싶었어요/되찾기로 결심했어요/꺼내고 싶었어요/꺼내기로 결심했어요 동사(예: 되찿다/찿다/꺼내다)+~하려고	0 1
A9	시도	소년은 물에서/물 밖으로 공을 빼냈어요/건졌어요. *시제와 상관없이 내용이 맞으면 1점	0 1
A10	결과	소년은 공을 되찾았어요. 공은 무사했어요/건져졌어요.	0 1
A11	내적반응	소년은 (공을 되찾아서) 행복했어요/기뻤어요/만족했어요/다행이라고 생각했어요.	0 1
		에피소드 3: 고양이(등장인물: 고양이)	
A12	계기 사건	고양이는 배고팠어요/궁금했어요/생선을 좋아했어요. 고양이가 생선을 봤어요/발견했어요.	0 1
A13	목적	고양이는 생선을 얻고/잡고/먹고/훔치고/가지고 싶었어요. 고양이는 생선을 얻기를/잡기를/먹기를/훔치기를/가지기를 결심했어요. 동사(예: 먹다, 가지다)+ ~하려고	0 1
A14	시도	고양이는 생선을 잡았어요/당겼어요/꺼냈어요/생선 쪽으로 손을 뻗었어요. 고양이는 동사(예: 가지다, 꺼내다)+~하려 했어요. *시제와 상관없이 내용이 맞으면 1점	0 1
A15	결과	고양이가 생선을 먹었어요/얻었어요.	01
A16	내적반응	고양이는 만족했어요/기뻤어요/만족했어요/행복했어요/(더 이상) 배고프지 않았어요.	0 1
A17		Total score out of 20:	

Scoring sheet for story grammar in English-Cat story

		Examples of correct responses	Score
A1	Setting	Time and/or place and/or character reference, e.g., once upon a time/one day/long ago by a lake/at the lake/at the river bank/by the water/by the shore/in a meadow… Cat/kitty/butterfly/boy	Time 1 Place 1 Cat 1 Butterfly 1 Boy 1
		Episode 1: Cat (Episode characters: cat and butterfly)	
A2	IST as initiating event	Cat was playful/curious Cat saw a butterfly	0 1

(Continued to the next page)



#### Appendix 2. Continued

		Examples of correct responses	Score	
A3	Goal	Cat wanted to catch/get/chase the butterfly/play with the butterfly (In order) to+VERB (catch, get, play)	0 1	
A4	Attempt	Cat jumped forward/up Cat chased/started to chase Cat tried to+VERB (catch, get, grab, take)	0 1	
A5	Outcome	Cat fell into the bush/did not get the butterfly/was not quick enough Butterfly escaped/flew away/was too quick	0 1	
A6	IST as reaction	Cat was disappointed/angry/hurt Butterfly was happy/glad	0 1	
		Episode 2: Boy (Episode character: boy)		
A7	IST as initiating event	Boy was sad/unhappy/worried about his ball Boy saw the ball in the water	0 1	
A8	Goal	Boy decided/wanted to get his ball back (In order) to+VERB (get)	0 1	
A9	Attempt	Boy was/is pulling/tried to pull the ball out of the water	0 1	
A10	Outcome	Boy got/had his ball back/again The ball was saved	0 1	
A11	IST as reaction	Boy was glad/happy/pleased/satisfied/relieved (to get/have his ball back)	0 1	
		Episode 3: Cat (Episode character: cat)		
A12	IST as initiating event	Cat was hungry/curious/keen on the fish Cat noticed/saw the fish	0 1	
A13	Goal	Cat wanted/decided to get/grab/eat/have/steal the fish (In order) to+VERB (eat, get)	0 1	
A14	Attempt	Cat was/is grabbing/pulling/taking/stealing the fish Cat grabs/pulls/takes the fish (out of the bucket)/reached for the fish Cat tried to+VERB (get, take)	0 1	
A15	Outcome	Cat ate/got the fish	0 1	
A16	IST as reaction	Cat was satisfied/glad/pleased/happy/not hungry (anymore)	0 1	
A17			Total score out of 20:	

#### Appendix 3. The utterance errors

Utterance errors in Korean
(unit: %)

		F	re	Ро	Post		
		Μ	SD	Μ	SD		
LD (N=9)	Rate of suffix	12.74	13.66	6.02	13.03		
	Rate of particle	9.47	14.74	6.87	5.39		
TD (N=10)	Rate of suffix	2.00	6.32	.00	.00		
	Rate of particle	5.30	9.13	2.36	4.99		

Utterance errors in English.

Children with less than two utterances and subject+verb composition were excluded due to short-word utterances in the analysis of English speech errors (LD=8, TD=9). (unit<sup>•</sup> %)

				(UNIL: %)
	Р	re	Pc	ost
	М	SD	М	SD
LD (N=8)	46.42	24.06	46.42	24.06
TD (N=9)	45.60	32.16	45.60	32.16



# 국문초록

# 한국어-영어 이중언어 아동의 이야기 말하기 능력 향상을 위한 내러티브 중재효과: 언어 간 상호작용 관점

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배경 및 목적: 본 연구는 한국어(L1)-영어(L2) 이중언어 아동을 대상으로 모국어 내러티브 중재가 아동의 모국어 내러티브 능력 향상뿐 만 아니라 언어 간 전이효과로 인한 제2언어 능력 향상에도 영향을 미치는지 언어 간 상호작용 관점을 파악하고자 하였다. 방법: 학령전 기 5-6세의 한국어-영어 이중언어 아동 19명(LD 9명, TD 10명)이 본 연구에 참여하였다. 동작성 지능 검사와 한국어/영어 언어 검사를 통해 집단을 구분하였다. 중재 전후 아동의 한국어/영어 내러티브를 수집하여 8번의 중재 후 아동의 중재 전후 내러티브의 수행 차이를 살펴보았다. 결과: 중재 전후 한국어 내러티브 수행력(이야기 문법, 다른 낱말 수, 평균낱말길이)과 영어 내러티브 수행력(이야기 문법, 다 른 낱말 수)의 주효과가 유의하였다. 두 집단에서 한국어 평균낱말길이는 아동의 한국어/영어 표현 및 수용 어휘력과 유의한 상관관계 가 나타났다. 언어발달지연 집단의 경우, 한국어 표현 어휘력과 영어 사후평가 내러티브 수행력(이야기 문법, 다른 낱말 수, 평균낱말길 이) 간, 그리고 한국어 수용어휘와 영어 사후 평가 수행력(이야기 문법, 다른 낱말 수) 간 유의한 상관관계가 있었다. 정상발달 집단의 경 우, 영어 표현 어휘력과 영어 내러티브 수행력(다른 낱말 수, 평균낱말길이)의 상관이 유의하였다. 논의 및 결론: 한국어(L1)-영어(L2) 이 중언어 아동을 대상으로 한 모국어 중재가 아동의 모국어(L1) 내러티브 능력(이야기 문법, 다른 낱말 수, 평균낱말길이) 향상에 효과적이 며, 언어 간 전이효과를 통해 제2언어(L2)의 내러티브 능력(이야기 문법, 다른 낱말 수) 향상에도 부분적인 효과가 있다는 것을 확인하였 다. 또한, 중재 전의 아동의 모국어(L1) 어휘 능력과 중재 후의 제2언어(L2) 내러티브 수행력 간에 상관관계가 있음을 확인하였다.

핵심어: 한국어-영어 이중언어, 내러티브, 내러티브 중재, 전이효과

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