DEPOSIT AND CONSULTATION OF DISSERTATION

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Abstract

The present exploratory study aims to explore how stories that challenge gender-stereotypical activities and gender-stereotypical emotion expressions modify four-year-old urban Chinese preschool children's 1) knowledge and attitudes on these target activities and emotion expressions, 2) playmate selection on same-sex peers preferring these target activities, and 3) peer perception of these target emotion expressions. A theoretically and methodologically rigorous quasi-experimental storytelling intervention with a cluster-randomized design was implemented on 39 four-year-old urban Chinese preschool children from a kindergarten in Shenzhen, China. Child participants were randomly assigned, in class units, to receive sixteen 20-minute story sessions with stories that either challenge (intervention group) or align with (control group) gender-stereotypical activities and gender-stereotypical emotion expressions for four weeks. At the same time, they were pre- and post-tested through a 15-minute individual assessment on measures of 1) sex-role discrimination, egalitarian sex-role model, and sex-role flexibility of gender-stereotypical activities and gender-stereotypical emotion expressions, 2) stereotyped playmate selection, and 3) stereotyped peer perception. Overall, although the Rank ANCOVA showed that differences between child participants in the intervention group and the control group were insignificant for all measures, analysis of general patterns and cases of matched pairs revealed nuances of 1) trends of alteration, or 2) resistance of alteration, for each measure. Therefore, a longer storytelling intervention is needed for better understanding these nuances. Additionally, Spearman's Correlation revealed how knowledge and attitudes were related differently for gender-stereotypical activities and gender-stereotypical emotion expressions. These results together offer 1) theoretical insights into, for example, development of gender stereotypes with different social significance, and 2) practical insights into, for example, practices of gender equality education in early education.

Chapter 1. Introduction

1.1 Rationale and Significance of the Research

This current research draws on the "Outline of Development of Chinese Children (2011-2020)" developed by the State Council of the People's Republic of China. Among the five fundamental principles in this document is the advocacy for: 1) creating an equal social environment for children, and 2) ensuring that children are not discriminated or judged by their identities, including gender. In the "Strategies and Measures" section, the State Council listed the need to enhance the awareness of gender equality in Chinese society and to ensure educational policies are not designed if against gender equality. Furthermore, the earlier "Outline of Development of Chinese Children (2001-2010)" encouraged the incorporation of content that aims to raise awareness of gender equality into the educational curriculum.

However, many published Chinese storybooks for preschoolers fail to portray boys and girls equally, which form and strengthen children's preliminary stereotypical perception and beliefs about gender. Gender stereotypes restrict the role children would play in daily life and in later selection of a career path. This study will explore whether an intervention of reading stories that challenge conventional gender-stereotypical activities and gender-stereotypical emotion expressions could effectively change 1) preschoolers' knowledge and attitudes on these target activities and emotion expressions, 2) playmate selection on peers preferring these target activities, and peer perception of these target emotion expressions. The ultimate purpose of this research is to allow children to be aware of and accept the diversity of their own and their peers' hobbies and personalities, building an increasingly egalitarian gender understanding.

1.2 Concepts

Before diving into the discussion of gender stereotypes, there is a need to define concepts of sex and gender for building a common ground of the current research. Though often used interchangeably, gender is different from sex. According to the Office for National Statistics (2019) of the United Kingdom, sex is biologically determined by people's anatomy at birth. It is generally a binary concept, with individuals identifying themselves as either male or female. However, different from sex, gender is socially constructed by

people's living environment and experience, with individuals identifying themselves as masculine or feminine (Stoller, 1964). Importantly, instead of binary concepts, masculinity and femininity are increasingly regarded as on a spectrum and are not exclusive (Office for National Statistics, 2019). For example, an individual can identity him- or herself as slightly masculine and highly feminine at the same time. Commonly, masculine male and feminine female are considered as normal.

1.3 Structure of Dissertation

Firstly, this dissertation begins with a review of literature on development, consequence, and manifestation of gender stereotypes among preschool children. The theoretical, methodological, and contextual gaps in the literature are summarized, following with the introduction of the current research. Secondly, the research methodology for answering the research questions is explained, with methodological advantages summarized in the end. Thirdly, descriptions of the collected quantitative data as well as results of statistical tests are presented. Fourthly, patterns and implications of the data are addressed, following with a discussion of limitations and suggestions of future directions.

Chapter 2. Literature Review

2.1 Development and Consequences of Gender Stereotypes

Majority of children form stable understanding on sex at an earlier age before three: Weinraub et al. (1984), for example, found that from families with parents received formal education beyond high school in urban settings in the United States, majority of 24 children aged 26 months could verbally label pictures of male and female accurately, and majority of 25 children aged 31 months could verbally and nonverbally indicate their accurate sex identity. However, compared to sex understanding, children's development of knowledge and attitudes on masculinity and femininity is more flexible, modifiable, and subtle, based on research primarily conducted in North American cultural contexts.

2.1.1 Development

Unlike the status of 'male' and 'female' that are biologically determined, masculinity and femininity of individuals, such as in personality traits and behavior, develop within dynamics of environmental contexts and interact with social determinants such as culture and politics (Bronfenbrenners, 1989; Skelton & Francis, 2011). As a result, people form widely shared beliefs on what men and women should and do possess, which are referred as gender stereotypes (Turner-Bowker, 1996).

Generally, preschool-aged children can perceive and internalize gender rules, which would regulate their daily behavior and decision-making processes (Creaser & Dau, 1996; MacNaughton, n.d., 2000, 2001). Creaser and Dau (1996) found children as young as two would verbally comment on gender differences. Perceptions and awareness on gender differences convert rapidly into memory storage of stereotypical patterns. According to a quasi-experimental study on children from middle-class families in the United States, between the age of three and five, children's stereotyping of gendered activities and gendered occupations grew rapidly, reaching its highest level in the early years of primary school (Martin & Little, 1990). The same developmental pattern was also found in a self-report study on teachers in an urban public Chinese preschool, indicating that gender stereotypes of preschool children, with varying family socio-economic status, increased by age from three to five years old (Sun et al., 2019).

Gender stereotypes can be structured into four components: personality traits, role behavior, job division, and physical characteristics (Deaux & Lewis, 1984), with each component developing and being affected in subtly different ways. The current research focuses on exploring gender stereotypes of role behavior. Studies conducted in the United States within middle-class families showed that the acquisition of gender roles and gender behavior began at a young age, but at the same time, they indicated that children gradually developed explicit attitudes toward the acquired gender roles and gender behavior (MacNaughton, 2001; Nadelman, 1974; Thompson, 1975). Thompson (1975), for example, found that 22 three-year-old urban kids exhibited tendency to label objects such as toys and clothes with either male or female, which aligned with the social value. With similar findings, Nadelman (1974), in addition, found it was not until age five that urban kids demonstrated preferences for objects matching their own gender. Therefore, these studies implied that even for preschoolers, knowing the stereotypes did not necessarily mean holding the same stereotypical attitudes.

For explaining the formation of gender stereotypes on role behavior, the nature-nurture debate offers alternative views. Arguing from the biological perspective, theories favoring the influence of heredity propose biologically deterministic trends for male and female to adopt masculine and feminine behavior and roles, respectively, due to effects of innate anatomy and evolutionary characteristics (Maccoby, 1998; O'Brien, 1992). For example, females rather than males are believed to naturally become caregivers for a born child driving by oestrogen. On the other hand, arguing from the cognitive or social perspective, theories favoring the influence of environment propose cognitively or socially deterministic trends for both sexes to become masculine or feminine due to either passive learning or active reflection (Bandura, 1969; Devor, 1997; Martin et al., 2002).

2.1.1.1 Cognitive theories of development in gender stereotypes

Through the cognitive approach, previous research proposed that children construct the understanding on stereotypical gender roles and stereotypical gender behavior through active reflection on living environments. Children are believed to spontaneously form mental connections of genders to specific roles and behavior, which are generally named as gender schemas (Bem, 1981). Gender schemas consciously or unconsciously determine how people

perceive male and female, molding impression on the two genders. At the same time, children consider gender schemas as major references to define gender-appropriate behavior and roles, learning what is conventional and unconventional for their own and opposite gender to act (Martin & Halverson, 1981). Thus, schemas, as categories, increase children's awareness of stereotypical gender behavior and roles.

For active learning of gender acquisition, Kohlberg (1966) summarized three stages of development. Firstly, people are at the gender labeling stage at age two to three, learning to label the gender of themselves and others correctly based on explicit characteristics such as appearance. Secondly, people go into the gender stability stage around age four. Although already recognized that sex identity is stable for individuals throughout lifetime, children at this stage are still forming an understanding that expressing maleness or femaleness would not change individuals' sex identity across situations. Together with the gender schema theory, children in the gender stability stage may be implied as highly motivated to conduct gender-conventional behavior or take gender-appropriate roles. Aligning with the stored cognitive schemas, stereotypical behavior and roles thus help strengthening these children's self-recognition of sex identity. Lastly, people reach the gender consistency stage around age six, understanding that the flexibility of gender across situations will not affect ones' sex identity.

2.1.1.2 Social theories of development in gender stereotypes

Through the social approach, previous research proposed that children learn stereotypical gender roles and stereotypical gender behavior through socialization within the living environment. Male and female children are believed to behave as or take the role of what majority of men and women do, respectively (Bandura, 1969). Meanwhile, children learn what are gender-conventional behavior and gender-appropriate roles through teaching and modeling. Besides imitating male and female models, children observe how external environment responds to these models and then modify their own behavior. Behavior and roles with positive feedback would be reinforced for higher likelihood of future demonstration, while behavior and roles with negative feedback would be marked for lower likelihood of future demonstration (Bandura, 1969).

In other words, children are considered as passive recipients of environmental effects. Their understanding and manifestation of gender roles and behavior are largely determined by what they have experienced in daily life (Liben & Bigler, 2002). For example, gender-related messages conveyed in paper and social media constitute children's gender knowledge at a young age. At the same time, gender discourse may vary by culture and thus molding subtly different gender stereotypes for people living in different areas. Due to the inevitable trend of social transmission, scholars began to explore the socialization of gender stereotyping from the post-structural and feminist postmodern approaches starting from 1990s (Hogan, 2012), encouraging people to actively reflect and take control of building their own gender understanding.

2.1.2 Consequences

This section focuses on how gender stereotyping on role behavior impacts children over development. Gender stereotypes are socially validated and powerful (Turner-Bowker, 1996). They exist in and affect every aspect of life, such as interpersonal relationships, academic journey, career path, entertainment, and even food selection (Zuo et al., 2021). Holding firmly established gender stereotypes, for example, would limit the impression and evaluation on both self and others (Wolffhechel et al., 2014). Stereotypical characteristics would be highlighted for notice, and resistance would be built quickly to 1) attempts and traits that go against gender stereotypes, and 2) people who violate the stereotypical expectation. Such resistance would negatively limit opportunities such as in education and occupation (Eagly & Wood, 2012).

Importantly, middle-class American preschool children were found through structured interviews to hold knowledge of gender-typed occupations and perceive gender differences in competence for different occupations (Levy et al., 2000; Trice & Rush, 1995). Meanwhile, such knowledge and perception were found internalized to mold preschoolers' future career preferences, such as discouraging preschoolers' motivation to pursuit gender-role-inconsistent jobs (Levy et al., 2000).

2.2 Gender Stereotypes in Chinese Preschool

As previous section indicated, preschool age is an important time period for children to acquire gender knowledge and develop gender-related attitudes. Importantly, as social theories endorse, the growth of gender knowledge and gender-related attitudes is dependent on social determinants. Therefore, as the current research aiming to investigate how gender-stereotypical knowledge and attitudes would be modified among Chinese preschoolers, it is necessary to review culturally specific social factors for them. Particularly, social factors within preschool are chosen for investigation because preschool is where full-time Chinese preschoolers spend most of their time in. In general, previous research showed that environmental settings and interpersonal connections in Chinese preschools largely catalyzed children's learning of gender stereotypes.

2.2.1 Classroom settings

The gender norm of role behavior is largely manifested in settings of preschool classrooms. Chinese preschool classrooms were found to organize in the way: 1) distinguishing male and female, and 2) conforming to social expectations of appropriate gender roles for male and female respectively through three observational studies (Liu, 2006; Wang, 2010; Zhang, 2018). Firstly, seating and line-up arrangement, for example, highlighted differences between male and female for convenience, with boys on one side and girls on the other side (Liu, 2006). Secondly, decorations on the wall, for example, showed photos of girls with nurse uniform and boys with doctor uniform (Wang, 2010). These settings indirectly communicated gendered messages to preschoolers. Additionally, Zhang (2018) found the permeation of gender stereotypes on arrangements of tools, toys, activity areas, and storybooks in several urban Chinese preschools, reflecting preschool staffs' propensity to adhere to gender norm in school. Similar findings were shown in Wang (2010)'s observation on over 20 urban kindergartens in China: while most schools had included gender equality education in curriculum planning, all of them demonstrated gender-stereotypical classroom settings. Therefore, it is reasonable to speculate that gender stereotypes are rooted culturally and resistant to changes.

2.2.2 Teachers' influence

As the group having much contact with preschool children, preschool teachers in China were found to demonstrate gender-stereotypical awareness, attitudes, and practices, which affected children's learning of gender stereotypes. For example, teachers' gender-stereotypical beliefs on children's capability regulated how they acted and treated children, which then influenced children's self-recognition (Jones & Dindia, 2004). As gender schema theory stated, children's mental connections of genders to roles and behavior are limited when teachers carry out relevant gendered practices, and gender stereotypes are thus formed (Bems, 1981).

In two observational studies, urban Chinese preschool teachers were found to encounter challenges when carrying out gender equality practices, irrespective of the neighborhood social economic status of the preschool (Chen et al., 2011; Wang, 2010). Although all teachers incorporated gender equality practices into interactions with kids at most of the time, they tended to treat boys and girls differently when managing classroom discipline, paying more attention to boys than girls. Chen et al. (2011) found that teachers carried out educational practices without active reflection on gender-stereotyped beliefs, which might be because they were unaware of their own stereotypical behavior. For example, gender labels such as beauty of girls and strength of boys were used frequently by teachers in the study. Additionally, even in the preschool that promoted gender equality education, teachers demonstrated gender-stereotypical behavior. Although gender equality was practiced well by teachers in sleeping time and line-up at meal times, Wang (2010) revealed trends of gender differences in performance evaluation and interactions during playing. Importantly, teachers were found to hold varying attitudes towards the implementation of gender equality education: while some teachers were supportive and optimistic, others were indifferent or doubtful of its benefit on children's socialization (Wang, 2010). As a result, it is reasonable to infer that gender stereotypes are deeply rooted cultural knowledge among Chinese. Even if gender equality education was encouraged, Chinese preschool teachers still tended to demonstrate gender-stereotypical awareness, attitudes, and practices.

2.2.3 Playing activities and toys

In Chinese preschools, children spend majority of time in playing. Not surprisingly, a large amount of playing activities and toys is significantly gendered. In general, previous studies on urban Chinese preschoolers showed that boys preferred to play with toys that allowed them to display agentic or competitive attributes such as forceful and decisive, while girls preferred to play with toys that allowed them to display communal or domestic attributes such as attractive and helpful (Li & Wong, 2016; Huang & Zhang, 2018; Zhang, 2018). For example, with one-month observation, Huang and Zhang (2018) found that four activity centers in classroom were significantly gendered: the area containing construction toys, such as Legos, as well as the area containing science-related tools, such as magnifying glass, were regarded as masculine by children, with boys playing more often in these areas than girls, whereas the area containing art tools, such as color paper, as well as the area for role-play with costumes were considered as feminine by children, with girls hanging around in these areas more often than boys. Some boys and girls even never appeared in the opposite-gendered activity areas within a month. Similar findings were shown when preschool children were observed during outdoor play: for example, boys tended to race cars and play with sand, while girls tended to help with each other to play swings in turn (Zhang, 2018).

Though rarely explored in Chinese contexts, gendered playing of toys was found to have long-term effects on children's life in Western contexts. Prioletta and Pyle (2017), for example, found in their observational study that toy selection limited by gender norm restricted academic skills and literacy abilities that urban Canadian children could practice during play. Each selection of playing activities and toys was an experience of negotiation of social expectations around gender, after which children would gradually understand the gender appropriateness of relevant role behavior for their own and opposite gender, then valuing those consistent with their gender identity (Blaise, 2005; Kohlberg, 1966). Moreover, even when male privilege is prevailing in China, Chen and Rao (2011) found through an observational research in an urban Chinese kindergarten that both boys and girls were hindered from equally engaging in all types of playing activities. As a result, labeling toys as masculine or feminine is implied to yield gender inequality that negatively influences both boys and girls in both the short- and long-term.

2.2.4 Playmate influence

In addition to gendered playing of toys, gendered playmate selection was found on 40 four-year-old preschoolers by Chen (2006) through a ten-month systematic observation in a rural kindergarten. Male and female children tended to play in separate groups in different areas and displayed resistance in playing with opposite-sex peers at the same time. Although on a few occasions did children join the opposite-sex playing group, they tended to play shortly or end playing when feeling 'supervised' by other peers or teachers (Chen, 2006). Additionally, within same-sex peers, Chen (2006) found that children were less likely to interact with those preferred by opposite-sex peers. Therefore, it was implied that Chinese children as young as four years old had already understood the gender norm of playmate selection.

Though rarely explored among Chinese preschoolers, how gendered playmate selection interacted with gendered playing was explored among Western preschool children. It is reasonable to refer to Western studies because Chinese and Western preschoolers showed similar patterns of gender-stereotypical playmate selection: preferences in selecting same-sex peers and intentions to avoid forming mixed-sex or opposite-sex playing groups (Haynes, 2001). Beginning around age three, children were found to spend more time playing with playmates of the same sex, with such tendency increasing exponentially from four to six years old (Haynes, 2001; Maccoby & Jacklin, 1985). It was further discovered through a one-year observational study that the selection of same-sex playmates of four-year-old American children, from urban families with low socio-economic status, could be partially explained by their common tendency to engage in same-gender playing activities (Martin et al., 2013). Indeed, another observational research revealed that urban middle-class American children actively imitated same-sex peers' playing behavior and thus reinforcing gender appropriate ones with each other (Shell & Eisenberg, 1990). As a result, it is reasonable to speculate that children's gendered playmate selection and gendered playing of toys mutually strengthen with each other as age grows, and therefore, peer interactions are determinant in children's gender socialization process.

2.3 Emotion Expression

2.3.1 Emotion expression in Chinese contexts

Around the age of three to four, children can recognize four basic emotions based on expressive cues: happy, sad, angry, and scared (Denham, 1998). Expression of emotion plays a key role in preschool children's interpersonal relationships and affects their development of psychological health (Harre, 1986). In turns, proposed by the social construction model, emotion expressions are given shape by experience and contexts (Harre, 1986).

Influenced by contexts, the expression of emotion varies by culture. Though rarely investigated among Chinese preschool children, primary-school-aged children from urban middle-class families in China are implied to perceive the expression of emotion to others as offensive and inappropriate through two cross-contextual studies. Firstly, in a self-report questionnaire, 55 Chinese children and their parents were found on average to have less emotional expressiveness and fewer uncontrollable emotions than those from the United States (Suveg et al., 2014). Another structured interview then found that compared to Western children, 69 Chinese children on average indicated higher degree of comfort in displaying emotions in front of peers than in front of family members (Rao & Gibson, 2019). Although self-report of emotion expressions did not represent the actual performance, it is reasonable to imply that expressing emotions, at least to others, is generally regarded as offensive and inappropriate in the Chinese culture.

Indeed, previous research conformed with this implication and indicated that expressions of negative emotions are even more stigmatized. Firstly, the abstract of an observational study showed that 191 five- to six-year-old Chinese children on average expressed more positive feelings than negative feelings (Che, 2010). Secondly, when asking to judge negative-valenced facial expression of both Chinese and Americans in computer tasks, 190 Chinese urban undergraduate students performed less accurately than American students in detecting subtly sad and angry faces (Zhang et al., 2015). In other words, Chinese students' perception of expressions of negative emotions was less accurate than that of American students. Furthermore, interestingly, although Chinese contains richer vocabulary, syntactic structure, and metaphorical expressions of emotion compared to English, these languages were under-taught and under-used by 33 urban Chinese university students when they were asked to write an angry experience (Ho, 2009). As a result, it is further implied that Chinese people tend to hold limited knowledge on expressions of negative emotion.

2.3.2 Gender stereotypes of emotion expressions

Although previous research showed consistent patterns of gender stereotypes of emotion expressions, these patterns were rarely investigated among Chinese, especially on Chinese preschool children. Generally, a meta-analytic review on 166 studies on emotion expressions from infancy to adolescence revealed that people adhere to gender-appropriate ways of expressing different emotions around age three: while female children expressed more positive emotions, fearfulness, and internalizing negative emotions such as sadness, male children expressed more externalizing negative emotions such as anger (Chaplin & Aldao, 2013). Chaplin and Aldao (2013) inferred that gendered emotion expressions were amplified with age growing, which aligned with results of an online questionnaire study with over 2000 adult American participants by McDuff et al. (2017).

2.3.3 Peer perception of emotion expressions

Though rarely explored in Chinese contexts, with gendered emotion expressions found in children since three, additional previous studies revealed a tendency for preschoolers to hold gender-biased perception and attitudes on emotion expressions among peers. Though insignificant, computer tasks on 71 three- to six-year-old American children showed that boys tended to tease angry characters more than girls, and girls tended to tease fear as well as sad characters more than boys (Sorber, 2001). Therefore, it is implied that children internalize gender norm into their own attitudes towards emotion expressions, aligning with social expectations. Furthermore, it was found that peer familiarity increased the accuracy of children's perception of emotion expressions, but meanwhile, it biased children's perception: though not as accurately as adults, four-year-old urban middle-class American preschoolers were found to rate classmates' emotion expressions more accurately than those of unknown peers, but at the same time, emotion expressions of children who behaved negatively were more likely to be rated as negative by classmates compared to peer strangers (Barth & Archibald, 2003). As a result, it is inferred that previously formed impression of classmates as well as gender rules of the emotion expression might together biased preschool children's perception and evaluation of peers' emotion expressions.

2.4 Preschool Storybooks

As influential learning media, storybooks act as windows and mirrors for children to view how should they themselves and others behaved (Bishop, 1990). In order to make sense of the storyline, preschool-aged children would actively connect factors in stories, such as gender and behavior of characters, with their daily life (Hill & Bartow Jacobs, 2020). Specifically, Hill and Bartow Jacobs (2020) found that American preschool children actively initiated conversations on gender in a group reading, assigning and justifying gender labels to characters in stories, even when the characters were non-human with ambiguous gender. Unsurprisingly, with children's high reading engagement, gendered information in storybooks was found to have powerful influence on children's beliefs and behavior.

2.4.1 Impact of gendered information in preschool storybooks

Gendered information in storybooks affects children's beliefs and behavior. An experimental study found that American preschoolers associated pseudowords with certain gender after reading intentionally designed stories, forming new gender stereotypes (Seitz et al., 2020). Besides affecting children's attitude formation, as social learning theories proposed, gendered information in storybooks was believed to influence children's behavior through modeling. Depictions of traits, roles, and behavior under masculine and feminine contexts create biased trends of gender normalization (Steyer, 2014). As a result, it is reasonable to imply that modeling through stories is effective in altering existing gender stereotypes and gender-stereotypical behavior of preschool children.

2.4.2 Gender stereotypes in storybooks in Chinese kindergartens

Several investigations of preschool storybooks carried out in China found that storybooks tended to portray male and female characters in a traditionally stereotypical manner (Ji & Zhang, 2021; Wang, 2016; Xu & Mo, 2018). For example, Ji and Zhang (2021) analyzed 135 picture books in a kindergarten located in a middle-class neighborhood and found gender-stereotypical patterns in social roles, appearance, personality traits, and behavior: taking behavior as an example, while males were more likely to be depicted as participating in outdoor activities, such as playing sand and racing cars, females were more likely to be depicted as participating in indoor activities, such as doing handicrafts and

sharing beautiful clothes. Similar gender-stereotypical patterns were found in 14 provincial preschool textbooks by Xu and Mo (2018) and 28 provincial preschool textbooks by Wang (2016): taking personality traits as another examples, while males were tended to be portrayed as smart and brave, females were tended to be portrayed as kind and caring. Additional findings by Xu and Mo (2018) indicated that male characters were given more variety of social roles, personality traits, and behavior as well as more forms of appearance than female characters. All these results imply that Chinese children are likely to receive gendered information from storybooks.

2.5 Preschool Shared Book Reading Intervention

Though rarely investigated in Chinese contexts, the shared book reading intervention was widely and effectively used in Western contexts for preschool children to modify attitudes towards groups (Dresner, 2000; Flerx et al., 1976; Kumar, 1997). Flerx and colleagues (1976) found that compared to those reading stories depicting traditional gender roles, three-to-six-year-old American preschoolers were more likely to attribute personality traits and activities to both males and females after reading 17-minute stories addressing egalitarian gender roles each day for a week, with a bigger change in older children. Additionally, a longer storytelling intervention for three-to-five-year-old American preschool children, with three sessions in each of the seven weeks, found that children in general demonstrated fewer gender-stereotypical choices on occupation preferences, but there was less change for four-year-old preschoolers (Dresner, 2000). These results not only imply potential effectiveness of the shared book reading intervention on altering preschoolers' gender stereotypes but also infer differential effects of the shared book reading intervention on different age groups among preschoolers.

Exposure to stories were believed to be effective for preschoolers to approach topics of gender. Because children tended to actively compare characters in stories with themselves even when the characters were ungendered, reading and discussing storyline could offer them a wider understanding of own- and opposite-gender performance under different contexts (Hill & Bartow Jacobs, 2020). As a result, it is reasonable to infer that traditional gender norm could be altered through reading untraditional gender performance in stories,

and thus a modified value system of children's own and others' gender performance could be built (Chou, 2012).

2.6 Gaps in Literature and Present Study

2.6.1 Gaps in literature

To sum up, though with theoretical support of the formation of gender stereotypes, there is a lack of contextually specific as well as theoretically and methodologically rigorous investigation in preschool children's alteration of gender stereotypes. This section summarizes patterns in previous research and addresses gaps in literature.

Firstly, the review of literature revealed that gender stereotyping is culturally rooted in Chinese preschools among urban middle-class Chinese preschoolers, manifested in 1) classroom settings, 2) teachers' awareness, attitudes, and practices, 3) playing activities and toys, 4) playmate interactions, and 5) storybooks, restricting children's learning and working opportunities in the present and future life. However, there was a lack of investigation on how children's knowledge of gender stereotypes and attitudes towards gender stereotypes differ or relate with each other, with previous research indicating that even for preschool children, knowing the stereotypes does not necessarily mean holding the same stereotypical attitudes. At the same time, majority of findings were yielded from observations by researchers or self-reports from teachers and parents, so less is known about children's actual knowledge and attitudes on gender stereotypes.

Secondly, the review of literature denoted preschool children's tendency to carry out gendered playing of toys as well as gendered playmate selection, implying a mutual influence between the two. Nevertheless, less was known about whether the tendency to carry out gendered playing of toys still influences preschool children's playmate selection when potential playmates are all same-sex peers. In other words, the influence of gender norm of playing itself on playmate selection is unclear.

Thirdly, the review of literature indicated 1) consistent patterns of gender-stereotypical emotion expressions of people from infancy to adolescence, as well as 2) preschool children's gender-biased perception and evaluation of peers' emotion expressions, which are worth exploring because of the influence of emotion expressions on children's development of mental health. However, whether the results could be generalized to Chinese

preschoolers was uncertain due to the specificity of emotion expression in Chinese culture: emotion expressions, especially those of negative emotions, are stigmatized as offensive and inappropriate.

Fourthly, the review inferred that though less applied in Chinese contexts, storybooks as effective learning tools could modify existing gender stereotypes and gender-stereotypical behavior of preschool children, but the effect was found varying for different preschool age groups. Indeed, as the three stages of gender acquisition proposed by Kolhberg (1966), the gender understanding of preschool children grows and changes rapidly age by age. However, previous research tended to study gender-stereotypical behavior and attitudes mixing children in different age groups, obscuring the subtleness of development in gender stereotypes.

2.6.2 Present study

Based on the summarized gaps in literature, a theoretically and methodologically rigorous study with contextual specificity on preschool children's alteration of gender stereotypes is required. Firstly, instead of recruiting children from all age groups in preschool as most previous studies did, the present study only investigated four-year-old children for two reasons: 1) preschool children have exponential growth on gender understanding age by age from three to six (Kolhberg, 1966), so focusing on one specific age group brings the most convincing results, 2) because four-year-old children are at the gender stability stage, in which they are in the process of understanding that expressing maleness or femaleness would not change individuals' sex identity across situations (Kolhberg, 1966), their learning results against conventional gender stereotypes are believed to be debatable and thus worth exploring by the student researcher. Secondly, a quasi-experiment with few confounding variables without losing the external validity was carried out, with details introduced in the methodology section.

Due to the lack of information to infer hypotheses, the present study is exploratory, aiming to add to the literature on how storytelling intervention that challenges conventional gender-stereotypical activities and gender-stereotypical emotion expressions modifies four-year-old urban Chinese preschool children's 1) knowledge and attitudes on these gender-stereotypical activities and gender-stereotypical emotion expressions, 2) playmate selection on peers preferring these gender-stereotypical activities, and 3) peer perception of these gender-stereotypical emotion expressions. The student researcher believed that by studying and interfering in preschool children's daily life contexts could their gender-stereotypical attitudes and behavior been minimized effectively.

There are four research questions for the current research:

How do knowledge and attitudes on gender-stereotypical activities and gender-stereotypical emotion expressions relate with each other before the intervention?

Is there any change in knowledge and attitudes on gender-stereotypical activities and gender-stereotypical emotion expressions after the intervention?

Is there a higher resistance to same-sex peers who love to participate in unconventional gender-stereotypical activities before the intervention? Any change after the intervention? Is there a gendered perception of gender-stereotypical emotion expressions in peers before the intervention? Any change after the intervention?

Chapter 3. Methodology

3.1 Research Design

With consideration of ethical issues and precise investigation of intervention factors, it was decided that a quasi-experimental design would best answer the research questions. As the core of the quasi-experiment, a four-week storytelling intervention was delivered in class units for child participants, with each activity session lasting for 20 minutes. Because children were nested within classrooms, a cluster-randomized design was employed, in which children in one class were grouped and randomly assigned into either the intervention group or the active control group to receive story sessions.

Additionally, an interactive face-to-face assessment was carried out individually before and after the storytelling activities for exploring the research questions. Two types of paper-and-pencil tasks and one type of verbal task were designed for children, with answers recorded by the student researcher. How each of these factors were operationalized would be introduced in Section 3.3.2.

3.2 Participants

3.2.1 Recruitment

3.2.1.1 School recruitment

Through purposive sampling, a preschool in Shenzhen, Guangdong province, China was chosen as the research site. Children attending this preschool were believed to represent the urban middle-class Chinese children due to its location and tuition fees. After the approval letter from the Central University Research Ethics Committee was received for ethical clearance (Appendix 1a, 1b), a research introduction sheet (Appendix 2a) was sent to the preschool principal via WeChat – the most commonly used online communication tool in China. After the consent was received, a site approval form (Appendix 2b) was then sent to the principal for signature.

3.2.1.2 Teacher recruitment

An in-person meeting was held for all teachers (n = 12) in the first grade of kindergarten (shorten as K1) for three purposes: 1) introducing details and clarifying questions for the research, 2) planning out the timetable and locations for assessments and story sessions for children, 3) creating an online group chat. The link of an anonymous online questionnaire with a consent form in the first page was sent to the online group chat after the meeting. K1 teachers who provided free and informed consent at the first page of the online questionnaire were recruited as teacher participants (n = 10). Rather than recruiting all teachers of three grades, a purposive sampling was carried out only among K1 teachers, who are teachers of child participants, because they were believed as teachers who have the direct contact with child participants and thus affecting child participants the most.

3.2.1.3 Child recruitment

For child participants, a power calculation through G*Power was conducted to determine that the minimum sample size requirement is 15 for reaching a large effect size – 0.8 – and a high power – 0.8 (Cohen, 1977). Setting both the effect size and the power as 0.8 allows the low probability of committing Type I errors and Type II errors, which is also meaningful in an exploratory study without hypotheses (Rubin, 2017).

As explained earlier in Section 2.6.2, instead of recruiting all children from three grades, only K1 children were recruited by a purposive sampling. Child participants were recruited by a digital poster introducing the study (Appendix 3a, 3b) and a digital opt-in form (Appendix 3c, 3d) distributed to their guardians via email by the preschool principal, with a WeChat message reminder sent to guardians by host teachers one day before the deadline. Only K1 children (n = 39, 20 boys and 19 girls) whose guardians returned the printed or digital opt-in form were recruited as child participants, with age ranged from three-year-eight-month- to four-year-eight-month-old (medium and mode = four-year-one-month-old). Besides gaining the parental consent, child participants were asked for the verbal assent before the first assessment (i.e. pre-test), each intervention session, and the second assessment (i.e. post-test). For the pre-test and the post-test, the verbal assent was asked twice: 1) when inviting the child to the assessment room, and 2) before the formal assessment began. The assent forms (Appendix 3e) were recorded digitally by the student researcher. Consent from guardians and assent from the child participant were equally considered.

3.3 Materials

3.3.1 Development of assessments and intervention

Because of the essentially social nature of the formation of gender stereotypes, contextually grounded instruments of measures and the intervention need to be designed to reach reliable and accurate results. Therefore, the student researcher carried out four preparation steps.

3.3.1.1 Online questionnaire for teacher participants

In order to capture accurately the activities child participants usually take part in and the emotions child participants express in the preschool context, a two-day observation in K1 classes was done by the student researcher. Sixteen daily activities and four emotion expressions were recorded and confirmed by the host teacher in each K1 class. An online questionnaire (Appendix 4) was then sent to K1 teachers, asking each of them to evaluate the extent of masculinity or femininity of each activity and each emotion expression in the preschool context through a five-point Likert Scale.

Presented with the name of activities (e.g. playing on swings) and emotion expressions (e.g. happy), the teacher were asked to rate whether each item is "masculine", "kind of masculine", "neutral", "kind of feminine", or "feminine". The order of the scale was alternating. After calculating the average scores (*1 = masculine, 5 = feminine*) of each activity and each emotion expression, top-three masculine activities – *playing with toy cars* (M = 2.1), *playing with building blocks* (M = 2.1), *playing sand with sand shovels and buckets* (M = 2.3), top-three feminine activities – *doing handicrafts with scissors, color paper, and cotton balls* (M = 4), *dressing up in costumes* (M = 3.8), *playing on swings* (M = 3.7), and top-two gendered emotions – *angry* as masculine (M = 2.4) and *scared* as feminine (M = 3.3) – were selected as the target gender-stereotypical activities and target gender-stereotypical emotion expressions for children's intervention and assessments.

3.3.1.2 Review of shared book reading intervention design for preschool children

The storytelling intervention of the current research was contextually designed based on a review on six studies of the shared book reading intervention that yielded effective learning results, which were all on preschool children with an objective of altering or forming attitudes toward specific groups (e.g. men, women, disabilities, elderly). Among the six studies, four studies adopted a pure shared book reading intervention (Dresner, 2000; Flerx, et al., 1976; Horan, 1981; Winters, 1994) with an average total length of 4.2 hours. Each session lasted for 10 to 25 minutes, with local teachers been trained to either read a story only (Flerx et al., 1976; Horan, 1981) or carry out discussions after reading a story (Dresner, 2000; Winters, 1994). Based on the review, the current research designed a total of 16 story sessions: four 20-minute story sessions were carried out in each week for four consecutive weeks by the student researcher in class units, with a total of 320 minutes (5.3 hours). Further details will be introduced in Section 3.4.2.

3.3.1.3 Review of measurements for designing age-appropriate tools for preschool children

A measurement review on ten studies assessing three- to six-year-old children's conceptual knowledge and conceptual representation was done for designing age-appropriate measurement tools in the current research. The review investigated five conceptual domains: theory of mind (Gonzales et al., 2018; Wimmer & Perner, 1983), socio-emotional learning

(Deklerk et al., 2014; Pons et al., 2004), prejudice (Clack, 2007; Wright & Tropp, 2005), language acquisition (Rogde et al., 2016; Stothard et al., 1998), and social skills (Ştefan et al., 2017; Ştefan & Avram, 2019). Commonalities of measurement were summarized as follow: 1) all children were tested individually within a five- to fifteen-minute session (except the ability test which could last 2.5 hours); 2) each child's constructed knowledge that is relevant to the task was not assumed and was assessed before tasks began; 3) the number of test questions ranged from eight to twenty-four, decreasing with the increasing complexity of task (e.g. open-ended verbal indication for fewer questions and pointing for more questions); 4) no more than four types of measures/tests were given to children; 5) visual elements such as dolls, figurines, and pictures were involved frequently to aid understanding, reduce task demand, and engage children; 6) under large number of tasks, children's level of engagement was maintained by adding more interaction (e.g. hands-on experience, social, verbal) or creating a sense of mystery. Based on this review, a 15-minute individual assessment was designed for child participants, containing simple physical indications (e.g. task of sorting) and verbal indications of short phrases (i.e. name nomination) – a total of three tasks with the number of questions ranging from 16 to 24. Child participants' understanding on the content of each testing item was checked before the formal questions were delivered. Additionally, the assessment in general was interactive and appealing: children had hands-on experience to engage into, and dolls as well as pictures were included as visual elements.

3.3.1.4 Pre-pilot and pilot tests

After designing the assessment with three tasks – the gender attribution task, the playmate selection task, and the peer nomination task (all will be introduced in Section 3.4.1), a pre-pilot test was carried out on a four-year-three-month-old child for three main purposes: 1) checking whether the testing materials of each task are comprehensible and child-friendly, 2) checking whether the instructions of each task are clear and child-friendly, 3) checking whether the design (e.g. format of games, time length) of assessment is engaging and child-friendly. Positive aspects and challenges were recorded for future improvement (see Appendix 5a for details), and a pilot test was carried out subsequently on a three-year-

ten-month-old child. The testing procedure and set up in the pilot test were implemented as similar as those in the formal assessment (see Appendix 5b for details).

3.3.1.5 Storybook preparation for the intervention

Storybook searches in the preschool library of the research site were done to find stories for the intervention, in which the main plot should describe protagonist(s) performing one of the six target gender-stereotypical activities or displaying one of the two target gender-stereotypical emotions. Seven storybooks were selected from the library for five gender-stereotypical activities and two gender-stereotypical emotion expressions. Since no storybook in the preschool library depicted the gender-stereotypical activity – sand playing, the eighth story was selected from the online database of preschool storybooks (see Appendix 6 for information of eight storybooks).

Among six of the eight stories found, the gender of protagonist(s) who carries out the gender-stereotypical activity or displays the gender-stereotypical emotion aligns with gender stereotypes. For example, in 'It's OK to be Angry – I Will Temper It', a boy – the protagonist – is portrayed as reacting angrily in different scenarios, matching the gender stereotype that anger is a masculine emotion. The gender of human protagonist(s) can be easily identified through both texts (e.g. character introduction) and illustrations (e.g. appearance). Even if the protagonist(s) are animals in some of the stories selected, their features have strong indications of a specific gender. For example, in 'My Dress', the protagonist – a rabbit – wears various dresses and is illustrated with long eyelashes, which are both feminine characteristics and thus indicating the rabbit as a female. Besides these six stories, the other two stories neither align with nor challenge gender stereotypes because in which the protagonists are depicted as gender-neutral animals. It appeared that the storybooks in the research site tended to contain stereotyped content for the target activities and target emotion expressions.

All stories were modified based on the following standards: 1) texts inserted in illustrations were removed. Wordless pictures were shown to ensure all children, including those with dyslexia, could fully participate in all stages of study; 2) each story consisted of 15 to 20 pages, with irrelevant plots being removed; 3) colloquial sentences were added into texts to replace compacted rhymes, because rhymes negatively affect children's retention of

story content (Hayes, 1999); 4) for each story, one version was made for the intervention group, and another version was made for the active control group. With all other illustrations remained the same, illustrations of the protagonists' figure were photoshoped to adapt to the identity of either male or female (e.g. apparent gender characteristics such as hairs and dressing were altered). Additionally, with all other texts remained the same, gender information of the protagonists was modified to adapt to the identity of either male or female (e.g. gender-stereotypical names).

3.3.2 Measures and scorings

3.3.2.1 Sex-role discrimination

Sex-role discrimination (SRD) assesses the child's knowledge or awareness of stereotypes on masculine and feminine behavior and roles (Schell & Silber, 1968). The Sex Role Learning Index (SERLI) was chosen as the measure for SRD in the current study because SERLI not only was adopted by previous study (e.g. Blackemore, 1992) to assess the concept of SRD but also was assessed by several studies as an adequate approach to measure sex-role acquisition in preschool children (Hartup & Zook, 1960; Thompson & McCandless, 1970). A child's knowledge of gender-stereotypical activities and gender-stereotypical emotion expressions is reflected as the percentage of agreement between the child's gender classification of items and gender stereotypes of those items in the gender attribution task (Edelbrock & Sugawara, 1978). A higher SRD score indicates a higher level of awareness of masculine and feminine stereotypes in activities and emotion expressions in the preschool context.

3.3.2.2 Egalitarian sex-role model

Egalitarian sex-role model (ESR) assesses the child's egalitarian attitudes towards masculine and feminine behavior and roles (Flerx et al., 1976). In the current research, a child's egalitarian attitudes towards gender-stereotypical activities and gender-stereotypical emotion expressions are reflected in their free-choice classifications of items in the gender attribution task. The egalitarian response of each item, coded in a score of three, is to classify the item for both boys and girls (Flerx et al., 1976). The stereotyped response of each item, coded in a score of one, is to classify the item for a single gender that aligns with gender

stereotypes (Flerx et al., 1976). Classifying the item for a single gender that does not align with gender stereotypes is considered as falling between the egalitarian response and the stereotyped response and thus is coded in a score of two (Flerx et al., 1976). A higher total ESR score indicates higher extent of gender-egalitarian attitudes towards activities and emotion expressions in the preschool context.

3.3.2.3 Sex-role flexibility

Sex-role flexibility (SRF) assesses the child's flexibility of awareness and attitudes towards masculine and feminine behavior and roles (Blackemore, 1992). SRF is reflected as the percentage of items initially identified as for both boys and girls in the free-choice classification and later correctly identified in the stereotyped gender group in the forced-choice classification. A higher SRF score indicates a higher level of flexibility on activities and emotion expressions in the preschool context, which means that the child holds gender-egalitarian attitudes towards these activities and emotion expressions even if he/she has the knowledge of gender stereotypes.

3.3.2.4 Stereotyped playmate selection

Stereotyped playmate selection (SPS) assesses the impact of gender-stereotypical activities on the child's playmate selection, exploring whether the gender appropriateness of potential playmates' hobbies affects playmate selection. In the playmate selection task, each decision of making friend with a peer is coded in a score of minus one, each decision of not making friend with a peer is coded in a score of one, and each 'no decision' is coded in a score of zero. A SPS score is the difference of the total score assigned to same-sex peers who love to participate in gender-inappropriate activities and the total score assigned to those who love to participate in gender-appropriate activities. A higher SPS score indicates a higher tendency to choose playmates who conform with gender-appropriate activities in the preschool context.

3.3.2.5 Stereotyped peer perception of emotion expression

Peer nomination is widely used to measure preschool children's peer perception (Milich, 1982). Therefore, stereotyped peer perception of emotion expression (SPP) was

designed to assess whether the child forms gendered perception of emotion expressions among peers. Each of a male nomination is coded in a score of minus one, each of a female nomination is coded in a score of one, and each absence of nomination is coded in a score of zero. Due to practical reasons, instead of selecting peers among class photos (Milich, 1982), the child was asked to nominate peers verbally. For each emotion expression, a total SPP score smaller than zero indicates masculine perception, a total SPP score larger than zero indicates feminine perception, and a total SPP score of zero indicates neutral perception.

3.4 Procedure

3.4.1 Assessments

Child participants were brought to a quiet semi-open space individually and led to sit on a chair facing the wall, with a table in front. The researcher then sat 90 degrees beside the child and began the 15-minute assessment, containing three tasks, by strictly following the pre-written scripts (Appendix 7a, 7b).

3.4.1.1 Gender attribution task

The assessment started with the gender attribution task, in which the child was asked to carry out free-choice classifications and forced-choice classifications of six gender-stereotypical activities (with two additional practice items) and two gender-stereotypical emotion expressions (with one additional practice item) into gender categories (adapted from Edelbrock & Sugawara, 1978). Taken in the research site, photos of items used in each activity as well as emoticons were shown to the child for building similar common grounds and reducing the working memory load. The child was told to put each photo into one of the three boxes on table representing ‘for boys’ (with a label of male cartoon character on), ‘for girls’ (with a label of female cartoon character on), and ‘for boys and girls’ (with a label of male and female cartoon characters on), respectively. One at a time, the researcher first asked the child to identify items/emoticons in the picture, “could you tell me what this is (these are)/what emotion this facial expression tells?” After ensuring shared knowledge, the child was then asked to conduct free-choice classifications, “who would (activity name)/display (emotion name) in your class, boys, girls, or boys and girls?” When all free-choice classifications were finished, forced-choice classifications were then conducted for activities

and emotion expressions that were assigned to the box – 'for boys and girls', "these items are for both boys and girls in your class, right? Who do you think would (activity name)/display (emotion name) more in your class, boys? Or girls?"

3.4.1.2 Playmate selection task

The playmate selection task was carried out subsequently, in which the child was asked to assign distance of friendship to six same-sex peers (with two additional practice items) who love to participate in each of the six gender-stereotypical activities. The activities were the same as those in the gender attribution task. With three hula hoops laying in a line on the ground, the child was told to stand in the middle hula hoops. One at a time, a doll with the same sex as the child was presented in front of the front hula hoop and introduced of his/her hobby, "this boy/girl loves to (activity name)." The child was told to jump forward if willing to make friend with the peer, jump backward if unwilling to make friend with the peer, or stand still if no decision was made.

3.4.1.3 Peer nomination task

The peer nomination task was carried out lastly, in which the child was asked to nominate two people in the class who would display certain emotion, with a total of two emotions (with one additional practice item). The emotions are the same as those in the gender attribution task. The child was first asked, "would people in your class display (emotion name)?" Only when the child answered with a yes then he/she be asked to nominate up to two peers, "who would display (emotion name) in your class?"

3.4.2 Intervention

Within a total of 16 sessions, each of the eight stories was read twice across two sessions (see Appendix 8 for scripts of each session). Digital illustrations were presented through the digital screen in each class along with storytelling, in which texts were eliminated to avoid potential impact of word reading ability. In the first session, texts were read to children threaded with discussions of story content, while in the second session, roles of storytellers (the student researcher) and listeners (child participants) were intentionally switched by using dialogic reading strategies – 'PEER sequence' (Mincic, 2009).

Specifically, child participants were prompted of a recall question first; their answers were then evaluated and expanded by the student researcher, with the student researcher repeating the original texts at last. 'PEER sequence' was also applied throughout each session to raise attentiveness in stories, aid understanding of content, and strengthen memories of content (Mincic, 2009).

3.4.2.1 Adaptation of intervention to individual differences in learning behavior

Although child participants were familiar with the modality of intervention – listening to texts read out while watching the illustrations – and thus could experience less learning difficulty, learning under a familiar mode made children inclined to stick with previously formed learning habit. For example, children behaved very differently from the very first session: some children tended to respond to questions, some children were more likely to make comments on characters or the story content, some children tended to remain silent but attentively listened, and some children were more easily distracted. Different inclinations of learning behavior could yield different learning results such as on memorization and comprehension. Therefore, attempts were carried out by the student researcher to adapt and reduce learning differences. For example, questions were more frequently delivered to children who were: 1) easily distracted, ensuring that they remembered the plot equally as others who were attentive; 2) silent, ensuring that they had equal opportunities to speak out while feeling comfortable.

3.5 Intervention Condition and Active Control Condition

3.5.1 Intervention condition

The intervention group contained 21 children (ten boys and eleven girls) in two classes. In all eight stories read to the intervention group, the protagonist(s) who performed specific gender-stereotypical activity or expressed specific gender-stereotypical emotion were depicted in non-stereotypical gender, challenging the conventional gender stereotypes. In other words, protagonists were all performing gender-inappropriate activities or expressing gender-inappropriate emotions. For example, instead of having a male protagonist expressing the masculine emotion – angry, the story read to the intervention group portrayed a female protagonist displaying anger.

3.5.2 Active control condition

The active control group contained 18 children (ten boys and eight girls) in two classes. Stories read to the active control group had the same plot as those read to the intervention group, except that the protagonists who performed specific gender-stereotypical activity or expressed specific gender-stereotypical emotion were depicted in stereotypical or neutral gender (if the original characters were gender-neutral). For example, the story with an original plot portraying a male protagonist expressing angry emotion was read to the active control group.

3.6 Decision-making for Statistical Tests for Data Analysis

A Pearson's Correlation was initially planned to assess the linear correlation among all the pre-intervention scores of child participants. After testing the assumption (see Appendix 9 for details), a Spearman's Correlation was determined to be appropriate for analyzing all relationships among the following data: 1) the sex-role discrimination (SRD), the egalitarian sex-role model (ESR), the sex-role flexibility (SRF), and the stereotyped playmate selection (SPS) of gender-stereotypical activities, as well as 2) the SRD, ESR, SRF of gender-stereotypical emotion expressions.

An Analysis of Covariance (ANCOVA) was initially planned to compare all the post-intervention scores between child participants in the intervention group and child participants in the active control group, controlling their pre-intervention scores (Field, 2018). After testing assumptions (see Appendix 10 for details), a non-parametric statistical test was determined to be appropriate for analyzing the following data: 1) SRD of gender-stereotypical activities, 2) SRD of gender-stereotypical emotion expressions, 3) ESR of gender-stereotypical activities, 4) ESR of gender-stereotypical emotion expressions, 5) SRF of gender-stereotypical activities, 6) SRF of gender-stereotypical emotion expressions, and 7) SPS. Robust to the violation of normality assumptions, a Rank Analysis of Covariance was selected as the appropriate non-parametric test, which is conservative and resistant to committing Type I errors (Quade, 1967; Wongla, 1984).

3.7 Summary of Methodological Advantages

The intervention design of the current research improves from previous shared book reading intervention research generally. Besides participants attending the shared book reading intervention, other participants in majority of previous studies either 1) remained business-as-usual (BAU), or 2) received random books that were unrelated to the intervention purpose. As a result, firstly, compared to children in the BAU, it was difficult to infer whether children receiving the intervention books showed changes due to the awareness of being studied, demonstrating a Hawthorn effect. Secondly, compared to children receiving random books, it was difficult to infer whether changes of children receiving intervention books were purely due to the intervention itself. As a result, by presenting the same stories to children in the intervention group and the control group, with the only adaptation being the gender of protagonists, the present study could yield more accurate results of the effect of intervention. Additionally, unlike majority of previous shared book reading intervention that were delivered by different local teachers after training, all intervention sessions and active control sessions were delivered by the student researcher following the pre-written scripts. As a result, the consistency of storytelling could further improve the accuracy of results.

Chapter 4. Results

4.1 Descriptives of Raw Data

4.1.1 Ratings of masculinity and femininity of activities and emotion expressions

Table 1. Gender Attribution

	Children (n=39)		
Activity	Valid N	Mode	Valid % of Mode
Cars	32	0	93.8
Sand	36	0	66.7
Blocks	36	0	58.3
Handicrafts	31	1	58.1
Costumes	37	1	62.2
Swings	35	1	85.7
Emotion expression			
Angry	37	0	59.5

Scared	34	1	70.6

Note: 0=masculine; 1=feminine

As Table 1 presented, either in free-choice classifications or forced-choice classifications, majority of child participants deemed that boys would participate in *playing with toy cars* (93.8%), *play sand with sand shovels and buckets* (66.7%), and *playing with building blocks* (58.3%). Meanwhile, majority of child participants deemed that girls would participate in *playing on swings* (85.7%*), dressing up in costumes* (62.2%), and *doing handicrafts with scissors, color paper, and cotton balls* (58.1%). Additionally, majority of child participants deemed that boys would express the *angry* emotion (59.5%) while girls would express the *scared* emotion (70.6%). Referring to the masculine-feminine spectrum, the direction of child participants' ratings on gender-stereotypical activities and gender-stereotypical emotion expressions aligned with that of teacher participants.

4.1.2 Peer nomination task

Table 2. Descriptive Data of Peer Nomination Task

Proportion	Pre-test		Post-test	
	Intervention (n=21)	Control (n=18)	Intervention (n=21)	Control (n=18)
Angry				
Partial & Full Nom.	0.52 (1)	0.33 (1)	0.86 (1)	0.83 (1)
Masculine	0.38 (0.73)	0.17 (0.5)	0.48 (0.56)	0.39 (0.47)
Feminine	0.05 (0.09)	0.11 (0.33)	0.09 (0.11)	0.22 (0.27)
Neutral	0.1 (0.18)	0.06 (0.17)	0.28 (0.33)	0.22 (0.27)
No Nom.	0.48 (1)	0.67 (1)	0.14 (1)	0.17 (1)
"Nobody"	0.33 (0.7)	0.44 (0.67)	0.05 (0.33)	0.11 (0.67)
"Somebody" but no nomination	0.14 (0.3)	0.22 (0.33)	0.1 (0.67)	0.06 (0.33)
Scared				

Partial & Full Nom.	0.43 (1)	0.5 (1)	0.62 (1)	0.56 (1)
Masculine	0.05 (0.11)	0.06 (0.11)	0.14 (0.23)	0.11 (0.2)
Feminine	0.24 (0.56)	0.33 (0.67)	0.09 (0.15)	0.34 (0.6)
Neutral	0.14 (0.33)	0.11 (0.22)	0.38 (0.62)	0.11 (0.2)
No Nom.	0.57 (1)	0.5 (1)	0.38 (1)	0.44 (1)
"Nobody"	0.38 (0.67)	0.33 (0.67)	0.29 (0.75)	0.33 (0.75)
"Somebody" but no nomination	0.19 (0.33)	0.17 (0.33)	0.1 (0.25)	0.11 (0.25)

As Table 2 presented, a ceiling effect appeared for the peer nomination task during data collection for both emotions, especially in the pre-test: only 52% child participants in the intervention group and 33% child participants in the control group offered a partial (i.e. nominate one peer) or full answer (i.e. nominate two peers) when asked to nominate peers in class who would display an angry emotion. Meanwhile, only 43% child participants in the intervention group and 50% child participants in the control group offered a partial or full answer when asked to nominate peers in class who would display a scared emotion. Additionally, two situations appeared when children did not nominate peers: child participants either said no one in class displayed the emotion or said someone in class displayed the emotion but failed to offer a name. As a result, instead of investigating the stereotyped peer perception of emotion expression through statistical analysis, patterns of child participants' answers in the pre-test and the post-test were summarized and compared, with potential speculations presented in the discussion section.

For nomination of angry peers before the storytelling activities, for child participants in the intervention group, 38% nominated male peer(s) and 33% said no one displayed anger, which were relatively equal majority. At the same time, for child participants in the control group, 44% said no one displayed anger. After the storytelling activities, majority of children in both intervention group and control group increasingly nominated male peer(s), with 48% in the intervention group and 39% in the control group. Additionally, for child participants provided partial and full nomination of angry peers, majority of children in both the intervention group and the control group nominated male peer(s) before and after the storytelling activities.

For nomination of scared peers of child participants in the intervention group, 38% said no one displayed fear before the storytelling activities. After the intervention, 38% nominated both male and female peers. Equal majority of child participants in the control group (i.e. 33% or 34%) nominated female peer(s) or said no one displayed fear, both before and after the storytelling activities. Additionally, for child participants provided partial and full nomination of scared peers, while over 60% in the control group nominated female peer(s) in both pre-test and post-test, 62% in the intervention group nominated both male and female peers after the intervention, with 56% nominated female peer(s) only before the intervention.

4.2 Calculated scores

All 39 recruited child participants participated fully and provided valid data for the pre-test and the post-test. After collecting data, the sex-role discrimination score, the egalitarian sex-model score, and the sex-role flexibility score were calculated respectively for gender-stereotypical activities and gender-stereotypical emotion expressions. The stereotyped playmate selection score was also calculated from the raw scores.

4.2.1 Descriptive statistics of calculated scores

Table 3. Descriptive Data for Scores of Pre-test and Post-test Tasks

	Pre-test				Post-test			
	Intervention (n=21)		Control (n=18)		Intervention (n=21)		Control (n=18)	
Scores	M	SD	M	SD	M	SD	M	SD
SRD_Activity	0.67	0.22	0.56	0.29	0.67	0.18	0.61	0.29
SRD_Emotion	0.62	0.44	0.53	0.4	0.64	0.45	0.47	0.4
ESR_Activity	11.57	2.06	12.5	2.66	13.24	2.1	12.5	3.26
ESR_Emotion	3.24	1.34	3.78	1.4	4.14	0.25	3.83	1.38
SRF_Activity	0.25	0.2	0.22	0.18	0.32	0.19	0.26	0.22
SRF_Emotion	0.07	0.18	0.14	0.23	0.26	0.34	0.08	0.19
SPS	0.86	1.96	1.22	1.56	0.38	1.96	1.22	1.83

Note: SRD=Sex-role discrimination; ESR=Egalitarian sex-role model; SRF=Sex-role flexibility; SPS=Stereotyped playmate selection

Three scores were compared for gender-stereotypical activities with the following results: 1) child participants in the intervention group and the control group demonstrated similar sex-role discrimination (SRD) before ($M_{Intervention}$ = 0.67, SD = 0.22; $M_{Control}$ = 0.56, SD = 0.29) and after ($M_{Intervention}$ = 0.67, SD = 0.18; $M_{Control}$ = 0.61, SD = 0.29) the storytelling activities; 2) while the egalitarian sex-role model (ESR) of child participants in the control group remained the same before ($M_{Control}$ = 12.5, SD = 2.66) and after ($M_{Control}$ = 12.5, SD = 3.26) the storytelling activities, ESR of child participants in the intervention group increased after the storytelling activities ($M_{Intervention}$ = 13.24, SD = 2.1) compared to the pre-test ($M_{Intervention}$ = 11.57, SD = 2.06); 3) child participants in the intervention group and the control group demonstrated similar sex-role flexibility (SRF) before ($M_{Intervention}$ = 0.25, SD = 0.2; $M_{Control}$ = 0.22, SD = 0.18) and after ($M_{Intervention}$ = 0.32, SD = 0.19; $M_{Control}$ = 0.26, SD = 0.22) the storytelling activities.

Likewise, three scores were compared for gender-stereotypical emotion expressions with the following results: 1) child participants in the intervention group and the control group demonstrated similar SRD before ($M_{Intervention}$ = 0.62, SD = 0.44; $M_{Control}$ = 0.53, SD = 0.4) and after ($M_{Intervention}$ = 0.64, SD = 0.45; $M_{Control}$ = 0.47, SD = 0.4) the storytelling activities; 2) while ESR of child participants in the control group increased for 0.05 after the storytelling activities ($M_{Control}$ = 3.83, SD = 1.38) compared to the pre-test ($M_{Control}$ = 3.78, SD = 1.4), ESR of child participants in the intervention group increased for 0.9 – a larger amount – after the storytelling activities with a narrower spread of scores ($M_{Intervention}$ = 4.14, SD = 0.25) compared to the pre-test ($M_{Intervention}$ = 3.24, SD = 1.34); 3) while SRF of child participants in the control group decreased after the storytelling activities ($M_{Intervention}$ = 0.08, SD = 0.19) compared to the pre-test ($M_{Intervention}$ = 0.14, SD = 0.23), SRF of child participants in the intervention group increased after the storytelling activities ($M_{Intervention}$ = 0.26, SD = 0.34) compared to the pre-test ($M_{Intervention}$ = 0.07, SD = 0.18).

Lastly, while the stereotyped playmate selection (SPS) of child participants in the control group remained the same before ($M_{Control}$ = 1.22, SD = 1.56) and after ($M_{Control}$ = 1.22, SD = 1.83) the storytelling activities, SPS of child participants in the intervention group

decreased after the storytelling activities ($M_{Intervention}$ = 0.38, *SD* = 1.96) compared to the pre-test ($M_{Intervention}$ = 0.86, *SD* = 1.96), even when their pre-test SPS was already low.

4.2.2 Correlation of pre-test calculated scores

A Spearman's Correlation was conducted for child participants' pre-test scores before the storytelling activities to explore the relationships between the knowledge and attitudes on gender-stereotypical activities and gender-stereotypical emotion expressions. The assumptions for conducting a Spearman's Correlation on all target linear relationships were met (see Appendix 11 for details).

Table 4. Correlations Between Scores of Activities

		ESR_Pre	**SRF_Pre**	**SPS_Pre**
SRD_Pre	Correlation Coefficient	-0.4**	0.7**	0.29
	p	0.01	<0.001	0.08
ESR_Pre	Correlation Coefficient	/	0.26	-0.33*
	p		0.11	0.04
SRF_Pre	Correlation Coefficient	0.26	/	-0.02
	p	0.11		0.92

Note: SRD=Sex-role discrimination; ESR=Egalitarian sex-role model; SRF=Sex-role flexibility; SPS=Stereotyped playmate selection

*=p<0.05; **=p<0.01

For gender-stereotypical activities, results of the Spearman's correlation presented in Table 4 indicated a significant positive association between SRD and SRF, ($r(39) = 0.7$, $p <$

0.001). At the same time, a significant negative association was found between SRD and ESR, ($r(39) = -0.4$, $p = 0.01$), as well as between ESR and SPS, ($r(39) = -0.33$, $p = 0.04$). Additionally, there was no association between: 1) SRD and SPS, 2) ESR and SRF, and 3) SRF and SPS.

Table 5. Correlations Between Scores of Emotion Expressions

		ESR_Pre	**SRF_Pre**
SRD_Pre	Correlation Coefficient	-0.75**	0.11
	p	<0.001	0.51
ESR_Pre	Correlation Coefficient	/	0.45**
	p		0.004

Note: SRD=Sex-role discrimination; ESR=Egalitarian sex-role model; SRF=Sex-role flexibility; SPS=Stereotyped playmate selection

**=p<0.01

For gender-stereotypical emotion expressions, results of the Spearman's correlation presented in Table 5 indicated that there was a significant negative association between SRD and ESR, ($r(39) = -0.75$, $p < 0.001$). At the same time, a significant positive association was found between ESR and SRF, ($r(39) = 0.45$, $p = 0.004$). Additionally, there was no association between SRD and SRF.

4.3 Comparison of Pre-test and Post-test

Table 6. Post-test Scores Between Groups (Rank ANCOVA)

Source of variance	SS	df	F	p
SRD_Activity_Post (RES)				
Between Groups	2.02	1	0.02	0.89
Within Groups	3763.57	37		

Total	3765.59	38		
SRD_Emotion_Post (RES)				
Between Groups	121.38	1	1.25	0.27
Within Groups	3601.04	37		
Total	3722.42	38		
ESR_Activity_Post				
Between Groups	244.02	1	2.4	0.13
Within Groups	3768.81	37		
Total	4012.83	38		
ESR_Emotion_Post				
Between Groups	148.05	1	1.33	0.26
Within Groups	4127.74	37		
Total	4275.78	38		
SRF_Activity_Post				
Between Groups	50.2	1	0.45	0.51
Within Groups	4142.99	37		
Total	4193.19	38		
SRF_Emotion_Post (RES)				
Between Groups	222.45	1	2.88	0.1
Within Groups	2859.7	37		
Total	3082.15	38		
SPS_Post (RES)				
Between Groups	109.74	1	1.25	0.27
Within Groups	3252.93	37		
Total	3362.67	38		

Note: RES=residuals; SRD=Sex-role discrimination
SRF=Sex-role flexibility; SPS=Stereotyped playmate selection

A Rank ANCOVA was conducted to compare the following scores between child participants in the intervention group and child participants in the control group: 1) SRD of gender-stereotypical activities in the post-test, controlling for that in the pre-test; 2) SRD of

gender-stereotypical emotion expressions in the post-test, controlling for that in the pre-test; 3) ESR of gender-stereotypical activities in the post-test, controlling for that in the pre-test; 4) ESR of gender-stereotypical emotion expressions in the post-test, controlling for that in the pre-test; 5) SRF of gender-stereotypical activities in the post-test, controlling for that in the pre-test; 6) SRF of gender-stereotypical emotion expressions in the post-test, controlling for that in the pre-test; 7) SPS in the post-test, controlling for that in the pre-test. The assumption for conducting a Rank ANCOVA for all target variables was met (see Appendix 12 for details).

As Table 6 presented, on average, between child participants in the intervention group and child participants in the control group, there was no significant difference in 1) SRDs of gender-stereotypical activities and gender-stereotypical emotion expressions, 2) ESRs of gender-stereotypical activities and gender-stereotypical emotion expressions, 3) SRDs of gender-stereotypical activities and gender-stereotypical emotion expressions, and 4) SPS.

4.4 Case Analysis

In order to uncover nuanced findings under the insignificant general patterns, a child participant in the intervention group together with a child participant in the control group, who were with the same pre-test scores on either 1) SRD, ESR, and SRF of gender-stereotypical activities, 2) SRD, ESR, and SRF of gender-stereotypical emotion expressions, or 3) SPS, were paired up respectively as matched pairs for investigating how their post-test scores differed from each other.

Table 7. Case Analysis of Seven Matched Pairs of Intervention-Control Children on Sex-role Discrimination, Egalitarian Sex-role Model, and Sex-role Flexibility of Activities

Case Number				
Intervention	**Control**	**SRD_Activity**	**ESR_Activity**	**SRF_Activity**
Child 18	Child 3	N	H	N
Child 27	Child 4	L	L	L
Child 21	Child 9	H	H	H
Child 22	Child 10	N	H	H

Child 31	Child 12	L	H	L
Child 35	Child 37	H	L	N
Child 24	Child 39	H	H	N

Note: H = Higher for intervention; N = No difference; L = Lower for intervention;
SRD=Sex-role discrimination; ESR=Egalitarian sex-role model;
SRF=Sex-role flexibility

Among the seven matched pairs that Table 7 presented, firstly, for SRD of gender-stereotypical activities, three matched pairs had the child in intervention group gaining a higher score, two matched pairs had the child in intervention group gaining a lower score, and two matched pairs showed no difference. Secondly, for ESR of gender-stereotypical activities, five matched pairs had the child in intervention group gaining a higher score, and two matched pairs had the child in the intervention group gaining a lower score. Thirdly, for SRF of gender-stereotypical activities, three matched pairs showed no difference, two matched pairs had the child in intervention group gaining a higher score, and two matched pairs had the child in intervention group gaining a lower score.

Table 8. Case Analysis of Ten Matched Pairs of Intervention-Control Children on Sex-role Discrimination, Egalitarian Sex-role Model, and Sex-role Flexibility of Emotion Expressions

Case Number		N	H	H
Intervention	**Control**	**SRD_Emotion**	**ESR_Emotion**	**SRF_Emotion**
Child 17	Child 2	N	H	H
Child 16	Child 3	N	N	N
Child 24	Child 6	N	H	N
Child 27	Child 8	H	H	H
Child 32	Child 10	L	N	L
Child 33	Child 11	N	H	H
Child 29	Child 13	N	H	H
Child 34	Child 14	N	H	N
Child 15	Child 36	N	H	H
Child 20	Child 38	N	H	N

Note: H = Higher for intervention; N = No difference; L = Lower for intervention;
SRD=Sex-role discrimination; ESR=Egalitarian sex-role model;
SRF=Sex-role flexibility

Among the ten matched pairs that Table 8 presented, firstly, for SRD of gender-stereotypical emotion expressions, eight matched pairs showed no difference, one matched pair had the child in intervention group gaining a higher score, and one matched pair had the child in the intervention group gaining a lower score. Secondly, for ESR of gender-stereotypical emotion expressions, eight matched pairs had the child in intervention group gaining a higher score, and two matched pairs showed no difference. Thirdly, for SRF of gender-stereotypical emotion expressions, five matched pairs had the child in intervention group gaining a higher score, four matched pair showed no difference, and one matched pair had the child in the intervention group gaining a lower score.

Table 9. Case Analysis of Five Matched Pairs of Intervention-Control Children on Stereotyped Playmate Selection

Case Number		
Intervention	**Control**	**SPS**
Child 33	Child 1	N
Child 15	Child 2	L
Child 19	Child 3	N
Child 29	Child 10	L
Child 32	Child 37	L

Note: N = No difference; L = Lower for intervention
SPS=Stereotyped playmate selection

Among the five matched pairs that Table 9 presented, for SPS, three matched pairs had the child in intervention group gaining a lower score, and two matched pairs showed no difference.

Chapter 5. Discussion

5.1 Correlation of Knowledge and Attitudes on Gender Stereotypes

Addressing the first research question, several patterns of how knowledge and attitudes on gender-stereotypical activities and gender-stereotypical emotion expressions respectively related were revealed by the results. Firstly, four-year-old child participants having more accurate knowledge on the direction of both activities and emotion expressions in the masculinity-femininity spectrum tended to hold less egalitarian attitudes towards them. This result implies that knowledge of gender-stereotypical items might already be internalized and affecting children's evaluation on these items among four years old. Additionally, though the relationships between knowledge and attitudes were significant for both activities and emotion expressions, the weak relationships for activities ($r = -0.4$) imply that knowledge and attitudes on gender-stereotypical items could be different and should be assessed separately (Field, 2018), which will be further examined in Section 5.2.

Secondly, how knowledge and attitudes interacted for gender-stereotypical activities and gender-stereotypical emotion expressions were found to be varied. Child participants who had higher flexibility of knowledge and attitudes on gender-stereotypical activities

tended to have more accurate knowledge on their direction in the masculinity-femininity spectrum, whereas child participants who had higher flexibility of knowledge and attitudes on gender-stereotypical emotion expressions tended to hold more egalitarian attitudes toward them. In general, these results demonstrate that not only knowledge and attitudes on gender-stereotypical items are independent constructs that could be different but also their relationships vary for different stereotypes.

Particularly, the varying interactions of knowledge and attitudes implied differences in child participants' perception of gender-stereotypical activities and gender-stereotypical emotion expressions. To begin with, child participants who actively avoided committing stereotypical attribution of daily activities more, tended to correctly associate more daily activities with the socially appropriate gender – either masculine or feminine. At the same time, child participants who actively avoided committing stereotypical attribution of emotion expressions more, tended to recognize and agree more that display of an emotion was gender neutral. These results together imply that compared to gender-stereotypical activities, emotion expressions of anger and fear, which are both negative emotions, tend to have higher extent of social significance for children. Child participants tended to follow social expectations of emotion expressions even when knowing what corresponding gender stereotypes were, indicating a willingness to conform to the social norm of gender appropriateness. Aligning with implications from the literature review, such phenomenon indicates that expressions of negative emotions are stigmatized in Chinese culture.

5.2 Sex-role Discrimination & Egalitarian Sex-role Model & Sex-role Flexibility

Although child participants who received the intervention did not show significantly different sex-role discrimination, egalitarian sex-role model, and sex-role flexibility compared to child participants who did not receive the intervention, the results indicate important trends for the second research question.

5.2.1 Sex-role discrimination

Findings of general patterns showed that children in the current study who were exposed to stories that challenge gender-stereotypical activities and gender-stereotypical emotion expressions on average did not earn significantly more knowledge on the direction

of these activities and emotion expressions in the masculine-feminine spectrum, compared to children who were exposed to stories that align with gender-stereotypical activities and gender-stereotypical emotion expressions. Besides the lack of difference between these children, there was less change of knowledge on average on the direction of these activities and emotion expressions in the masculine-feminine spectrum for child participants exposed to stories that challenge these gender stereotypes. At the same time, under findings of general patterns, findings of case analysis offer additional and different insights on the acquisition of knowledge on gender-stereotypical activities and gender-stereotypical emotion expressions, respectively. Among the seven matched intervention-control pairs of child participants who had the same sex-role discrimination (SRD), egalitarian sex-role model (ESR), and sex-role flexibility (SRF) of gender-stereotypical activities before the storytelling sessions, there was no evident indication of how children who listened to different set of stories differed from each other in sex-role discrimination: child participants who listened to stories challenging gender-stereotypical activities could either earn more knowledge (three pairs), less knowledge (two pairs), or equal amount of knowledge (two pairs) on them than child participants who listened to stories aligning with gender-stereotypical activities. However, among the ten matched pairs of child participants who had the SRD, ESR, and SRF of gender-stereotypical emotion expressions before the storytelling sessions, there was an evident indication that child participants who listened to stories challenging gender-stereotypical emotion expressions held equal amount of knowledge on them (eight pairs) than child participants who listened to stories aligning with gender-stereotypical emotion expressions.

Therefore, findings of general patterns and case analysis together imply two potential interpretations for the acquisition of knowledge on gender-stereotypical emotion expressions: 1) the formation of gender consciousness on emotion expressions is a consistent and long-term process. Child participants on average had not yet internalized or transferred what they read in stories into new understandings towards stereotypical emotion expressions in the tests used in this study; 2) the existing gender consciousness on emotion expressions was stable and resistant to change. The unconventional plots in stories on emotion expressions might be considered as variant cases rather than indicators of social norm by child participants on average because of four years old's strong willingness to retain previously learnt gender

norm rigorously, supported by cognitive theories of development in gender stereotypes. At the gender stability stage, four-year-old children have not yet understood that displaying masculinity or femininity would not change their own sex identity of male or female across situations (Kolhberg, 1966). Therefore, they tend to be highly motivated in filtering out abnormal gender information, such as expression of anger as feminine and expression of fear as masculine, in order to consolidate the stored gender schemas (Bem, 1981), especially when expression of negative emotion is stigmatized as inappropriate in the Chinese culture as previous literature denoted.

In addition to acquisition of knowledge on gender-stereotypical emotion expressions, findings of general patterns and case analysis together imply that nuances of individual variability exist in acquisition of knowledge on gender-stereotypical activities. Firstly, gender consciousness on activities were more alterable than gender consciousness of emotion expressions: while some child participants might consider unconventional plots in stories on activities as indicators of social norm, other child participants might consider them as variant cases. Therefore, future research should investigate the potential causes of such individual variability.

5.2.2 Egalitarian sex-role model

Findings of general patterns showed that children in the current study who were exposed to stories that challenge gender-stereotypical activities and gender-stereotypical emotion expressions on average did not become significantly more egalitarian towards these activities and emotion expressions compared to children who were exposed to stories that align with gender-stereotypical activities and gender-stereotypical emotion expressions. However, there was a trend towards increase in egalitarian attitudes towards both activities and emotion expressions for child participants who listened to stories that challenge these gender stereotypes, supported by findings of case analysis under findings of general patterns. Among the matched intervention-control pairs of child participants who had the same sex-role discrimination, egalitarian sex-role model, and sex-role flexibility of gender-stereotypical activities and gender-stereotypical emotion expressions, respectively, before the storytelling sessions, there was an evident indication that child participants who listened to stories challenging these gender stereotypes gained higher extent of egalitarian attitudes

towards them (five of seven pairs for activities and eight of ten pairs for emotion expressions) than child participants who listened to stories aligning with these gender stereotypes.

Therefore, findings of general patterns and case analysis together imply that while attitudes toward gender-stereotypical activities and gender-stereotypical emotion expression tend to be flexible for modification, a storytelling intervention lasting for a longer time might be more effective in forming children's gender-egalitarian attitudes with a longer period for internalization, which should be investigated in future research. Furthermore, future research could also explore a more efficient storytelling intervention on forming egalitarian attitudes towards gender-stereotypical activities and gender-stereotypical emotion expressions with the same time span as the current research. For example, whether presenting stories depicting both genders rather than the unconventional gender only on activities and emotion expressions used in the present study may be more effective.

5.2.3 Sex-role flexibility

Findings of general patterns showed that children in the current study who were exposed to stories that challenge gender-stereotypical activities and gender-stereotypical emotion expressions on average were not significantly more likely to hold gender-egalitarian attitudes towards these activities and emotion expressions while having knowledge on the direction of these activities and emotion expressions in the masculine-feminine spectrum. However, though not found towards gender-stereotypical activities, there was a trend towards increase in flexibility in knowledge and attitudes towards gender-stereotypical emotion expressions for child participants who listened to stories challenging these gender stereotypes, supported by findings of case analysis under findings of general patterns. Among the ten matched intervention-control pairs of child participants who had the same sex-role discrimination (SRD), egalitarian sex-role model (ESR), and sex-role flexibility (SRF) of gender-stereotypical emotion expressions before the storytelling sessions, there was an evident indication that child participants who listened to stories challenging these gender stereotypes gained more flexibility in knowledge and attitudes towards them (five pairs) than child participants who listened to stories aligning with these gender stereotypes. However, among the seven matched pairs of child participants who had the same SRD, ESR, and SRF

of gender-stereotypical activities before the storytelling sessions, there was no evident indication of how children who listened to different set of stories differed from each other in sex-role flexibility: child participants who listened to stories challenging gender-stereotypical activities could either earn equal amount of flexibility (three pairs), more flexibility (two pairs), or less flexibility (two pairs) on them than child participants who listened to stories aligning with gender-stereotypical activities, denoting existing nuances of individual variability.

5.2.4 Summary

To sum up findings for the second research question, firstly, general patterns and case analysis on sex-role discrimination, egalitarian sex-role model, and sex-role flexibility of gender-stereotypical activities together showed that children in the current study tended to exhibit individual variability in knowledge acquisition, earn higher extent of egalitarian attitudes, and exhibit individual variability in flexibility of knowledge and attitudes towards gender-stereotypical activities after reading stories that challenge these stereotypes. Secondly, findings of general patterns and case analysis on sex-role discrimination, egalitarian sex-role model, and sex-role flexibility of gender-stereotypical emotion expressions together showed that children in the current study tended to show no change in knowledge acquisition, earn higher extent of egalitarian attitudes, and earn higher extent of flexibility of knowledge and attitudes towards gender-stereotypical emotion expressions after reading stories that challenge these stereotypes.

The findings offer theoretical insights for four-year-old preschool children's individual variability in the formation of gender stereotypes. Some four-year-old child participants were driven by the awareness of constructing conventional self-identity. Aligning with what cognitive theories proposed, these children were motivated to behave in accordance with gender norms as a means of gaining self-identification in their sex identity. Therefore, they were resistant to alteration on gender consciousness by messages challenging gender-stereotypical activities and gender-stereotypical emotion expressions (Martin & Halverson, 1981). But at the same time, other four-year-old child participants were more easily affected by information conveyed to them. Aligning with what social theories proposed, these children are more inclined to be influenced by external messages and thus

having more flexible alteration on gender consciousness (Liben & Bigler, 2002). Therefore, they showed detachment from gender norms due to a higher tendency to accept the gender-unconventional story content on activities and emotion expressions, such as a male participating in a feminine activity.

The summarized results for the second research question aligned with findings for the first research question. Firstly, for gender-stereotypical activities, the strong, positive association ($r = 0.7$) found between knowledge and flexibility in knowledge and attitudes aligned with child participants' individual variability in both knowledge and flexibility in knowledge and attitudes after exposure to stories challenging gender-stereotypical activities (Field, 2018). Secondly, for gender-stereotypical emotion expressions, the strong, negative association ($r = -0.75$) found between attitudes and flexibility in knowledge and attitudes aligned with child participants' gaining in both egalitarian attitudes and flexibility in knowledge and attitudes after exposure to stories challenging gender-stereotypical emotion expressions (Field, 2018). Therefore, these results together signify that the determinant factor for constructing children's flexibility in gender-stereotypical activities and gender-stereotypical emotion expressions may be different, which may be due to the different social significance between activities and emotion expressions in the Chinese preschool context as the student researcher previously mentioned. As a result, future research should explore the speculation with more details.

5.3 Stereotyped Playmate Selection

Addressing the third research question, findings showed that children in the current study in general demonstrated a low extent of stereotyped playmate selection before the storytelling activities. But even so, compared to child participants who listened to stories that align with gender-stereotypical activities, there was a trend towards decrease on average, though insignificant, in resistance to select same-sex playmates who love to participate in gender-inappropriate activities for child participants who listened to stories that challenge gender-stereotypical activities, supported by findings of case analysis. Among the five matched intervention-control pairs of child participants who demonstrated the same stereotyped playmate selection before the storytelling sessions, there was an evident indication that child participants who listened to stories challenging gender-stereotypical

activities demonstrated either lower extent of stereotyped playmate selection (three pairs) or equal extent of stereotyped playmate selection (two pairs) than child participants who listened to stories aligning with these gender stereotypes, without a single case that demonstrated higher extent of stereotyped playmate selection. Therefore, findings of general patterns and case analysis together imply that while playmate preferences tend to be flexible for modification, a storytelling intervention lasting for a longer time might be more effective in forming children's gender-neutral playmate preferences with a longer period for internalization, which should be investigated in future research. This result for the third research question also aligned with findings for the first research question. The weak but significantly negative association ($r = -0.33$) found between egalitarian attitudes towards gender-stereotypical activities and stereotyped playmate selection aligned with children's gain in egalitarian attitudes and decrease in stereotyped playmate selection after exposure to stories challenging gender-stereotypical activities (Field, 2018).

However, these results contradicted with findings of previous research on playmate selection. For example, although not investigating differences of playmate preferences for same-sex peers, the systematic observational study by Chen (2006) on playmate selection among Chinese rural preschoolers suggested that children tended to prefer engaging in gender-appropriate playing with gender-consistent peers. Additionally, the experimental study by Sorber and Cunningham (1999) on American urban preschoolers' playmate selection found that children living in families that less frequently expressed positive or negative emotions demonstrated gender-stereotypical playmate preferences more than children from high-expressive families. As emotion expression is discouraged in the Chinese culture (Matsumoto et al., 2008; Zhang et al., 2015), Chinese children were deemed to hold stereotyped playmate selection. The mismatching of results may imply that directly asking preschool children's playmate preferences may not reflect their actual behavior of playmate selection. Children as young as four years old might already engage in more subtle forms of discrimination. For example, rather than refusing to play with same-sex peers who carried out gender-inappropriate playing, children might initiate fewer physical and verbal interaction to these peers during play. As a result, future research might improve from the current methods to investigate preschool children's playmate selection more comprehensively by assessing their implicit playmate preferences as well as observing their

playing behavior when participating in different gender-stereotypical playing activities with same-sex peers.

5.4 Peer Perception of Emotion Expression

Addressing the fourth research question, results regarding peer nomination revealed subtle differences in perception of expression of anger and fear in peers, although more future research is needed as supplementary support for the summarized patterns. For nomination of angry peers, regardless of listening to stories challenging or aligning with gender-stereotypical emotion expressions, children in the current study on average tended to change from stating that no one displayed anger to nominating at least one male peer who displayed anger after the storytelling activities. Two potential explanations are implied from this result. Firstly, a social desirability effect might appear in the pre-test, in which child participants intended to avoid relating peers with the negative emotion of anger. But the stigmatization of expression of anger decreased in general after children were exposed to stories with a protagonist behaving angrily, regardless of the gender of protagonists. In other words, the increasing nomination of male peer(s) in the post-test may be the manifestation of children becoming more comfortable in expressing their real thoughts. Therefore, the present intervention tended to de-stigmatize the expression of angry emotion rather than resulting in a gender-neutral peer perception toward it. As a result, this de-stigmatizing trend implies that child participants tended to normalize and rationalize daily behavior by referring to plots in storybooks, offering supports to claims that preschool-aged children would actively connect factors in stories with their daily life (Hill & Bartow Jacobs, 2020).

Secondly, besides potential influence of social desirability effect, the result might reflect an actual learning process of perceiving emotion expression in peers. Due to the discouragement of emotion expression in the Chinese culture, children might not yet have an opportunity to reflect on how peers tend to express emotion in general. Listening to stories with human characters displaying angry emotion might allow children to learn and ruminate expression of anger by referring to themselves and peers around them. Therefore, a stereotypical peer perception toward expression of anger was reinforced. Such implication aligns with child participants' comments when listening to the story depicting a girl expressing anger, saying that, for example, 'she behaves like C (the name of a male peer).'

(see Appendix 13 for observational notes). As a result, future research must explore 1) whether a storytelling intervention that lasts for a longer time and contains more stories challenging expression of anger as masculine may be more effective in forming a gender-neutral peer perception in expression of anger, or 2) whether a storytelling intervention that contains stories depicting both genders rather than the unconventional gender only on expression of anger may be more effective.

Besides nomination of angry peers, for nomination of scared peers, children in the current study receiving stories challenging gender-stereotypical emotion expressions on average tended to change from stating that no one displayed fear to nominating both male and female peers who displayed fear after the storytelling activities. Therefore, the result implies that compared to expression of anger, expression of fear was less stigmatized among child participants and was more prone to alteration into gender-neutral peer perception. This implication can be explained by the willingness to maintain harmonious relationships in collectivistic cultures: while expression of angry is likely to break human relationships, expression of fear did not and could even improve human relationships (Matsumoto et al., 2008). As a result, future research must explore whether a storytelling intervention that lasts for a longer time and contains more stories challenging expression of fear as feminine may be more effective in forming a gender-neutral peer perception in expression of fear.

5.5 Additional Findings on the Influence of Contexts

Besides findings addressing the four research questions, the similar ratings of teachers and children in the current study on the direction of gender-stereotypical activities and gender-stereotypical emotion expressions in the masculine-feminine spectrum imply a powerful mutual influence of gender understanding on these activities and emotion expressions between child participants and their teachers in the Chinese preschool where this study was conducted. Because the Chinese culture endorses both social interdependence and hierarchy (Gabrenya & Hwang, 1996), it is reasonable to speculate from this result that a stronger and inevitable influence exists for teachers' gender consciousness on children. Indeed, children's formation of knowledge and attitudes towards gender performance is largely affected by gender-related beliefs and expectations from adults around them (Jones & Dindia, 2004). Therefore, it is likely that the awareness of building a gender-neutral

environment among teachers is indispensable for reducing gender-stereotypical beliefs and behavior among children. As feminist poststructuralist theory proposed, teachers need to understand power relations for improving gender issues related with agencies such as language and subjectivity (Foucault, 1980). As a result, future research should investigate how to design effective trainings for rooting gender-neutral awareness as well as pragmatic gender-neutral education among school staffs.

5.6 Limitation and Future Direction

This section addresses limitations in the current research as well as potential future directions extended from findings of the current research.

To begin with, in addition to individual learning differences, the findings might largely depend on child participants' ability to transfer learning from the two-dimensional representation in stories to three-dimensional objects and behavior in daily life (Barr, 2010). The more flexible child participants' mental representational system was, the more easily they could associate the two-dimensional and three-dimensional gender-stereotypical activities and emotion expressions together and thus performing well in the assessments. As a result, wider practical implications can be achieved by exploring two potential future directions: 1) the two-dimensional learning format can be enhanced by matching as much three-dimensional attributes as possible, such as the image and the voice of male and female characters; 2) three-dimensional learning formats can be adopted instead of two-dimensional learning formats. For example, instead of listening to stories while looking at illustrations, children can be asked to perform the story plots by role-playing.

Additionally, nuanced findings in preschool children's egalitarian attitudes towards gender-stereotypical activities and gender-stereotypical emotion expressions could be gained from two perspectives: 1) differences between boys and girls; 2) what do gender-egalitarian attitudes mean for children. Firstly, learning of egalitarian attitudes was found less effective for four- and five-year-old male children compared to female children because of male children's tendency to defend their perceived superiority (Flerx et al., 1976). Therefore, future research can explore whether and how four-year-old boys and girls gain egalitarian attitudes differently towards gender-stereotypical activities and gender-stereotypical emotion expressions, revealing whether a perceived hierarchy exists for each item. Secondly, future

research can investigate whether children perceive 1) high masculinity and high femininity, or 2) low masculinity and low femininity, in activities and emotion expressions when demonstrating gender-egalitarian attitudes, which can bring practical implications for career development because students in Chinese vocational schools with high masculinity as well as high femininity were found advantageous in job seeking (Guo, 2006).

Lastly, subtle findings could be yielded from child participants' peer perception of emotion expression if exploring meanings of different answers for no nomination. For example, what did child participants mean when they stated that no one in their class would express anger? Meanwhile, what did child participants mean when they agreed that someone in their class would express anger but failed to offer any nomination? These findings can offer insights in how emotion expression was gendered and socialized in the Chinese culture.

Chapter 6. Conclusion

In conclusion, the present study aims to investigate how stories challenging gender-stereotypical activities and gender-stereotypical emotion expressions modify four-year-old Chinese urban preschool children's knowledge and attitudes on these gender-stereotypical items, playmate selection on peers preferring these gender-stereotypical activities, and peer perception of these gender-stereotypical emotion expression. From analysis of general patterns and matched pairs, while resistance of alteration was shown for some measures such as the knowledge of gender-stereotypical emotion expressions, the insignificant but emerging trends of alteration shown on other measures indicate either the individual variability among child participants or the potential effectiveness of a longer storytelling intervention. Practically, educational practices on gender equality, such as the storytelling intervention of the current research, should be applied in preschool children's daily life experience. However, there seems to have much to improve in early education in China on gender equality education even though it is encouraged and supported by Chinese government.

Early education, especially teachers in preschool, should take the responsibility in creating a safe environment for children to practice gender-bending, breaking the restriction of traditional gender norm. But at the same time, there is a need to explore the equilibrium of

gender-neutral educational practices and traditional gender expectation in the Chinese culture. Even with strong supports from the preschool principal and active marketing by the student researcher in the recruitment process, only 57% target guardians signed up the storytelling intervention for their kids with exposure to the research objective – reducing gender stereotypes among children. Importantly, these parents and children are in the middle-class urban group in China, who are deemed to have above-average socio-economic status, open-mindedness, and educational level among Chinese. However, it appears that they on average tended to hold conservative attitudes towards gender egalitarianism.

There is still a long journey to go in figuring out the most culturally appropriate way for Chinese people to achieve gender equality since preschool age. Only if children stop compromising with obeying the gender norm could boys and girls become free from restriction of opportunities such as in learning and working. Therefore, with less gender labeling, a more diverse, inclusive, and friendly society could be built.

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Appendices

Appendix 1a – CUREC 2 Form

SECTION A. RESEARCH DETAILS	
1. Full title of research	Preschoolers' gender attribution, peer perception, and playmate selection when conventional gendered activities and emotion attribution are challenged -- an exploratory study.
2. Short title (for use on participant-facing documents)	*fa xian bu tong de wo men (发现不同的我们)* (Discovering many different us)
3. Principal Investigator / Student Supervisor	xxx
4. PI's training/experience in research ethics and/or research integrity	Attended research integrity training courses during doctoral studies in the University of Portsmouth (UK), as a Newton Fellow (British Academy and Royal Society) at the University of York and University of Oxford (UK), and within the current role in the department of education.

	Has led the foundations of education research module for Masters students in the area of chid development and education. This course includes the areas of research ethics and research integrity. Has been research advisor to Masters and Doctoral students. Has conceptualised Ethics courses.
5. Student name and degree programme (if applicable)	xxx MSc in Education – Child Development and Education
6. Department/Institute name	Department of Education
7. University email address	xxx
8. University telephone number	xxx
9. Funding Source (required for ethics team use)	/
10. Do any researchers have any Conflicts of Interest?	No

SECTION B. RESEARCHERS	
1. Researcher title and name	xxx
2. Department / Institute name or affiliation	Department of Education
3. Role in Research	Principal investigator

4. Training/Experience in Research Ethics and/or research integrity	Attended research integrity training courses during doctoral studies in the University of Portsmouth (UK), as a Newton Fellow (British Academy and Royal Society) at the University of York and University of Oxford (UK), and within the current role in the department of education.
1. Researcher title and name	xxx
2. Department / Institute name or affiliation	Department of Education
3. Role in Research	Student researcher
4. Training/Experience in Research Ethics and/or research integrity	2016: Mandatory ethics training for BSc. Psychology undergraduates at University of Toronto (TCPS 2: CORE by Government of Canada). 2020: Mandatory ethics training for MSc. Education graduates at University of Oxford. 2021: Compulsory ethics and integrity training for researchers at University of Oxford.

SECTION C. BASIC INFORMATION	
1. Brief lay summary of research (Maximum 300 words)	This research draws on the "Outline of Development of Chinese Children (2011-2020)" developed by the State Council of the People's Republic of China. Among the five fundamental principles in this document is the advocacy for creating an equal social environment for children, and ensuring that children are not discriminated or judged by their identities, including gender. In the "Strategies and Measures" section, the State Council list the need to enhance the awareness of gender equality in Chinese society and to ensure educational policies are not designed if against gender equality. Furthermore, the earlier "Outline of Development of Chinese Children (2001-2010)"* encouraged the incorporation of content that aims to raise awareness of gender equality into the educational

	curriculum. However, many published Chinese storybooks for preschoolers fail to portray boys and girls equally, which forms and strengthens children's preliminary stereotypical perception and beliefs about gender. Gender stereotypes restrict the role children would play in daily life and in later selection of a career path. This study will explore whether an intervention of reading stories that challenge conventional gendered activities and emotions could effectively increase gender egalitarianism among preschoolers. The ultimate purpose of this research is to allow children to be aware of and accept the diversity of peers' hobbies and personalities, for reducing gender stereotypes. The research question of this study is: what are preschoolers' gender attribution, peer perception, and playmate selection when conventional gendered activities and emotion attribution are challenged? *A 3-week 20-minute storybook intervention for a total of 120 minutes will be carried out for children in the second- and third-year groups in a preschool. Before and after the intervention, children will be asked to do a 15-minute assessment combining paper and pencil tasks and verbal or aural tasks, with answers recorded digitally by the student researcher.* *http://www.scio.gov.cn/ztk/xwfb/46/11/Document/976030/976030_5.htm *http://www.scio.gov.cn/xwfbh/xwbfbh/wqfbh/42311/42690/xgzc42696/Document/1674866/1674866.htm
2. List all places where research will be conducted (including online)	*xxx*
3. Anticipated research start	May 13th, 2021

date	
4. Anticipated research end date (n.b. A maximum of 5 years approval can be granted)	August 13th, 2021
5. Please list any CUREC Approved Procedure(s) you will follow	AP25-Non-invasive methods with children as participants in institutional and non-institutional settings
6. Please list any CUREC Best Practice Guidance used to develop your research	BPG09-Data collection and management
7. Please list any Professional Guidelines used	British Educational Research Association: Ethical Guidelines for Educational Research British Psychological Society Standards and Guidelines
8. Name of departmental / peer reviewer (if applicable)	/

9. Will you submit, or have you submitted, this research for ethical review or consideration elsewhere (e.g. local or collaborator's ethics committee, or other local approval)?	There are four reasons why an ethical review has not been taken in China: 1. The research site – xxx – is an independent private school that is subsidiary of a UK based school – xxx. Therefore, the Ethics clearance from University of Oxford is preferred by the school. 2. The current research is a straightforward short-term project that covers a topic of importance in the national policy in China. 3. The format of this project (i.e. paper and pencil assessment and storybook intervention) is unlikely to cause significant problems. 4. It is also not feasible for an international school to be provided ethics review by a local body for an activity on their campus.

SECTION D. PARTICIPANTS (n.b. where there is no contact with human participants (in person or virtual) and no observation of them, but only use of data about them, please omit this section, and complete section I instead)	
1. Age range of participants	4-6 years old preschoolers (with a small number of children between 3 years 8 months and 4 years) and adult preschool teachers.
2. Are research participants classed as people whose ability to give free and informed consent is in question? e.g. those under 18, prisoners, or adults 'at risk'	4-6 years old preschoolers are classed as people whose ability to give free and informed consent is in question. These participants are under 18, so their guardians will provide consent on behalf of the participants.

3. Anticipated number of participants	50 preschoolers and 12 preschool teachers.
4. Inclusion Criteria	4- to 6-year-old children in the first year group of preschool (i.e. K1) in xxx and with parental consent to participate. All teachers in the first year group of preschool (i.e. K1) in xxx who give free and informed consent.
5. Exclusion criteria	Children whose parents do not return the opt-in form are excluded. Teachers who do not give free and informed consent at the first page of the online questionnaire are unable to complete the online questionnaire. They are automatically excluded.
6. Please mark 'X' against all planned recruitment methods Provide copies of all recruitment material for review	Poster advert ☐ Flyer ☐ Email circulation ☒ In-person approach ☐ Website ☐ Social media (e.g. twitter, Facebook) ☒ Snowball sampling (recruiting through contacts of existing ☐ Newspapers ☐ Research recruitment sites (e.g. Prolific Academic, Amazon ☐ Existing departmental contacts or volunteer database ☐ Other (please specify below) ☐
7. How will recruitment material be distributed?	WeChat is the most commonly used communication tool in China. It is naturally used both for casual chat and for work communication. In xxx, email is also used among staffs, as well as between the school and parents, but only under the purpose of formal communication (e.g. sending important notice and newsletter). Recruitment material with research introduction have been developed (Appendix 1a and 1b). A site approval form will be sent to the principal for signature once the CUREC form has been approved (Appendix 1c).

8. Once identified, how will potential participants be approached and invited to take part?	After receiving consent from the principal, the preschool will send out a digital poster (Appendix 2a, 2b) and a digital opt-in form (Appendix 2c, 2d) via email on behalf of the student researcher to all guardians of K1 students. The poster will contain the research introduction. The opt-in form should be returned before a specific date, and withdrawal after this date is accepted. All teachers in K1 will be introduced to the research in-person during a meeting. This meeting will be moved to a remote session if the pandemic situation returns to the region and risk assessment suggests face-to-face sessions must be cancelled. The link of the online questionnaire will be sent into the WeChat group containing the student researcher and these teachers after the meeting for voluntary and anonymous completion.
9. How will consent be obtained from participants in the research or their parents/guardians?	Guardians who want their child to participate in the research will be asked to send the digital opt-in form (Appendix 2c, 2d) or return the opt-in form in printed paper to the child's teachers within 3 days, in whatever way they feel comfortable with. Children whose guardians return the opt-in form will become participants in the intervention and the assessments. Participants will be asked for verbal assent before the pre-test, each intervention session, and the post-test. For pre-test and post-test, verbal assent will be asked twice: 1) at the beginning of the interaction between the researcher and the child prior to leading the child into the test room, 2) before the formal assessment begins. The assent form (Appendix 2e) will be recorded by the student researcher digitally. Consent from guardians and assent from the child will be equally considered.

	Teachers who are willing to complete the online questionnaire must provide free and informed consent at the first page of the questionnaire, and their data will be anonymized automatically with an alphanumeric number.

SECTION E. RESEARCH METHODOLOGY			
1. Please mark 'X' against the methods that will be used in your research Ensure you address each method you will use in your informed consent documents and on this form			
Use of casual or local workers (e.g. interpreters)	☐	Audio recording of participant	☐
Interview	☐	Video recording of participant	☐
Focus group	☐	Photography of participant	☐
Participant completes questionnaire in hard copy	☐	Physiological recording from participant	☐
Participant completes online questionnaire or other online task	☒	Taking a sample of blood or other bodily fluid from a participant	☐
Use of social media	☐	Participant observation	☐
Analysis of existing records	☐	Covert observation	☐
Participant performs verbal or aural task	☒	Systematic observation	☐
Participant performs paper and pencil task	☒	Observation of specific organisational practices	☐
Participant performs computer based task	☐	Other (please specify below)	☐
Measurement/recording of motor behaviour	☐		

2. Give an account of the research as experienced by the participants

Preschool teachers:

The student researcher will create a WeChat group for all participants. A link of the online questionnaire will be sent to the group, with researcher emphasizing its voluntary participation and anonymity. The group will be used for communication (e.g. raising concerns, proposing suggestions) between the student researcher and teachers till the end of the research.

Participants will be asked to complete the questionnaire before the intervention begins. The questionnaire takes 5-10 minutes to finish. In the questionnaire, participants will be asked to rate the masculinity/femininity of activities that preschoolers often participate in and emotions that preschoolers often expressed (Appendix 3).

Preschoolers:

Pre-test: 15 minutes per child

Participants will take the test individually. Each child will be greeted by the student researcher outside of the test room. After giving verbal assent, the child will be led to sit on a chair facing the wall, with a table in front. The student researcher will then chitchat with the child (e.g. "What's your name", "Are you feeling good today", "I love your shoes"). After ensuring the child is relaxed and comfortable with the environment and the session, the student researcher will ask if him/her is willing to "play some games". After getting verbal assent, the child will be offered clear instruction and knowledge testing questions before each task begins. With a total of three tasks – gender attribution task, playmate selection task, and peer nomination task (Appendix 4a, 4b, 4c), the student researcher will insert two breaks in the middle. After finishing all tasks, the child will be thanked with a sticker and be led out of the test room.

When the child refuses to follow the instruction during the test, the student researcher will explain the instructions again. When the child shows signs of negative emotion (e.g. disinterested, no response, crying) during the test or refuses to continue the test at any point, the student researcher will comfort him/her and end the test immediately. Praises and encouragement will also be given to children who did not complete the test.

Intervention: 20 minutes per session over 3 weeks

Participants will attend the 20-minute storybook session led by the student researcher for 3 consecutive weeks. The storybook session will be carried out with approximately 15

children in a group. Before the session begins, children who do not opt in of the research will be taken to the playground by one of the teachers in class.

At the beginning of each storybook session, children will be greeted by the student researcher. After feeling all the children are relaxed and comfortable, the student researcher will start to tell the story. At the same time, pictures will be shown on the computer screen as a story deck. Stories will be directly taken from published storybooks (priority will be given to storybooks in the market that are used in the research site). These are the stories for the control group. Stories for the intervention group will be adapted from stories selected for the control group by changing the gender of characters.

After listening to the story, children will be asked to split into groups of 3-4. They will be introduced to the 'Q&A games' and its rule: after listening to each question asked by the student researcher, each group can send a representative to whisper an answer in student researcher's ear. Also, children will be asked if they want to compete against other groups for winning points. The total points of each group will be announced after every three questions. Questions will include content recall questions (e.g., "What did the character do?") and reflection questions (e.g. "Do you think the character is capable to do that? Why?").

At the end of each session, all children will be thanked with a sticker and praised with their attention and engagement. They will be informed of the time of the next session.

Post-test: 15 minutes per child

Post-test will be carried out in the same way as pre-test.

3. Will the research include any audio, video or photographic recordings?

No

4. Please detail any expenses or gifts that will be offered to participants

Each child participant will get a sticker after the pre-test, each storybook session, and the post-test. The content of stickers will be gender neutral such as fruits and landscapes.

SECTION F. ETHICAL CONSIDERATIONS For guidance on ethical issues, please see http://researchsupport.admin.ox.ac.uk/governance/ethics/resources *(N.B. To complete, double click on the check boxes and select 'checked')*		
1. Will the research involve any vulnerable participants (e.g. children, elderly, prisoners, adults "at risk")? **If yes,** please describe how they are defined as vulnerable and detail any CUREC Approved Procedures or guidance that will be applied to the research (for current documents and templates see https://researchsupport.admin.ox.ac.uk/governance/ethics/resources). In particular, please state why either CUREC Approved Procedure 15 or 25 cannot be applied wholly to your research.	Yes ☒	No ☐
Yes, the research will involve 4- to 6-year-old children. Child participants are defined as vulnerable because they lack the autonomy and decision making capacity to ethically consent to participate in the research and to understand and assume the risks of research.		
2. Will unequal relationships exist between participants and those obtaining informed consent? **If yes,** describe the nature of the unequal relationship and how arising ethical issues will be addressed	Yes ☒	No ☐
Child participants may perceive an unequal relationship to exist between them and the student researcher as a result of age and position within the preschool. The power imbalance will be reduced in three ways: 1) The student researcher will always explicitly ask for verbal assent before every part of the research, exerting no pressure on children to attend the research or answer questions that make them feel uncomfortable. 2) The student researcher will always engage with child participants in a gentle and nurturing way. Their feedback and feelings toward each part of the research will always be asked and considered. 3) The storytelling will focus on shared reading rather than teaching, and children are able to share their own thoughts in the later "Q&A games" through answering reflection questions. Also,		

the content of storybook intervention is easily accessible.

Parents of child participants may perceive an unequal relationship to exist between them and the student researcher as a result of education level. The power imbalance will be reduced in two ways: 1) The research will be introduced explicitly to each parent in email, along with the contact information of the student researcher and the principal investigator for questions or concerns. 2) At the end of every school day when the storybook session is carried out, the student researcher will stand at the school gate for parents' easy approach for greetings or to express concerns.

Teachers may perceive an unequal relationship to exist between them and the student researcher as a result of education level and position within the preschool. The power imbalance will be reduced in three ways: 1) All teachers will be introduced to the research explicitly in a face-to-face meeting before everything starts, which will be emphasized as a joint effort rather than the sole contribution of the student researcher and the principal investigator. Each of their feedback and concerns will be strongly recognized, and they are welcomed to contact the student researcher for any suggestion. The student researcher will make sure every teacher is comfortable and clear with every step in the research. 2) Teachers are welcomed to stay in the classroom during each storytelling session. 3) Teachers in each class will be approached by the student researcher at the end of each week for feedback and stating of any concerns.

It is anticipated that the research will not exacerbate the presence of already unequal relationships between teachers and students within the school. However, calling out gendered way of behaving in daily life can trigger potential conflicts, unhappiness, and challenge traditional positioning around gender roles. Should the research topic be upsetting to any adult they are welcome to withdraw from the research. This will be expressly informed in all meetings that may arise as a result of the discomfort.

3. Will the research involve questions and/or discussions of contentious and/or sensitive issues (e.g. information relating to ethnicity, political opinions, religious beliefs, physical/mental health or sexual life)?	Yes	No
	☒	☐

If yes, please justify why this is required and provide the questions (or an outline of them) raising the issues that will be used in your research.

Preschool teachers:

The online questionnaire for preschool teachers will ask teachers to rate the masculinity/femininity orientation of activities and emotions in preschool context.

Preschool children:

Questions:

- Q1: "Here is a picture of (object name). Who would use (object name) to (activity name), boys, girls, or boys and girls?"/ "Here is a picture of a (emotion name) face. Who would have a (emotion name) face, boys, girls, or boys and girls?"
- Q2: "Why do you think these are for boys and these are for girls?" (this question follows from the above question and is related to the object/emotion under discussion)
- Q3: "This is (a gender-neutral name), he/she loves to use (object name) to (activity name). Do you want to make friends with him/her?"
  → If yes: "How much do you want to make friends with him/her?
  → If no: "How much you don't want to make friends with him/her?"

The research explores preschoolers' gender stereotypes, which is considered as a sensitive topic. The questions above are necessary to ask because: 1) Questions for preschool teachers are indispensable for designing the most appropriate content for the intervention. 2) Questions for preschoolers are indispensable for gaining research knowledge about stereotypic thinking and its acquisition. For example, the questions for preschoolers yield understanding on whether preschoolers attribute object/activity/emotion to a specific gender (Q1), the logic behind children's gender attribution (Q2), and whether their rating for same-sex playmates who love to

engage in conventional masculine/feminine activities (Q3). These knowledges are crucial for increasing theoretical understanding – identifying the development of gender stereotypes – and for increasing practical understanding on how to design a gender-neutral education curriculum in Chinese preschool.		
4. Will taking part in the research put participants under any particular burden and/or risk (including risk of prosecution)? **If yes,** describe how risks will be mitigated. If there is a risk of prosecution to the participant, justify why incriminating data are sought	Yes ☐	No ☒
/		
5. Will the research involve deliberate deception of participants outside the scope of CUREC Approved Procedure 07? **If yes**, justify why deception is used, describe deception and debriefing process, and include debriefing documents in the application	Yes ☐	No ☒
/		
6. Could the proposed research affect your own physical and/or psychological safety as a researcher? **If yes,** describe how you will manage this.	Yes ☐	No ☒
/		
7. How will you ensure the research is conducted according to the details given in this form?		
Before the research starts, the process of research will be written down in detail. The draft design of research procedure will be piloted and a detailed process document of how each part of the script is materialised will be written up and thoroughly discussed. Following this the final design for each step of the research will be followed.		
8. Please give details of any other ethical and/or safety considerations		
1) Currently, schools in mainland China, including the research site, are operated normally. All in-person research activities will be ended either with		

appearance of a single case in the research site or with relevant changes in policies by the local government,

2) When sitting across a table during assessment, all activity materials will be sterilized with alcohol for each child. Children will be helped to wash hands before and after assessment. The student researcher will follow the same protocol.

3) The student researcher had already received vaccination for Covid.

4) Any incidents related to pandemic (e.g. the student researcher begins to show symptoms of Covid) will be immediately reported to the University through Incident Reporting and Investigation System (IRIS).

9. How do you propose to deal with / handle any incidental findings?

The student researcher has a Duty of Care. In discussion with my supervisor, I state that the level of my Duty of Care as a researcher is to report anything the children disclose about harm happening to them or any other children. In addition, we now have access to the 'Safeguarding and Child Protection Policy' of the research site (attached in the email). Specifically, the protocol I will follow if there are any incidental findings that suggest harm to a participating child or another child, is to inform my supervisor and together we will fill out the 'Safeguarding & Child Protection Record of Concern' (i.e. Appendix 1 in the policy document) and send it to the preschool's Designated Safeguarding Lead and Deputies.

10. Will any data or information from this study be provided to individual participants?

No

SECTION G. OTHER CONSIDERATIONS		
1. Is any part of this research being conducted overseas? **If yes,** please give details below. Ensure you complete and submit a travel risk assessment form to your departmental safety officer, if your department requires this. (This is necessary to ensure the travel/fieldwork is covered by the University's travel insurance – see http://www.admin.ox.ac.uk/finance/insurance/travel/) Please also address any physical or psychological risks for Oxford researchers and local fieldworkers in the 'Ethical Considerations' section above and discuss these with your safety officer.	Yes ☒	No ☐
The entire research will be carried out overseas in Shenzhen, Guangdong Province, China. This is the student researcher's hometown and where she is currently based in with her family.		
2. Does your research raise issues relevant to the Counter-Terrorism and Security Act (the Prevent Duty), which seeks to prevent people from being drawn into terrorism? **If yes,** please say how you plan to address any related risks. Please see advice on this on our Best Practice Guidance Web Page.	Yes ☐	No ☒
/		

SECTION H. DATA MANAGEMENT AND HANDLING

All information provided by participants is considered **research data** for the purpose of this form. Any research data from which participants can be identified is known as personal data; any personal data which is sensitive is considered special category data. Management of personal data, either directly or via a third party, must comply with the requirements of the General Data Protection Regulation (GDPR) and the Data Protection Act 2018, as set out in the University's Guidance on Data Protection and Research. In answering the questions below, please also consider the points raised in the Data Protection Checklist and whether, for higher-risk data processing, a separate Data Protection Impact Assessment (DPIA) may also be required for the research. Advice on research data management and security is available from Research Data Oxford and your local IT department. Advice on data protection is available from information.compliance@admin.ox.ac.uk.

1. **Please mark 'X' against the data you will collect for your research**

Screening documents	☐	Audio recordings	☐
Consent records including participant name (written consent forms, audio-recorded consent, assent forms (for research involving minors)) *For child participants*	☒	Video recordings	☐
Online consent (may be anonymous) *For teacher participants*	☒	Transcript of audio/video recordings	☐
Opt-in forms *For child participants, filled by parent.*	☒	Photographs	☐
Contact details for research purposes only (destroyed when no longer needed for this research)	☐	Information about the health of the participant (including mental health)	☐

Contact details kept for future studies	☐	Physiological test results / measurements	☐
Field notes	☐	MRI scans	☐
Questionnaire answers *For teacher participants*	☒	Other (please specify below)	☐
Task results (e.g. paper/online tasks, diary completion) *For child participants*	☒		

2. For <u>each of the types of data selected above</u>, state how this will be physically transferred from where it is collected to a secure local storage site (and backed up as necessary). This includes both paper records and data captured electronically.

All digital opt-in forms along with a digital version of any opt-in forms in paper from parents of child participants will be stored safely and securely as encrypted files in the department-provided storage system (e.g. Nexus365 OneDrive).

Online consent and online questionnaire answers from teacher participants will be exported from the online questionnaire website – *Wenjuanxing*, which is the most commonly used online questionnaire platform in China for academic purpose. All the data will be stored safely and securely using encrypted files in the departmental-provided storage system (e.g. Nexus365 OneDrive).

All assent forms, answers of paper and pencil tasks, answers of verbal and aural tasks from child participants will be digitally recorded by the student researcher. They will be stored safely and securely using encrypted files in the department-provided storage system (e.g. Nexus365 OneDrive).

3. How and where will each type of data be stored whilst the research is ongoing (until the end of all participant involvement)? Describe the arrangements for ensuring confidentiality, i.e. location of storage (e.g. Nexus 365 OneDrive for Business, SharePoint), security arrangements and de-identification of such data. Do not store unencrypted data in freely available cloud services or unprotected USB drives.

Student researcher will transfer all digital opt-in forms to departmental-provided storage system (e.g. Nexus365 OneDrive) on a daily basis. The opt-in forms in paper will be

transferred into digital version to store in departmental-provided storage system (e.g. Nexus365 OneDrive) on a daily basis, and all the papers record will be stored under lock and key in a cupboard in the student researcher's home-office and will be destroyed on August 14th, immediately after the research ends.

Before the designated deadline, all online consent and online questionnaire answers from teacher participants will be stored in the online questionnaire website. These data will all be anonymised. After the deadline, they will be exported and stored in departmental-provided storage system (e.g. Nexus365 OneDrive).

All assent forms, answers of paper and pencil tasks, and answers of verbal and aural tasks from child participants will be digitally recorded by the student researcher. Any personal information that could directly identify an individual will not be recorded. These data will be organized and stored in the department-provided storage system (e.g. Nexus365 OneDrive) twice a day (i.e. at 12:00 p.m., 6:00 p.m.).

The list of child participant names against numbers will be digitally recorded by the student researcher. These data will be organized and stored in department-provided storage system (e.g. Nexus365 OneDrive) twice a day (i.e. at 12:00 p.m., 6:00 p.m.).

4. Will you use a unique participant number on research data instead of participant name?

If yes, state whether or not you will retain a list of participant names against numbers (pseudonymisation via a linkage list). Where will the list be stored, and when will it be destroyed?

Yes, a unique identifier will be used for each child participant and each teacher participant. A list of participant names against numbers will be stored safely and securely using encrypted files in departmental-provided storage system (e.g. Nexus365 OneDrive). The digital file with participants' exact names will be destroyed on August 14th, immediately after the research ends.

5. Who will have access to the research data?

The student researcher and the principal investigator will have access to the data.

6. If research data is to be shared with another organisation, how will it be transferred / disclosed securely?

/

7. When and how will identifiable data (including audio/video recordings & photos) be destroyed or deleted?		
/		
8. Please confirm that you will store other research data safely for at least 3 years after final publication or public release and adhere to any additional research funder policies. For more information about the University policies, please see the University's web pages on research data management. **If 'Yes'**, please give details of who will store the data and on storage format, location and security. **If 'No'**, please provide further details.	Yes ☒	No ☐
After publication of the academic thesis, the student researcher will store research data in Open science archive. Practices of Open research data will be followed (https://www.universitiesuk.ac.uk/policy-and-analysis/research-policy/open-science).		

SECTION I. RESEARCH INVOLVING SECONDARY USE OR DISCLOSURE OF PERSONAL DATA OR SPECIAL CATEGORY DATA This section of the form is **only to be completed** for research activity (as part or all of the research) where there is no contact with human participants (in person or virtual) and no observation of them, only use of data about them. Your research must meet the standards laid down in the Data Protection Act 2018 with respect to the collection, use, and storage of personal data about human participants.		
1. Will you seek data access agreements for these data? **If yes,** • List the individual(s) or organisation(s) from which the information will be sourced • Attach a copy of the agreement with the individual(s) or organisations in question • Provide details of any conditions imposed by the organisation(s) concerning the release of the information **If no,** please explain how and when the agreement of the disclosing organisation(s) will be obtained	Yes ☐	No ☐
/		
2. Could these data be linked back to an individual or individuals? **If yes,** • Please explain why data cannot be collected in a way that prevents linkage with an individual/individuals • Say how individual consent was obtained for the collection, use or disclosure of linkable data **If no,** you do not need to complete the rest of this section	Yes ☐	No ☐
/		

3. How will any personally identifiable data be transferred to you? Please describe the arrangements for any physical transfer of personal data (including paper records and data captured electronically via portable media) from where you are obtaining it to local storage
/
4. Where, and for how long, will personally identifiable data be stored during and after the research? Please outline procedures for ensuring confidentiality, e.g. security arrangements, pseudonymisation etc.
/
5. Who will have access to the personally identifiable data? If data is to be shared with another organisation, other than the researchers listed, how will it be transferred / disclosed securely
/
6. When and how will personally identifiable data be destroyed?
/

SECTION J. PUBLICATION AND DISSEMINATION OF RESULTS	
1. How will you disseminate project outcomes at the end of the research?	The research results will be presented in an academic thesis which will then be archived in archives such as the Bodleian and Open science. Practices of Open access (OA) and open research data will be followed. If conditions for journal publication are satisfied, the academic thesis can be published. The academic thesis will be shared with teachers and parents in the research site through an optional workshop for teachers and even for parents. The material will be written in simple language and will discuss study findings and implications related to gender-neutral education. The academic thesis will be summarized in a short, engaging, and easy-to-understand article by the student researcher and principal investigator. The lay article can be published on WeChat Public Platform with relevant tags for easy access of Chinese people.

SECTION K. ADDITIONAL QUESTIONS FOR APPLICATIONS TO THE MEDICAL SCIENCES IDREC	
1. List any standardised questionnaires that will be utilised (there is no need to send a copy)	/
2. List any additional questionnaires designed by the researchers – a copy of these must be sent to the MS IDREC for review	/
3. Give details of any biological sample(s) that will be taken (e.g. blood, urine, saliva, faeces)	/

DECLARATIONS AND SIGNATURES
In providing signatures, the IDRECs accept either:

Option 1: Email confirmations sent from a University of Oxford email address. Separate emails should be sent by each of the relevant signatories as outlined below, indicating acceptance of their responsibilities.

Option 2: That the form be fully-signed with handwritten (wet-ink) signatures. Please scan these and the rest of the form pages to create a single PDF document and email to us.

The form should be sent with Word versions of all documents by email to:

ethics@medsci.ox.ac.uk (for applications from the Medical Sciences and MPLS divisions)

ethics@socsci.ox.ac.uk (for applications from the Social Sciences and Humanities divisions)

Applications from departments with a departmental research ethics committee (DREC) should first be sent for initial review to the relevant DREC.

Pasted images of signatures cannot be accepted

PRINCIPAL INVESTIGATOR (AND STUDENT IF APPLICABLE)

I/We, the researcher(s):

- Understand our responsibilities as outlined on this form and in the CUREC glossary and guidance
- Agree to start this research only after obtaining approval from the IDREC;
- Understand that the Principal Investigator must ensure that all researchers are suitably qualified and trained to conduct the research described, or are appropriately supervised until deemed qualified/trained;
- Agree to provide additional information as requested by the IDREC before approval is secured and as research progresses;
- Agree to maintain the confidentiality of all data collected from or about participants;
- Agree to notify the IDREC in writing immediately of any proposed change to the research, and await approval before proceeding with the proposed change;
- Agree to notify the IDREC if the Principal Investigator changes and supply the name of the successor;
- Will use the data collected only for the research for which approval has been given;
- Will grant access to data only to authorised persons; and
- Have made arrangements to ensure that personal data collected from participants will be held in compliance with the requirements of the GDPR and the Data Protection Act 2018.

Principal Investigator (Name)	xxx
Principal Investigator (Signature) **(**Wet-ink signature, not pasted electronic image)	xxx
Date	26/03/3021
Student (Name)	xxx

Student (Signature) **(**Wet-ink signature, not pasted electronic image)	xxx
Date	26/03/2021

ACCEPTANCE BY HEAD OF DEPARTMENT/FACULTY OR DESIGNATED NOMINEE*

*Another senior member of the department may sign where the head of department is the Principal Investigator, or where the head of department has appointed a nominee. Example nominees include Deputy Head of Department, Director of Research, and Director of Graduate/Undergraduate Studies.

I have read the research proposal above. On the basis of the information available to me, I:

- consider the Principal Investigator/Supervisor and student researcher (if applicable) to be aware of their ethical responsibilities in regard to this research;
- am satisfied that the proposed design and scientific methodology are sound; the research has been subject to appropriate peer review and is likely to contribute to existing knowledge and/or to the education and training of the researcher(s) and that it is in the public interest.

Head of Department or designated nominee (Name)	
Head of Department or designated nominee (Signature) Wet-ink signature (not pasted electronic image) *or* The Head of Department/nominee can send an email (including PI name and study title) to ethics@medsci.ox.ac.uk or ethics@socsci.ox.ac.uk confirming the above	
Date	

Appendix 1b – Letter of Approval for CUREC 2 Form

SOCIAL SCIENCES & HUMANITIES INTERDIVISIONAL RESEARCH ETHICS COMMITTEE

Research Services, University of Oxford, Wellington Square, Oxford OX1 2JD
Tel: +44(0)1865 616576 Fax: +44(0)1865 280467
ethics@socsci.ox.ac.uk

27 May 2021

[redacted]
University of Oxford
15 Norham Gardens
Oxford, OX2 6PY

[redacted]

Research Ethics Approval (CUREC 2)
Ref No: R75517/RE001
Title: Preschoolers' gender attribution, peer perception, and playmate selection when conventional gendered activities and emotion attribution are challenged -- an exploratory study.

The above application has been considered on behalf of the Social Sciences and Humanities Interdivisional Research Ethics Committee (IDREC) in accordance with the procedures laid down by the University for ethical approval of all research involving human participants.

I am pleased to inform you that, on the basis of the information provided to the IDREC, the proposed research has been judged as meeting appropriate ethical standards, and accordingly approval has been granted.

Should there be any subsequent changes to the project that raise ethical issues not covered in the original application you should submit details to the IDREC for consideration: https://researchsupport.admin.ox.ac.uk/governance/ethics/apply/sshidrec#collapse394916.

Please note that your study may be selected for review by the SSH IDREC during an annual audit. You may also be required to submit a brief annual progress report on each anniversary of study approval, until the study is completed.

Yours sincerely,

Jennifer Blaikie
Research Ethics Manager

[redacted]

Appendix 2a – Research Introduction Sheet for the Research Site

Greetings from xxx,

It is my great honor to introduce the project that xxx and I will carry out in K1 classes at xxx.

Research project: a storybook activity to reduce gender stereotypes of preschoolers

Student researcher: xxx

- Master of Science in Education – Child Development and Education, University of Oxford'21; supervised by xxx (principal investigator)

Research purpose:

- Explore whether and how gender characteristics in storybooks affect preschoolers' gender attribution, playmate selection, and peer perception
- Reduce preschoolers' stereotypical attitudes toward masculine and feminine roles/characteristics, which could benefit socio-emotional and cognitive development

General information of the storybook activity:

- Delivered to K1 students in the class unit leading by xxx
- 12 sessions; 3-5 sessions/week, with each session lasting for 20 minutes - What will children do:
    - Listen to a story (with digital pictures shown), play "Q&A games" (answer content recall questions & reflection questions of the story)
    - A 15-minute entertaining assessment will be carried out twice for children individually (before and after the storybook activity)
        - Exploring gender attribution, playmate selection, and peer perception
- An online questionnaire will be sent to K1 teachers before the storybook activity begins
    - Results will be used to design the storybook activity o Entirely voluntary & anonymous

Procedure: online questionnaire & collection of parental consent 1st assessment → storybook activity → 2nd assessment

Additional information:

- All procedures of the research project have been examined and approved by ethics committee at University of Oxford (Ethics reference: R75517/RE001)
- Entirely voluntary
    - Before the research begins, a digital/printed poster describing the research (e.g. purpose, procedure) and an opt-out form for the project will be sent to parents
    - xxx's contact information will be provided for any inquiries
    - Students will be asked for oral assent before each assessment and each storybook session begins - Confidentiality ensured
    - All data collected will be anonymized and stored safely and securely using encrypted files in departmental-provided storage system of University of Oxford
- Results and conclusions will be shared with xxx

Appendix 2b – Site Approval Form

Site Approval Form

I have read the information in the document about the research study – "Discovering Many Different Us".

I understand that my school will be used as a research site and the researcher will only conduct the study on 1) K1 teachers who provide informed consent, 2) K1 children whose parents/guardians return the opt-in form for the research study. Teachers and children can withdraw from the study at any point by verbally informing the researcher after the research study begins.

I also understand that the study has approved by the ethics committee of University of Oxford. The confidentiality of children's information will be strictly and securely protected.

I hereby give the permission to the researcher for conducting the research study in my school.

Name of School _____

Signature of the School Principal _____ Date _____

Appendix 3a – Digital Poster to Guardians for Recruitment (English Version)

Dear K1 parents,

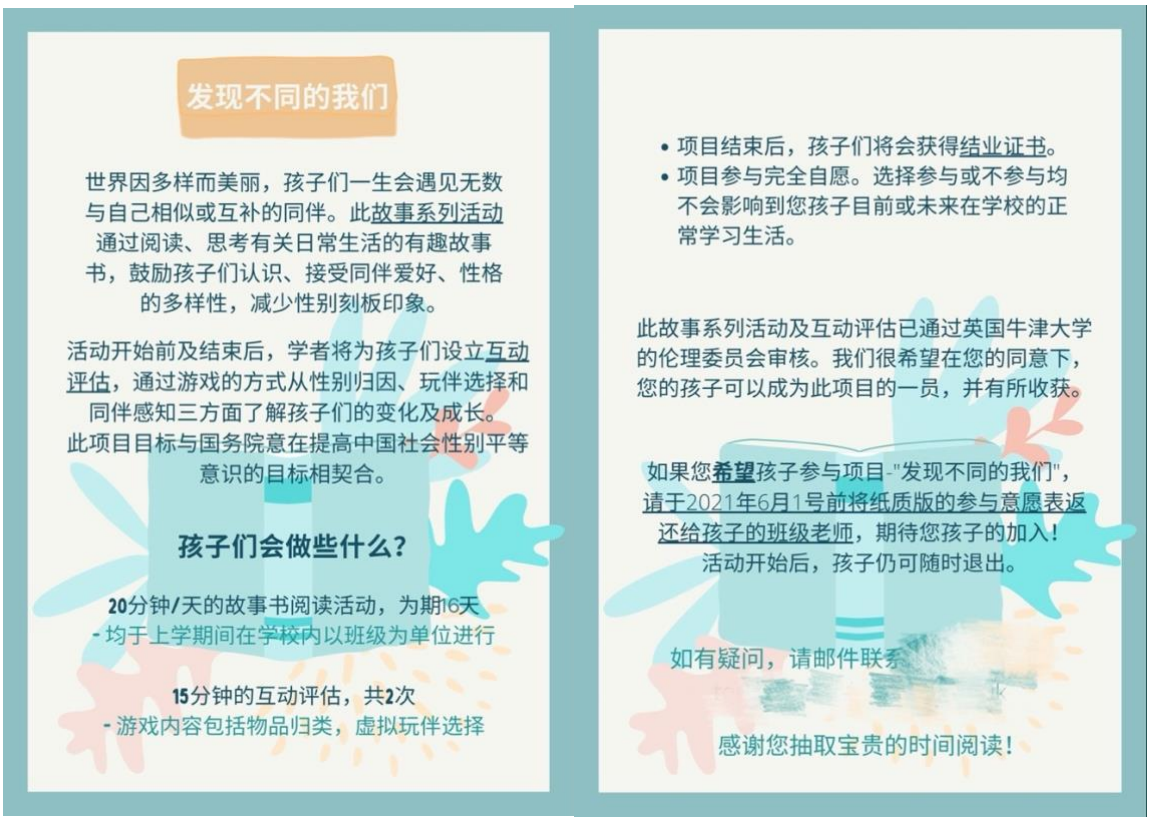
My name is xxx, a postgraduate student studying at University of Oxford. It is my great honor to introduce the project that xxx and I will carry out in K1 classes:



Appendix 3b – Digital Poster to Guardians for Recruitment (Chinese Version)

各位 K1 年级家长好：

我是 xxx，是英国牛津大学的一名在读教育学硕士研究生。很荣幸在此介绍我与 xxx 即将在 K1 年级开展的项目：



Appendix 3c – Digital Opt-in Form to Guardians for Recruitment (English Version)

Opt-in Form for "Discovering Many Different Us"

Greetings:

I understand that "Discovering Many Different Us" will be conducted in K1 classes in xxx. I **wish** my child _____ (name), _____ (date of birth), to be included in this project.

Signature of parents/guardians _____

Date of signature _____

Please return this opt-in form to your child's teacher before June 1st, 2021.

Appendix 3d – Digital Opt-in Form to Guardians for Recruitment (Chinese Version)

《发现不同的我们》参与意愿表

您好：

我了解到《发现不同的我们》将在 xxx K1 班级内展开，我**希望**我的孩子

_____（姓名），_____（出生日期），参与此项目。

家长/监护人签名 _____

签名日期 _____

请于 2021 年 6 月 1 号前将电子版或纸质版的参与意愿表返还给孩子的班级老师

Appendix 3e – Assent Form for Child Participants

CHILD ASSENT FORM

	MY RESPONSE	
I understand what these games are about.	YES	NO
I have no more questions about the games.	YES	NO
I understand that I can stop playing at any time.	YES	NO
I want to join the games and activities.	YES	NO

If any answers are “no” or you don’t want to take part, that’s OK! No one will be angry with you.

Student Name: _____

Date: _____

Write your name or leave a drawing in the box:

The researcher who explained this project to you needs to sign too:

Print Name: _____

Sign: _____ Date:

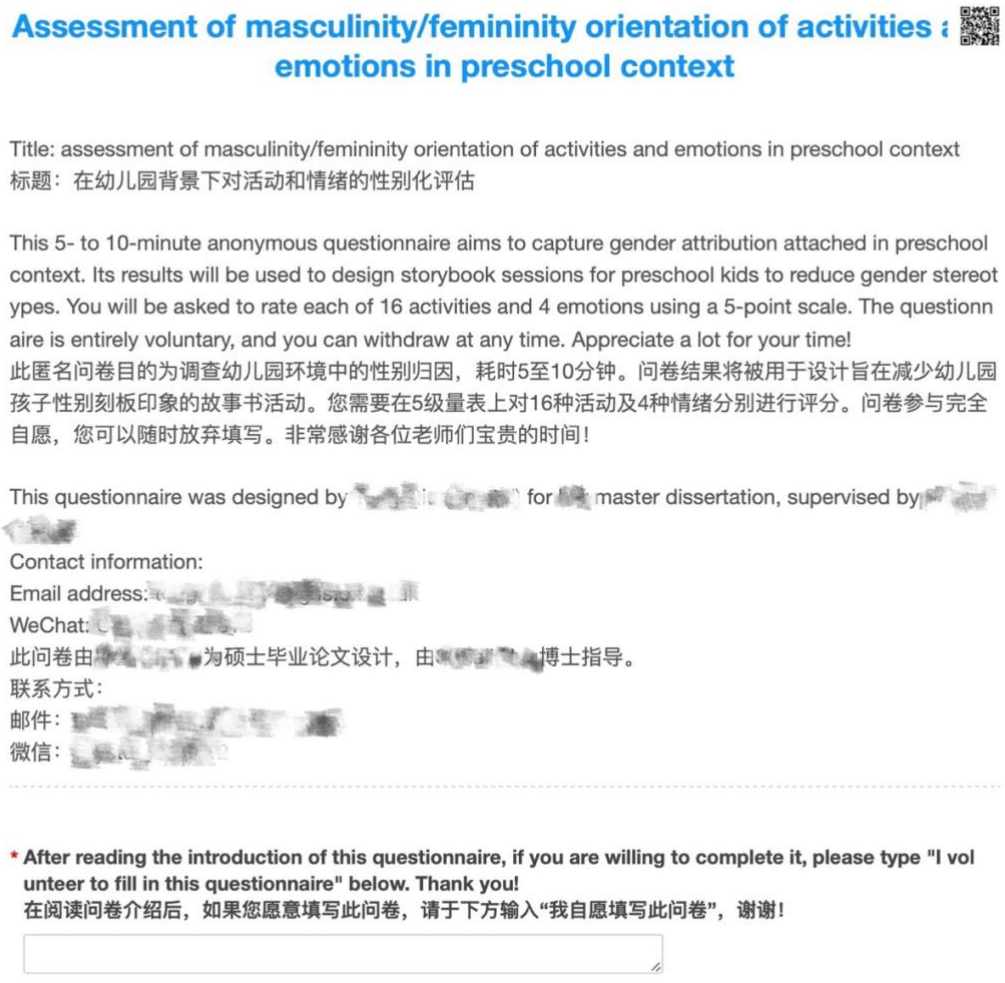
A witness will sign too:

Print Name: _____

Sign: _____ Date:

Thank you

Appendix 4 – Online Questionnaire for Teacher Participants



Assessment of masculinity/femininity orientation of activities a emotions in preschool context

Title: assessment of masculinity/femininity orientation of activities and emotions in preschool context
标题：在幼儿园背景下对活动和情绪的性别化评估

This 5- to 10-minute anonymous questionnaire aims to capture gender attribution attached in preschool context. Its results will be used to design storybook sessions for preschool kids to reduce gender stereotypes. You will be asked to rate each of 16 activities and 4 emotions using a 5-point scale. The questionnaire is entirely voluntary, and you can withdraw at any time. Appreciate a lot for your time!
此匿名问卷目的为调查幼儿园环境中的性别归因，耗时5至10分钟。问卷结果将被用于设计旨在减少幼儿园孩子性别刻板印象的故事书活动。您需要在5级量表上对16种活动及4种情绪分别进行评分。问卷参与完全自愿，您可以随时放弃填写。非常感谢各位老师们宝贵的时间！

This questionnaire was designed by [redacted] for [redacted] master dissertation, supervised by [redacted]
Contact information:
Email address: [redacted]
WeChat: [redacted]
此问卷由[redacted]为硕士毕业论文设计，由[redacted]博士指导。
联系方式：
邮件：[redacted]
微信：[redacted]

* **After reading the introduction of this questionnaire, if you are willing to complete it, please type "I volunteer to fill in this questionnaire" below. Thank you!**
在阅读问卷介绍后，如果您愿意填写此问卷，请于下方输入“我自愿填写此问卷”，谢谢！

Below are 16 activities that preschool kids often participate in. Please rate the masculinity/femininity orientation of each activity. **Your first thought is valued**. Appreciate a lot for your time!
以下是16个幼儿园孩子们经常参与的活动，请对每一项活动进行性别化评估。**您的第一感觉很重要。**非常感谢各位老师们宝贵的时间！

* **Reading storybooks 看故事书**

1: Masculine男性化, 2: Kind of masculine有些男性化, 3: Neutral中性, 4: Kind of feminine有些女性化, 5: Feminine女性化

Masculine 男性化 ○1 ○2 ○3 ○4 ○5 **Feminine 女性化**

* **Playing jigsaw puzzles 玩七巧板**

Masculine 男性化 ○1 ○2 ○3 ○4 ○5 **Feminine 女性化**

* **Playing with assembling building blocks 玩拼搭积木**

Masculine 男性化 ○1 ○2 ○3 ○4 ○5 **Feminine 女性化**

* **Doing handicrafts with scissors, color paper, and cotton balls 用剪刀、彩纸、棉球做手工**

1: Masculine男性化, 2: Kind of masculine有些男性化, 3: Neutral中性, 4: Kind of feminine有些女性化, 5: Feminine女性化

Masculine 男性化 ○1 ○2 ○3 ○4 ○5 **Feminine 女性化**

* **Dancing with music 跟着音乐跳舞**

Masculine 男性化 ○1 ○2 ○3 ○4 ○5 **Feminine 女性化**

* **Playing sand with sand shovels and buckets 用沙铲和桶玩沙子**

Masculine 男性化 ○1 ○2 ○3 ○4 ○5 **Feminine 女性化**

* **Playing cooking games with pots and ingredients 用锅和食材玩烹饪游戏**

1: Feminine女性化, 2: Kind of feminine有些女性化, 3: Neutral中性, 4: Kind of masculine有些男性化, 5: Masculine男性化

Feminine 女性化 ○1 ○2 ○3 ○4 ○5 **Masculine 男性化**

* **Riding tricycles 骑三轮车**

Feminine 女性化 ○1 ○2 ○3 ○4 ○5 **Masculine 男性化**

* **Holding teddy bears 抱着泰迪熊**

Feminine 女性化 ○1 ○2 ○3 ○4 ○5 **Masculine 男性化**

* **Playing on swings 荡秋千**

1: Feminine女性化, 2: Kind of feminine有些女性化, 3: Neutral中性, 4: Kind of masculine有些男性化, 5: Masculine男性化

Feminine 女性化 ○1 ○2 ○3 ○4 ○5 **Masculine 男性化**

* **Playing balls 玩皮球**

Feminine 女性化 ○1 ○2 ○3 ○4 ○5 **Masculine 男性化**

* **Observing insects with insect observation boxes 用昆虫观察盒观察昆虫**

Feminine 女性化 ○1 ○2 ○3 ○4 ○5 **Masculine 男性化**

* **Dressing up in fancy clothes/costumes 穿上华丽的衣服/戏服**

1: Masculine男性化, 2: Kind of masculine有些男性化, 3: Neutral中性, 4: Kind of feminine有些女性化, 5: Feminine女性化

Masculine 男性化 ○1 ○2 ○3 ○4 ○5 **Feminine 女性化**

* **Drawing with color pens 用彩色笔画画**

Masculine 男性化 ○1 ○2 ○3 ○4 ○5 **Feminine 女性化**

* **Playing water with buckets 用桶玩水**

Masculine 男性化 ○1 ○2 ○3 ○4 ○5 **Feminine 女性化**

* **Playing with toy cars 玩玩具车**

1: Masculine男性化, 2: Kind of masculine有些男性化, 3: Neutral中性, 4: Kind of feminine有些女性化, 5: Feminine女性化

Masculine 男性化 ○1 ○2 ○3 ○4 ○5 **Feminine 女性化**

下一页

Below are 4 emotions that kindergarten children often display. Please rate the masculinity/femininity orientation of each emotion. **Your first thought is valued**. Appreciate a lot for your time!
以下是4个幼儿园孩子们经常表现的情绪，请对每一项情绪进行性别化评估。**您的第一感觉很重要**。非常感谢各位老师们宝贵的时间！

* **Happy 开心**

1: Feminine女性化, 2: Kind of feminine有些女性化, 3: Neutral中性, 4: Kind of masculine有些男性化, 5: Masculine男性化

Feminine 女性化 ○1 ○2 ○3 ○4 ○5 **Masculine 男性化**

* **Scared 害怕**

Feminine 女性化 ○1 ○2 ○3 ○4 ○5 **Masculine 男性化**

* **Sad 伤心**

Feminine 女性化 ○1 ○2 ○3 ○4 ○5 **Masculine 男性化**

* **Angry 生气**

1: Feminine女性化, 2: Kind of feminine有些女性化, 3: Neutral中性, 4: Kind of masculine有些男性化, 5: Masculine男性化

Feminine 女性化 ○1 ○2 ○3 ○4 ○5 **Masculine 男性化**

Appendix 5a – Report of Pre-pilot Test

Date: May 5th, 2021

Participant information:

- Gender: female
- Age: 4 years 3 months
- Language: Mandarin

Summary:

The pre-pilot test was done for my little cousin at her home. There are two parts of the pre-pilot test: 1) Identification of testing materials, 2) The whole assessment. Three main purposes of the pre-pilot test are as follow: 1) Check whether the testing materials of each task are comprehensible and child-friendly, 2) Check whether the instructions of each task are clear and child-friendly, 3) Check whether the design (e.g. format of games, time length) of assessment is engaging and child-friendly. The testing environment is close to that of the expected official testing environment: a quiet semi-open space with only the student researcher and the child.

General Comments:

The pre-pilot test went smoothly without interruption. During the first part, the child can easily and successfully identify all testing materials, including objects in pictures, name of emotion symbols, image representation of gender, and gender of dolls. The formal assessment took approximately 15 minutes. The child can understand majority of instructions, with main challenges in that of the playmate selection task which will be explained later. She did not get distracted or lost attention for each of the three tasks.

Positives:

- Practice items helped to get the child used to the format, content, and pace of tasks.
- For the gender attribution task, asking the child to name objects in each picture before item classification helped to check understanding and build common ground.

- The dolls in the playmate selection task engaged the child into the fictitious scenarios nicely.
- The child could carry out all tasks with clear verbal and physical communication.
- The pace of assessment seems to work well with the child.

Challenges and solutions:

- Originally, the playmate selection task asks the child to make decision based on a five-point scale, but the child had a hard time understand the nuances between "really want to make friends with someone" and "somewhat want to make friends with someone" (similar for "really don't want to make friends with someone" and "somewhat don't want to make friends with someone"). When the number of choices were reduced to three – "want to make friends with someone", "neutral", and "don't want to make friends with someone", the child demonstrates good comprehension and performance. Therefore, the five-point scale will be changed into a three-point scale.
- The 'why' questions in the gender attribution task attain floor effects. The child failed to express the reason for her decision most of the time. For example, when the child was asked: "why do you think this item is for boys?", she answered: "because it is for boys." Therefore, the 'why' questions will be deleted.
- Talking to the child while recording answers at the same time was manageable, but more practice is needed.
- Better to memorize all the instructions and do not frequently look at the laptop screen, which seemed to distract the child a bit.
- The answer recording sheet could be designed in a more convenient way (e.g. could be more condensed).

Appendix 5b – Report of Pilot Test

Date: May 29th, 2021

Participant information:

- Gender: male
- Age: 3 years 10 months
- Language: Mandarin

Summary:

The pilot test was done for my family friend at his home. The testing procedure and set up were as similar as possible as those in the formal assessment. Entering a semi-open space, the child was asked to sit on a chair facing the wall, with a table in front. The student researcher then sat 90 degrees beside the child. The assessment began after chitchat, with the gender attribution task following by the playmate selection task and then the peer nomination task. The pilot went well and was finished within 15 minutes. The child was able to understand and carry out all the instruction of all three tasks.

Positives:

- The design of assessment is age appropriate. The child finished all three tasks with a high level of engagement.
- The child demonstrated enjoyment in the interactive activities.
- The background music that I played at the beginning of assessment helped the child to get relaxed.
- The child could carry out all tasks with clear verbal and physical communication.
- The pace of assessment seems to work well with the child.

Challenges and solutions:

- Originally, the peer nomination task directly asks the child to nominate peers who would display certain emotions, which assumed that the child could always identify and connect certain emotions with certain peers. Therefore, the question – "would

people in your class display (emotion name)?" will be asked first. Only if the child answers 'yes' will he/she be asked to nominate peers.

- Some wordings could be replaced with more child-friendly language (e.g. replace 'objects' with 'things') and be more explicit. Revise long sentences into short ones.
- More practice is needed for the tone, multi-tasking (e.g. talking to the child while recording answers), and scripts! Be psychologically prepared for children's random comments and questions during the tasks.

Appendix 6 – Storybook Information

Name of book	**Author**	**Translator**	**Publisher**	**Image of protagonist(s)**	**Gender of protagonist(s)**	**Main gendered activity**	**Other gendered activity**
Playing a Swing	Maikexiaokui	/	China Children's Press & Publication Group/China Children's Press	Animals	Ambiguous	Playing on a swing	No
Nezumi-kun's Christmas	Yoshio Nakae, Noriko Ueno	Jingzi Yuandu	Beijing Poplar Culture Project Co., Ltd.	Animals	Ambiguous	Decorating Christmas tree	Female mouse made a cake (text + illustration)
Don't Ever be a Pirate	Melinda Lang, David Shannon	Rongrong Ren	New Star Press	Boy	Male	Playing with sand	The boy plays football (text + illustration)

My Dress	Kayako Nishimaki	Yi Peng	Tommorow Publishing House	Animal (Rabbit)	Female	Playing dressing up	Female rabit sewing dress (text + illustration)
Pete The Cat - Construction Destruction	James Dean	Li Chang	Dook Media Group Limited	Animal (Cat)	Male	Constructing amusement park	Male cat driving construction vehicle
Pete The Cat - Go, Pete, Go!	James Dean	Li Chang	Dook Media Group Limited	Animals (Cat & Turtle)	Male & Ambiguous	Racing cars	Male cat riding a bicycle (text + illustration)
It's Ok to be Afraid - I Will be Positive and Brave	Taixi Yang, Yunxi Piao	Yanhui Zhao	Xinjiang Juvenile Publishing House	Girl	Female	Being scared	No
It's Ok to be Angry - I Will Temper It	Yinxie Song, Mingzhi Bai	Yanhui Zhao	Xinjiang Juvenile Publishing House	Boy	Male	Being angry	No

Appendix 7a – Scripts of Assessments (English Version)

(*Play the light music – Dream for today – in the room. Greet the child outside of the room and lead him/her to sit on a chair facing the wall, with a table in front. The student researcher then sits 90 degrees beside the child*)

Chitchat: "What's your name? How old are you?", "Are you feeling good today", "I love your shoes".

Get and record verbal assent: "(Name), nice to meet you. I would like to invite you to play two games with me, is that ok?"

Gender attribution task:

Object tasks:

"What toys do you like to play with at school?"

"Cool! Next, I am going to show you some items. These are the things that we can see in school, and I want you to tell me if they are for boys, girls, or both boys and girls in your class (*Point to 3 boxes labelled with picture as "for girls", "for boys", and "for both boys and girls" in order while speaking*). I will hand over the items to you one by one, and please put them into the corresponding box."

"Now, can you tell me which box should items for boys go? Which box should items for girls go? Which box should items for both boys and girls go?"

- *If answer is correct* → "Good, are you ready to begin?" (If answer is no: "Is there any concern or question that I can help you with?")
- *If answer is incorrect* → "Items for (gender) should go into this box." Ask the question above again after clarification, if the answer is still incorrect, record participants' verbal answer.

"Could you tell me what this is/these are?"

- *If answer is close/correct* → "Yes, it's xxx, and we also call it (tricycle; ball; swing; sand shovel and bucket; scissors, color paper, and cotton balls; building blocks; costume; toy cars)."

- *If answer is incorrect* → "Close/great guess, it's actually (tricycle; ball; swing; sand shovel and bucket; scissors, color paper, and cotton balls; building blocks; costume; toy cars)."

"Who would (ride a tricycle; play the ball; play on a swing; play sand with a sand shovel and a bucket; do handicrafts with scissors, color paper, and cotton balls; play with building blocks; dress up in costume; play with toy cars) in your class, boys, girls, or boys and girls?" *(The order of the verbal alternatives offered will be alternating) (After asking each question, hand over the item to the child to place in the appropriate box)*
(*Repeat for 2 practice items & 6 test items. The items will be given to the child one by one*)

(Take out items in the box – "for boys and girls" – and lay them on the table. Put the box out of the child's sight)

"These items are for both boys and girls in your class, right? Who do you think would (ride a tricycle; play the ball; play on a swing; play sand with a sand shovel and a bucket; do handicrafts with scissors, color paper, and cotton balls; play with building blocks; dress up in costume; play with toy cars) more in your class, boys? Or girls?" (*Repeat until all items in that box are re-assigned*)

Emotion tasks:

"Well done. Let's have a break. How was your day at school? Do you have a good time?"

(Take out items in each box and put them out of the child's sight)

"Are you ready to continue? Next, I am going to show you some facial expressions. Each facial expression tells us about an emotion. For example, some of your mates will be scared of thunder (*make a look of fear*), and some of your mates will be scared of bugs (*make a look of fear*), and this is an emotion of fear. You said you are (happy/unhappy) at school, and this is an emotion, right? Can you make a (happy/unhappy) face?"

"Good, let's continue. After seeing these facial expressions, I want you to tell me if they are emotions that boys, girls, or both boys and girls in your class would display. I will hand over the facial expressions to you one by one, and please put them into the

corresponding box." (*Point to boxes labelled with picture as "girls", "boys", and "both boys and girls" in order while speaking*)

"Good, are you ready to begin?" (If answer is no: "Is there any concern or question that I can help you with?")

"Could you tell me what emotion this facial expression tells?"

- *If answer is close/correct* → "Yes, it tells us a (sad, scared, angry) emotion."
- *If answer is incorrect* → "Close/great guess, it actually tells us a (sad, scared, angry) emotion."

"Who would display a (sad, scared, angry) face in your class, boys, girls, or boys and girls?" *(The order of the verbal alternatives offered will be alternating) (After asking each question, hand over the item to the child to place in the appropriate box)*

If object is not assigned to 'boys and girls' → "Why (gender) in your class would display a (sad, scared, angry) emotion?"

(*Repeat for 2 practice items and 2 test items. The items will be given to the child one by one*)

(Take out items in the box – "for boys and girls" – and lay them on the table. Put the box out of the child's sight)

"These are emotions that boys and girls in your class would display, right? Who do you think would display a (sad, scared, angry) face more in your class, boys? Or girls?" (*Repeated until all items in that box are re-assigned*)

Break:

"Well done! We finish the first game. How do you feel about this game? Do you like it?"

"Are you ready for the next game?"

- *If answer is no*: "Let's have a longer break, and I promise you the next game will be a fun one … Are you feeling good to go now?"

Playmate selection task:

(Tools: three hula hoops in a line on the ground, with two dolls with the same gender as the child being put on a table; BGM: Vapour trails)

"Now, please close your eyes. Imagine yourself has a super power of transformation! You heard that high above the sky has a Lilliput – a country living with little men, and you really want to go there to have a look. You stand up slowly and make yourself smaller and smaller. You then stretch out your arms and fly up slowly." (*Lead the child to stand up and walk for 5 seconds to a spot beside the hula hoops*)

"You are hanging around in Lilliput. Now, please open your eyes. Wow, you find a Lilliputian school. You find that this school is cool, and you want to play here. Now, you see some peers right over there, and you would like to see if they are good to become your new friends." (*Point to the two dolls sitting beside the hula hoops*)

"The Lilliputian school has a row of magic grids that can help you to choose your friends. Now, please stand in the middle of the magic grid." (*Guide the child to stand in the right place*)

"OK, now I am the assistant of the magic grids, and I will tell you what each of the peers loves to do. If you want to make friends with him/her, jump forward (*Lead the child jumps forward*). Ok, let's return to the middle grid. If you don't want to make friends with him/her, jump backward (*Lead the child jumps backward*). Ok, let's return to the middle grid. If you haven't decided whether you want to make friends with him/her or not, stand still."

"Good, can you try it again by yourself? How would you do if you want to make friends with the peer? How would you do if you don't want to make friends with the peer? How would you do if you haven't decided whether or not to make friends with the peer?" (*Move on after the child acts correctly*)

"Well done, now you know the secret of the magic grids. Are you ready to begin?" (*If answer is no*: "Is there any concern or question that I can help you with?")

(Place one of two dolls on the table in turns. Put the mentioned item beside the doll as visual reference. Make a 'bling bling' gesture to the doll)

"This boy/girl loves to (ride a tricycle; play the ball; play on a swing; play sand with a sand shovel and a bucket; do handicrafts with scissors, color paper, and cotton balls; play with building blocks; dress up in costume; play with toy cars). Please move within the magic grids to show whether you want to make friends with him/her?"

(Repeat for 2 practice items and 6 test items)

Break:

"Well done! We finish this game. How do you feel about it? Do you like it?"

"We have last two questions to ask, are you ready to continue?" (*If answer is no*: "Let's have a longer break, and I promise you that we only have two questions left… Are you feeling good to go right now?"

Peer nomination task:

"Do you remember what this emotion is (*Put the mentioned facial expression in front of the child as visual reference*)? Yes, this is a (sad, scared, angry) emotion. Would people in your class display a (sad, scared, angry) emotion?"

- *If answer is yes* → "Who would display a (sad, scared, angry) emotion in your class? Who else would display a (sad, scared, angry) emotion in your class?" (*Record the names in order*)

(Repeat for 1 practice item and 2 test items)

"Thank you for your sharing and participation! This is the end of our game. You did a really good job."

Appendix 7b – Scripts of Assessments (Chinese Version)

（*教室内播放轻快音乐-Dream for today，在教室门口迎接孩子，将孩子带至桌椅处面对墙坐下，自己坐在桌椅转角处*）

闲聊："你叫什么名字呀，今年几岁？"，"刚刚在做些什么？"，"我喜欢你的鞋。"

获得并记录口头同意："（名字），很高兴见到你。我想邀请你跟我一起玩两个游戏，可以吗？"

"你平常在学校都喜欢玩些什么玩具呀？"

"好的，接下来呢，我会给你展示一些物品，这些物品都是我们在学校里可以见到的，我想请你一个一个告诉我，它们是给班里的男生用的，女生用的，还是给男生和女生一起用的（*边说边按顺序指向三个对应的盒子*）。我会把物品一个一个给你，请你放进对应的盒子里。"

"现在，你可以告诉我，给男生用的物品要放到哪个盒子呢？给女生用的物品要放到哪个盒子呢？给男生和女生一起用的物品要放到哪个盒子呢？"

- *答案正确* → "好，那你准备好开始了吗？"（*如果没准备好*："有什么担忧或者问题我可以帮忙解决吗？"）
- *答案错误* → "给（性别）用的物品应该放在这个盒子"。解释完后再问一遍问题，如果答案还是不对，记录口头答案。

"请问这是什么？"

- *答案接近/正确* → “没错，这是 xxx，我们也叫它（三轮车；球；秋千；沙铲、桶；剪刀、彩纸、棉球；积木；角色服装；玩具车）。”
- *答案不对* → “很接近了，它其实是（三轮车；球；秋千；沙铲、桶；剪刀、彩纸、棉球；积木；角色服装；玩具车）。”

“请问（骑三轮车；玩球；玩秋千；用沙铲、桶玩沙子；用剪刀、彩纸、棉球做手工；玩积木；穿角色服装；玩玩具车）是给班里的哪些同学（ ）的呢？是男生，女生，还是男生和女生？”（*提示答案的顺序交替*）（*问完问题后，将物品一一交给孩子*）

（*拿出“男生和女生”盒子内的所有物品摊在桌上，把盒子放在孩子视线外*）

“这些物品是给班里的男生和女生一起用的，对吧？那你觉得班里的谁会更经常（骑三轮车；玩球；玩秋千；用沙铲、桶玩沙子；用剪刀、彩纸、棉球做手工；玩积木；穿角色服装；玩玩具车）呢？是男生，还是女生？”（*重复问直到所有物品被重新分配*）

“做的很好哦。我们休息一下，你今天在学校过得怎么样，开心吗？”（*拿出之前盒子里的图片，放在孩子视线之外*）

“准备好继续了吗？接下来呢，我会给你看一些表情，每一个表情都在告诉我们一种心情。比如有的同学听到打雷的声音会害怕（*做出害怕的表情*），有的同学看到虫子会害怕（*做出害怕的表情*），那你可以做一个害怕的表情吗？再比如，你刚刚说在学校过得（开心/不开心），这也是一种心情，对吗？那你可以做一个（开心/不开心）的表情吗？”

“好，我们继续，在你看到我给你的这些表情后，我想请你一个一个告诉我，它们是班里的男生会表现出来的心情，女生会表现出来的心情，还是男生和女生都会表现出来的心情（*边说边按顺序指向三个对应的盒子*）。我会把表情一个一个给你，请你放进对应的盒子里。”

“那你准备好开始了吗？”（*如果没准备好*：“有什么担忧或者问题我可以帮忙解决吗？）

“请问这个表情告诉了我们什么样的心情呢？”

- *答案正确* → “没错，它告诉了我们（伤心，害怕，生气）的心情。”
- *答案接近/不正确* → “很接近了，它其实告诉了我们（伤心，害怕，生气）的心情。”

“请问（伤心，害怕，生气）是班里的哪些同学会表现出的心情呢？是男生，女生，还是男生和女生？”（*提示答案的顺序交替*）（*问完问题后，再将物品一一交给孩子*）

如果物品没放进‘男生和女生’ → “为什么班里的（性别）会表现出（伤心，害怕，生气）的心情呢？”

（*拿出“男生和女生”盒子内的所有表情摊在桌上，把盒子放在孩子视线外*）

“这些心情是班里的男生和女生都会表现出来的，对吧？那你觉得班里的谁会更经常表现出（伤心，害怕，生气）的心情呢？是男生，还是女生？”（*重复问直到所有物品被重新分配*）

“很棒，我们完成了第一个游戏。你觉得怎么样，喜欢这个游戏吗？”

“那你准备好开始下一个游戏了吗？”

- *如果没有*：“那我们再休息一会，我保证下一个游戏会很有趣哦……ok 吗，我们可以继续吗？”

（*道具：地上的三宫格，一张桌子，附近摆放两个跟孩子同性别的娃娃*）（播放 BGM：Vapour trails）

“现在请闭上眼睛，想象自己有一个可以变身的超能力！你听说天上有一个小人国，特别想去那里看一看，于是呢，你把自己慢慢地慢慢地变小，你伸出翅膀，慢慢地飞了起来。”（*带孩子站起来走 5 秒，走到地上三宫格的旁边*）

“你在小人国飞啊飞……现在请睁开眼睛，哇，你找到了一间小人国学校。你发现这间学校很酷，想在这里玩一会。现在呢，你看到不远的地方有一些小伙伴，你想看看他们适不适合做你的新朋友。”（*指向的娃娃们*）

“小人国学校里有一排魔法格子，它们可以帮助你选择朋友。现在，请你站在中间的魔法格子。”（*带孩子走到中间的格子*）

“好的，我现在是魔法格子的小助手，我会告诉你每一个小伙伴喜欢做的事情，如果你想跟他/她做好朋友，就向前跳（*带孩子向前跳*）。好的，我们回到中间的格子。如果你不想跟他/她做好朋友，就向后跳（*带孩子向后跳*）。好的，我们再回到中间的格子。如果你没有想好要不要跟他/她做好朋友，就待在原地。”

“好，现在你可以自己试一次吗？如果你想跟小伙伴做好朋友，你会怎么做？如果你不想跟他做好朋友，你会怎么做？如果你没想好要不要跟小伙伴做好朋友，你会怎么做？”（*正确独立做出后继续*）

“非常好，现在你已经知道了魔法格子的秘密，那你准备好开始了吗？”（*如果没准备好*：“有什么担忧或者问题我可以帮忙解决吗？”）

（*交替着将一个同性娃娃放至桌上，依次放相关物品图片在娃娃旁边做参照，对着娃娃做出一闪一闪的手势*）

“这个男生/女生喜欢（骑三轮车；玩球；玩秋千；用沙铲、桶玩沙子；用剪刀、彩纸、棉球做手工；玩积木；穿角色服装；玩玩具车），请在魔法格子内走动，告诉我们你想不想跟他/她做好朋友。”

“做的很棒，我们玩完了这个游戏。你觉得怎么样，喜欢这个游戏吗？”

“我们剩下最后两个问题了，准备好继续了吗？”

- *如果没有*：“那我们再休息一会，我保证是最后两个问题了……ok 吗，我们可以继续吗？”

“还记得这是什么心情吗（*将对应表情摆至孩子面前做参考*）？对，这是（伤心，害怕，生气）的心情。在你的班里，会有同学（伤心，害怕，生气）吗？”

- *有*→“班里的谁会（伤心，害怕，生气）呢？班里还有谁会（伤心，害怕，生气）吗？”（*按顺序记下名字*）

“谢谢你的分享和参与，我们的游戏到这里就结束啦。你做的非常棒。”

Appendix 8 – Scripts of Storytelling Sessions (English Version)

Control group

Session: No.1

Name of Book: Go, Pete, Go!

Author: James Dean

Translator: Chang Li

Number of pages: 19

Protagonists: a gender-ambiguous turtle & a male cat

(Read out the original text in each page, with additional scripts as follow)

Page 1:

- Good morning/afternoon everyone. Today is our first storybook session. How is everyone doing? Let's start with our story journey, and I would love each one of you to listen carefully while I am reading. Ok? Great. The name of today's story is called: Go, Pete, Go!

Page 2:

- This is a turtle who loves racing cars.

Session: No.2

Name of Book: It's Ok to be Afraid - I Will be Positive and Brave

Author: Taixi Yang, Yunxi Piao

Translator: Yanhui Zhao

Number of pages: 14

Protagonist: a girl

(Read out the original text in each page, with additional scripts as follow)

Page 1:

- Good morning/afternoon everyone. How is everyone doing today? Let's start with our story journey. Yesterday everyone did a good job listening to the story. Are you ready for today's stories? Great. The name of today's story is called: It's Ok to be Afraid - I Will be Positive and Brave.

Page 2:

- Xiaolv is a kid who is scared of a lot of things.

Session: No.3

Name of Book: My dress

Author: Kayako Nishimaki

Translator: Yi Peng

Number of pages: 20

Protagonist: a female rabbit

(Read out the original text in each page, with additional scripts as follow)

Page 1:

- Good morning/afternoon everyone. How is everyone doing today? Let's start with our story journey. Are you ready for today's stories? Great. The name of today's story is called: My dress.

Page 2:

- This is a rabbit who loves dressing up in different costumes.

Session: No.4

Name of Book: My Christmas

Author: Yoshio Nakae, Noriko Ueno

Translator: Jingzi Yuandu

Number of pages: 19

Protagonist(s): gender-ambiguous animals

(Read out the original text in each page, with additional scripts as follow)

Page 1:

- Good morning/afternoon everyone. How is everyone doing today? Let's start with our story journey. Are you ready for today's stories? Great. The name of today's story is called: My Christmas.

Page 2:

- This is a mouse who loves doing handicrafts.

Session: No.5

Name of Book: Go, Pete, Go!

Author: James Dean

Translator: Chang Li

Number of pages: 19

Protagonists: a gender-ambiguous turtle & a male cat

(Use dialogic reading strategies – PEER – for each page)

Page 1:

- Good morning/afternoon everyone. Today let's review a story that we have read before. I would love you to be the main storytellers and tell me what happened in each scenario. Are you ready? Great. Can anyone tell me what's the name of this story?

Page 2:

- Who is this animal?
- What does the turtle love and want to do?

Page 3:

- Who are these animals?
- Why don't they want to race with the turtle?

Page 4:

- Who comes? What does Pete say?
- How does the turtle react (to Pete's bicycle)? And what does Pete say back to the turtle?

Page 5-6:

- What happen now?

Page 7:

- How is the race? Who is leading?
- What does the turtle do?

Page 8:

- What happen to the car?

Page 9:

- What does the turtle see? And the turtle decides to do what?

Page 10:

- What does the turtle get? How does the turtle feel?

Page 11:

- What does Pete do when the turtle is eating?
- How's the day? What does Pete feel?

Page 12:

- Does the turtle finish eating?
- What does Pete do? And how does the turtle react?

Page 13:

- Does the turtle see Pete?
- What does the turtle do?

Page 14:

- How is the race? Who is leading?
- What does the turtle do? What does it do afterwards?

Page 15-18:

- What happen now?

Page 19:

- What happen at the end of the race?
- Are both of them happy? Why?

Session: No.6

Name of Book: It's Ok to be Afraid - I Will be Positive and Brave

Author: Taixi Yang, Yunxi Piao

Translator: Yanhui Zhao

Number of pages: 14

Protagonist: a girl

(Use dialogic reading strategies – PEER – for each page)

Page 1:

- Good morning/afternoon everyone. Today let's review a story that we have read before. I would love you to be the main storytellers and tell me what happened in each scenario. Are you ready? Great. Can anyone tell me what's the name of this story?

Page 2:

- Who is this kid? What kind of emotion does Xiaolv frequently display?
- How does Xiaolv behave when she is afraid? What do we need to tell her?

Page 3-8:

- What happen now? What does Xiaolv afraid of? Why?

Page 9:

- Is Xiaolv the only one who would be afraid of something? Who else would display fear?

Page 10:

- What kind of emotions can you see people displaying?

Page 11:

- What should Xiaolv do when she is fearful?
- How would Dad and Mom react?

Page 12:

- Who else can Xiaolv ask for help if Dad and Mom are not besides her?
- Who can Xiaolv go for in school? How would teachers react?

Page 13-14:

- How would Xiaolv deal with things that she is afraid of?
- How would she feel? What would she say to herself?

Session: No.7

Name of Book: Construction Destruction

Author: James Dean

Translator: Chang Li

Number of pages: 15

Protagonist: a male cat

(Read out the original text in each page, with additional scripts as follow)

Page 1:

- Good morning/afternoon everyone. How is everyone doing today? Let's start with our story journey. Are you ready for today's stories? Great. The name of today's story is called: Construction Destruction.

Page 2:

- This is a cat who loves constructing buildings.

Session: No.8

Name of Book: My Christmas

Author: Yoshio Nakae, Noriko Ueno

Translator: Jingzi Yuandu

Number of pages: 19

Protagonist(s): gender-ambiguous animals

(Use dialogic reading strategies – PEER – for each page)

Page 1:

- Good morning/afternoon everyone. Today let's review a story that we have read before. I would love you to be the main storytellers and tell me what happened in each scenario. Are you ready? Great. Can anyone tell me what's the name of this story?

Page 2:

- Who is this animal? What does the mouse love and do?
- What holiday is today? What does the mouse plan to do?

Page 3, 7, 9, 11, 13:

- What happens now? How does the mouse/duck/rabbit/pig/bear/elephant feel?

Page 4, 6, 8, 10, 12, 14:

- Who comes and say what?

Page 15:

- How does Sister Mouse feel? What does she say?

Page 16:

- What happens now?

Page 17:

- How does everyone else feel? Why?

Page 18-19:

- What do they do?

Session: No.9

Name of Book: Playing a Swing

Author: Maikexiaokui

Number of pages: 20

Protagonist: gender-ambiguous animals

(Read out the original text in each page, with additional scripts as follow)

Page 1:

- Good morning/afternoon everyone. How is everyone doing today? Let's start with our story journey. Are you ready for today's stories? Great. The name of today's story is called: Playing a Swing.

Page 2:

- There is a swing in the playground.

Page 3, 5, 7, 9, 11, 13, 15:

- Little Mouse/Chicken/Cat/Dog/Pig/Lion/Elephant loves playing swings.

Page 19:

- Big Elephant also wants to play the swing, but how?

Session: No.10

Name of Book: It's Ok to be Angry - I Will Temper It

Author: Yinxie Song, Mingzhi Bai

Translator: Yanhui Zhao

Number of pages: 18

Protagonist: a boy

(Read out the original text in each page, with additional scripts as follow)

Page 1:

- Good morning/afternoon everyone. How is everyone doing today? Let's start with our story journey. Are you ready for today's stories? Great. The name of today's story is called: It's Ok to be Angry - I Will Temper It.

Page 2:

- Xiaohuang is a kid who is angry of a lot of things.

Session: No.11

Name of Book: Construction Destruction

Author: James Dean

Translator: Chang Li

Number of pages: 15

Protagonist: a male cat

(Use dialogic reading strategies – PEER – for each page)

Page 1:

- Good morning/afternoon everyone. Today let's review a story that we have read before. I would love you to be the main storytellers and tell me what happened in each scenario. Are you ready? Great. Can anyone tell me what's the name of this story?

Page 2:

- Who is this animal? What is the cat doing?

Page 3:

- Who does the cat go for? For what?

Page 4:

- Who come for what?

Page 5-10, 12-15:

- What happens now?

Page 11:

- What does the cat want to do? How does everyone else respond?

Session: No.12

Name of Book: Don't Ever be a Pirate

Author: Melinda Lang, David Shannon

Translator: Rongrong Ren

Number of pages: 15

Protagonist: a boy

(Read out the original text in each page, with additional scripts as follow)

Page 1:

- Good morning/afternoon everyone. How is everyone doing today? Let's start with our story journey. Are you ready for today's stories? Great. The name of today's story is called: Don't Ever be a Pirate

Page 2:

- Xingxing is a kid who loves playing sand.

Page 6:

- Xingxing holds a bucket in his left hand and a sand shovel in his right hand.

Page 13:

- Xingxing picks up the bucket and the sand shovel after pirates leave. He decides to build a bigger castle and digs a deeper ditch.

Session: No.13

Name of Book: My dress

Author: Kayako Nishimaki

Translator: Yi Peng

Number of pages: 20

Protagonist: a female rabbit

(Use dialogic reading strategies – PEER – for each page)

Page 1:

- Good morning/afternoon everyone. Today let's review a story that we have read before. I would love you to be the main storytellers and tell me what happened in each scenario. Are you ready? Great. Can anyone tell me what's the name of this story?

Page 2:

- Who is this animal? What does the rabbit love and do?
- What happens now?

Page 3-4, 6-7, 9-10, 12-13, 15:

- What does the rabbit do?

Page 5, 8, 11, 17-19:

- Where is the rabbit?

Page 14, 16, 20:

- What happens now?

Session: No.14

Name of Book: Playing a Swing

Author: Maikexiaokui

Number of pages: 20

Protagonist: gender-ambiguous animals

(Use dialogic reading strategies – PEER – for each page)

Page 1:

- Good morning/afternoon everyone. Today let's review a story that we have read before. I would love you to be the main storytellers and tell me what happened in each scenario. Are you ready? Great. Can anyone tell me what's the name of this story?

Page 2:

- What is this?

Page 3, 5, 7, 9, 11, 13, 15:

- Who is this animal? What does the mouse/chicken/cat/dog/pig/lion/elephant love?
- What does it want to do? How does it feel?

Page 4, 6, 8, 10, 12, 14, 17:

- Who comes to help? How do they feel?

Page 16:

- What does the elephant do?

Page 18-19:

- What happens?
- The Big Elephant wants to do what? How can it be achieved?

Page 20:

- What do these animals do?

Session: No.15

Name of Book: It's Ok to be Angry - I Will Temper It

Author: Yinxie Song, Mingzhi Bai

Translator: Yanhui Zhao

Number of pages: 18

Protagonist: a boy

(Use dialogic reading strategies – PEER – for each page)

Page 1:

- Good morning/afternoon everyone. Today let's review a story that we have read before. I would love you to be the main storytellers and tell me what happened in each scenario. Are you ready? Great. Can anyone tell me what's the name of this story?

Page 2:

- Who is this kid? What kind of emotion does Xiaohuang frequently display?
- How does Xiaohuang behave when he is angry? What do we need to tell him?

Page 3-4, 6, 8-9:

- What happen now? What does Xiaohuang angry of? Why?

Page 5, 7, 10:

- What should Xiaohuang do in this case, even if he is angry?

Page 11:

- Is Xiaohuang the only one who would be angry of something? Who else would display anger?

Page 12-13, 15:

- How should Xiaohuang deal with things that make him angry?

Page 14:

- What would happen if Xiaohuang hides his anger?

Page 16-17:

- What are some useful tips for Xiaohuang to manage his anger?

Page 18:

- What should we suggest Xiaohuang?
- How would he feel? What would he say to himself?

Session: No.16

Name of Book: Don't Ever be a Pirate

Author: Melinda Lang, David Shannon

Translator: Rongrong Ren

Number of pages: 15

Protagonist: a boy

(Use dialogic reading strategies – PEER – for each page)

Page 1:

- Good morning/afternoon everyone. Today let's review a story that we have read before. I would love you to be the main storytellers and tell me what happened in each scenario. Are you ready? Great. Can anyone tell me what's the name of this story?

Page 2:

- Who is this kid? What does Xingxing love and do?
- Where is Xingxing? What is he doing?

Page 3:

- What does Xingxing see?
- Why can Xingxing recognize the corsair?

Page 4:

- What does Xingxing do?
- How do Xingxing's parents react? What does Xingxing do next?

Page 5:

- What happens? What does the pirate say?

Page 6:

- What does Xingxing do?

Page 7-8:

- What do pirates do? What do they say to Xingxing?

Page 9:

- What happens now?

Page 10:

- What do pirates show to Xingxing?

Page 11:

- Where are they? What do they decide to do?

Page 12:

- What happens now? What do they do next?

Page 13:

- What happens now? What does Xingxing do after the pirates left?

Intervention group (all stories are adapted from those of control group)

Session: No.1

Name of Book: Go, Kelly, Go!

Author: James Dean

Translator: Chang Li

Number of pages: 19

Protagonists: a female turtle & a female cat

(Read out the original text in each page, with additional scripts as follow. In each page, 'Pete' is replaced by 'Emma', and 'turtle' is replaced by 'Turtle Kelly')

Page 1:

- Good morning/afternoon everyone. Today is our first storybook session. How is everyone doing? Let's start with our story journey, and I would love each one of you to listen carefully while I am reading. Ok? Great. The name of today's story is called: Go, Kelly, Go!

Page 2:

- Kelly is a turtle who loves racing cars.

Session: No.2

Name of Book: It's Ok to be Afraid - I Will be Positive and Brave

Author: Taixi Yang, Yunxi Piao

Translator: Yanhui Zhao

Number of pages: 14

Protagonist: a boy

(Read out the original text in each page, with additional scripts as follow)

Page 1:

- Good morning/afternoon everyone. How is everyone doing today? Let's start with our story journey. Yesterday everyone did a good job listening to the story. Are you ready for today's stories? Great. The name of today's story is called: It's Ok to be Afraid - I Will be Positive and Brave.

Page 2:

- Xiaolv is a boy who is scared of a lot of things.

Session: No.3

Name of Book: My clothes

Author: Kayako Nishimaki

Translator: Yi Peng

Number of pages: 20

Protagonist: a male rabbit

(Read out the original text in each page, with additional scripts as follow. In each page, 'dress' is replaced by 'clothes')

Page 1:

- Good morning/afternoon everyone. How is everyone doing today? Let's start with our story journey. Are you ready for today's stories? Great. The name of today's story is called: My clothes.

Page 2:

- Rabbit Tony is a boy who loves dressing up in different costumes.

Session: No.4

Name of Book: My Christmas

Author: Yoshio Nakae, Noriko Ueno

Translator: Jingzi Yuandu

Number of pages: 19

Protagonist(s): male animals

(Read out the original text in each page, with additional scripts as follow. 'Buddy' is used to address all other animals.)

Page 1:

- Good morning/afternoon everyone. How is everyone doing today? Let's start with our story journey. Are you ready for today's stories? Great. The name of today's story is called: My Christmas.

Page 2:

- Buddy Mouse is a boy who loves doing handicrafts.

Session: No.5

Name of Book: Go, Kelly, Go!

Author: James Dean

Translator: Chang Li

Number of pages: 19

Protagonists: a female turtle & a female cat

(Use dialogic reading strategies – PEER – for each page)

Page 1:

- Good morning/afternoon everyone. Today let's review a story that we have read before. I would love you to be the main storytellers and tell me what happened in each scenario. Are you ready? Great. Can anyone tell me what's the name of this story?

Page 2:

- Who is this animal? Is it a boy or a girl?
- What does Turtle Kelly love and want to do?

Page 3:

- Who are these animals?
- Why don't they want to race with the turtle?

Page 4:

- Who comes? What does Emma say?
- How does Turtle Kelly react (to Emma's bicycle)? And what does Emma say back to the turtle?

Page 5-6:

- What happen now?

Page 7:

- How is the race? Who is leading?
- What does Turtle Kelly do?

Page 8:

- What happen to the car?

Page 9:

- What does Turtle Kelly see? And Turtle Kelly decides to do what?

Page 10:

- What does Turtle Kelly get? How does she feel?

Page 11:

- What does Emma do when Turtle Kelly is eating?
- How's the day? What does Emma feel?

Page 12:

- Does Turtle Kelly finish eating?
- What does Emma do? And how does Turtle Kelly react?

Page 13:

- Does Turtle Kelly see Emma?
- What does Turtle Kelly do?

Page 14:

- How is the race? Who is leading?
- What does Turtle Kelly do? What does it do afterwards?

Page 15-18:

- What happen now?

Page 19:

- What happen at the end of the race?
- Are both of them happy? Why?

Session: No.6

Name of Book: It's Ok to be Afraid - I Will be Positive and Brave

Author: Taixi Yang, Yunxi Piao

Translator: Yanhui Zhao

Number of pages: 14

Protagonist: a boy

(Use dialogic reading strategies – PEER – for each page)

Page 1:

- Good morning/afternoon everyone. Today let's review a story that we have read before. I would love you to be the main storytellers and tell me what happened in each scenario. Are you ready? Great. Can anyone tell me what's the name of this story?

Page 2:

- Who is this kid? Is Xiaolv a boy or a girl? What kind of emotion does Xiaolv frequently display?

- How does Xiaolv behave when he is afraid? What do we need to tell him?

Page 3-8:

- What happen now? What does Xiaolv afraid of? Why?

Page 9:

- Is Xiaolv the only one who would be afraid of something? Who else would display fear?

Page 10:

- What kind of emotions can you see people displaying?

Page 11:

- What should Xiaolv do when he is fearful?
- How would Dad and Mom react?

Page 12:

- Who else can Xiaolv ask for help if Dad and Mom are not beside him?
- Who can Xiaolv go for in school? How would teachers react?

Page 13-14:

- How would Xiaolv deal with things that he is afraid of?
- How would he feel? What would he say to himself?

Session: No.7

Name of Book: Construction Destruction

Author: James Dean

Translator: Chang Li

Number of pages: 15

Protagonist: a female cat

(Read out the original text in each page, with additional scripts as follow)

Page 1:

- Good morning/afternoon everyone. How is everyone doing today? Let's start with our story journey. Are you ready for today's stories? Great. The name of today's story is called: Construction Destruction.

Page 2:

- Emma Cat is a girl who loves constructing buildings.

Session: No.8

Name of Book: My Christmas

Author: Yoshio Nakae, Noriko Ueno

Translator: Jingzi Yuandu

Number of pages: 19

Protagonist(s): male animals

(Use dialogic reading strategies – PEER – for each page)

Page 1:

- Good morning/afternoon everyone. Today let's review a story that we have read before. I would love you to be the main storytellers and tell me what happened in each scenario. Are you ready? Great. Can anyone tell me what's the name of this story?

Page 2:

- Who is this animal? Is Buddy Mouse a boy or a girl? What does Buddy Mouse love and do?
- What holiday is today? What does Buddy Mouse plan to do?

Page 3, 7, 9, 11, 13:

- What happens now? How does Buddy Mouse/Duck/Rabbit/Pig/Bear/Elephant feel?

Page 4, 6, 8, 10, 12, 14:

- Who comes and say what?

Page 15:

- How does Sister Mouse feel? What does she say?

Page 16:

- What happens now?

Page 17:

- How does everyone else feel? Why?

Page 18-19:

- What do they do?

Session: No.9

Name of Book: Playing a Swing

Author: Maikexiaokui

Number of pages: 20

Protagonist: male animals

(Read out the original text in each page, with additional scripts as follow)

Page 1:

- Good morning/afternoon everyone. How is everyone doing today? Let's start with our story journey. Are you ready for today's stories? Great. The name of today's story is called: Playing a Swing.

Page 2:

- There is a swing in the playground.

Page 3, 5, 7, 9, 11, 13, 15:

- Buddy Mouse/Chicken/Cat/Dog/Pig/Lion/Elephant is a boy who loves playing swings.

Page 19:

- Brother Elephant also wants to play the swing, but how?

Session: No.10

Name of Book: It's Ok to be Angry - I Will Temper It

Author: Yinxie Song, Mingzhi Bai

Translator: Yanhui Zhao

Number of pages: 18

Protagonist: a girl

(Read out the original text in each page, with additional scripts as follow)

Page 1:

- Good morning/afternoon everyone. How is everyone doing today? Let's start with our story journey. Are you ready for today's stories? Great. The name of today's story is called: It's Ok to be Angry - I Will Temper It.

Page 2:

- Xiaohuang is a girl who is angry of a lot of things.

Session: No.11

Name of Book: Construction Destruction

Author: James Dean

Translator: Chang Li

Number of pages: 15

Protagonist: a female cat

(Use dialogic reading strategies – PEER – for each page)

Page 1:

- Good morning/afternoon everyone. Today let's review a story that we have read before. I would love you to be the main storytellers and tell me what happened in each scenario. Are you ready? Great. Can anyone tell me what's the name of this story?

Page 2:

- Who is this animal? Is Emma a boy or a girl? What is she doing?

Page 3:

- Who does Emma go for? For what?

Page 4:

- Who come for what?

Page 5-10, 12-15:

- What happens now?

Page 11:

- What does Emma want to do? How does everyone else respond?

Session: No.12

Name of Book: Don't Ever be a Pirate

Author: Melinda Lang, David Shannon

Translator: Rongrong Ren

Number of pages: 15

Protagonist: a girl

(Read out the original text in each page, with additional scripts as follow)

Page 1:

- Good morning/afternoon everyone. How is everyone doing today? Let's start with our story journey. Are you ready for today's stories? Great. The name of today's story is called: Don't Ever be a Pirate

Page 2:

- Xingxing is a girl who loves playing sand.

Page 6:

- Xingxing holds a bucket in her left hand and a sand shovel in her right hand.

Page 13:

- Xingxing picks up the bucket and the sand shovel after pirates leave. She decides to build a bigger castle and digs a deeper ditch.

Session: No.13

Name of Book: My clothes

Author: Kayako Nishimaki

Translator: Yi Peng

Number of pages: 20

Protagonist: a male rabbit

(Use dialogic reading strategies – PEER – for each page)

Page 1:

- Good morning/afternoon everyone. Today let's review a story that we have read before. I would love you to be the main storytellers and tell me what happened in

each scenario. Are you ready? Great. Can anyone tell me what's the name of this story?

Page 2:

- Who is this animal? Is Tony Rabbit a boy or a girl? What does Tony Rabbit love and do?
- What happens now?

Page 3-4, 6-7, 9-10, 12-13, 15:

- What does do?

Page 5, 8, 11, 17-19:

- Where is Tony Rabbit?

Page 14, 16, 20:

- What happens now?

Session: No.14

Name of Book: Playing a Swing

Author: Maikexiaokui

Number of pages: 20

Protagonist: male animals

(Use dialogic reading strategies – PEER – for each page)

Page 1:

- Good morning/afternoon everyone. Today let's review a story that we have read before. I would love you to be the main storytellers and tell me what happened in each scenario. Are you ready? Great. Can anyone tell me what's the name of this story?

Page 2:

- What is this?

Page 3, 5, 7, 9, 11, 13, 15:

- Who is this animal? Is it a boy or a girl? What does Buddy Mouse/Chicken/Cat/Dog/Pig/Lion/Elephant love?
- What does it want to do? How does it feel?

Page 4, 6, 8, 10, 12, 14, 17:

- Who comes to help? How do they feel?

Page 16:

- What does Buddy Elephant do?

Page 18-19:

- What happens?
- The Brother Elephant wants to do what? How can it be achieved?

Page 20:

- What do these animals do?

Session: No.15

Name of Book: It's Ok to be Angry - I Will Temper It

Author: Yinxie Song, Mingzhi Bai

Translator: Yanhui Zhao

Number of pages: 18

Protagonist: a girl

(Use dialogic reading strategies – PEER – for each page)

Page 1:

- Good morning/afternoon everyone. Today let's review a story that we have read before. I would love you to be the main storytellers and tell me what happened in each scenario. Are you ready? Great. Can anyone tell me what's the name of this story?

Page 2:

- Who is this kid? Is Xiaohuang a boy or a girl? What kind of emotion does Xiaohuang frequently display?
- How does Xiaohuang behave when she is angry? What do we need to tell her?

Page 3-4, 6, 8-9:

- What happen now? What does Xiaohuang angry of? Why?

Page 5, 7, 10:

- What should Xiaohuang do in this case, even if she is angry?

Page 11:

- Is Xiaohuang the only one who would be angry of something? Who else would display anger?

Page 12-13, 15:

- How should Xiaohuang deal with things that make her angry?

Page 14:

- What would happen if Xiaohuang hides her anger?

Page 16-17:

- What are some useful tips for Xiaohuang to manage her anger?

Page 18:

- What should we suggest Xiaohuang?
- How would she feel? What would she say to himself?

Session: No.16

Name of Book: Don't Ever be a Pirate

Author: Melinda Lang, David Shannon

Translator: Rongrong Ren

Number of pages: 15

Protagonist: a girl

(Use dialogic reading strategies – PEER – for each page)

Page 1:

- Good morning/afternoon everyone. Today let's review a story that we have read before. I would love you to be the main storytellers and tell me what happened in each scenario. Are you ready? Great. Can anyone tell me what's the name of this story?

Page 2:

- Who is this kid? Is Xingxing a boy or a girl? What does Xingxing love and do?
- Where is Xingxing? What is she doing?

Page 3:

- What does Xingxing see?
- Why can Xingxing recognize the corsair?

Page 4:

- What does Xingxing do?
- How do Xingxing's parents react? What does Xingxing do next?

Page 5:

- What happens? What does the pirate say?

Page 6:

- What does Xingxing do?

Page 7-8:

- What do pirates do? What do they say to Xingxing?

Page 9:

- What happens now?

Page 10:

- What do pirates show to Xingxing?

Page 11:

- Where are they? What do they decide to do?

Page 12:

- What happens now? What do they do next?

Page 13:

- What happens now? What does Xingxing do after the pirates left?

Appendix 9 – Assumption Testing for Pearson's Correlation

Table 1. Test of Normality for Scores in the Pre-test

	Kolmogorov-Smirnov			Shapiro-Wilk		
	Statistic	**df**	**p**	**Statistic**	**df**	**p**
SRD_Activity	0.17	39	0.005	0.93	39	0.018
SRD_Emotion	0.28	39	<0.001	0.77	39	<0.001
ESR_Activity	0.17	39	0.008	0.95	39	0.09
ESR_Emotion	0.22	39	<0.001	0.86	39	<0.001
SRF_Activity	0.18	39	0.004	0.89	39	0.001
SRF_Emotion	0.49	39	<0.001	0.5	39	<0.001
SPS	0.31	39	<0.001	0.8	39	<0.001

Note: SRD=Sex-role discrimination; ESR=Egalitarian sex-role model; SRF=Sex-role flexibility; SPS=Stereotyped playmate selection

According to Table 1, because the p-values for all seven scores were smaller than 0.05 in the Kolmegorov-Smirnov Test and Shapiro-Wilk Test, there was sufficient evidence to say that 1) the sex-role discrimination, the egalitarian sex-role model, and the sex-role flexibility for gender-stereotypical activities, 2) the sex-role discrimination, the egalitarian sex-role model, and the sex-role flexibility for gender-stereotypical emotion expressions, and 3) the stereotyped playmate selection, in the pre-test, were not normally distributed. Due to the violation of assumptions for conducting Pearson's Correlation (Field, 2018), a non-parametric test, which is the Spearman's Correlation, should be used for assessing the linear relationships among these pre-test scores.

Appendix 10 – Assumption Testing for ANCOVA

Table 2. Test of Normality for Scores in the Post-test

	Kolmogorov-Smirnov			Shapiro-Wilk		
	Statistic	**df**	**p**	**Statistic**	**df**	**p**
SRD_Activity	0.21	39	<0.001	0.9	39	0.002
SRD_Emotion	0.28	39	<0.001	0.77	39	<0.001
ESR_Activity	0.16	39	0.01	0.96	39	0.14
ESR_Emotion	0.25	39	<0.001	0.89	39	0.001
SRF_Activity	0.17	39	0.008	0.91	39	0.004
SRF_Emotion	0.42	39	<0.001	0.63	39	<0.001
SPS	0.3	39	<0.001	0.79	39	<0.001

Note: SRD=Sex-role discrimination; ESR=Egalitarian sex-role model; SRF=Sex-role flexibility; SPS=Stereotyped playmate selection

According to Table 2, because the p-values for all seven scores in the post-test were smaller than 0.05 in the Kolmegorov-Smirnov Test and Shapiro-Wilk Test, which are 1) the sex-role discrimination, the egalitarian sex-role model, and the sex-role flexibility for gender-stereotypical activities, 2) the sex-role discrimination, the egalitarian sex-role model, and the sex-role flexibility for gender-stereotypical emotion expressions, and 3) the stereotyped playmate selection. Therefore, there was sufficient evidence to say that all seven dependent variables were not normally distributed. Therefore, the first assumption for conducting ANCOVA was violated.

Table 3. Test of Homogeneity of Variances for Scores in the Post-test

	Levene's Test F	**df1**	**df2**	**p**
SRD_Activity	9.27	1	37	0.004*
SRD_Emotion	2.05	1	37	0.16
ESR_Activity	0.22	1	37	0.64
ESR_Emotion	1.3	1	37	0.26
SRF_Activity	1.79	1	37	0.19
SRF_Emotion	13.08	1	37	<0.001*
SPS	0.45	1	37	0.51

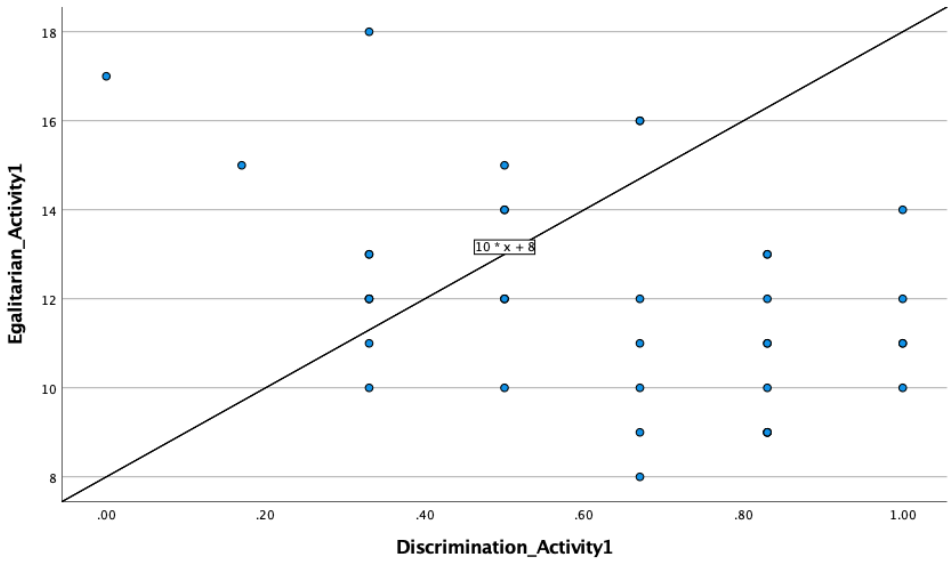
Note: SRD=Sex-role discrimination; ESR=Egalitarian sex-role model; SRF=Sex-role flexibility; SPS=Stereotyped playmate selection

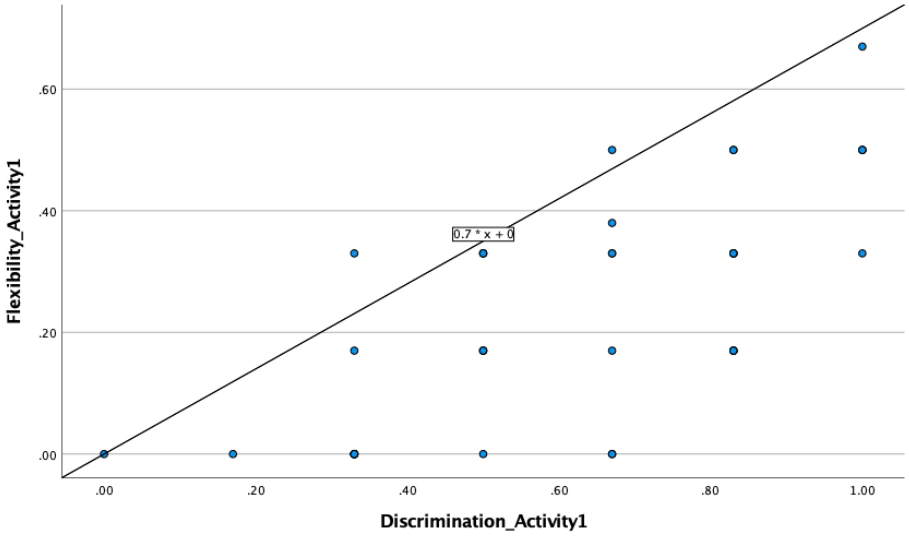
According to Table 3, because the p-values for 1) the sex-role discrimination (SRD) of gender-stereotypical activities and 2) the sex-role flexibility (SRF) of gender-stereotypical emotion expressions, were smaller than 0.05 in the Levene's Test, there was sufficient evidence to say that the variances of these two dependent variables in the post-test across groups (i.e. the intervention group and the active control group) were significantly different. Therefore, the second assumption for conducting ANCOVA was violated for SRD of gender-stereotypical activities and SRF of gender-stereotypical emotion expressions.

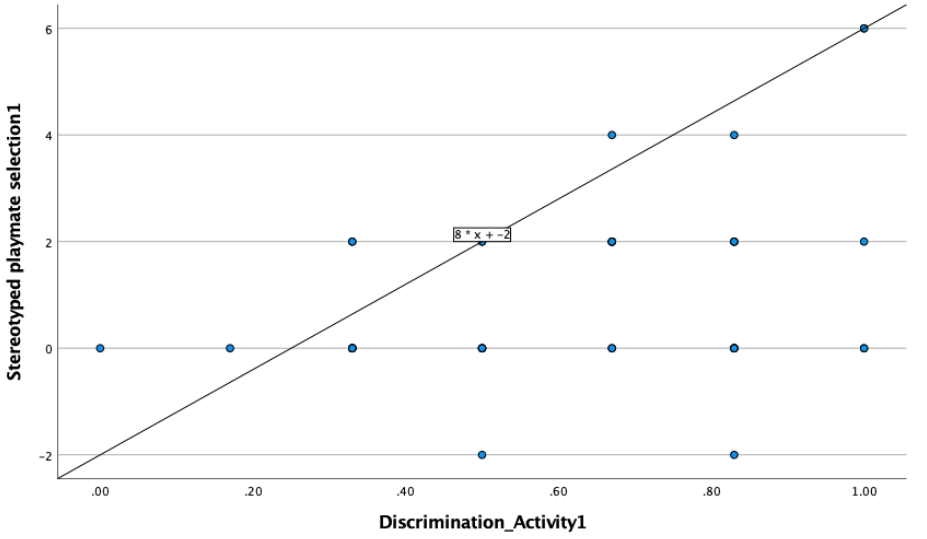
To sum up, because the assumptions of normality and homogeneity of variances for conducting ANCOVA were violated for all seven dependent variables, the assumptions of independent observation, homogeneity of regression slopes for the covariates, and linearity between covariates had no need to be checked (Field, 2018). As a result, non-parametric tests rather than parametric tests should be carried out for each of the dependent variable, which are: SRDs of gender-stereotypical activities and gender-stereotypical emotion expressions, ESRs of gender-stereotypical activities and gender-stereotypical emotion expressions, SRFs of gender-stereotypical activities and gender-stereotypical emotion expressions, and SPS.

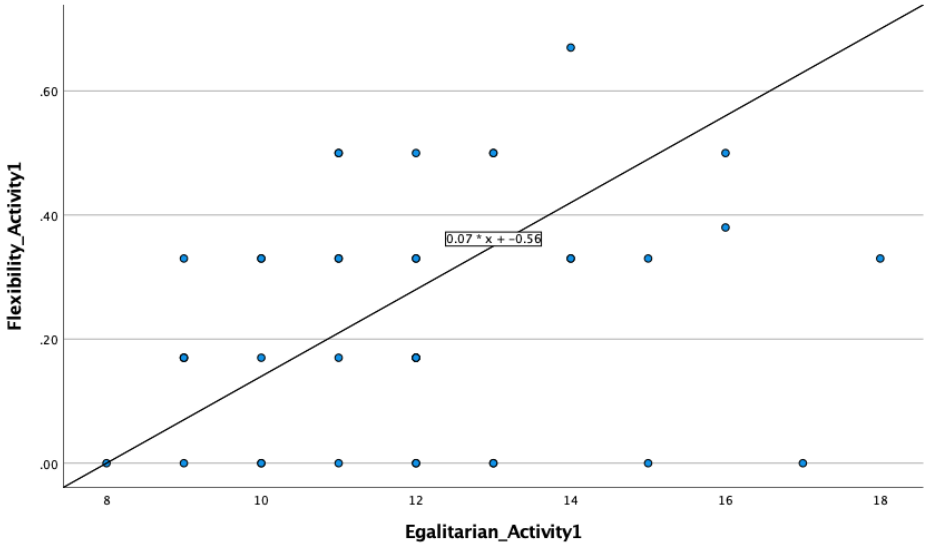
Appendix 11 – Assumption Testing for Spearman's Correlation

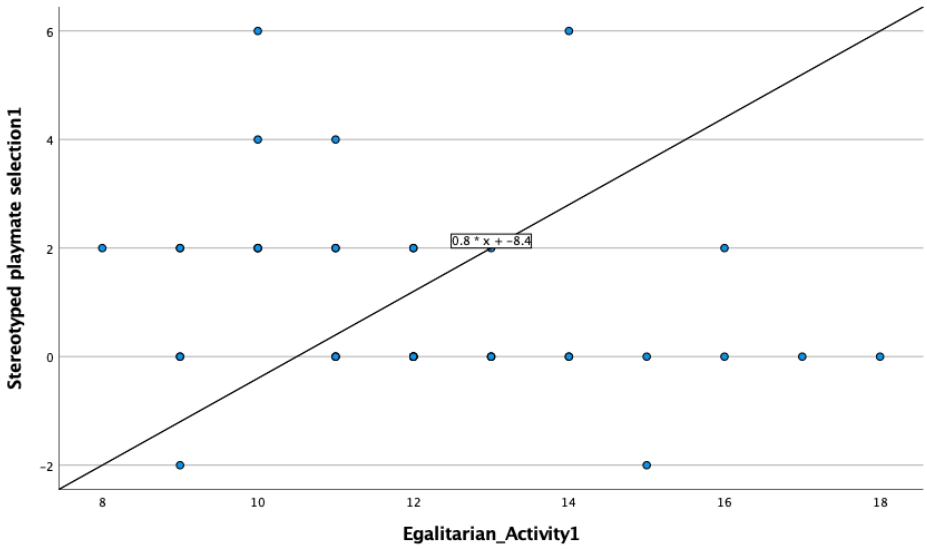
Because all child participants (n = 39) had valid score on each variable, each of the two variables could represent paired observations. Therefore, the first assumption for conducting Spearman's Correlation was not violated (Field, 2018).

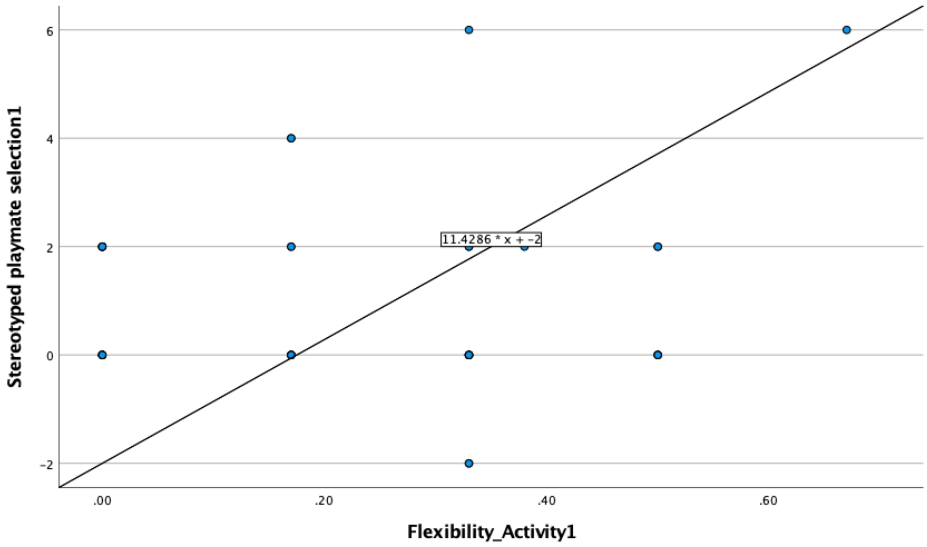


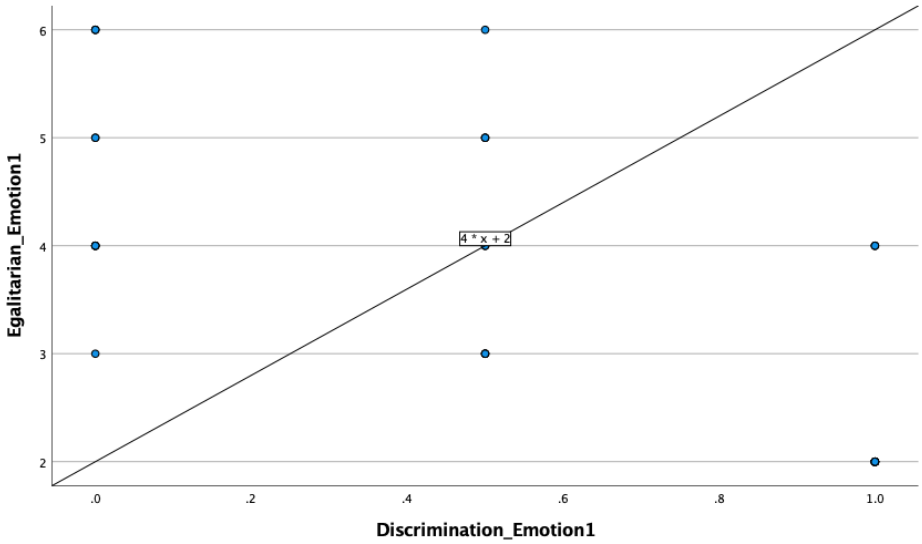


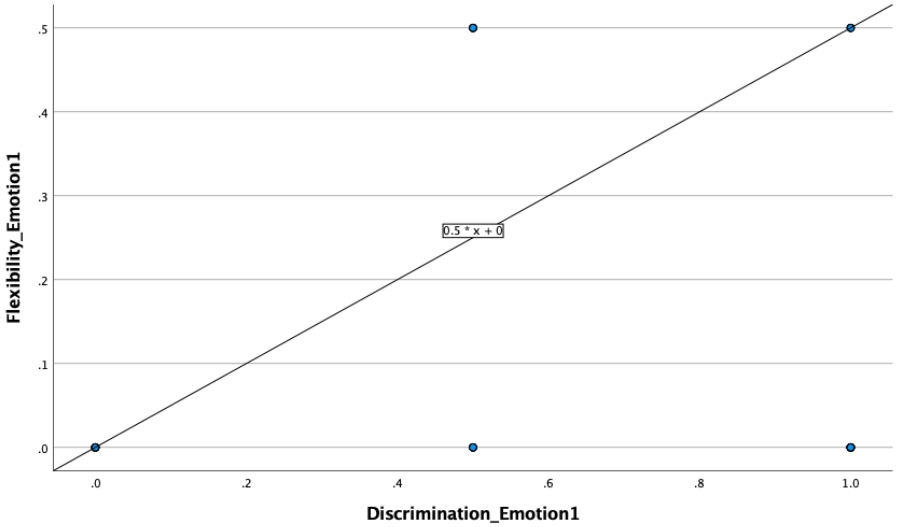

Stereotyped playmate selection1
6
4
2
0
-2
8 * x + -2
.00
.20
.40
.60
.80
1.00
Discrimination_Activity1

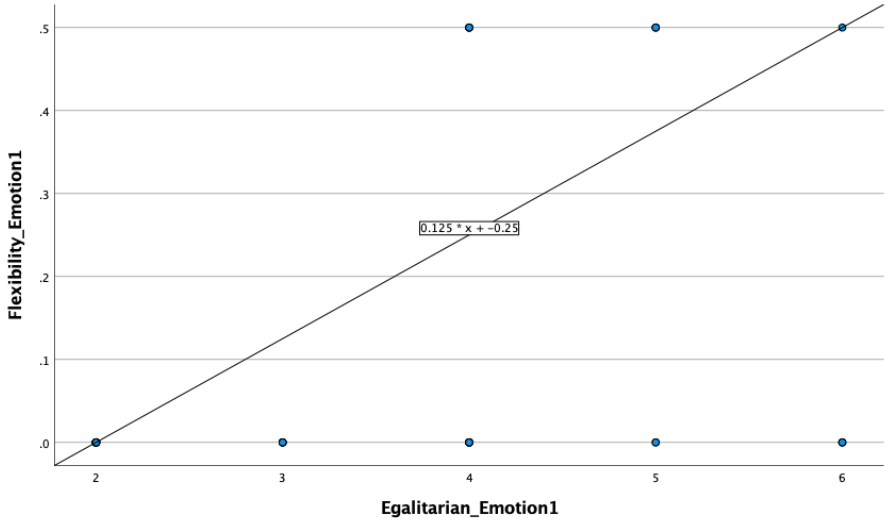

Flexibility_Activity1
.60
.40
.20
.00
0.07 * x + -0.56
8
10
12
14
16
18
Egalitarian_Activity1


Stereotyped playmate selection1
6
4
2
0
-2
0.8 * x + -8.4
8
10
12
14
16
18
Egalitarian_Activity1


Stereotyped playmate selection1
6
4
2
0
-2
11.4286 * x + -2
.00
.20
.40
.60
Flexibility_Activity1


Egalitarian_Emotion1
6
5
4
3
2
4 * x + 2
.0
.2
.4
.6
.8
1.0
Discrimination_Emotion1


Flexibility_Emotion1
.5
.4
.3
.2
.1
.0
0.5 * x + 0
.0
.2
.4
.6
.8
1.0
Discrimination_Emotion1



According to the nine scatterplots presented above, monotonic relationships exist between each of the two variables, which are: 1) the sex-role discrimination (SRD) of gender-stereotypical activities and the egalitarian sex-role model (ESR) of gender-stereotypical activities, 2) SRD of gender-stereotypical activities and the sex-role flexibility (SRF) of gender-stereotypical activities, 3) SRD of gender-stereotypical activities and Stereotyped playmate selection (SPS), 4) ESR of gender-stereotypical activities and SRF of gender-stereotypical activities, 5) ESR of gender-stereotypical activities and SPS, 6) SRF of gender-stereotypical activities and SPS, 7) SRD of gender-stereotypical emotion expressions and ESR of gender-stereotypical emotion expressions, 8) SRD of gender-stereotypical emotion expressions and SRF of gender-stereotypical emotion expressions, and 9) ESR of gender-stereotypical emotion expressions and SRF of gender-stereotypical emotion expressions. Therefore, the second assumption for conducting Spearman's Correlation was not violated (Field, 2018).

To sum up, because the assumptions of paired observations and monotonic relationships between variables were not violated for all target relationships, Spearman's Correlation can be used to assess linear relationships between these variables.

Appendix 12 – Assumption Testing for Rank ANCOVA

Table 4. Test of Homogeneity of Variances for Covariates (Scores in the Pre-test)

	Levene's Test F	df1	df2	p
SRD_Activity	2.8	1	37	0.1
SRD_Emotion	1.63	1	37	0.21
ESR_Activity	0.7	1	37	0.41
ESR_Emotion	0.1	1	37	0.75
SRF_Activity	0.14	1	37	0.71
SRF_Emotion	4.33	1	37	0.054
SPS	0.78	1	37	0.38

Note: SRD=Sex-role discrimination; ESR=Egalitarian sex-role model; SRF=Sex-role flexibility; SPS=Stereotyped playmate selection

The only assumption for conducting Rank ANCOVA is the homogeneity of variances in covariates among groups (Quade, 1967). According to Table 4, the p-values for all seven scores in the pre-test were larger than 0.05 in the Levene's Test, which are 1) the sex-role discrimination, the egalitarian sex-role model, and the sex-role flexibility for gender-stereotypical activities, 2) the sex-role discrimination, the egalitarian sex-role model, and the sex-role flexibility for gender-stereotypical emotion expressions, and 3) the stereotyped playmate selection. Therefore, there was no sufficient evidence to say that the variances of covariates across groups (i.e. the intervention group and the active control group) were significantly different. Therefore, the assumption for conducting Rank ANCOVA was not violated for all covariates.

Appendix 13 – Observational Notes for Storytelling Sessions

'Car' story:

- Intervention group (female protagonist):
    - Even if I emphasized the gender of the protagonist (i.e. Kelly Turtle), most children memorize it as a male
        - Me: "Anyone remember the turtle is male or female?"; Majority of children: "Male."; Female Child A: "No, this is Kelly Turtle (so it should be a female)"
    - Female Child B: "I love her car!"
    - Male Child A: "I don't want her to win. I want to break her car."
- Control group (male protagonist):
    - Female Child C: "I love racing car as well."

'Handicraft' story:

- Intervention group (male protagonist):
    - Male Child A: "He (Buddy Mouse) made an ugly Christmas tree. I don't like it."
        - Repeat this comment in Session #2, and other kids mimicked his comment.
- Control group (female protagonist):
    - Male Child A: "Is the mouse male or female?"; Female Child B: "The mouse has a flower on the head, it must be a female."

'Angry' story:

- Intervention group:
    - Female Child A: "She behaves like (the name of a male peer)."
- Control group:
    - Male Child A: "I will be angry, just like him."

'Block' story:

- Both groups: boys show more interest/more reaction/more excitement than girls
- Intervention group:
    - Female Child A: “When can we finish the story?”
    - Two girls that behave well before lost attention in the middle

‘Sand’ story:

- Intervention group:
    - Female Child A: “she did not behave like girls. Girls will not play sand like this.”

‘Scared’ story:

- Both groups:
    - Majority of boys and some girls actively commented: “I am not afraid of anything.”
    - Male Children: “I am a superman.”
- Intervention group:
    - Female Child A: “Can we read girl’s story next time (with female characters)?”

‘Swing’ story:

- Both groups:
    - Girls show more interest/more reaction/more excitement than boys

‘**Costumes**’ story:

- Both groups:
    - Show great interest to the story