

Story Comprehension and Storytelling Production among Chinese Kindergarteners in Different Family Contexts

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Abstract

The purpose of this study was to examine kindergarten children's story comprehension and production in relation to emergent literacy in a sample of final-year kindergarten children. This study employed a quantitative descriptive cross-sectional survey design involving 104 final-year kindergarten children in Chengdu, China, to examine emergent literacy and differences in story comprehension and production across family backgrounds. Kindergarten children's scores on story comprehension and production received a mean score of 3.64 (SD= 0.60) and total emergent literacy score of 51.13 (SD= 8.30). When comparing the four emergent literacy domains, there were no significant differences found, $F(3, 309) = 2.364$, $p = .071$, partial $\eta^2 = .022$. However, scores for story comprehension and production did differ across the three family structures significantly, $F(2, 101) = 5.51$, $p < .01$, partial $\eta^2 = .098$. Furthermore, scores for the four emergent literacy domains differed significantly for paternal and maternal education on the four sub-tests received higher average scores when their parents had obtained postsecondary education compared to parents with high school education or less, $F(2, 101) = 18.26$, $p < .001$, partial $\eta^2 = .265$, and $F(2, 101) = 14.28$, $p < .001$, partial $\eta^2 = .220$, respectively. There were also significant differences found for paternal and maternal occupation, $F(6, 97) = 8.982$, $p < .001$, partial $\eta^2 = .357$, and $F(6, 97) = 6.615$, $p < .001$, partial $\eta^2 = .290$, respectively. In summary, the results of this study revealed that kindergarten children's performance on measures of story comprehension and production varied as a function of several family characteristics. Implications of the study include support of children's storytelling in kindergarten and at home, using scaffolded narrative and reading practices, in a variety of family forms and with parents of differing educational backgrounds.

Keywords Storytelling, Story Comprehension, Emergent Literacy, Family Literacy, Parental Education Kindergarten

Introduction

Oral narrative ability is integral to children's emerging literacy and their later reading and writing. Through retelling, dramatizing, adapting and creating stories, children can exploit a variety of language, comprehension and narrative opportunities. The opportunities to engage

in these activities in the home and kindergarten settings. In particular, more research is needed to explore children's ability to comprehend and produce stories and the relationships that exist between children's narrative ability and their family circumstances within a Chinese kindergarten context.

Emergent literacy refers to the knowledge and skills that kindergarten children acquire before they learn to read and write. These skills include kindergarten children's oral language, phonological awareness, print awareness, vocabulary, and narrative competence (Whitehurst & Lonigan, 1998). Emergent literacy skills develop in children as they engage with spoken language and print, in schools and other settings, with peers and adults, and in their homes and communities. Differences in kindergarten children's emergent literacy skills can influence children's readiness to engage with formal reading and writing practices in the year prior to school entry. While oral language skills such as vocabulary, phonological awareness and print knowledge are often studied in relation to emergent literacy, there are a number of other components that kindergarten children use in early literacy to make sense of written and spoken language. In particular, skills related to story comprehension and production, including children's ability to retell, dramatize, adapt and create their own stories have been found to contribute to vocabulary, oral language competence and children's narrative skills and subsequent literacy skills in reading and writing. Narrative activities such as shared reading, dialogic interaction and other forms of storytelling including kindergarten children's role play, as well as kindergarten children's story retelling, production of original stories and conversations about stories that are read to them can support children's emergent literacy skills.

Kindergarten children's emergent literacy is developed within two environments includes the home and the early childhood education context. The home literacy environment consists of books and other materials for literacy purposes as well as shared reading, storytelling and interactions with caregivers and children for language purposes. In addition, parents' beliefs about literacy are an essential part of the home literacy environment. Family characteristics such as parents' education, parents' occupations and family structure may be associated with the opportunities that children have for emerging literacy within the home environment. However, these family characteristics are not direct causes of kindergarten children's emerging literacy but are associated with a number of more proximal factors such as how often parents and kindergarten children share reading, how often parents and children tell stories, the quality of caregivers' and children's language interactions and kindergarten children's access to literacy materials.

This research is set in the context of China early-childhood education, a domain where children's opportunities for spoken language, storytelling, pretend play, cooperative interaction, verbal expression of ideas and imagination are shaped by a complex array of family and educational practices. The purposes of this study are to explore kindergarten children's narrative skills and examine the ways in which children engage in creative story construction within a range of narrative contexts in a Chinese kindergarten setting.

While a plethora of studies exist for emergent literacy in general, many more have investigated aspects of oral language includes vocabulary, syntax and the individual components of print literacy include phonological awareness, print knowledge. However,

there is little empirical evidence which specifically addresses the ability of children to comprehend and to produce stories, in particular how they are able to retell a story, to dramatize, to adapt and even to generate stories independently.

There is little research into the extent to which children's story comprehension and production are influenced by their different family backgrounds. Some studies have found that children from different families differ in relation to the various aspects of the literacy environment provided for them by their parents. For example, studies have found that kindergarten children from families with higher levels of parental education have greater access to books than children from families with lower levels of parental education. Other studies have found that the structure of families and parents' occupations are also associated with kindergarten children's home literacy environment. To date, however, there is a lack of empirical studies that investigate the relationship between children's storytelling competence and their family backgrounds.

Thus, in order to promote storytelling in kindergarten and support children in their transition to formal schooling, this study examines the level of children's ability in story comprehension and production as well as their emergent literacy and other related abilities, and looks into the differences with regard to various family background characteristics.

This study aims to examine story comprehension and production, as a component of emergent literacy, of final-year kindergarten children in Chengdu, China. The study also explores the storytelling competence of children from different family-backgrounds, including family structure, parents' education, parents' occupation, and so on. The findings from this study could help kindergarten programs and families support children's emergent literacy development through quality storytelling, shared reading, play, and narrative activities. These differences are correlated not caused by family background. Findings from the current study are intended to shed light on children's storytelling and understanding and use of stories within the context of emergent literacy and to help kindergarten programs develop effective narrative activities including storytelling, shared reading, dramatic play, and narrative writing.

Literature Review

This section provides a review of the literature, exploring kindergarten children's story comprehension and production in the context of emergent literacy. Issues relating to emergent literacy and storytelling, scaffolded participation in storytelling, home literacy environment and family background are discussed, drawing upon Bioecological Theory (Bronfenbrenner & Morris, 2006). The research gap that this study aims to explore is also outlined.

This area of child development includes the knowledge and skills that kindergarten children acquire before they can conventionally read and write, such as phonological awareness, print knowledge, vocabulary, oral language and narrative competence (Whitehurst & Lonigan, 1998). Comprehending and producing stories is a complex task that requires integration of various skills, including vocabulary, memory, storyline, casual events and oral expression. Shared book reading that includes storytelling has been found to promote children's vocabulary, their oral language and their literacy development (Bus et al., 1995; Mol et al., 2008; Sénéchal & LeFevre, 2002).

The development of kindergarten children's storytelling competence can be facilitated through repeated opportunities to listen to stories, retell, dramatize, reedit and create in their own way. Shared reading, questioning, modeling, role-play and verbal scaffolding by adults in various settings includes home, kindergarten and library support children's progress from assisted story retelling to independent story production (Bus et al., 1995; Mol et al., 2008).

The home literacy environment is defined by the presence of books, shared reading, storytelling, parent-child interactions, and parents' attitudes towards literacy. Research found a positive correlation between kindergarten children's language development and children's emergent literacy development in the home environment (Farver et al., 2013; Niklas & Schneider, 2017). However, this does not necessarily mean that the family-background characteristics of parental education, occupation, or even family structure automatically influence children's storytelling abilities. They rather describe the context in which children grow up and are exposed to literacy in their homes.

In keeping with the Bioecological Theory (Bronfenbrenner, 1979, 1994; Bronfenbrenner & Morris, 1998, 2006). The Processes shared reading, parents' storytelling, children's storytelling, home reading, parent-child conversation, children's pretend play, teacher-child interaction of the environments in which young children live represent the key to their development. Processes are the key factors within the Child's Environment and are the key to his or her growth and development, as they have the greatest impact on his or her development (Bronfenbrenner & Morris, 2006).

As factors that influence the literacy environment of kindergarten children, the parents' education, occupation and the family structure are to be considered as external conditions and not as direct determining factors of kindergarten children's storytelling ability. Story comprehension and production are factors that can be developed in the home as well as in the kindergarten environment through repeated interactions (Bronfenbrenner & Morris, 2006).

While there have been numerous studies in the field of emergent literacy (Bus et al., 1995; Sénéchal & LeFevre, 2002; Cui & Greger, 2024), studies investigating the ability of children in the final year of kindergarten to understand and produce stories from a wide range of different families in Chengdu, China are rare. This study therefore uses Bioecological Theory (Bronfenbrenner & Morris, 2006) to explore the storytelling competence of children in the final year of kindergarten and its associations with several family background variables from a wide range of different families in Chengdu, China.

Methodology

The study adopted a quantitative descriptive cross-sectional survey design (Creswell & Creswell, 2023). A total of 104 kindergarten children in Chengdu, China, were recruited in the study, with 47 of them (45.2%) boys and 57 (54.8%) girls. There were 104 valid questionnaires collected from 120 distributed, with a response rate of 86.7%. By using the Emergent Literacy Status Questionnaire (Yin, 2022) consisting of 14 items across four sub-scales of print awareness, phonological awareness, story comprehension and production, and vocabulary development, each item was rated on a five-point Likert-type scale from 1 (Strongly Disagree) to 5 (Strongly Agree). This instrument achieved good internal consistency in the present study

with a Cronbach α coefficient of .863. SPSS IBM Statistics 26 was used for data analysis. The basic characteristics of the participants and their emergent literacy scores were described using descriptive statistics. One-sample t test, repeated-measures ANOVA, and one-way ANOVA were used to examine the overall emergent literacy as well as differences in story comprehension and production across different family backgrounds family structures, parents' education, and parents' occupations. The effect size of partial eta squared (η^2) was used in the study.

Results and Discussion

This section outlines the results from the investigation into kindergarten children's emergent literacy and their story comprehension and production. The results are organized by the participant characteristics, their emergent literacy profile, and the differences found between their story comprehension and production in relation to family structure, parental education and parental occupation.

Demography

Demographic characteristics of the kindergarten children and their families were collected from 104 participants. Children's story comprehension and story production were compared across several child, family, parent education, and parent occupation characteristics.

Table 1

Participant characteristics

Characteristic	Category	n	%
Child sex	Boy	47	45.2
	Girl	57	54.8
Family structure	Nuclear	37	35.6
	Multigenerational	53	51.0
	Single parent	14	13.5
Paternal education	High school or less	37	35.6
	College or bachelor's	49	47.1
	Master's or above	18	17.3
Maternal education	High school or less	31	29.8
	College or bachelor's	56	53.8
	Master's or above	17	16.3

Table 1 presents the characteristics of the 104 kindergarten children who participated in the study. The kindergarten children who participated, 45.2% were boys and 54.8% girls. The majority of the kindergarten children lived in multigenerational families (51.0%), followed by kindergarten children from nuclear families (35.6%) and those from single-parent families (13.5%). The distribution of paternal education was as follows: 47.1% held a college degree or higher, 35.6% had a high school degree or less, and 17.3% held a master's degree or higher.

Mothers' education also varied. While 53.8% of the mothers held a college degree or higher, 29.8% had a high school degree or less, and 16.3% held a master's degree or higher. Thus, children from a variety of different family types and with parents of different levels of education participated in the study.

The families of the participants consisted of different structures of family members and of parents with different levels of education. More than half of the kindergarten children in the present study grew up in multigenerational families. The majority of the fathers and the mothers had a postsecondary level of education. In studies of kindergarten children's emergent literacy, it is important to take into account the children's home environment with their parents and other caregivers in everyday situations. Research has shown that the home literacy environment (HLE) consisting of books available at home, shared reading, storytelling and interactions between parents and children is related to children's language development and their emergent literacy (Farver et al., 2013; Niklas & Schneider, 2017; Cui & Greger, 2024). According to Bioecological Theory the family structure and the parents' level of education are part of the children's microsystem and can affect the proximal processes of shared reading, conversations and stories (Bronfenbrenner & Morris, 2006).

Table 2

Emergent literacy scores

Outcome	Items	Possible range	M	SD
Print awareness	3	1-5	3.61	0.73
Phonological awareness	4	1-5	3.66	0.58
Story comprehension and production	4	1-5	3.64	0.60
Vocabulary development	3	1-5	3.72	0.64

Table 2 presents the scores for emergent literacy of 104 kindergarten children in this study. The children scored highest on vocabulary, followed by phonological awareness, story comprehension and production, and print awareness. All domain means were of comparable size. The average score for the children's emergent literacy was 51.13 (SD = 8.30) out of a total possible score of 70.

There were generally positive results for the kindergarten children's emergent literacy skills in the four sub-skills. The children's vocabulary skills received the highest mean score, followed by their phonological awareness skills, their story comprehension and production skills, and print awareness skills. This indicates that children's skills for storytelling are embedded within a larger system of emergent literacy skills. Such a view of emergent literacy has been propounded by Whitehurst and Lonigan (1998), who have described emergent literacy in terms of a group of code-related and oral-language skills. In this study, the kindergarten children's ability to understand and to make stories were examined, and were found to require vocabulary, memory, sequencing, understanding, and expression skills. Such skills have previously been found to be enhanced by shared reading of books with a caregiver, and by children's hearing and seeing of stories being read (Bus et al., 1995; Mol et al., 2008; Sénéchal & LeFevre, 2002). Bioecological views of human development (Bronfenbrenner & Morris, 2006) suggest that children's acquisition of such skills occurs as a result of repeated

proximal processes, in which children interact with teachers, caregivers, and a variety of books, whilst engaging in language and in stories.

Table 3

Story comprehension and production by family context

Factor	Group	n	M	SD	Omnibus test
Family structure	Nuclear	37	3.86	0.59	F (2, 101) = 5.51 p < .01
	Multigenerational	53	3.58	0.62	
	Single parent	14	3.30	0.31	
Paternal education	High school or less	37	3.24	0.48	F (2, 101) = 18.26 p < .001
	College or bachelor's	49	3.80	0.55	
	Master's or above	18	4.04	0.52	
Maternal education	High school or less	31	3.23	0.42	F (2, 101) = 14.28 p < .001
	College or bachelor's	56	3.75	0.59	
	Master's or above	17	4.01	0.55	

Table 3 shows the results from the ANOVA tests on the scores of the kindergarten children's story comprehension and production as a function of family structure and parental education. In terms of family structure, kindergarten children from nuclear families scored highest with a mean of 3.86 (SD = 0.59). Significant differences were found between the three family structures, $F(2, 101) = 5.51$, $p < .01$. Also, significant differences were found between the levels of paternal education, $F(2, 101) = 18.26$, $p < .001$, and between the levels of maternal education, $F(2, 101) = 14.28$, $p < .001$. The kindergarten children whose fathers and mothers had master's degrees or above scored highest on both story comprehension and production with means of 4.04 and 4.01 respectively. Therefore, there were significant differences in children's story comprehension and production as a function of family structure and parental educational backgrounds.

Kindergarten children from nuclear families had a higher mean score in story comprehension and production than kindergarten children from multigenerational and single-parent families. However, it should be noted that family structure is not directly related to children's ability to tell stories. The different types of household structures support different patterns of interaction between kindergarten children and their caregivers, and children have different amounts of time, literacy resources and opportunities for storytelling with their caregivers. Therefore, family structure is a context given to kindergarten children, whereas it is the repeated interactions between children and their caregivers that are the more direct processes influencing kindergarten children's development (Bronfenbrenner, 1979; Bronfenbrenner & Morris, 2006). Results revealed significant differences between the means of children's story comprehension and story production based on paternal and maternal education. Kindergarten children whose fathers or mothers obtained postsecondary

education obtained higher mean scores for story comprehension and story production than children whose parents had a high school diploma or less. These results are consistent with findings from home literacy studies which reported associations between parents' education and availability of literacy resources, frequency of shared reading, types of parent-child language interaction, and frequency of literacy-related activities (Farver et al., 2013; Niklas & Schneider, 2017; Cui & Greger, 2024). Kindergarten children engage in shared reading and dialogic interaction with parents who possess greater levels of formal education, and such interactions afford children opportunities to increase their vocabulary, to retell a story, to answer questions about a story, to explain characters' actions, and to construct and relate events from a story (Bus et al., 1995; Mol et al., 2008).

Conclusion

The current study investigated emergent literacy in a sample of final-year kindergarten children in Chengdu, China. Kindergarten children's performance on measures of story comprehension and production was found to be at positive levels for emergent literacy and were comparable to children's performance on measures of print awareness, phonological awareness, and vocabulary. However, kindergarten children's storytelling competence varied significantly as a function of family structure and parents' education. These family variables should be viewed as contextual factors that could influence kindergarten children's literacy experiences rather than as causes of children's storytelling competence in accordance with Bioecological Theory.

Several limitations of the current study were noted. Firstly, the study employed a cross-sectional design. In addition, the sample consisted of only 104 kindergarten children from one city in China. The use of parental report as opposed to direct child assessment was a further limitation. Some of the family-background subgroups consisted of very small numbers of participants, for example, the various occupational groups. Importantly, some of the proximal processes such as children's shared reading, frequency of hearing stories, interactions with parents and teachers, and teachers' support for children's storytelling were not assessed in the current study.

The results from the study suggest that storytelling can be made equally available to kindergarten children from different backgrounds and that kindergarten and family can provide children with opportunities to engage in storytelling and develop their narrative competence through shared interactions and conversations, reading, and making stories together.

This study captured the two critical dimensions of emergent literacy by investigating children's story comprehension and story production while exploring their links with the children's family backgrounds in the context of Chinese kindergartens. By adopting Bioecological Theory, the study moved beyond individual literacy skills that have been investigated in existing social science research to examine how children's narrative development is located within specific families and educational settings. Findings from the present study not only contributed to the body of knowledge in early childhood education and literacy research but also offered context-specific evidence from China. The study further highlighted the importance of examining family characteristics and children's opportunities to engage in storytelling in supporting children's emergent literacy development.

Future studies could increase sample size and include kindergarten children from more regions of China. Furthermore, children's storytelling competence could be directly assessed. By means of a longitudinal design, and by including various home literacy environments as well as shared reading, parent-child interactions and kindergarten practices, it could be examined how these different processes contribute to kindergarten children's storytelling development over time. The investigation of the proximal processes as proposed by Bioecological Theory would be of great value for future research.

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