

Research on Children's Outdoor Play: Analysis of Published Journal Articles in Korea from 2005 to 2015

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Abstract

This study reviewed outdoor play articles published in Korea during past 10 years. The purposes were to determine the main themes of outdoor play articles and the research methods used in the studies. To summarize the main findings: (1) seven research themes were identified, with 'outdoor play environment' and 'children's outdoor play behaviors' being the major research topics. (2) With regard to research method, approximately two-thirds of studies employed a quantitative methodology, with survey being the most frequent. However, when exploring the theme of 'outdoor play experience,' all studies used qualitative research methods such as participant observation, interview, or archival data collection.

Keywords: research review, outdoor play, children, Korea

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All children in the world play, and play has been a part of early childhood education since Froebel developed the first kindergarten. Children learn about the world, express their feelings and ideas, and develop social relationships with other people through play. According to Wachs (1986), the content of children's play is influenced by their experiences and the contexts of their lives. The context can include the physical environment, time, other children or adults, and cultural expectation.

As Dempsey and Frost (1993) state, the understanding of play environment is important since the environment signals what is possible. The environment in large part embodies the curriculum of early childhood education and care. Environments are not neutral, but demand different degrees of participation. Particular settings of play environment invite children to involve themselves in particular activities, and the extent of children's participation in an activity depends on how well certain aspects of the surrounding physical environment meet their needs, attitudes, and interests (Barker & Wright, 1955; Kritchewsky, Prescott, & Walling, 1977).

Play does not occur in vacuum. Rather, it occurs within a context including social and physical dimensions since children play with something and/or someone, even if only in imagination, in a certain place and at a certain time (Naylor, 1985). According to Wohlwill and Heft (1987), outdoor environments enhance the opportunity for free exploration. The existence of various natural materials in outdoor environments, which offer little restriction and make few special demands on children, allow them to more freely explore the world around. In other words, the relatively unconstrained environment provided by the outdoors offers children opportunities to create and organize their world more freely (Shin, 1994).

Also, an increasing body of literature has presented empirical evidence on the value of outdoor play for child development. Outdoor play is associated with greater levels of physical activity, and this kind of whole body exercise has a long-lasting influence throughout development and health (Baranowski, Thompson, Durant, Baranowski, & Puhl, 1993; Brown et al., 2009; Spencer & Wright, 2014). Children who regularly play outdoors tend to be fitter and leaner, develop stronger immune systems, play more creatively, have more active imagination, report lower stress levels, and demonstrate greater respect for themselves and others (Fjørtoft, 2004; Burdette & Whitaker, 2005).

In the early childhood education area in Korea, play has been topic of interest, and many

studies regarding children's play have been published in early childhood education and developmental journals. However, only a few articles have examined outdoor play. According to Choi and Kim (2009), among 2,453 studies of play found in the Korean National Assembly Library Database System, only 152 focused on outdoor play. Furthermore, in Korea, early childhood educational settings have tended to adopt policies that reduce outdoor play time because of concerns for safety and placing greater value on academic outcomes.

To provide further evidence on the value of outdoor play for children's development, it is very important to collect and communicate the research and knowledge regarding outdoor play. Therefore, to clarify the current status of outdoor play in the academic field of early childhood education, this article explores the focus of recent outdoor play studies conducted by researchers in Korea over a 10-year period. Research questions include: (1) What themes are examined in peer-reviewed journal articles on outdoor play in Korea? (2) What research methods are being used in studies on outdoor play?

Data Collection

Studies published in Korea during the 10 years from 2005 to 2015 were identified through a structured computerized search of the Summon database using a search term of "outdoor play." Only studies conducted in children and in early childhood education and care settings were selected. Based on the title and abstract, search results were reviewed for relevance and duplicates. The initial database search in Summon resulted in 76 publications. In addition, reference lists from selected articles and relevant review papers were searched for additional articles meeting inclusion criteria. Titles and abstracts were reviewed for eligibility criteria, resulting in 46 publications that were fully considered. Among the final group of selected articles, analysis of the content was used to identify the characteristics according to theme and research methods. The constant comparative process as provided by Glaser and Strauss (1967) and further interpreted by Strauss and Corbin (1998) was used as the basis for the content analysis to define themes. For all included studies, data were extracted for research purpose, methods, target population, location and main study results.

Content analysis done by the author was checked with a peer reviewer who was a professor in a college of education. Where ambiguity remained, a conclusion was reached by discussion.

Findings

After careful review of the final selected 46 articles, the articles were categorized according to research theme and methods. Based on these procedures, a total of seven research themes were identified: outdoor play environment, children's outdoor play behaviors, planning and management of outdoor play, outdoor play and child development, outdoor play experience, perception of outdoor play, safety, and others. Of the 46 studies, 29 reported using quantitative research methods and 14 reported using qualitative research methods. One study employed the Q-method, which combined quantitative and qualitative research methodologies. In addition, one study developed an assessment scale for outdoor play and environment. The remaining study was a review of articles on outdoor play. General study characteristics are summarized in Table 1.

Outdoor Play Environments

Among 46 studies concerning outdoor play, 12 focused on outdoor play environments. Eight studies explored the actual and current conditions of outdoor play environments in early childhood education and care settings, and all of the studies used survey as a research method. In addition, three studies aimed at developing outdoor environment design guidelines based on user needs analysis and observation of children's outdoor play. The remaining study focused on maximizing play benefits through color classification of outdoor play equipment. All studies reported quantitative results of a survey except one, which employed qualitative research methods including participant observation, interview, and analysis of archival data collection. With regard to target population, seven studies selected child care centers as research samples, and three studies selected kindergartens. Another study targeted both kindergartens and child care centers. Only one study included

Table 1. *General characteristics of studies focused on outdoor play*

Themes (N)	Research purpose (N)	Research methods (N)	Target population (N)	Location (N)
Outdoor play Environment and/or equipment (12)	- Actual/current condition of outdoor play environment or facilities (8) - Development of playground environment design/user needs analysis (3) - Color classification of playground equipment (1)	- Quantitative study (11): survey (10), observation and survey (1) - Qualitative study (1): participant observation and interview	- Kindergarten (3) - Child care center (7) - Kindergarten and child care center (1) - Toddlers and teachers (1)	- Kindergarten (3) - Child care center (8) - Kindergarten and child care center (1)
Outdoor play behaviors (10)	- Explore outdoor play behaviors or activities (9): characteristics of outdoor play behaviors (5), play activities in a natural outdoor environment (2), entry behaviors during outdoor play (1), rough-and-tumble play during outdoor play (1) - Compare indoor and outdoor play behaviors (1)	- Quantitative study (6): observational study (2), observation and survey (4) - Qualitative study (4) with participant observation, interview, archival data collection	- Toddlers (1) - Preschoolers (7) - 0-5 years of age (2)	- Kindergarten (5) - Child care center (4) - Kindergarten and child care center (1)
Planning and management of outdoor play (5)	- Actual/current state and condition of outdoor play (4) - Action research for effectively managing outdoor play (1)	- Quantitative study (4): survey (4) - Qualitative study (1): action research	- Teachers (4) - Children and teachers (1)	- Kindergarten (1) - Child care center (2) - Kindergarten and child care center (2)
Outdoor play and child development (5)	- Relation between outdoor play and child development (5): self-efficacy and social competence (1), emotional intelligence and drawing representation ability (1), mathematical and athletic abilities (1), aggression and interpersonal problem-solving ability (1), leadership (1)	- Quantitative study (5): experimental (4), observational and survey (1)	- Preschooler (5)	- Kindergarten (4) - Child care center (1)
Outdoor play experience (4)	- Meaning of outdoor play experiences (3) - Outdoor play experiences and children's rights of participation (1)	- Qualitative study (4): participant observation, interview, archival data collection	- Infants (1) - Toddlers (1) - Preschoolers (2)	- Child care center (3) - Child care center and kindergarten (1)
Perception of outdoor play (4)	- Teacher's perception (or attitude) of outdoor play (3) - Child's perception of outdoor play (1)	- Quantitative study (1): survey (1) - Qualitative study (2) - Quantitative and qualitative (1): Q-method	- Teachers (3) - Preschoolers (1)	- Kindergarten (3) - Child care center and kindergarten (1)
Safety (2)	- Outdoor play safety rules (1) - Safety of outdoor play environment (1)	- Quantitative study (2): survey (2)	- Preschoolers (1) - Playground (1)	- Kindergarten (1) - Kindergarten and child care center (1)
Others (4)	- Knowledge co-construction of teacher and children during outdoor play (action research) - Collaborative process of outdoor play rules - Development of assessment scale for outdoor play activity and environment - Research review of outdoor play	- Qualitative study (2): participant observation and interview (1), action research (1) - Developing measurement (1) - Review (1)	- Teacher and children (1) - Preschoolers (1) - Kindergarten (1) - Research (1)	- Kindergarten (2) - Child care center (1)

both toddlers and teachers as participants and examined their needs in the construction of an outdoor playground.

According to these research results focused on the actual and current conditions of

outdoor play environment, while all kindergartens that participated in the studies had their own outdoor playgrounds, not all child-care centers had outdoor space for play. Furthermore, in the case of child care centers, some used building rooftops and neighborhood public playgrounds as outdoor play space. In addition, most did not have outdoor play space for infants and toddlers (An & Lee, 2007; Byun & Choi, 2006; Byun, Choi, & So, 2013; Koh, Ryue, & Na, 2006; Shin, Kim, & You, 2012).

The sizes of outdoor spaces and the available play materials provided in playgrounds were insufficient to support various play activities. Most outdoor spaces consisted of fixed play equipment that lacked areas for constructive and creative play. In general, the quality of the outdoor environment was not high enough to contribute to the balanced development of children (Byun & Choi, 2006; Choi & Byun, 2008a; Kang, 2009). Researchers have suggested that, rather than monotonous and identical designs, early childhood education and care settings should design outdoor play environments that provide diverse opportunities for play, challenges, and adventure by including circuitous pathway designs, indoor-outdoor transitional space, and systematic relation of space to facilities (Choi & Byun, 2007a, 2008b; Lee & Lee, 2007). In addition, Pyun, Lee, and Kim (2010) suggested color classifications for outdoor play equipment according to the type of play using the MCC Emotional Filter Color System.

Children's Outdoor Play Behaviors

Of the 10 studies focusing on children's outdoor play behaviors in early childhood education and care settings, five studies purposed to investigate the general characteristics of outdoor play behavior. Another two studies explored play activities in natural outdoor environments. In addition, one study examined rough-and-tumble play, and another two studies compared indoor and outdoor play behaviors. Of the 10 studies, six conducted quantitative studies, two of which employed observational study, while the other four employed observation and survey together. Four researchers used qualitative methods of participant observation, interview, and archival data collection. Regarding target population, seven studies selected preschoolers as subjects for their studies, and two studies selected children 0-5 years of age. Only one study selected toddlers as the target population. In

addition, five studies were conducted at kindergartens, and four studies were conducted in child care centers. Only one study was conducted in both kindergartens and child care centers.

According to the results of research conducted in unstructured natural outdoor spaces, children design their own play, enjoying exploration and discoveries, as the natural space allowed them to pursue independence and confidence, physical fitness, and happiness (Nah & Kim, 2012). However, Lim and Kwak (2015) suggested the need for careful planning of outdoor play for young children living in big apartment complexes, as these children were not accustomed to outdoor play in nature. Moreover, researchers argued that the quality of the outdoor environment and the interaction with teachers or other children influenced the quality of outdoor play (Choi & Byun, 2006, 2007b; Kim & Kim, 2008; Lee, 2010; Seo, Jeoung, & Park, 2014). Compared to indoor play behaviors, children engaged in more functional-relational behaviors and physical play and less unoccupied, onlooker behaviors and solitary play on playgrounds (Kwon & Ohm, 2011; Lee, 2007). In addition, Kim and Shin (2007) found that children's outdoor rough-and-tumble play was related to both gender and social competence.

Planning and Management of Outdoor Play

Four studies explored actual planning and management of outdoor play in early childhood education and care settings using survey methods, and one study conducted action research on effective ways to manage outdoor play time. Four studies selected teachers as the target population, whereas only one study employing action research was performed with both teachers and children. Two studies were conducted in child care centers, and one study was conducted in kindergartens. Another two studies were conducted in both kindergartens and child care centers.

According to action research (Lim & Ohm, 2015), effective management of outdoor play must consider the physical and social environment as well as detailed outdoor programs. Moreover, the results of studies focused on actual conditions of outdoor play concluded that outdoor play environments of early childhood education and care settings were limited with regard to their proper educational function due to time limitations, lack of well-developed

outdoor programs, and environmental and safety issues (Choi & Byun, 2010; Kim, 2005; Kim & Kim, 2009; Lee & Shin, 2008)

Outdoor Play and Child Development

Five studies addressed the relationships between outdoor play and other variables of developmental areas or developed outdoor play programs to promote specific areas of child development. The topics included self-efficacy and social competence, emotional intelligence and drawing representation ability, mathematical and athletic abilities, aggression and interpersonal problem solving, and leadership. All five studies employed quantitative study methods: four of them were experimental studies, and one study used both observation and survey methods. The target population of all studies was preschoolers, with four studies conducted at kindergartens and one at a child care center.

According to the studies, physical and expressive behaviors on playgrounds enhanced children's self-efficacy and social competence (Kang, Shim, & Ryu, 2013), and outdoor play with natural objects was positively related with emotional intelligence and drawing representation ability (Kim & Chae, 2012). Cho and Hong (2011) also suggested that integrated activities of outdoor play and mathematics had greater positive effects on children's overall mathematical and athletic abilities than did ordinary outdoor activities. Furthermore, outdoor rough-and-tumble play was related with reduction in aggression and increase in interpersonal problem-solving ability (Choi, Roh, Jeong, & Ju, 2013), as well as with sub-factors of leadership such as challenge and self-confidence (Choi, Hong, Jeon, Bae, & An, 2013).

Outdoor Play Experiences

Three studies investigated the meaning of outdoor play experiences in terms of development and playground equipment use, and one study analyzed outdoor play experiences respecting children's right of participation. All studies employed qualitative research methods with participant observation, interview, and archival data collection. Two studies were conducted with preschoolers, and the other two studies selected infants or

toddlers as the target population. Three studies were located at child care centers, and one other was conducted in kindergartens.

According to these studies, outdoor play experiences provided children with opportunities to develop relationships with peers, teachers, and other individuals and to express their feelings and emotions (Bong & Kim, 2010; Han & Yoon, 2011; Son & Jeon, 2011). Kwak (2014) also concluded that outdoor play respecting the right of participation fostered free communication, choices and initiative, flow, and creative problem solving.

Perception of Outdoor Play

Of the four studies investigating perception of outdoor play, only one explored children's perceptions of outdoor play compared with those of indoor play. The remaining three studies explored teachers' perceptions of outdoor play. With regard to research methods, the study exploring children's perception of outdoor play employed the Q-method, which combined quantitative and qualitative research methodologies, and two studies used qualitative methods. One study reported using survey as a research method. With regard to research location, three studies were conducted at kindergartens, and one at child care centers.

According to research results, all teachers who participated in the studies perceived outdoor play as being very important in supporting children's development but reported some difficulties in implementing outdoor play (Han & Kweon, 2013; Kim & Ryu, 2012; Moon, Jung, & Lee, 2011). The researchers categorized children's perceptions of outdoor play as either extrinsic or intrinsic imagery (Chung, Park, & Kang, 2014).

Safety

Only two studies explored safety of outdoor play. Lee and Shin (2006) analyzed differences in kindergarten children's awareness and practices on play safety rules outdoors using survey as a research method. They found that, while safety awareness increased in older children, awareness of safety practices did not. There was also a large discrepancy between safety awareness and practices among young children. The second study examined

playground safety by assessing playground environment, equipment, and facilities. Results from this study revealed that safety management levels at early childhood education and care institutions were higher than at apartment complexes and residential areas (Chung & Kang, 2011).

Others

Four studies were categorized as others. First, Na and Kim (2014) explored the process of knowledge co-construction of teachers and children during outdoor play as an action research. In addition, Goh and Chung (2009) examined the collaborative process of creating outdoor group play rules using an ethnographic approach. Third, Shin (2005) developed assessment scales for outdoor play and environment. Finally, Choi and Kim (2009) conducted a review of children's outdoor play research trends using published journal articles from 1998 to 2009.

Discussion

This study reviewed outdoor play articles published in Korea during past 10 years. The purposes were to determine the main themes of outdoor play articles and the research methods used in the studies. To summarize the main findings: (1) seven research themes were identified, with "outdoor play environment" and "children's outdoor play behaviors" being the major research topics. (2) With regard to research method, approximately two-thirds of studies employed a quantitative methodology, with survey being the most frequent. However, when exploring the theme of "outdoor play experience", all studies used qualitative research methods such as participant observation, interview, or archival data collection.

According to research results, the quality of outdoor environments at early childhood education and care settings was not sufficient to enhance balanced development in children. While all kindergartens that participated in the studies had their own outdoor playground, some child care centers did not have their own playground. It seems that the environmental

difference between kindergartens and child care centers was caused by different regulation systems to authorize the settings in Korea as well as the owners' (or directors') perception of outdoor play.

Physical environments of early childhood education and care settings possess multiple functions. These present a script of possibilities, evaluate and present immediate recognition of success, and form the foundation of curriculum in early childhood education (Dempsey & Frost, 1993). It is evident that the outdoor environment and available equipment have effects on children's play in different ways, and it is important to understand the environmental factors related to children's play. Therefore, early childhood education and care settings should provide outdoor play environments that include various play materials to support many kinds of cognitive and social play, as well as a clean, friendly, and inviting atmosphere.

With regard to children's outdoor play behaviors, researchers pointed out that more functional behaviors and physical play were found outdoors than indoors, as children enjoyed leading their own play, exploration, and discoveries outdoors. This phenomenon was also discussed in foreign studies, as Henniger (1985) proposed that the outdoor environment seemed to be an important stimulus, enhanced by activity-producing materials and great freedom found outdoors.

Studies of outdoor play have also shown that outdoor contexts and types of play can offer important practice for negotiation (Broadhead, 2010) and socially cohesive behaviors (Ross & Rogers, 1990). According to Waite, Rogers, and Evans (2013), outdoor spaces lend themselves to the study of how children naturally interact as they are less dominated by adult agendas. Korean researchers have also found that outdoor play was positively related with children's social, emotional, and physical development. Furthermore, outdoor play seemed to enhance children's representational and interpersonal problem-solving abilities. As demonstrated in these studies, outdoor play experiences provided children with opportunities to develop relationships with others and to more freely express their feelings and emotions.

However, it is very important to understand that simply being outside is not sufficient, and that the ways in which teachers and children engage while they are outside impact the resulting experience and associated outcomes. There is valuable learning potential in the

child's self-initiated engagement with environmental aspects that prompt some expression of awe, wonder, excitement and/or questioning. When teachers respond to this expression in a manner that is congruent to the child's expression, there is potential for rich, meaningful interaction to take place (Waters & Maynard, 2010). As Korean researchers have reported, the quality of outdoor environments and outdoor activity programs influenced the quality of outdoor play. Therefore, careful planning and quality interactions with peers and teachers are essential for a high quality of outdoor play.

References

- An, M., & Lee, J. (2007). Conditions and uses of outdoor playgrounds for infants and toddlers in corporate-sponsored child care centers. *Journal of Future Early Childhood Education, 14*(3), 225-243.
- Baranowski, T., Thompson, W. O., Durant, R. H., Baranowski, J., & Puhl, J. (1993). Observation on physical activity in physical location: Age, gender, ethnicity, and month effects. *Research Quarterly for Exercise and Sports, 64*(2), 127-133.
- Barker, R. G., & Wright, H. F. (1955). *Midwest and its children*. New York: Harper & Row.
- Bong, S., & Kim, K. (2010). Exploring one-year-old children's outdoor play experiences. *Journal of Child Care Studies, 6*(2), 1-20.
- Broadhead, P. (2010). Cooperative play and learning from nursery to year one. In P. Broadhead, J. Howard, & E. Wood (Eds.), *Play and learning in the early years* (pp. 43-61). London: Sage.
- Brown, W. H., Pfeiffer, K. L., McIver, K. L., Dowda, M., Addy, C. L., & Pate, R. R. (2009). Social environmental factors associated with preschoolers' nonsedentary physical activity. *Child Development, 80*(1), 45-58.
- Burdette, H. L., & Whitaker, R. C. (2005). Resurrecting free play in young children: Looking beyond fitness and fatness to attention, affiliation and affect. *Archives of Pediatric and Adolescent Medicine, 159*, 46-50.
- Byun, H., & Choi, M. (2006). A study on the composition and planning guidelines of

- outdoor play environment at child care centers in Seoul. *Korean Journal of Human Ecology*, 15(2), 209-229.
- Byun, H., Choi, M., & So, K. (2013). A study on characteristics of building, outdoor playground & equipment in child care center. *Journal of the Korean Housing Association*, 24(6), 9-18.
- Choi, E., & Kim, J. (2009). Analysis on young children's outdoor play research trends. *Early Childhood Education & Care*, 4(2), 97-118.
- Cho, M., & Hong, H. (2011). The effect of integrated math activities with outdoor plays on children's mathematical and athletic abilities. *Korean Education Inquiry*, 29(1), 83-107.
- Choi, M., Hong, S., Jeon, A., Bae, E., & An, S. (2013). The relationship between young children's engagement in rough-and-tumble play during recess and their display of leadership. *The Journal of Eco-Early Childhood Education*, 12(2), 91-112.
- Choi, M., & Byun, H. (2006). A case study on the children's play behaviors and outdoor environment of child care center in Daejeon. *Korean Journal of Human Ecology*, 15(6), 919-935.
- Choi, M., & Byun, H. (2007a). A study on the development of design guidelines for the outdoor play settings in child care center. *Korean Journal of Human Ecology*, 16(4), 855-875.
- Choi, M., & Byun, H. (2007b). A case study on the children's play behaviors and outdoor environment of child care center in Seoul. *Journal of the Korean Housing Association*, 18(3), 91-102.
- Choi, M., & Byun, H. (2008a). Care-giver's needs and evaluation on the actual condition of the playgrounds in child care facilities. *Journal of Korean Housing Association*, 19(6), 105-114.
- Choi, M., & Byun, H. (2008b). Classification of the playground environment design in child care center according to user needs analysis. *Korean Journal of Human Ecology*, 17(4), 661-677.
- Choi, M., & Byun, H. (2010). A study on the actual condition and teachers' perception of outdoor play in child care center. *Korean Journal of Human Ecology*, 19(1), 203-214.
- Choi, M., Roh, E., Jeong, M., & Ju, B. (2013). The influence of reduction in aggression of

- young children and interpersonal problem solving ability between outdoor activity of rough and tumble play and general outdoor activity play. *Journal of Future Early Childhood Education*, 20(4), 21-44.
- Chung, M., & Kang, S. (2011). A study on the safety of outdoor playgrounds. *The Journal of Korea Open Association for Early Childhood Education*, 16(5), 249-268.
- Chung, M., Park, S., & Kang, E. (2014). Five-year-old children's perceptions of indoor and outdoor play. *The Journal of Eco-Early Childhood Education*, 13(4), 23-51.
- Dempsey, J. D., & Frost, J. L. (1993). Play environments in early childhood education. In B. Spodek (Ed.), *Handbook of research on the education of young children* (pp. 306-321). New York: Macmillan.
- Fjørtoft, I. (2004). Landscape as playscape: The effects of natural environments on children's play and motor development. *Children, Youth and Environments*, 14(2), 21-44.
- Glaser, B., & Strauss, A. (1967). *The discovery of grounded theory*. Chicago: Aldine.
- Goh, E., & Chung, K. (2009). An ethnographic study on making group play rules outdoors among young children: Focus on eco-early childhood institutions. *The Journal of Eco-Early Childhood Education*, 8(4), 187-209.
- Han, B., & Kweon, M. (2013). A study on the outdoor activity based on the Nuri Curriculum. *The Journal of Eco-Early Childhood Education*, 12(4), 47-68.
- Han, J., & Yoon, J. (2011). A qualitative study on young children's outdoor play experience: focusing on playground equipment. *Journal of Early Childhood Education*, 31(5), 155-181.
- Henniger, M. L. (1985). Preschool children's play behaviors in an indoor and outdoor environment. In J. L. Frost & S. Sunderlin (Ed.), *When children play: Proceeding of the international conference on play and play environments (1983: University of Texas at Austin)* (pp. 145-150). Wheaton, MD: Association for Childhood Education International.
- Kang, K. (2009). The outdoor play environments for infants by nurseries types. *Early Childhood Education & Care*, 4(2), 119-140.
- Kang, J., Shim, S., & Ryu, K. (2013). The study of young children's self-efficacy and social competence by outdoor play centered in physical and expressive activities.

Early Childhood Education Research & Review, 17(5), 5-31.

- Kim, E. (2005). A study in the actual conditions of outdoor play in kindergartens and childcare centers and teachers' perceptions of outdoor play in Daegu. *The Journal of Child Education*, 14(2), 271-286.
- Kim, M., & Chae, Y. (2012). The influences of play with natural objects on preschool children's emotional intelligence and drawing representation ability. *Early Childhood Education Research & Review*, 16(5), 339-359.
- Kim, J., & Kim, H. (2008). The children's play behaviors according to the outdoor play environment quality. *Korean Association for Child Physical Education*, 9(2), 1-16.
- Kim, J., & Kim, E. (2009). Assessment of physical activity, activity coefficient of preschool children and actual condition of daycare center outdoor play. *Korean J Community Nutrition*, 14(6), 777-788.
- Kim, E., & Ryu, J. (2012). Kindergarten teachers' perceptions of outdoor play meanings and difficulties in implementing outdoor activities and the methods how to activate outdoor play. *Early Childhood Education Research & Review*, 16(4), 27-52.
- Kim, Y., & Shin, H. (2007). Aspects of children's rough-and tumble play during the outdoor play and effects of gender and social competence. *Korean Journal of Human Ecology*, 16(5), 945-955.
- Koh, M., Ryue, S., & Na, J. (2006). An analysis on the actual conditions of kindergarten outdoor facilities in Korea. *Korean Journal of Human Ecology*, 15(4), 675-689.
- Kritchevsky, S., Prescott, E., & Walling, L. (1977). *Planning environments for young children: Physical space*. Washington, DC: NAEYC.
- Kwak, J. (2014). Young children's outdoor play experience in regard to respecting their rights of participation. *Journal of Learner-Centered Curriculum and Instruction*, 14(8), 467-494.
- Kwon, M., & Ohm, J. (2011). The relationships between the entry behaviors into a play group in indoor outdoor free-play time and the social behaviors of preschoolers. *Journal of Educational Studies*, 42(2), 137-156.
- Lee, H. (2007). Toddler's play behaviors according to indoor and outdoor environments. *The Journal of Korea Open Association for Early Childhood Education*, 12(1), 97-121.

- Lee, S. (2010). A qualitative study on the uses of physical environments and outdoor play at educational agencies for young children. *The Journal of Eco-Early Childhood Education*, 9(3), 153-170.
- Lee, S., & Lee, B. (2007). What infants and teachers want in day care center outdoor playgrounds: a projective approach using observation of 2 year-olds during outdoor play and teachers' participation in the playground design. *Journal of Early Childhood Education*, 27(2), 77-98.
- Lee, S., & Shin, D. (2008). Guidelines for developing programs to the activation of outdoor play in early childhood educational institutions. *Early Childhood Education Research & Review*, 12(2), 147-169.
- Lee, W., & Shin, D. (2006). Differences in young children's perception and practices on play safety rules of playground equipment. *Korea Journal of Child Care and Education*, 47, 133-150.
- Lim, E., & Kwak, N. (2015). Adaptation process of young children to outdoor activities in the forest. *Journal of Holistic Education*, 19(1), 121-149.
- Lim, Y., & Ohm, J. (2015). Action research on effective ways of outdoor play for three-year-old children in kindergarten. *Journal of Educational Studies*, 46(2), 105-132.
- Moon, K., Jung, H., & Lee, K. (2011). The typology of kindergarten teachers' attitude toward young children's outdoor play. *The Journal of Korea Open Association for Early Childhood Education*, 16(40), 89-115.
- Nah, K., & Kim, K. (2012). An exploration of play activities in natural outdoor space. *Journal of Early Childhood Education*, 32(6), 139-165.
- Nah, K., & Kim, K. (2014). An action research for teacher-children co-construction in outdoor play in natural spaces. *Journal of Future Early Childhood Education*, 21(2), 43-68.
- Naylor, H. (1985). Design for outdoor play: An observational study. In J. L. Frost & S. Sunderlin (Eds.), *When children play: Proceeding of the international conference on play and play environments (1983: University of Texas at Austin)* (pp. 103-113). Wheaton, MD: Association for Childhood Education International.
- Pyun, Y., Lee, J., & Kim, Y. (2010). A study on maximizing kindergarten play benefits

- through the colors used on outdoor playgrounds & equipment. *Journal of Early Childhood Education*, 30(3), 49-70.
- Ross, D. D., & Rogers, D. L. (1990). Social competence in kindergarten: Analysis of social negotiations during peer play. *Early Child Development and Care*, 64(1), 15-26.
- Seo, H., Jeoug, E., & Park, M. (2014). Play behaviors of young children presented at the outside of Sandeul kindergarten. *Korean Journal of Child Care and Education*, 84(1), 85-119.
- Shin, D. (1994). *Preschool children's symbolic play indoors and outdoors*. Unpublished doctoral dissertation, University of Texas at Austin.
- Shin, D. (2005). A study on the development of assessment scale for outdoor play activity and outdoor environment for early childhood education centers. *Early Childhood Education Research & Review*, 9(2), 151-167.
- Shin, E., Kim, E., & You, Y. (2012). A study on the spatial configuration and uses of kindergartens outdoor playground. *Soon Chun Hyang Journal of Humane Studies*, 31(2), 200-228.
- Son, W., & Jeon, J. (2011). Toddlers' experience world through play in the nature-friendly outdoor environment. *Journal of Korean Child Care and Education*, 7(3), 143-164.
- Spencer, K. H., & Wright, P. M. (2014). Quality outdoor play spaces for young children. *Young Children*, November, 28-34.
- Strauss, A., & Corbin, J. (1998). *Basics of qualitative research: Techniques and procedures for developing grounded theory*. Thousand Oaks, CA: Sage.
- Wachs, T. D. (1986). Models of physical environmental action: Implication for the study of play materials and parent-child interactions. In A. W. Gottfield & C. C. Brown (Eds.), *The contributions of play materials and parental involvement to children's development* (pp. 253-278). Lexington, MA: Health.
- Waite, S., Rogers, S., & Evans, J. (2013). Freedom, flow and fairness: exploring how children develop socially at school through outdoor play. *Journal of Adventure Education & Outdoor Learning*, 13(3), 255-276.
- Waters, J., & Maynard, T. (2010). What's so interesting outside? A study of child-initiated interaction with the teachers in the natural outdoor environment. *European Early Childhood Education Research Journal*, 18(4), 473-483.

Wohlwill, J., & Heft, A. (1987). The physical environment and development of the child. In D. Stokols & I. Altman (Eds.), *Handbook of environmental psychology* (pp. 281-328). New York: Plenum.