



A Meta-Analysis of the Effects of Storytelling on English Language Learning*

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ABSTRACT

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The aim of the current meta-analysis was to determine overall effects of storytelling on English language learning and teaching with further analysis of different effects across school levels, outcome variables (such as language skills and affective effects), and across storytelling types. Although storytelling-related meta-analyses have already been conducted, the previous meta-analysis on storytelling did not analyze affective effects or include theses/dissertations. The current study analyzed cognitive and affective effects of storytelling through 277 samples from 18 journal articles, 63 master's theses and three doctoral dissertations in order to generalize more samples of empirical research on storytelling under Korean EFL context from 2000 to 2021. As a result, the overall effect of storytelling was $g = .613$. Likewise, effects of the cognitive domain ($g = .627$) and the affective domain ($g = .599$) were similar with the overall effect size of storytelling. Vocabulary and attitude were more effective than other subtypes of cognitive and affective domains respectively. Storytelling was more effective with a more directly interactive type when learners started to study English in elementary or secondary school. Finally, educational implications and limitations are discussed.

I. INTRODUCTION

Efforts to promote communicative skills have been continuing under Korean EFL context. Ministry of Education (2015) also emphasizes communicative competence as one of the most important objects in English education. Storytelling can be useful to improve not only communicative skills but also interest and self-confidence (Spagnoli, 2008; Wright, 2009). It is because listening to stories itself can draw learners' interest in studying English (Oller, 1983).

With the advantages of storytelling, many studies suggest the various alternative ways of storytelling in class through the theoretical background and lesson plans, or de-

scribe their lesson of storytelling. Although individual empirical studies have tried to investigate the effects of storytelling under Korean EFL context (J. T. Chang, 2011, 2016; B. B. Im & C. Y. Lim, 2005; S. Heo, 2018), outcome variables and targets vary in each study. It is difficult to generalize the overall effects of storytelling only with individual studies. Some empirical studies revealed that storytelling was effective in the cognitive and affective domains (J. T. Chang, 2016; S. Heo, 2018; Y. H. Jung & H. O. Kim, 2012; S. Kim, 2010). However, other empirical studies did not find dramatic effects in the cognitive domain (S. H. Jang, 2015; N. Jeong, 2009; S. H. Kim, 2001) and the affective domain (K. O. Hwang, 2006) when comparing storytelling

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and the traditional teaching methods.

Unlike individual empirical studies that sometimes suggest contradictory experimental results under the limited environment, a meta-analysis synthesizes findings from individual relevant quantitative studies. Recently, many researchers have used meta-analyses in English language education. Meta-analyses on English education have been conducted mainly for Computer-Assisted Learning such as e-learning (H. Choi & S. Cheon, 2011; J. Lee, 2017; J. Y. Lee & O. H. Park, 2016; K. Yun & U. Maeng, 2017) and flipped learning (H. Kim & J. Kim, 2019; J. M. Youn & M. Hwang, 2020). Based on the same or similar topics, their research designs are all different. The three studies on e-learning (H. Choi & S. Cheon, 2011; J. Y. Lee & O. H. Park, 2016; K. Yun & U. Maeng, 2017) selected primary studies for different targets. The other study (J. Lee, 2017) compared the effects between e-learning and m-learning. Similarly, one study on flipped learning (H. Kim & J. Kim, 2019) compared the effects between flipped and blended learning, whereas the other (H. Choi & S. Cheon, 2011) just explored the effect of flipped learning.

In order to suggest the integrated picture of the effect of storytelling in English language learning and teaching, a meta-analysis on storytelling is needed. Storytelling-related meta-analyses have already been conducted (E. Choe et al., 2017; J. Y. Lee, 2021; K. H. Park, 2016). In K. H. Park's (2016) study, English education was not the main focus, but other subjects were all included. E. Choe et al.'s (2017) meta-analysis on children's literature compared three class activities including storytelling, story making and singing in journal articles of elementary education. The subgroup analysis of effects on storytelling was not conducted by dividing different outcome variables or different storytelling types as the previous study mainly focused on the effects of stories and poems. J. Y. Lee (2021) focused on the overall effect of storytelling in English education, but the previous study just analyzed the cognitive effects only in journal articles. Even though the topics of meta-analyses on English education are same or similar, their different research design could draw their own meaningful results through adopting the different scope of data collection and the different scheme of data coding. Thus, the current study could draw own meaningful implications to guide future English instructions and research on storytelling with the different research design from the previous meta-analysis.

As storytelling could give learners emotionally positive effects, the affective domain should be considered for the meta-analysis. In addition, the current study tries to collect related studies exhaustively including journal articles, master's theses and doctoral dissertations to generalize more samples of empirical quantitative research on storytelling in English education. Sufficient samples, which are the premise of a meta-analysis, make more objective analysis of effects (S. D. Hwang, 2015). The following four research questions will guide the present study.

- 1) How effective is storytelling under Korean EFL context?
- 2) Does the effect of storytelling vary across different education and school levels?

- 3) Does the effect of storytelling vary across different outcome variables such as language skills and affective effects?
- 4) What storytelling types are more effective?

II. THEORETICAL FRAMEWORK AND LITERATURE REVIEW

1. Storytelling in English Language Education

Storytelling is literally 'telling stories'. With its literal meaning, sometimes storytelling is mistakenly considered as the same meaning of 'story reading' in Korea even though storytelling is much more active to participate in listening and retelling than story reading that students just read or listen to a story (M. R. Kim, 2013). Beyond its literal meaning, storytelling could be defined as a dynamic and interactive process between tellers and listeners. Tellers can find another meaning of a story, and listeners imagine the story in their own way (King, 1996). Some scholars emphasize the distinctive features of storytelling in that just telling stories is not storytelling. Storytelling focuses on the way to deliver stories lively to listeners (Petty & Jensen, 1980; T. Yoon, 2018b).

In English instructions, storytelling is utilized mainly for listening and speaking. L2 learners could improve English listening and speaking through storytelling (Peck, 2001) because it could be great listening materials in English instructions (Harmer, 2012). Storytelling also enables learners to practice repeated sentences easily (I. J. Jo, 2009). In addition to the cognitive features of storytelling, its positive affective characteristics are noticeable. It is non-threatening and interesting to improve oral and aural language skills (Spagnoli, 2008). Storytelling could build self-confidence and a sense of cooperative learning as a classroom activity to promote meaningful communication (Wright, 2009). The activity is so realistic, vivid, dynamic and familiar that L2 learners could learn English naturally (I. J. Jo, 2009). Most English teachers were aware of the effectiveness of storytelling on English education, but some teachers had difficulty in preparing storytelling materials and developing skills to deliver stories as a storyteller (S. Park, 2007).

To overcome the difficulty of practicing storytelling, storytelling is used in various different types in language class. Empirical research has been conducted in a lot of journal articles and theses to examine the effectiveness of different types of storytelling such as general storytelling (J. T. Chang, 2011, 2016; S. Heo, 2018; B. B. Im & C. Y. Lim, 2005), Total Physical Response Storytelling (J. Bae & D. Lee, 2012; T. Yoon, 2018a), digital storytelling (H. S. Kim & C. J. Kwon, 2006; S. Kim, 2010; P. Park & H. Chung, 2016), and retelling (M. H. Jeong & I. J. Jo, 2016; M. Kim, 2015).

One of the popular storytelling activities in elementary school is Total Physical Response Storytelling (TPRS). TPRS is literally a teaching method that connects storytelling to Total Physical Response (TPR). TPR aims to improve learners' oral proficiency with imperative drills and physical

reactions under the grammar-based view (Brown, 2007). Likewise, TPRS can give learners chances to expand vocabulary, and to be exposed to grammatically correct input through meaningful stories (Braunstein, 2006). TPRS was studied mostly in elementary education (S. E. An, 2014; J. Bae & D. Lee, 2012; S. M. Choi, 2006; E. Y. Jang, 2010; S. N. Lim, 2001; Y. Sung, 2002; T. Yoon, 2018a).

As technology has highly developed, storytelling is integrated into digital technology. Digital storytelling is a kind of storytelling that develops a story using digital software beyond the traditional classroom-based method. Digital technology and multimedia could compensate for traditional storytelling that depends on teachers' ability to deliver and express stories (S. Kim, 2009). Digital storytelling is described as a powerful way to draw learners' attention and to provide emotional experiences by delivering a story with multimedia (D. G. Min, 2002). However, digital storytelling is lack of direct interaction with their teachers or classmates, which is different from face-to-face storytelling (S. Y. Kim & J. Jung, 2011).

Retelling is a post-telling activity that learners reconstruct and tell the story again in their own words in front of others as a teller (I. J. Jo, 2009; Wright, 2009). Retelling could be an effective source of enhancing English competence (Harmer, 2012) as learners can use both receptive and productive skills. Recently, retelling activities were also integrated into a digital tool, AI chatbot (S. Y. Chu & D. G. Min, 2021).

With various storytelling types, research on storytelling has been actively conducted in Korea because storytelling is considered as one of the most useful classroom activities for young children. Storytelling has been chosen to enhance English proficiency usually for children, but hardly for adult language learners (M. R. Kim, 2013). Since fairy tales which include relatively easy vocabulary items and sentence patterns are usually utilized for storytelling activities (T. Yoon, 2018b), research on storytelling has been conducted mostly in elementary education. However, in secondary school or university, storytelling could be useful activities with proper levels of difficulty. The difficulty of storytelling could be adjusted for learners by selecting story making which is one of the most difficult activities for L2 learners (N. Kim et al., 2008).

Research trends of storytelling were also analyzed mostly in elementary English education (J. J. Ahn & T. Y. Kim, 2016; E. Ko & K. Hong, 2017). The two studies reported that storytelling has been steadily studied since the 7th national curriculum was adopted, but related studies suddenly decreased in 2014. The two studies revealed that more studies were conducted for the upper grades. According to J. J. Ahn and T. Y. Kim (2016), qualitative research ($n = 20$) was conducted more than quantitative research ($n = 14$). As the technology developed, research on digital storytelling increased rapidly. According to E. Ko and K. Hong (2017), storytelling materials were various such as cartoons, Korean folk tales, original contents, journals, pattern books, revised stories, and story singing. Related research in elementary education focused on reading and writing more than listening, speaking, and vocabulary. Grammar was taught the

least through storytelling. Among subtypes of the affective domain, interest was analyzed the most.

Unlike storytelling research on elementary English education which studied various outcome variables, storytelling research on high school and university showed general trends in accordance with their teaching purpose. Storytelling research on high school (J. S. Kim, 2006; J. Park, 2018) analyzed the effects of reading only. This is because reading is the most important ability to get higher scores for tests. The two studies indicated meaningful results of storytelling with literary works to improve reading ability. Storytelling research on university (S. Bae, 2021; S. Heo, 2018; P. Park & H. Chung, 2016) aimed to improve speaking ability with creative storytelling. Creative storytelling is considered as the most difficult (N. Kim et al., 2008). Those three studies suggested that creative storytelling enabled university students to increase speaking ability. Research on middle school (J. T. Chang, 2016; M. H. Jeong & I. J. Jo, 2016; K. Yang, 2018) tried to select proper materials to adjust activities to the national curriculum and students' proficiency level, whereas they did not have a general trend of outcome variables. The three studies on middle school indicated that storytelling activities were effective in the cognitive outcome variables including reading and speaking.

Including four types of storytelling and four school levels, through quantitative research, storytelling has been proved to be effective in not only communicative skills (M. H. Jeong & I. J. Jo, 2016) but also other language outcomes (S. Kim, 2010; S. Park, 2002; T. Yoon, 2018a) including vocabulary, grammar, reading, and writing even with affective factors. However, other empirical studies did not find dramatic cognitive effects (S. H. Jang, 2015; N. Jeong, 2009; S. H. Kim, 2001) and affective effects (K. O. Hwang, 2006) when comparing storytelling and the traditional teaching methods. It is difficult to generalize the overall trend of storytelling effects only with individual studies.

2. Storytelling-Related Meta-Analyses

A meta-analysis is a method of synthesizing individual research of the same topic through calculating the 'Effect Size (*ES*)' to give an integrated overview (S. D. Hwang, 2015). The effectiveness of stories in L2 learning was actively analyzed using meta-analyses. Storytelling is closely related to stories like fairy tales (T. Yoon, 2018b). Meta-analyses on extensive reading have been conducted more than twice (H. S. Chae, 2019; N. Suk, 2021). H. S. Chae (2019) included only English extensive reading from journal articles and theses, whereas N. Suk (2021) adopted L2 extensive reading including 46 studies on English instructions and nine studies on Korean instructions from journal articles, theses, and dissertations. The former research reported that an overall effect was $ES = .713$ with a large effect size of reading comprehension ($ES = 1.016$) in 31 selected studies. The later research revealed that an overall effect was $ES = .67$ with an effect size of reading comprehension ($ES = .53$) in 55 selected studies. However, unlike the former research, the later research did not report

the overall effect of English extensive reading.

Among stories in L2 learning, meta-analyses on children's literature were also actively conducted in English education. J. Y. Kim and J. R. Kim (2016) analyzed the effects of English stories on reading instructions in kindergartens and elementary schools from 80 primary studies. The overall mean effect was $ES = .626$. Stories were slightly more effective in the affective domain ($ES = .662$) than the cognitive domain ($ES = .562$). As a result of the subgroup analysis of the cognitive domain, the four subtypes were around medium sizes in understanding contents ($ES = .612$), vocabulary ($ES = .534$), understanding sentences ($ES = .492$), and phonics ($ES = .462$). In the subgroup analysis of the affective domain, attitude showed a large effect size ($ES = .931$). Interest was the second most effective ($ES = .797$). Motivation ($ES = .566$), class engagement ($ES = .567$) and self-confidence ($ES = .596$) had similar effect sizes. Another meta-analysis on children's literature (E. Choe et al., 2017) compared three class activities including storytelling, story making and singing in journal articles of elementary education although they mainly focused on the effects of children's literature such as stories and poems. They reported that the overall effect of children's literature was $ES = .60$. Storytelling showed the relatively smaller cognitive effect size ($k = 16$, $ES = .38$) and the large affective effect size ($k = 9$, $ES = 1.24$), which can be compared to the affective effect sizes in story making ($k = 3$, $ES = .79$) and singing ($k = 8$, $ES = .72$). The previous study examined overall cognitive and affective effect sizes of storytelling, but the subgroup analysis of effects on storytelling was not conducted by dividing different outcome variables or different storytelling types.

Meta-analyses on storytelling have been also conducted (S. O. Hwang & J. E. Oh, 2018; J. Y. Lee, 2021; K. H. Park, 2016). The two previous studies by S. O. Hwang and J. E. Oh (2018), and K. H. Park (2016) included other subjects from journal articles, master's theses and doctoral dissertations. In S. O. Hwang and J. E. Oh's (2018) study, research on storytelling activities for early childhood education was reviewed in nine subjects including language, math, science, social ability, creativeness, music, the environment, physical expressions, and health except for English. The overall effect of storytelling showed a large size ($ES = 1.82$) from 39 studies. Science was the most effective subject ($ES = 2.43$), and language had a large effect size ($ES = 1.70$). Unlike the current study, the previous study did not analyze the effect of storytelling on English language learning. In contrast, K. H. Park's (2016) study included the effect of the program of 'telling stories' on English learning with other subjects such as Korean, creativeness, and arts. The existing study collected research on the programs of 'telling stories' from 1990 to 2015 regardless of subjects and participants. However, early childhood and elementary education were the main focus. Unlike the present study, the previous study did not exclusively focus on the effects of English language instructions by including other subjects. The existing study analyzed only 14 samples of English instructions, but 71 samples of other subjects. With seven journal articles and 61 theses,

telling stories had effects around medium sizes in all samples ($ES = .400$), the cognitive ($ES = .430$) and affective ($ES = .515$) domains. Elementary education had a large effect size ($ES = 1.030$) from only six samples, whereas early childhood education showed a smaller effect size ($ES = .312$) from 53 samples. Regarding language variables, the instructions in English ($ES = .474$) were slightly more effective than the instructions in Korean ($ES = .386$).

Only J. Y. Lee's (2021) study focused on the effect of storytelling on English language learning. The previous study analyzed 40 samples in 28 journal articles by using a statistical program, CMA (Comprehensive Meta Analysis) 3.3. The overall cognitive effect of storytelling showed a large effect size ($ES = .820$). As a result of the school-level analysis, the large effect sizes were drawn in elementary school ($k = 31$, $ES = .813$) and university ($k = 6$, $ES = .955$), whereas middle school showed a relatively smaller effect size ($k = 3$, $ES = .648$). As a result of outcome variables, proficiency ($k = 8$, $ES = 1.199$), vocabulary ($k = 5$, $ES = .987$) and writing ($k = 2$, $ES = .950$) had large effect sizes, whereas speaking ($k = 13$, $ES = .709$), listening ($k = 5$, $ES = .576$) and reading ($k = 4$, $ES = .396$) had different effect sizes. Oral language ($k = 18$, $ES = .676$) and written language ($k = 6$, $ES = .584$) did not show a huge difference. Productive skills ($k = 15$, $ES = .746$) were much more effective than receptive skills ($k = 9$, $ES = .489$).

Even though the topics of meta-analyses on English education are same or similar, their different research design of meta-analyses could draw their own meaningful results through adopting the different scope of data collection and the different scheme of data coding. The current meta-analysis has four major differences from J. Y. Lee's (2021) study. First, the previous study explored only journal articles without master's theses and doctoral dissertations. Second, the previous study examined only cognitive effects without affective effects. Third, the previous study analyzed empirical primary studies of storytelling with the control group design and the one-group pretest-posttest design. Fourth, the previous study did not analyze the different effects across storytelling types. Unlike J. Y. Lee's (2021) meta-analysis, the current study includes not only journal articles but also master's theses and doctoral dissertations in order to estimate the effect size for both the cognitive and affective effects from more samples. Collecting comprehensive data is important to integrate the related studies for more reliable results of a meta-analysis (J. Y. Kim, 2017). Sufficient samples, which are the premise of meta-analyses, make more objective analysis of effects (S. D. Hwang, 2015). Thus, the current study could draw own meaningful implications to guide future English instructions and research on storytelling with the different research design.

III. METHOD

1. Data Collection and Inclusion Criteria

The studies for the current meta-analysis were collected

from online databases in Korea such as RISS (Research Information Sharing Service), National Assembly Digital Library, Kyobo Scholar, KISS (Korean-studies Information Service System), and DBpia. However, in order to prevent the overlap of the same data of the meta-analysis, RISS was considered as the main database because the database was able to access studies that the other databases provided.

The primary search keywords were “storytelling,” “story telling” and “story-telling”. In addition, other keywords such as “story,” “retelling,” and “TPRS” were searched as well not to miss out possible related studies. The setting was limited to Korean EFL context. The studies were published from 2000 to 2021. The period from 2000 to 2021 was chosen for this meta-analysis because the 7th National Curriculum put an emphasis on the communicative competence and began to implement English education for 3rd graders of elementary school in the regular curriculum in 1997. The change would be reflected to the related research a few years after the start of the new curriculum. As a meta-analysis needs to collect sufficient quantitative research on the same topic (S. D. Hwang, 2015), the number of studies published for 21 years could be considered as sufficient. The full text had to be accessed in the online databases. As a result, 1380 journal articles, 2247 master’s theses and 249 doctoral dissertations were found including overlapped primary studies.

With the found studies, titles and abstracts were reviewed. First of all, overlapped studies were excluded. The current study included the studies that used storytelling as a model or activity of the English instruction in empirical research, and excluded the studies that used storytelling only for the testing type or the lesson plans. Thus, surveys, case studies, and meta-analyses were excluded. The participants of the selected studies were elementary school, middle school, high school, and university students. As a result, 100 journal articles, 330 theses and 13 dissertations were collected.

After collecting primary studies, each primary study was reviewed in order to inspect its research questions, research designs, and results. The selected studies conducted experiments with one control group and one experimental group. That is, the one-group posttest-only or pretest-posttest designs, and the multiple-comparison research design were excluded for this meta-analysis. The number of participants needed to be at least more than 20 in total.

A comparison group needed to adopt the traditional English instruction or no treatment. The current study excluded the studies that compared two different storytelling activities or used storytelling activities for a comparison group. Thus, the methods of the primary studies were reviewed to filter the studies that contained the comparison group or the storytelling activity in name only. The studies that proved or reported that the experimental and comparison groups were homogenous were selected. The selected studies contained statistical data such as sample sizes, means, and standard deviations with *p*-values, and *t*-values or *F*-values.

When the journal article and the thesis (or the dissertation) had the same data, the journal article was selected.

However, the master’s thesis that S. J. Choi (2008) studied was included because her journal article reported only statistical data of three different groups across learners’ proficiency level. Likewise, the doctoral dissertation conducted by J. S. Kim (2009) was included because her journal article reported less samples of the effectiveness than her dissertation. Finally, 84 storytelling studies were collected. The selected studies included 18 journal articles, 63 master’s theses, and three doctoral dissertations that were published from 2000 to 2021 under Korean EFL context with sufficient statistical data.

2. Data Coding

The selected studies were divided according to the variables: school levels, outcome variables, and storytelling types (see Appendix). Table 1 presents the scheme of data coding. S. H. Kim’s (2001) study conducted the two sessions of the experiment. After the first session, the experimental group changed into the control group. Thus, the data of the first session were coded. The two samples of anxiety from the studies of G. Cho (2008) and Y. H. Jeon (2002) were excluded because the figures were reversed unlike the other values. More specifically, the value of anxiety is getting greater as storytelling is less effective. It could disturb the results of overall effects from the meta-analysis. Thus, 277 samples in 84 studies were coded with means, standard deviations, and sample sizes of the experimental and control groups.

As presented in Table 1, master’s theses turn out to be the most frequent among the three types of publication. Elementary school students were the main participants of research on storytelling. Unlike other school levels, elementary school includes three qualitatively different English curricula. In the first and second grades, English is not a mandatory subject. The third and fourth grades focus on listening and speaking, whereas the fifth and sixth grades need to study four language skills (Ministry of Education, 2015). Thus, elementary school needs to be divided into three parts: the first and second grades, the third and fourth grades, and the fifth and sixth grades in accordance with the difference of the national curriculum of English education in the school-level analysis.

In the cognitive domain, eight individual academic variables are included such as four language skills, vocabulary, grammar, phonics, and achievement tests. Among the eight variables, the effects of listening and speaking are measured in primary studies the most because storytelling is an activity based on oral communication. In addition, effects between oral and written language, and between receptive and productive skills are compared. Oral language includes listening and speaking with three samples of oral vocabulary that researchers especially emphasized. Written language contains reading, writing, phonics, and the achievement of reading and writing with three samples of written vocabulary that researchers especially marked. Receptive skills include listening, reading, and phonics with three samples of vocabulary for comprehension that

TABLE 1
Data Coding Variables and Values for the Current Meta-Analysis

Variable	Value (Numbers of studies)
1. Study name	Author(s) (year)
2. Publication	1) Journal articles (<i>n</i> = 18) 2) Master's theses (<i>n</i> = 63) 3) Doctoral dissertations (<i>n</i> = 3)
3. School level	(1) 1st & 2nd grade of elementary school (<i>n</i> = 5)
	1) Elementary education (<i>n</i> = 76) 2) 3rd & 4th grade of elementary school (<i>n</i> = 31)
	(3) 5th & 6th grade of elementary school (<i>n</i> = 40)
3. School level	2) Secondary education (<i>n</i> = 5) (1) Middle school (<i>n</i> = 3) (2) High school (<i>n</i> = 2)
	3) Tertiary education (<i>n</i> = 3) University (<i>n</i> = 3)
4. Outcome variables	(1) Listening (<i>n</i> = 42) (2) Reading (<i>n</i> = 23)
	(3) Speaking (<i>n</i> = 33) (4) Writing (<i>n</i> = 8)
	(5) Vocabulary (<i>n</i> = 20) (6) Grammar (<i>n</i> = 3)
	1) Cognitive domain (<i>n</i> = 83) (7) Phonics & alphabet (<i>n</i> = 2) (8) Achievement (<i>n</i> = 4)
	(1) Oral language (<i>n</i> = 52) (2) Written language (<i>n</i> = 30)
	(1) Receptive skills (<i>n</i> = 61) (2) Productive skills (<i>n</i> = 40)
	(1) Interest (<i>n</i> = 48) (2) Self-confidence (<i>n</i> = 32)
	(3) Class engagement (<i>n</i> = 16) (4) Attitude (<i>n</i> = 7)
	2) Affective domain (<i>n</i> = 53) (5) Self-directed learning ability (<i>n</i> = 5) (6) Motivation (<i>n</i> = 10)
	(7) Satisfaction (<i>n</i> = 3) (8) Difficulty (<i>n</i> = 3)
(9) Importance (<i>n</i> = 2) (10) Awareness of cooperation (<i>n</i> = 2)	
5. Storytelling types	1) General storytelling (<i>n</i> = 57) 2) Digital storytelling (<i>n</i> = 14) 3) TPRS (<i>n</i> = 7) 4) Retelling (<i>n</i> = 6)

researchers especially marked. Productive skills contain speaking and writing with three samples of vocabulary for expressions that researchers especially emphasized.

In the affective domain, ten individual variables are included, whereas the two samples such as familiarity from J. G. Cho's (2005) study and an affective effect from J. S. Jeon (2002) are excluded for the subgroup analysis. These two values do not belong to any subtype of the affective domain.

In order to compare different storytelling types, the four types are divided into general storytelling, digital storytelling, TPRS, and retelling. General storytelling was conducted the most, whereas retelling was conducted the least without general storytelling.

3. Statistical Analysis

To calculate effect sizes of storytelling on English language learning under Korean EFL context, an open source software R version 4.0.1 was utilized with R Studio. The meta-analytic package of 'meta' in R was used for analyzing overall effect sizes, the test of heterogeneity, the forest plot, subgroup effect sizes, and Egger's regression test. Another meta-analytic package of 'metafor' was used for calculating the publication bias, the 'Fail-safe N'.

Before exploring effect sizes, the forest plot, which summarizes effect sizes of individual studies, an overall effect size and heterogeneity, was briefly reviewed to select fixed-effect or random-effect models. The fixed-effect model assumes that all studies have the same true effect size, whereas the random-effect model assumes that all studies have different effect sizes with different character-

istics of each study (S. D. Hwang, 2015).

After deciding the analysis model, effect sizes were analyzed. Cohen's *d* and Hedges' *g* are widely utilized as effect sizes in meta-analyses (S. Yoo, 2017). Hedges' *g* is recommended because Cohen's *d* tends to overestimate effect sizes (S. D. Hwang, 2015). Thus, this study used Hedges' *g*. Hedges' *g* can be interpreted in the same way of Cohen's *d* index that suggests '*ES* ≤ .200' as a small effect size, '*ES* = .500' as a medium effect size, and '*ES* ≥ .800' as a large effect size (Cohen, 1988).

Egger's regression test was conducted to inspect the publication bias. If Egger's regression test indicates that the samples are biased, the fail-safe N is conducted to figure out the degree of the publication bias, and to detect how critical the publication bias is. The result of the fail-safe N is greater than '*5k* (*k*: numbers of samples) + 10', the bias is not critical (S. D. Hwang, 2015). It reveals that the estimated effect sizes are acceptable and reliable.

IV. RESULTS AND DISCUSSION

1. Publication Bias

In this study, Egger's regression test is used to detect the publication bias. The result of Egger's regression test shows that the primary studies of storytelling have the publication bias (*t* = 8.153, *p* = .000). The result suggests that the included samples are biased. The results of the publication bias could imply that empirical research on storytelling has been weighted toward the positive results. It is because the studies with the positive results tend to

TABLE 2
Overall Effects of Storytelling

Model		95% CI				Heterogeneity					
		<i>k</i>	<i>ES (g)</i>	Lower limit	Upper limit	<i>z</i>	<i>p</i>	<i>Q</i>	<i>df</i>	<i>p</i>	<i>I</i> ²
All	Fixed effects	277	.545	.517	.574	37.54	.000	1039.70	276	.000	73.5%
	Random effects	277	.613	.556	.669	21.31	.000				
Cognitive domain	Fixed effects	143	.577	.537	.618	28.12	.000	438.47	142	.000	67.6%
	Random effects	143	.627	.555	.699	17.05	.000				
Affective domain	Fixed effects	134	.513	.473	.553	24.98	.000	596.28	133	.000	77.7%
	Random effects	134	.599	.512	.686	13.48	.000				

be passed (S. D. Hwang, 2015). The estimated effect sizes would be overestimated. It is necessary to pay attention to the interpretation of the results. To figure out the degree of the publication bias, the fail-safe N is conducted. The result suggests that the publication bias is not critical in that the fail-safe N (N = 161948) is greater than ‘5*k* + 10’ (5 × 277 + 10) (S. D. Hwang, 2015). Thus, the estimated effect sizes are reliable and acceptable in this study.

The publication bias could not be compared with the related meta-analyses of English education because the previous English storytelling-related meta-analyses did not report the publication bias. However, it is important to suggest the publication bias even though the selected samples are proved to be biased in order to give information to interpret the results (S. D. Hwang, 2015).

2. Overall Effects of Storytelling

To verify the overall effect of storytelling on English education in Korea, the mean effect size of storytelling was measured by calculating Hedges’ *g* for 277 samples from 84 studies in all unique samples. Hedges’ *g* was also calculated for 143 samples of 83 studies in the cognitive domain, and for 134 samples of 53 studies in the affective domain. The heterogeneity test of all *ESs* was conducted.

Table 2 shows the results of the heterogeneity test and the overall effect sizes. The result of the heterogeneity is the nearly high level (*I*² = 73.5%) in the forest plot in that the level above 75% denotes high heterogeneity in *I*² (S. D. Hwang, 2015). In addition, the heterogeneity test shows the statistical significance (*p* = .000). The result indicates that the primary studies of storytelling are inconsistent in English language education under Korean EFL context. Thus, the random-effect model is more reliable for suggesting mean effect sizes.

The effect sizes are also shown in Table 2. The mean effect of all samples shows *g* = .613. Likewise, effects of the cognitive domain (*g* = .627) and the affective domain (*g* = .599) are similar with the overall effect size of storytelling. The result of the cognitive domain is different from the previous study conducted by J. Y. Lee (2021) in that the mean effect of storytelling from journal articles was a large size (*d* = .820). The difference could be attributed to the way of including primary studies. The previous study collected primary studies with both the control group re-

search design and the one-group only design. The result of the current study is similar with the mean effect of the control group research design (*d* = .654) in the previous study. However, the effect size is slightly larger than the current study. The difference could be from the way of calculating effect sizes. The previous study used Cohen’s *d* that tended to overestimate effect sizes of small sample sizes (S. D. Hwang, 2015). In addition, the previous study analyzed only journal articles that tended to be published if positive effects were suggested.

3. Effects Across Education and School Levels

This study examined the effects of storytelling across education and school levels. In the school-level analysis, elementary school is divided into three parts: the first and second grades, the third and fourth grades, and the fifth and sixth grades in accordance with the difference of the national curriculum of English education.

1) Effects Across Education Levels

The results across education levels are presented in Table 3. Statistically significant differences across education levels exist in the affective domain (*Q* = 8.63, *p* = .013), but not in all samples (*Q* = 5.47, *p* = .065) and the cognitive domain (*Q* = .98, *p* = .614).

In all samples and the cognitive domain, the mean effects show the statistical significance in elementary and secondary education, but not in tertiary education. In the affective domain, the mean effect of elementary education shows the statistical significance. In the cognitive domain, storytelling is more effective in secondary education (*g* = .741) than elementary education (*g* = .620).

The results of the cognitive domain are contradictory to J. Y. Lee’s (2021) meta-analysis in that storytelling was more effective in elementary education (*d* = .813) than secondary education (*d* = .648). The way of selecting primary studies could draw the different results. The previous study included only three samples of middle school from journal articles.

2) Effects Across School Levels

The results across school levels are shown in Table 4. In terms of the number of samples, the fifth and sixth grades

TABLE 3
Effects of Storytelling Across Education Level

	Education level	<i>k</i>	<i>ES (g)</i>	95% CI		<i>z</i>	<i>p</i>	Between groups	
				Lower limit	Upper limit			<i>Q</i>	<i>p</i>
All	Elementary education	258	.622	.565	.679	21.40	.000	5.47	.065
	Secondary education	12	.629	.370	.888	4.76	.000		
	Tertiary education	7	.240	-.076	.555	1.49	.136		
Cognitive domain	Elementary education	132	.620	.546	.695	16.25	.000	.98	.614
	Secondary education	8	.741	.514	.968	6.40	.000		
	Tertiary education	3	.653	-.176	1.483	1.54	.123		
Affective domain	Elementary education	126	.624	.538	.711	14.10	.000	8.63	.013
	Secondary education	4	.422	-.112	.956	1.55	.121		
	Tertiary education	4	.052	-.330	.433	.27	.790		

TABLE 4
Effects of Storytelling Across School Level

	School level	<i>k</i>	<i>ES (g)</i>	95% CI		<i>z</i>	<i>p</i>	Between groups	
				Lower limit	Upper limit			<i>Q</i>	<i>p</i>
All	1st & 2nd grade in elementary school	12	1.024	.643	1.404	5.27	.000	10.62	.060
	3rd & 4th grade in elementary school	99	.625	.530	.719	12.94	.000		
	5th & 6th grade in elementary school	147	.590	.520	.661	16.32	.000		
	Middle school	10	.669	.357	.982	4.19	.000		
	High school	2	.512	.212	.813	3.34	.001		
	University	7	.240	-.076	.555	1.49	.136		
Cognitive domain	1st & 2nd grade in elementary school	7	.942	.566	1.318	4.91	.000	6.11	.295
	3rd & 4th grade in elementary school	56	.624	.520	.728	11.77	.000		
	5th & 6th grade in elementary school	69	.591	.482	.700	10.66	.000		
	Middle school	6	.842	.572	1.111	6.12	.000		
	High school	2	.512	.212	.813	3.34	.001		
	University	3	.653	-.176	1.483	1.54	.123		
Affective domain	1st & 2nd grade in elementary school	5	1.132	.287	1.977	2.63	.009	9.81	.044
	3rd & 4th grade in elementary school	43	.638	.464	.811	7.19	.000		
	5th & 6th grade in elementary school	78	.591	.497	.684	12.40	.000		
	Middle school	4	.422	-.112	.956	1.55	.121		
	High school	0	-	-	-	-	-		
	University	4	.052	-.330	.433	.27	.790		

of elementary school have the most samples. High school students were selected as participants the least ($k = 2$).

Although samples of high school are recorded in Table 4, it cannot be meaningful to generalize the effects of storytelling on high school because of its too small sample size ($k < 5$). It is similar with the case of the cognitive effects in university and the affective effects in middle school and university.

Statistically significant differences across school levels exist in the affective domain ($Q = 9.81, p = .044$), but not in all samples ($Q = 10.62, p = .060$) and the cognitive domain ($Q = 6.11, p = .295$). Three groups of elementary

school and high school show the statistical significance, whereas university does not show the statistical significance in all samples, the cognitive domain and the affective domain. In middle school, only the affective domain does not show the statistical significance.

In elementary school, the effect sizes become lower as the grade goes up. Only the first and second grades show the large effect sizes in all samples, the cognitive domain and the affective domain. The results of elementary school are similar with the meta-analysis on English stories (J. Y. Kim & J. R. Kim, 2016). The existing study revealed that English stories

were the most effective for early childhood education and the first and second grades with the large effect sizes in both cognitive ($ES = 1.291$) and affective domains ($ES = 1.229$). This phenomenon suggests that stories could be a powerful tool to start to learn English for younger children.

The gap between the cognitive and affective effects is different from the meta-analyses of children’s literature (E. Choe et al., 2017; J. Y. Kim & J. R. Kim, 2016) in elementary education in that the two previous studies showed that the affective domain was more effective than the cognitive domain from third to sixth grades of elementary school. However, the current study does not show the huge differences between the cognitive and affective effects from third to sixth grades of elementary school.

Middle school also shows the large effect size only in the cognitive domain ($g = .842$). The result of middle school is different from the previous meta-analysis on storytelling (J. Y. Lee, 2021) in that the cognitive effect of middle school was $d = .648$ in three samples from journal articles. The difference could come from the different number of the samples of the primary studies.

4. Effects of Outcome Variables

This study also investigated the effects of storytelling across the subtypes of the cognitive domain such as four language skills, vocabulary, grammar, phonics and achievement, and across the subtypes of the affective domain such as interest, self-confidence, class engagement, attitude, self-directed learning ability, motivation, satisfac-

tion, difficulty, importance, and awareness of cooperation.

1) Effects of the Cognitive Domain

The results across unique subtypes of the cognitive domain are illustrated in Table 5. In terms of the number of samples, grammar and phonics were analyzed the least ($k = 3$). Although samples of grammar, phonics and achievement are recorded in Table 5, it cannot be meaningful to generalize the effects of storytelling on those three subtypes because of their too small sample sizes ($k < 5$). Thus, grammar, phonics and achievement are excluded from the discussion. The statistically significant difference is not found across unique subtypes of the cognitive domain ($Q = 8.25, p = .311$). All eight subtypes of the cognitive domain show the statistical significance ($p < .05$).

Vocabulary is the most effective outcome variable ($g = .702$) with excluding the three subtypes which have too small samples ($k < 5$). The results of listening ($g = .534$) and speaking ($g = .688$) are similar with J. Y. Lee’s (2021) study in that the effects were between medium and large effect sizes in listening ($d = .576$) and speaking ($d = .709$).

In contrast, the results of reading ($g = .570$) and vocabulary ($g = .702$) are contradictory to J. Y. Lee’s (2021) meta-analysis as the effect of reading was a relatively smaller size ($d = .396$), but vocabulary had a large effect size ($d = .987$).

This study also explored the effects of storytelling between oral and written language, and between receptive and productive skills. The results of effects between oral and

TABLE 5
Effects of Cognitive Domain

Cognitive domain	95% CI						Between groups	
	<i>k</i>	<i>ES (g)</i>	Lower limit	Upper limit	<i>z</i>	<i>p</i>	<i>Q</i>	<i>p</i>
Listening	42	.534	.415	.653	8.80	.000	8.25	.311
Reading	23	.570	.414	.726	7.16	.000		
Speaking	34	.688	.534	.842	8.75	.000		
Writing	9	.487	.315	.660	5.53	.000		
Vocabulary	25	.702	.492	.911	6.56	.000		
Grammar	3	1.223	.462	1.985	3.15	.002		
Phonics & alphabet	3	.736	.278	1.194	3.15	.002		
Achievement	4	.788	.081	1.496	2.18	.029		

TABLE 6
Effects of Storytelling Between Oral and Written Language and Between Receptive and Productive Skills

		95% CI					Between groups		
		<i>k</i>	<i>ES (g)</i>	Lower limit	Upper limit	<i>z</i>	<i>p</i>	<i>Q</i>	<i>p</i>
Language forms	Oral language	79	.606	.514	.697	12.98	.000	.54	.462
	Written language	39	.553	.448	.659	10.29	.000		
Language skills	Receptive skills	71	.549	.459	.638	11.99	.000	1.61	.204
	Productive skills	46	.645	.526	.764	10.65	.000		

written language, and between receptive and productive skills are illustrated in Table 6. Storytelling is more effective for teaching oral language than written language, and for teaching productive skills such as speaking and writing than receptive skills such as listening and reading. However, the results between receptive and productive skills are partly different from J. Y. Lee’s (2021) meta-analysis that presented the huge gap between receptive skills ($d = .489$) and productive skills ($d = .746$).

Storytelling, which is a basically oral and aural activity, is expected to enhance communicative skills. However, the effects of oral language are not much greater than those of written language even though speaking is the most effective among four language skills. The results of the current meta-analysis reveal that storytelling enables students to enhance oral and written language, and receptive and productive skills in balance with the effect around medium sizes. The results also indicate that storytelling could be used for four language skills in class. Vocabulary is much more effective than four language skills. The participants of the selected primary studies could affect the results of the current meta-analysis. Most participants of the primary studies are elementary school students.

2) Effects of the Affective Domain

The results across unique subtypes of the affective domain are illustrated in Table 7. The statistically significant difference is not found across unique subtypes of the affective domain ($Q = 12.67, p = .178$). Except for satisfaction, difficulty, and awareness of cooperation, other seven subtypes of the affective domain show the statistical significance ($p < .05$).

In terms of the number of samples, importance and awareness of cooperation were analyzed the least ($k = 2$). Although samples of satisfaction, difficulty, importance and awareness of cooperation are recorded in Table 7, it cannot be meaningful to generalize the effects of storytelling on those four subtypes with their too small sample sizes ($k < 5$).

Thus, satisfaction, difficulty, importance and awareness of cooperation are excluded from the discussion.

Storytelling tends to facilitate attitude ($g = 1.277$) the most, and class engagement ($g = .711$) the second most among the subtypes of the affective domain. Interest is also relatively more effective ($g = .622$) as storytelling is known to be closely related to interest (E. Ko & K. Hong, 2017; Spagnoli, 2008).

The result of attitude is similar with the meta-analysis on children’s literature (J. Y. Kim & J. R. Kim, 2016) as attitude showed a large effect size ($ES = .931$). However, the existing study reported that the second most effective one was not class engagement ($ES = .567$) but interest ($ES = .797$). The interactive feature of storytelling could affect the differences between the previous study and the current study. Learners need to participate in storytelling more actively than reading stories. Therefore, storytelling could give more positive effects on attitude and class engagement than reading stories.

5. Effects Across Storytelling Types

The results across storytelling types are shown in Table 8. The statistically significant differences exist in all samples ($Q = 8.89, p = .031$) and the affective domain ($Q = 10.48, p = .015$), but not in the cognitive domain ($Q = 1.00, p = .800$). The effect sizes of all four storytelling types show the statistical significance ($p < .01$).

TPRS is the most effective type, whereas digital storytelling is the least effective type. The effects of general storytelling are similar with the overall effect size ($g = .613$) of the current study. In the cognitive domain, the effects of the four storytelling types are not much different. In contrast, in the affective domain, digital storytelling is far less effective, and TPRS is much more effective than other storytelling types.

Digital storytelling shows the similar pattern of the effect sizes with retelling, but the different pattern of the effect sizes from TPRS. Digital storytelling has the larger

TABLE 7
Effects of Affective Domain

Affective domain	k	ES (g)	95% CI		z	p	Between groups	
			Lower limit	Upper limit			Q	p
Interest	50	.622	.483	.761	8.77	.000	12.67	.178
Self-confidence	34	.525	.360	.689	6.25	.000		
Class engagement	16	.711	.516	.907	7.13	.000		
Attitude	7	1.277	.473	2.081	3.11	.002		
Self-directed learning ability	5	.608	.255	.960	3.38	.001		
Motivation	10	.572	.380	.763	5.85	.000		
Satisfaction	3	.135	-.453	.722	.45	.653		
Difficulty	3	-.023	-.840	.795	-.05	.957		
Importance	2	.609	.326	.892	4.21	.000		
Awareness of cooperation	2	.310	-.001	.621	1.95	.051		

TABLE 8
Effects of Storytelling Across Storytelling Types

	Storytelling types	95% CI				Between groups			
		<i>k</i>	<i>ES (g)</i>	Lower limit	Upper limit	<i>z</i>	<i>p</i>	<i>Q</i>	<i>p</i>
All	General storytelling	180	.638	.569	.707	18.19	.000	8.89	.031
	Digital storytelling	46	.462	.332	.592	6.95	.000		
	TPRS	24	.786	.581	.991	7.52	.000		
	Retelling	27	.547	.363	.731	5.82	.000		
Cognitive domain	General storytelling	96	.630	.540	.719	13.78	.000	1.00	.800
	Digital storytelling	23	.566	.393	.739	6.42	.000		
	TPRS	12	.732	.446	1.018	5.01	.000		
	Retelling	12	.635	.423	.847	5.88	.000		
Affective domain	General storytelling	84	.648	.542	.755	11.94	.000	10.48	.015
	Digital storytelling	23	.361	.178	.543	3.88	.000		
	TPRS	12	.845	.540	1.151	5.43	.000		
	Retelling	15	.485	.207	.763	3.41	.001		

effect size of the cognitive domain ($g = .566$) than that of the affective domain ($g = .361$) as retelling with the larger cognitive effect size ($g = .635$) and the smaller affective effect size ($g = .485$). However, TPRS has the larger effect size of the affective domain ($g = .845$) than the effect size of the cognitive domain ($g = .732$). In summary, TPRS can draw more positive affective responses from language learners than digital storytelling and retelling.

The different effects of storytelling types depend on how interactive the type is. The more interactive characteristic of TPRS could affect the strong effectiveness. TPRS is a kind of storytelling connected to TPR which draws students' physical reactions with grammatically correct input and meaningful stories (Braunstein, 2006; Brown, 2007). In contrast, digital storytelling is lack of direct interaction with teachers or classmates, which is different from face-to-face storytelling (S. Y. Kim & J. Jung, 2011).

V. CONCLUSION

The current meta-analysis aims to explore the overall effect of storytelling on English language learning under Korean EFL context. In addition to the overall effect, this study focused on the different effects across school levels, outcome variables, and storytelling types for detailed analysis. Meta-analyses on storytelling have already been conducted. However, the existing study (J. Y. Lee, 2021) did not include master's theses and doctoral dissertations, and did not analyze affective effects unlike the current study. In this regard, further meta-analysis on storytelling was needed to analyze the effects of both the cognitive and affective domains with journal articles, master's theses, and doctoral dissertations.

In terms of the overall effect of storytelling, the mean effect of all samples showed $g = .613$. Likewise, effects of the cognitive domain ($g = .627$) and the affective domain ($g =$

$.599$) were similar with the overall effect size of storytelling. The result of the cognitive domain was different from the previous study conducted by J. Y. Lee (2021) in that the mean effect of storytelling from journal articles was a large size.

Considering the effects across the education and school levels, in elementary school, the effect sizes became lower as the grade went up. Only the first and second grades showed the large effect sizes in all samples, the cognitive domain and the affective domain. Middle school also showed the large effect size only in the cognitive domain ($g = .842$).

Regarding the effects across the outcome variables, almost all cognitive outcome variables had greater effect sizes than $g = .500$ except for writing. In the cognitive domain, vocabulary was the most effective outcome variable if grammar, phonics and achievement which had too small sample sizes were excluded. However, the effect of writing was a relatively smaller size. The school level could affect the results of the current meta-analysis. Most participants of the included primary studies were elementary school students. If more studies on storytelling are conducted in secondary and tertiary education, results could change. Through the comparison between oral and written language, and between receptive and productive skills, storytelling enabled students to enhance oral and written language, and receptive and productive skills in balance with the effect around medium sizes. The results were slightly different from the theoretical background that storytelling activities aimed to improve oral communicative skills. The results indicated that storytelling could be used for four language skills in class since the statistically significant difference was not found between receptive and productive skills.

In the affective domain, the effects of all six affective variables ranged from medium to large sizes except for four subtypes that had too small samples ($k < 5$). Attitude was the most effective outcome variable with a large effect size. Storytelling focused on enhancing interest (E. Ko & K.

Hong, 2017; Spagnoli, 2008), but the current meta-analysis showed attitude and class engagement were more effective than interest. In addition, storytelling had larger effect sizes in attitude and class engagement than story-related activities when comparing the current study with the meta-analysis on children's literature conducted by J. Y. Kim and J. R. Kim (2016). It was because learners needed to participate in storytelling more actively than reading stories. The results could suggest that storytelling could be used to lead to positive attitude toward to English learning and to enable students to participate in class activities actively.

As to the effects across the storytelling types, TPRS was the most effective type, whereas digital storytelling was the least effective type. Especially, the gap was greater in the affective domain than the cognitive domain. From the results, the different effects of storytelling types depended on how interactive the type was. TPRS has the characteristic of TPR which draws students' physical reactions with meaningful stories (Braunstein, 2006; Brown, 2007). In contrast, digital storytelling is less directly interactive with teachers or classmates than face-to-face storytelling (S. Y. Kim & J. Jung, 2011).

The educational implications of the current meta-analysis are as follows. Storytelling is more effective to start to study English in elementary and secondary school. With its interactive feature, language learners could have positive effects on attitude and engagement toward to English class. To maximize the effectiveness of storytelling, teachers need to focus on direct interaction with learners.

The limitation of this study is that included samples were biased when using Egger's regression test. It is necessary to pay attention to the interpretation of the results, whereas the estimated effect sizes were proved to be reliable when using the fail-safe N. In addition, the sample sizes of secondary school students or university students were much smaller than those of elementary school students because empirical research on storytelling was rarely conducted in secondary school or university.

Further storytelling-related meta-analysis is necessary to collect more samples to generalize the effects of storytelling. Further empirical studies on storytelling need to use storytelling for secondary school students or university students. In most existing studies, elementary school students were the participants. In order to figure out more precise effects of storytelling for secondary school students or university students, more empirical samples are needed. From the individual studies of middle school (J. T. Chang, 2016; M. H. Jeong & I. J. Jo, 2016; K. Yang, 2018), high school (J. S. Kim, 2006; J. Park, 2018) and university (S. Bae, 2021; S. Heo, 2018; P. Park & H. Chung, 2016), storytelling was significantly effective in the cognitive outcome variables. Since fairy tales which include relatively easy vocabulary items and sentence patterns are usually utilized for storytelling activities (T. Yoon, 2018b), research on storytelling has been conducted mostly in elementary education. However, storytelling could be used for secondary school students or university students by increasing the difficulty of storytelling activities. Storytelling needs to be used by

adjusting its difficulty to learners' proficiency. For example, the activity can be implemented based on creative storytelling which is one of the most difficult activities for L2 learners (N. Kim et al., 2008).

In the education field, teachers need to design their lesson by focusing on direct interaction with learners, and select storytelling materials and types for adjusting activities to the purpose of the instruction and the level of language competence. For example, storytelling for high school students and university students aimed for only reading and speaking respectively in the individual research. TPRS was used mostly for elementary education. To develop and implement storytelling activities in a more interactive and practical way, training programs for English teachers are needed. English teachers had difficulty in preparing proper materials and implementing storytelling instructions as a storyteller (S. Park, 2007) because storytelling depends on teachers' ability to deliver and express stories (S. Kim, 2009).

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APPENDIX
The Characteristics of Primary Studies

Study (year)	Publication	School level	Storytelling type	Outcome variable	
1	J. H. An (2005)	Master's thesis	Elementary (4th grade)	Storytelling	Reading, Interest
2	S. E. An (2014)	Master's thesis	Elementary (2nd grade)	TPRS	Vocabulary
3	J. Bae & D. Lee (2012)	Journal article	Elementary (6th grade)	TPRS	Vocabulary, Reading
4	S. Bae (2021)	Master's thesis	University	Digital storytelling	Speaking
5	Y. J. Bae (2010)	Master's thesis	Elementary (5th grade)	Digital storytelling	Achievement, Interest, Self-confidence, Importance Class engagement
6	M. Bang (2002)	Master's thesis	Elementary (3rd grade)	Storytelling	Interest, Self-confidence, Class engagement, Listening
7	S. Byeon (2008)	Master's thesis	Elementary (5th grade)	Digital storytelling	Reading, Interest
8	C. Chae (2004)	Master's thesis	Elementary (3rd grade)	Digital storytelling	Listening, Speaking Achievement (Reading & Writing)
9	J. T. Chang (2011)	Journal article	Elementary (5th grade)	Storytelling	Vocabulary
10	J. T. Chang (2016)	Journal article	Middle school	Storytelling	Reading, Speaking, Attitude
11	G. Cho (2008)	Master's thesis	Elementary (6th grade)	Storytelling	Grammar, Motivation, Self-confidence, Attitude, Interest
12	H. J. Cho (2006)	Master's thesis	Elementary (6th grade)	Storytelling	Interest, Self-confidence, Class engagement, Vocabulary
13	J. G. Cho (2005)	Master's thesis	Elementary (5th grade)	Storytelling	Listening, Speaking, Interest Self-confidence, Familiarity
14	J. E. Choi (2001)	Master's thesis	Elementary (5th grade)	Storytelling	Interest, Class engagement, Awareness of cooperation
15	S. J. Choi (2008)	Master's thesis	Elementary (6th grade)	Storytelling	Vocabulary in reading, Vocabulary in writing
16	S. M. Choi (2006)	Master's thesis	Elementary (4th grade)	TPRS	Listening, Speaking, Interest, Self-confidence
17	Y. Y. Choi (2004)	Master's thesis	Elementary (4th grade)	Storytelling	Listening
18	E. G. Chun (2008)	Master's thesis	Elementary (4th grade)	Storytelling	Listening, Speaking, Interest
19	S. J. Ha (2003)	Master's thesis	Elementary (5th grade)	Storytelling	Listening, Speaking Interest, Self-confidence
20	S. Han & K. H. Kim (2015)	Journal article	Elementary (5th grade)	Retelling	Reading, Writing, Interest, Motivation, Self-confidence, Self-directed learning ability
21	E. H. Heo (2013)	Master's thesis	Elementary (5th grade)	Storytelling	Reading, Interest, Difficulty Self-confidence, Motivation, Self-directed learning ability, Class engagement
22	S. Heo (2018)	Journal article	University	Storytelling	Speaking
23	E. H. Hong (2012)	Master's thesis	Elementary (4th grade)	Digital storytelling	Interest, Motivation, Class engagement, Reading
24	K. O. Hwang (2006)	Master's thesis	Elementary (3rd grade)	Storytelling	Interest, Class engagement Self-confidence Listening, Speaking
25	B. B. Im & C. Y. Lim (2005)	Journal article	Elementary (5th grade)	Storytelling	Listening, Speaking, Interest
26	E. Y. Jang (2010)	Master's thesis	Elementary (1st grade)	TPRS	Interest, Self-confidence, Class engagement, Listening, Speaking

Study (year)	Publication	School level	Storytelling type	Outcome variable	
27	M. Y. Jang (2003)	Master's thesis	Elementary (5-6th grade)	Storytelling	Listening, Speaking
28	S. H. Jang (2015)	Master's thesis	Elementary (3rd grade)	Storytelling	Listening, Reading
29	Y. H. Jang (2005)	Master's thesis	Elementary (4th grade)	Storytelling	Listening
30	Y. H. Jeon (2002)	Master's thesis	Elementary (4th grade)	Storytelling	Listening, Speaking, Vocabulary, Self-confidence, Motivation
31	J. S. Jeon (2002)	Master's thesis	Elementary (6th grade)	Storytelling	Listening, Vocabulary, Affective domain
32	M. H. Jeong & I. J. Jo (2016)	Journal article	Middle school	Retelling	Speaking, Interest, Self-directed learning ability, Self-confidence
33	N. Jeong (2009)	Master's thesis	Elementary (4th grade)	Digital storytelling	Listening
34	S. Jeong (2012)	Doctoral dissertation	Elementary (4th grade)	Storytelling	Listening, Speaking, Reading
35	W. R. Jo (2011)	Master's thesis	Elementary (5th grade)	Storytelling	Vocabulary, Interest, Satisfaction
36	Y. A. Jo (2009)	Master's thesis	Elementary (5th grade)	Storytelling	Listening, Speaking, Reading, Interest
37	A. Jung (2019)	Master's thesis	Elementary (5th grade)	Digital storytelling	Writing, Interest, Attitude
38	Y. H. Jung & H. O. Kim (2012)	Journal article	Elementary (4th grade)	Storytelling	Listening, Speaking, Interest, Attitude
39	H. S. Kang (2006)	Master's thesis	Elementary (6th grade)	Storytelling	Reading, Interest, Importance, Self-confidence, Difficulty, Class engagement, Self-directed learning ability
40	H. J. Kang (2005)	Master's thesis	Elementary (6th grade)	Retelling	Reading, Interest, Self-confidence of English, Self-confidence of reading
41	E. H. Kim (2005)	Master's thesis	Elementary (3rd grade)	Storytelling	Interest of learning, Difficulty, Interest of English learning, Interest of English stories, Listening, Speaking
42	H. E. Kim (2003)	Master's thesis	Elementary (5th grade)	Storytelling	Interest, Phonics
43	H. J. Kim (2012)	Master's thesis	Elementary (5-6th grade)	Storytelling	Vocabulary, Interest, Motivation
44	H. S. Kim & C. J. Kwon (2006)	Journal article	Elementary (6th grade)	Digital storytelling	Achievement, Speaking
45	J. S. Kim (2009)	Doctoral dissertation	Elementary (5th grade)	Storytelling	Listening, Speaking, Reading, Writing, Interest, Self-confidence, Motivation
46	J. S. Kim (2006)	Master's thesis	High school	Retelling	Reading
47	M. Kim (2015)	Master's thesis	Elementary (5th grade)	Retelling	Achievement, Vocabulary, Speaking1, Speaking 2, Writing1, Writing 2, Interest, Self-directed learning ability, Self-confidence
48	M. Kim (2000)	Master's thesis	Elementary (5th grade)	Storytelling	Interest, Class engagement, Awareness of cooperation, Listening
49	S. H. Kim (2001)	Master's thesis	Elementary (3rd grade)	Storytelling	Listening, Interest, Self-confidence, Satisfaction, Class engagement
50	S. Kim (2010)	Journal article	Elementary (4th grade)	Digital storytelling	Interest, Self-confidence, Class engagement, Listening, Grammar
51	S. H. Kim & Y. S. Jung (2010)	Journal article	Elementary (3rd grade)	Storytelling	Alphabet, Phonics
52	K. S. Ko & H. R. Ju (2004)	Journal article	Elementary (5th grade)	Storytelling	Listening, Speaking, Reading, Writing, Interest, Class engagement, Self-confidence
53	W. S. Ku (2013)	Master's thesis	Elementary (6th grade)	Storytelling	Listening, Reading, Interest

Study (year)	Publication	School level	Storytelling type	Outcome variable	
54	S. Kwag (2008)	Master's thesis	Elementary (3rd grade)	Storytelling	Vocabulary, Interest
55	S. H. Kweon (2007)	Master's thesis	Elementary (5th grade)	Storytelling	Listening, Speaking
56	E. Y. Lee (2002)	Master's thesis	Elementary (5th grade)	Storytelling	Reading, Motivation, Self-confidence, Interest
57	J. H. Lee (2005)	Master's thesis	Elementary (2nd grade)	Digital storytelling	Listening, Interest
58	K. J. Lee (2005)	Master's thesis	Elementary (6th grade)	Retelling	Reading, Interest, Self-confidence
59	K. Lee (2004)	Master's thesis	Elementary (6th grade)	Storytelling	Vocabulary
60	S. R. Lee & Y. S. Hong (2005)	Journal article	Elementary (3rd grade)	Storytelling	Listening, Speaking
61	K. Lim (2003)	Master's thesis	Elementary (3rd grade)	Storytelling	Listening
62	O. J. Lim (2003)	Master's thesis	Elementary (3rd grade)	Digital storytelling	Speaking, Listening, Interest, Self-confidence
63	S. N. Lim (2001)	Master's thesis	Elementary (5th grade)	TPRS	Receptive vocabulary, Productive vocabulary
64	Y. S. Lim (2001)	Master's thesis	Elementary (4th grade)	Storytelling	Interest, Self-confidence, Listening, Speaking
65	Y. J. Lim (2003)	Master's thesis	Elementary (4th grade)	Storytelling	Listening
66	Y. Noh (2004)	Master's thesis	Elementary (4th grade)	Storytelling	Listening, Speaking
67	H. Moon (2004)	Master's thesis	Elementary (5-6th grade)	Storytelling	Vocabulary
68	S. J. Oh (2001)	Master's thesis	Elementary (3rd grade)	Storytelling	Listening
69	E. Park (2013)	Master's thesis	Elementary (5th grade)	Storytelling	Reading, Writing
70	J. Pak (2018)	Master's thesis	High school	Digital storytelling	Reading
71	M. J. Park (2004)	Master's thesis	Elementary (5th grade)	Storytelling	Listening, Speaking, Attitude
72	P. Park & H. Chung (2016)	Journal article	University	Digital storytelling	Speaking, Interest, Class engagement, Satisfaction, Self-confidence
73	S. J. Park (2015)	Journal article	Elementary (4th grade)	Storytelling	Listening, Reading, Writing, Self-confidence, Class engagement
74	S. Park (2002)	Master's thesis	Elementary (2nd grade)	Storytelling	Vocabulary in listening, Vocabulary in speaking
75	S. H. Ryu (2001)	Journal article	Elementary (4th grade)	Storytelling	Listening
76	H. J. Son (2010)	Master's thesis	Elementary (5th grade)	Storytelling	Speaking
77	J. Song (2021)	Doctoral dissertation	Elementary (3-4th grade)	Digital storytelling	Listening, Reading, Speaking, Writing, Vocabulary, Interest, Self-confidence of English reading, Self-confidence of improving reading ability
78	Y. M. Song (2003)	Master's thesis	Elementary (5th grade)	Storytelling	Listening, Speaking, Reading, Attitude, Interest, Self-confidence
79	Y. Sung (2002)	Master's thesis	Elementary (5th grade)	TPRS	Spoken vocabulary, Written vocabulary, Interest, Self-confidence, Attitude
80	K. Yang (2018)	Master's thesis	Middle school	Storytelling	Vocabulary1, Vocabulary2, Grammar
81	J. Yoon (2000)	Master's thesis	Elementary (3rd grade)	Storytelling	Listening, Speaking, Interest, Self-confidence
82	M. S. Yoon & U. Maeng (2011)	Journal article	Elementary (2nd grade)	Storytelling	Vocabulary, Interest
83	T. Yoon (2018)	Journal article	Elementary (5th grade)	TPRS	Vocabulary, Interest, Self-confidence, Motivation, Class engagement
84	S. S. Yu (2005)	Master's thesis	Elementary (4th grade)	Storytelling	Listening, Motivation, Self-confidence, Interest