
Forest Kindergarten in Germany and Korea - An Empirical Comparative Study on the Educational Field of Aesthetics

Frank Francesco Birk

Department of Social Work, Bib International College, Bergisch Gladbach, Germany

Email address:

frankbirk2003@yahoo.de

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Abstract: This article presents a comparative international and cross-cultural study about aesthetics in early childhood education in forest kindergarten education in Germany and Korea. It deals with differences in the understanding of education and the (educational) goals of the forest kindergarten pedagogy. In addition, the educational area of aesthetics in forest kindergartens in both countries is examined. This article presents the current state of research on aesthetic education in early childhood education in forest kindergartens. This is the first study that focuses on forest kindergartens and aesthetic education in an international and cross-cultural context. A written survey with mostly quantitative questions and some qualitative parts is conducted, in which both the parents (314) and the education experts (84) in Germany and South Korea were interviewed. The frequencies of the different statements were determined and presented graphically with Word clouds. The main result of this study is that the forest kindergarten pedagogy in Germany and Korea, despite different educational understandings and different cultures, has a lot in common, because the Koreans have taken over many aspects and attitudes from Germany. The educational field of aesthetics is explicitly more relevant in Germany, but the Korean experts are presenting many projects that have a close connection to the aesthetic education sector, without assigning them to this field. This includes especially traditional offers such as masquerade and calligraphy. The concluding consideration critically discusses the results and places them in the discourse of forest kindergarten pedagogy.

Keywords: Aesthetic, Forest Kindergarten, Play, Study, International

1. Introduction

Forest kindergarten pedagogy has established itself all over the world. Forest kindergartens exist in countries such as the Netherlands, Sweden, Italy, Chile, USA, Korea, Japan and England. This study is the first intercultural and international comparative study in forest kindergarten pedagogy, in which differences and similarities of Korean and German forest kindergartens are presented. There are cultural differences in both countries, including the fact that Germany is an individualistic society and Korea is a collectivistic society. Likewise, both countries have different educational systems and perform very differently in PISA studies. This work belongs to the discourse of comparative education. A comparison has the intention of establishing a relationship between two quantities, which can show similarities and differences [10]. Comparative education studies issues and phenomena and issues around education

and pedagogy against an international or a global horizon, using the mode of comparison (intercultural, international, intranational, interregional) because more precise analyses and more accurate answers are expected from the comparison [1]. The present work is an international and cross-cultural comparative study with experimental as well as melioristic function, by means of which universal, state-independent structures and functional interrelationships of educational systems can be identified and improvements of the own educational system can be found out [11]. In addition to this comparison, the research can also contribute to the generation of hypotheses or their specification [11]. The international comparison serves to identify national specificities between German and Korean forest kindergarten pedagogy in order to determine similarities and differences between the conceptions, educational understandings, (educational) goals as well as the educational area aesthetics [1]. The intercultural comparison is based on cultural

differences and similarities. Here, a comparison between an individualistic society, in which the concept of the forest kindergarten was co-founded, and a collectivistic society, which adopted the concept according to the European model, is particularly revealing with regard to different educational goals. Oh & Choi state that in Korea, when concepts are adopted from other countries, the own always asserts itself through the incorporation of the foreign [26]. By comparing these different educational systems and the different social characteristics of early childhood education in forest kindergarten can be identified. For this purpose, questionnaire surveys will be conducted with educational professionals from forest kindergartens as well as parents from selected forest kindergartens from Germany and in Korea. These research desiderata will be collected by a quantitative questionnaire survey using a large number of educational professionals and parents. This quantitative approach is necessary to generate a sufficiently large amount of data to produce meaningful results [26].

2. Aesthetics in Germany and Korea

2.1. Aesthetics in Germany

Aesthetic education is anchored in the Common Framework of the Länder for Early Education in Child Day Care Facilities (Gemeinsamer Rahmen der Länder für die frühe Bildung in Kindertageseinrichtungen) as well as in all 16 education and upbringing plans (Bildungs- und Erziehungsplänen) [4]. The following terms can be found for the field of aesthetics: musical education / dealing with media [13], senses (Baden-Wuerttemberg), artistically active children: aesthetics, art and culture (Bavaria), art, visual design, music and theatre play (Berlin) and building and design (Bremen). Thus, the whole spectrum includes the visual (painting, sculpture, etc.) and performing (theatre, dance, etc.) arts [31] and in many federal states also the field of music. Through the different designations of the educational field of aesthetics, a field of tension can be defined that prescribes aesthetic education between perception and active creation. Borg (2012) critically states: Especially in the elementary sector, the term aesthetic education is used inflationarily - with the consequence that everything that has to do with artistic activities in the broadest sense is titled aesthetic education [5]. In addition, in a survey on the theories and practice of aesthetic education in day-care centres for children, pedagogical professionals state that an explicit practical and professional knowledge of cultural and aesthetic education in early childhood is little developed [18; 25].

According to Schäfer (2011), aesthetic education is the ordering of sensory experiences through cultural, biological and life-historical acquired, often pictorial orders, which do not necessarily have to follow ideas of beauty or harmony [30]. This field of education is used here in the sense of the Greek term *aisthesis*, which refers to the knowledge of

sensual, bodily perception and sensation [32]. In addition, the term aesthetics also includes harmony in nature and art and a harmony of the human senses (*ibid.*). Children explore and discover their environment through the totality of their senses. The senses are divided into near senses (olfactory, gustatory, tactile / haptic, kinaesthetic and vestibular perception) and far senses (auditory and visual perception) [17].

Each area of perception is closely related to a form of design: images are experienced through the eye, sounds through the ears and the texture of materials through the sense of touch [6]. In creative work, such as painting, drawing, shaping and experimenting with materials, children come to terms with their environment, process their experiences and also give new expression to their impressions [2]. Although there are different terms for the educational field of aesthetics in Germany, playful learning with all the senses, the training of perception and creative expression e. g. with the body or with pens and paper are the focus of educational programmes in Germany [16].

2.2. Aesthetics in Korea

The educational area of aesthetics can be equated with the South Korean dimension of *expression*, as they cover the same aspects in terms of content. What both have in common is that they focus on creative design with different media and deal with perceptual processes (e.g. hearing, seeing, smelling). The dimension of expression deals with how the pedagogical professional can support young children and preschool children in a diverse personality development. The educational area of aesthetics in South Korea contains three dimensions. These are *Finding Beauty in Nature and Life*, *Enjoying Artistic Expressions* and *Appreciation*. The dimension *Finding Beauty in Nature and Life* encourages the natural interest in sounds, music, movement and artistic work that can be found in nature. This dimension supports the children in finding interest in music, movement, art and the natural-cultural environment. Experimentation with speed, strength, rhythm and beat as well as the perception of colours, shapes and scents in nature are to be stimulated.

The dimension enjoying the creative process is about the artistic expression of thoughts and feelings through different artistic means such as music, movement, dance, sculptural design and theatre play. This dimension is divided into the following five sub-dimensions: Expression through music, expression through movement and dance, expression through artistic activities, expression through theatre play and expression through a combination of different forms of expression. Expression through music can be done, for example, by singing and playing children's and folk songs together and by creating rhythmic patterns. Expression through movement and dance is experienced through familiar and unfamiliar ways of moving or a creative use of material and the expression of thoughts and feelings through movement and dance. Expression is to emerge through artistic activities using creative materials as well as thoughts and feelings. Individual and cooperative artistic activities play a special role here. The sub-dimension expression through

theatre play is about acting out a simple existing or made-up story as well as preparing costumes of the scenery and other props. The last sub-dimension is about expressing thoughts and feelings on specific topics through an interplay of artistic activities such as music, dance, artistic activities and theatre play.

In the dimension *Appreciation of the Work*, children are encouraged to develop interest and enjoyment in artistic creation, beauty in nature and traditional South Korean arts. The dimension *Appreciation* includes the *Meaning of Beauty*, the *Appreciation of Artistic Expression* and the *Appreciation of Traditional South Korean Arts*. The perception of the enjoyment or beauty of nature, the various types of music, dances and drama, and the sharing of thoughts and feelings characterise this area of aesthetic perception. Appreciation of artistic expression also includes appreciation of the artistic expression of oneself and others, as well as learning about the differences between the artistic expressions of oneself and others. The sub-dimension *Appreciating Traditional South Korean Arts* is intended to arouse children's interest and enthusiasm in traditional South Korean arts [24].

3. State of Research

A comparison to forest kindergartens between two states is of interest because in forest kindergarten pedagogy variables such as space, (mostly) prefabricated games (e.g. board games, sports equipment, outdoor play equipment) are omitted. In the case of these two states, it is relevant that both countries have different social forms (individualistic and collectivistic), a different history of kindergarten pedagogy and a different understanding of education. In the following, the state of research on the educational field of aesthetics is presented in order to explain research gaps and to justify the research. There are hardly any studies that explicitly deal with the educational field of aesthetics [7, 8, 9, 12, 14, 15, 21, 23]. In the following, the respective study results are presented and summarized in table 1.

Gorges (2000/2002) surveyed German first-year teachers on different behavioral and learning areas of 37 children who had previously been in forest kindergarten or not. In the areas of interest and creativity in music lessons, half of the former forest kindergarten children were rated better than average. The estimated value is 0.37, which puts this area in seventh rank with 13 points [6]. The situation is similar in the area of interest and creativity in visual arts. The arithmetic mean of 0.33 is above average, but the score of twelve is only enough for eighth rank [6].

Häfner (2002) investigated the school readiness of primary school children who had previously attended a forest kindergarten or a regular kindergarten. From eight German states 103 teachers from 230 children in forest kindergarten and 114 children from regular kindergarten were interviewed. The children were evaluated by the teachers on the basis of 42 questions with a grading scale from 1 to 6. Here, 1 was the best score and 6 the worst. Aesthetic education was assessed with the four items imaginative in the classroom, creative in the

classroom, assessment of the child in visual arts and assessment of the child in music lessons. The children from the forest kindergarten performed better on the items than the children who had previously attended a regular institution. The children performed significantly better on the two items Child is creative in class and Child is imaginative [7].

Warmbold (2002) explores how the experience of nature and landscape can be described for children in forest kindergartens and which places the children prefer in the landscape [34]. In doing so, she interviewed two educational professionals from forest kindergartens in Germany [33]. The results of the study show that the children from the forest kindergarten look for distinctive landmarks and give them special names (e.g., mudmeadow and stonemountain). In addition, the children choose names for places that have a social meaning for them, such as Collecting Oak or Stop Tree. Often places are chosen where fantasy figures live (such as robber's hideout or dragon's cave) [34]. These places and their designations are passed on from year to year within the group of children. This creates deep emotional ties to childhood play places, which the former forest kindergarten children still visit years later [21].

Kiener (2003) conducted research on play and the development of motor skills and creativity in nature. She studied 181 children from four forest kindergartens in Switzerland, five regular kindergartens without forest day and five regular kindergartens with forest day. For the educational area of aesthetics, she used creativity tests for preschool and school children (Kreativitätstest für Vorschul- und Schulkinder; KVS-P) [19] to measure the creativity of the children [14]. This test procedure measures action gross motor creativity (showing different ways of moving, moving a paper cup into a wastebasket in different ways, using drink coasters in different ways), action fine motor creativity (making different pictures from ovals, drawing many different drawings), and verbal creativity (guessing what a drawing could represent). The test results are differentiated into idea fluency (total number of ideas) and idea flexibility (diversity of ideas). After one year of forest kindergarten, the forest kindergarten children showed significantly better performance in the two scales idea flexibility and idea fluency than the regular kindergarten children with one integrated forest day per week and regular kindergarten children without integrated forest days (univariate analysis of variance: $p < .05$) [15]. The parents of children from the forest kindergarten also noticed more positive changes (e.g. creative handicrafts, playing without toys) in creativity than the parents of children from the regular kindergarten (Chi^2 test: $p < .01$). As reasons for the positive development in the context of creativity, the free play without prefabricated play materials as well as the ability to occupy themselves independently can be named (ibid.).

Letteri (2004) also used the KVS-P to survey the creativity of 13 forest kindergarten children and 17 regular kindergarten children. The children in forest kindergarten were significantly better than these in regular kindergartens in the two subtests where creativity refers to developing concrete actions. They had more and more varied ideas about what

could be done with a drink coaster or how to move a paper cup into a wastebasket (Mann-Whitney U test: $p < .01$)" (21).

In a 2004 survey, Huppertz reviewed the goals and values of forest kindergarten educational professionals and examined, among other things, the image of humanity, didactic approaches, and children's activities. Between 90 and 102 professionals responded to each question. Multiple answers were possible for most of the questions. One question concerns the child development areas for which the forest kindergarten is particularly suitable according to the opinion of the educational professionals. The professionals ($n=98$) named motor support (57.1%) in first place, perception (23.5%) in fourth place, and creativity and imagination (7.1%) in tenth place out of 14 mentions [12]. Furthermore, the prioritisation of the educational areas was

surveyed using a scale of one to ten ($n=102$). The highest mean scores were achieved by the areas of social education (9.56), encounter with nature (9.59), perception (9.45) and motor skills (9.39). The area of musical and aesthetic education (7.55) achieved the seventh ranking out of a possible eleven (ibid.).

Michek, Nováková & Menclovác (2014) used observation with semi-structured interviews in three Czech forest kindergartens and document analysis to investigate the advantages and disadvantages of forest kindergarten pedagogy among managers and educational professionals. The result regarding aesthetic education is that the natural space stimulates increased creativity [23].

The following table shows the results on aesthetic education in the forest kindergarten.

Table 1. Study results on the educational area of aesthetics in forest kindergartens.

Authors/Focus of the study	Target group/Sample	Research method	Results
Gorges (2000/2002)	Survey of teachers on 37 children who previously attended forest kindergarten compared to children who did not attend forest kindergarten	Questionnaire	The children from the forest kindergarten were rated higher in interest and creativity in music lessons and in visual arts
Häfner (2002) School readiness of children from forest and regular kindergartens	103 teachers from eight federal states, 230 children from forest kindergartens and 114 from regular kindergartens	Questionnaire	The children from the forest kindergarten are significantly more imaginative and creative in class The children were rated better in visual arts as well as in music lessons
Warmbold (2002/2006): Landscape experiences of children in the forest kindergarten	Two pedagogical specialists	Interview	Play locations are named according to needs (e.g., rules, sense of community) and fantasy creatures. There is a close bond with the play places
Kiener (2003/ 2004): The importance of play for motor and creative development in children from forest kindergartens	181 children from four forest kindergartens, five regular kindergartens without a forest day and five regular kindergartens with an integrated forest day	Metric testing and interviews with parents and educational professionals	Forest kindergarten children achieve significantly better results in the areas of idea fluency and idea flexibility
Letteri (2004): Creativity of children in forest and regular kindergarten	13 children from forest kindergartens and 17 from regular kindergartens	Metric test method	Children from the forest kindergarten had significantly more and varied ideas in dealing with everyday materials Perception, creativity and imagination are significant areas among educational professionals
Huppertz (2004): Study on goals, values, didactics and play of the children in the forest kindergarten	109 educational specialists from forest kindergartens	Questionnaire	Creativity is one of the four most significant areas with regard to coping with future tasks
Michek, Nováková & Menclovác (2014)	Three forest kindergartens	Observation	Creativity is stimulated more strongly in the natural space than in premises.

Overall, the study results present that forest kindergarten pedagogy aims to provide an antithesis to formalized, mediatized and institutionally shaped childhood patterns and to allow free spaces for children's play activities, movement and independent exploration of the natural and social environment [19].

Aesthetic Education has hardly been explicitly studied in the context of forest kindergarten pedagogy [4, 5, 6, 9, 11, 13, 21, 15]. Except for Warmbold (2002), no researchers explicitly address aesthetic education [33]. Warmbold (2002) [33] interviewed two educational professionals and conducted a content analysis, but she only presents the steps of the content analysis, which she refers to as Phase II, in a few sentences, so that the exact methodological procedure (e.g., coding rules, coding scheme, coding guide and firming of the

content analytic units of analysis) as well as the evaluation is not comprehensible to readers [20, 22]. Kiener (2003) as well as Letteri (2004) investigated creativity by means of the metric test KVS-P and a survey of educational professionals and parents. Here, the question arises whether a quantitative test procedure can measure the full potential of the field of creativity or aesthetic education. It should also be noted that creativity is an important goal of aesthetic education but does not represent the entire spectrum of aesthetic education. Aesthetic education is only included as a small part in the surveys of Gorges (2000; 2002), Häfner (2002), Huppertz (2004) and Michek et al. (2014). The data of Gorges (2000; 2002) and Häfner (2002) are oriented towards the assigned school grades and should also be critically questioned whether this survey really takes into account the full potential of

aesthetic education in these studies [4]. The present study aims to close this research desideratum and to provide first systematically results on Aesthetic Education in the Forest Kindergarten.

4. Empirical Part

4.1. Methods

In this international and intercultural comparative study, 33 pedagogical specialists from Korea and 51 from Germany were examined by questionnaire. Furthermore, 155 parents from Korea and 159 from Germany were interviewed. The focus is on descriptive statistics, since the frequency distributions of certain characteristics are of particular interest [3]. Since the expressions in the available questionnaires usually comprise only about ten different ones and no metric but mostly ordinal data are available, a distribution of each expression is given and no classified data are created [3]. The second type of question records mean values of the pedagogical specialists instead of frequencies. The condition for this is that the variables are metric [28].

Below are exemplary questions from the questionnaire:

- 1) Has your child's play behaviour changed since joining the forest kindergarten? (Yes/No).
- 2) If yes: How has the play behaviour changed? (Free text).
- 3) Please report the areas of the projects carried out in the last year (free text).
- 4) Please report the play topics of the children in the free play phase (free text).

These questions serve to answer the following research question:

What is the importance of the educational area of aesthetics in the forest kindergarten and how are these implemented in early childhood practice in Germany and South Korea?

4.2. Results

The results are graphically illustrated by word clouds. The program WortArt.com is used for this purpose. Word clouds are now very widely used means of visualizing the words of a particular source [27]. There are different ways of representing word clouds. For the qualitative questions presented, domains are cited as words. The size of the representation of the respective word is based on the number of mentions from this area, so that frequently mentioned areas appear significantly larger in the word cloud than less frequently mentioned areas [27]. Word clouds can provide a quick overview of the most frequent terms in a text and this is done in a visual form that is far more accessible than a tabular representation listing words and indicating their frequency [27].

4.2.1. Results from the Educational Professionals

In the following, the mentions of the German educational professionals are listed in relation to the topics of the projects

carried out in the last year. In Germany, most of the projects are on animals (11) and on aesthetic education (10). Examples of aesthetic projects are performing arts, theater education topics and circus. The area of geography/history (10) is mentioned with the following projects: Peoples & Tribes and Universe. Music is mentioned seven times by the educational professionals. Professions, I and my body (6 each) as well as seasons/festivals (5) are mentioned by the pedagogical specialists. This is followed by the topic of environmental protection (4) with the mentions of animal welfare and waste separation and avoidance. Four projects are mentioned in the area of democratic education. These are children's rights, giving playtime to children of refugees and developing a complaints system for children. The project topics sports/movement and plants are mentioned three times by the pedagogical staff. Two projects were mentioned in the area of literature/language. In addition, projects in the areas of vehicles (2), mathematics (2) and elements (1) were mentioned by the educational professionals in Germany.



Figure 1. Project topics (educational professionals, Germany).

All eight forest kindergartens in Korea carry out at least one project in the past year in the area of aesthetic education as well as plants. For example, projects in the area of traditional, creative offerings and design with natural materials are mentioned. The Korean specialists mentioned projects on the topics of animals (6), geography/history (6) and elements (4). In the area of geography/history, projects were carried out on the planet Earth and on maps. The areas of seasons/festivals (4), sports/movement (3), environmental protection (2), literature/language (2), mathematics (2), vehicles (1), professions (1), I and my body (1) and music (1) are also cited by the Korean educational professionals.



Figure 2. Project topics (educational professionals, Korea).

The educational professionals indicate activities with

natural materials in 51 mentions. In the subcategories, the following activities are mentioned: Building and constructing (18), playing with water (10), digging holes (10), sandbox activities (5), playing with natural materials (4), making bouquets (2) and collecting natural materials (2). This is followed by role play with 51 nominations. The following role-play topics are mentioned by the educational professionals: family (15), heroes or fighting games (10), professions (8), cooking (8), animals (7), re-enacting project topics (2) and playing school (2). Movement is cited by the educational professionals with 49 mentions (96%). The 49 responses on movement include climbing trees, movement games, running/running, tag games, ball games, balancing on felled logs or log pollen, throwing natural materials, rolling, archery, dancing and hide-and-seek games. The area of crafts is cited with 40 mentions (handling tools, carving as well as gardening). Artistic activities are cited with 33 mentions (painting, designing with natural materials, handicrafts, singing and music as well as modeling with plasticine or clay). 14 mentions are found in games with objects (handling ropes, swings, table games, pulling the handcart). Observing flora and fauna is mentioned with six mentions and the topic of friendship with four.



Figure 3. Topics in free play (educational professionals, Germany).



Figure 4. Topics in free play (educational professionals, Korea).

Activities with natural materials (playing with water, digging holes in the ground, building and constructing with natural materials, playing with natural materials and harvesting and preparing fruits) are indicated 32 times by the Korean educational professionals. Movement is indicated 23 times including climbing, ball games, gymnastics, running, swinging, traditional games, free movement, balancing on tree trunks, jumping, hiding games as well as sliding. 7 professionals mention role play (cooking, role play in general, professions, family, heroes and fighting games and nature). 13 professionals state that dealing with flora and fauna is significant for the children in free play. This is followed by artistic activities with twelve mentions (handicrafts, origami,

kneading, theater, designing with natural materials, dancing and music with natural materials). Playing with objects is nominated six times by the professionals. Playing with ropes (5) and playing with cups and dishes (5) are listed as play themes for this area. The area of handicrafts receives five mentions (tools, carving wood with paring knives. One statement concerns friendship.

4.2.2. Results from the Parents

The parents of forest kindergarten children in Germany observed a change in play behavior in 98 cases. The most frequent mention by German parents is that their child's creativity / imagination (34) has improved. Creativity and imagination can be seen, for example, in storytelling and in the increased activity of painting and handicrafts. 25 of the German parents feel that the children use role play more intensively to express themselves. The role plays are more thematic and deal more with forest topics (e.g. animal family, forestry office). 24 Parents note that play without prefabricated play materials or play with natural materials or everyday materials has taken up more space. The children integrate natural materials as well as everyday materials in play with their toys (e.g., building bridges with roots from the forest). Natural materials are increasingly valued and preferred over conventional toys. 23 parents report that they play more with other children. Here, other children from the forest kindergarten are mentioned. 21 parents state that their child has become more independent or can occupy themselves more on their own, as the children in the forest are more active and independent in playing with and without play materials as well as alone or with other children. 21 Parents indicate that their child has developed positively in the educational area of movement. In this regard, statements are made that the children are fitter due to the hikes in the forest, that the children are trained in their movement sequences due to the different forest floor and that they can gain diverse sensorimotor experiences. 17 Parents state that the children have gained access to nature or environmental awareness. Here, the parents state that the children develop an intensive relationship with the flora and fauna and that the forest becomes a part of the social space, which is also visited during leisure time with the family. The parents say that the natural space acquires a special meaning for the children through the adventures they experience in the forest and that the children gain an environmental awareness through this. For example, the children pick up trash, they pay attention to nature and feel that their forest kindergarten is the best kindergarten ever. Even parents whose child previously attended a regular facility report these experiences. 17 Parents mention that the child's social behavior has improved. For example, the children can resolve conflicts independently and without violence and have better interaction with others. In addition, the group atmosphere is very positive. 15 parents indicate that play at home has shifted outside to the garden or forest. The perseverance with others in games or more intensive play is indicated by ten parents. Nine parents state that the educational professionals of the forest kindergarten introduce

the children to experiences with which they have no contact in the home environment. Climbing (9) and carving or working with tools (4) are cited as examples of this. Four parents state that the children's risk assessment has become more sensitive. The children can better assess what dangers are and what they can or cannot trust themselves to do. Three parents each mentioned that building and constructing with building blocks has become more intensive and that the children have also become more interested in listening to music or making music on their own. Two parents each state that more board games are played in the family and that concentration and motivation have improved.



Figure 5. Topics in free play (parents, Germany).

In Korea, 120 parents observed a change in play behavior. 53 Korean parents observe that their child shows a more intensive access to nature or a more intensive environmental awareness. Parents report that their children are less disgusted by soil, have closer contact with animate and inanimate nature and have a friendly relationship. 32 Parents state that the children's self-confidence has increased. The children can better show their boundaries. Playing in nature gives them many positive experiences and through these activities the children reduce fears. Also, according to the parents, a positive self-image can develop in the small groups. 28 parents (18%) report that their child plays more creatively or is more imaginative since attending the forest kindergarten. The children use more artistic activities (e.g., painting, crafts) and tell more imaginative stories. 16 parents state that the children show more interest in movement-oriented activities such as ball games, romping and other movement games. Likewise, 16 parents mentioned that playing without toys or playing with natural or everyday materials stimulates creativity and supports children's interaction. Because the children have no or fewer prefabricated play materials at their disposal, they play more intensively with their play materials at home, integrate natural materials into their play and fewer conflicts arise. Most children prefer playing with natural materials as a natural means of play. In the area of role play, 14 parents state that their child's role play has become more intensive and varied and that the children act out topics and projects from the forest kindergarten at home. Ten mentions were made by parents in the areas of social behavior. The Korean parents state that the children approach other children more and compromise. The small group size is mentioned as an advantage and that the children can form more intensive relationships with others. Thus, skills such as helpfulness, cooperation and the ability to deal with conflict develop

during play. Eight parents observe that their child shows more joy of life and plays more passionately. The parents describe the increase in joy of life by the fact that the child laughs more, that their child's facial expressions and gestures have changed, that the child does not experience any pressure to perform and that their child very much enjoys going to the forest kindergarten and joyfully talks about their experiences in the forest. Furthermore, the parents stated that after the forest kindergarten the children do more reading or language games (8) as well as painting or handicrafts (7). Six parents indicate that their child's play has shifted outside and that there is more building with blocks and construction. Five Korean parents indicate that their child is more interested in traditional play, three indicate that the child is more interested in school learning and two indicate that there is more tree climbing.



Figure 6. Topics in free play (parents, Korea).

These changes in various areas of play since entering the forest kindergarten (for at least nine months) were queried with the help of a 5-point scale, with significantly reduced play in the respective area being given a score of one and significantly increased play being given a score of five. When it comes to playing with other children, children in Germany show the greatest change in terms of increased play after entering the forest kindergarten (4.59). This is followed by the choices of playing outside (4.52), sports / exercise (4.49), role play (4.42), learning (4.31) creative design (4.22) and looking at books (4.15). The differences are not as clear for construction play (3.99), playing instruments (3.26) and watching TV. The intensity of interaction with computers, tablets, cell phones or consoles (2.53) tends to decrease since attending the forest kindergarten.

Korean parents notice the greatest changes in playing outside (4.36), closely followed by sports / exercise (4.33), playing with other children (4.21) and being creative (4.13) and role-playing (4.12). Smaller changes occur in looking at books (3.98) and construction play (3.97). Directed learning (2.99) and watching television (2.66) barely increase. Playing instruments (2.27) and using computers, tablets, cell phones, or consoles (2.03) are decreasing, according to parents.

There is variance homogeneity in the mean differences in the area of sport / exercise ($p = .698$). A significance of the differences cannot be determined with the help of the t-test ($p = .075$). In the area of playing with other children, there is homogeneity of variance ($p = .362$) and the t-test shows the difference to be highly significant ($p < .001$). In learning, there is variance heterogeneity ($p < .001$) and a highly significant difference ($p < .001$). When playing instruments, variance homogeneity is present ($p = .076$) and there is a highly

significant result ($p < .001$). Outdoor play shows variance homogeneity ($p = .800$) and no significance ($p = .061$). The area of construction play shows variance homogeneity ($p = .817$) and no significant differences in the t-test ($p = .910$). The statements on creative design show variance homogeneity ($p = .553$) and no significant difference can be found ($p = .426$). There is also variance homogeneity in the role play ($p = .176$). The calculations with the t-test show a significant difference ($p = .009$). In the area of television watching, variance homogeneity is present ($p = .822$), a significant difference cannot be determined ($p = .053$). In the area of playing games on the computer, cell phone, console, or tablet, variance heterogeneity exists ($p < .001$), but no significant difference is found ($p = .104$). In the area of looking at books, variance heterogeneity exists ($p = .185$), but no significant difference can be detected ($p = .185$).

5. Discussion

Aesthetic education in forest education hardly differs between the German and Korean educational professionals. When asked about the importance of the educational area of aesthetics, the promotion of creativity and imagination is presented as a significant goal by about half of the professionals from both countries. Compared to regular kindergartens, there are hardly any prefabricated play materials in forest kindergartens. Natural materials play a special role in the forest kindergarten pedagogy of both countries. The children have to attribute a meaning to the natural materials in order to get into play with others. This attribution is very individual and encourages creativity and imagination. In addition, it must be said that nature offers an environment that is less overwhelming the perception than a regular kindergarten. The noise level is lower and the space in the forest is larger, so that the children have more room to play. This can create good moments for creativity and imagination and more role-playing can develop, since the children can play more undisturbed and have more time to play out their themes due to the relatively long free play. In both countries, a similar picture emerges in the projects carried out in the area of aesthetics.

In Germany, more educational professionals state that the favorite activity in the children's free play is the artistic activity. Painting as an activity is mentioned by 39% of the German and 21% of the Korean educational professionals. These results are reinforced by the free play theme of creative design with 41% in Germany and 30% in Korea. The higher numbers in Germany suggest that the children have more opportunities for artistic activities during free play. This is partly because the free play period is longer in Germany than in Korea and partly because the general care time in the forest kindergarten in Korea is shorter than in Germany. In the daily routine of Korean forest kindergartens, more space is given to guided activities. Time is a significant factor for creative processes and since the daily structure in Korean forest kindergartens is rather rigid, there is less time for these offerings. As an advantage of forest kindergarten

pedagogy, just under half of the educational professionals from Germany and just under one-third from Korea cited creativity and imagination. The children come into contact with hardly any prefabricated play materials; this essentially inspires creativity and imagination. These are stimulated by the fact that the children have to exchange ideas about their play, since natural materials do not show any prefabricated structures. Furthermore, natural materials can be interpreted differently by each child, so that, for example, the same stick receives different attributions, which are closely linked to the biography of the respective children. This is because the children can express their biography through play and creative design. This expression is not restricted by predetermined norms, such as those that prevail at the painting and craft table in regular kindergartens. There is no right or wrong here. This offers the children a free space to become actively creative.

6. Conclusion

The present study shows that aesthetic education has a high relevance for forest kindergarten pedagogy. The differences between the content and explicit mention of the educational area of aesthetics in Korea are striking. This discrepancy between the implementation of aesthetic projects and the lack of assignment of these projects to the educational area of aesthetics could be due, among other things, to the strong performance orientation in Korea. This suggests that a different understanding of aesthetic education prevails in Korea and Germany. Another reason could be the ambiguity of this educational field, which is generally difficult to distinguish from the other fields. In this regard, further research into the definition as well as the use of aesthetic educational opportunities in the field of early childhood education would be useful. In Germany, children have more free play time per day on average than in Korea. Role-playing, using tools, playing with friends during leisure time indoors or outdoors, playing with shovels, buckets, etc. are also less important in Korea than in Germany, although playing with natural materials is considered very significant in both countries. A detailed comparison of play in the home environment as well as in the forest kindergarten could provide insights into what meaning the prefabricated toys as well as the natural materials have for the children and what differences the children see between play in the forest kindergarten and at home. In a subsequent study, it would be interesting to collect the educators' perspective as well as the children's perspective in the form of qualitative interviews in order to examine the educational area of aesthetics more closely and thus, for example, to learn about topics, contents, and orientations of the aesthetics offerings related in the forest kindergarten.

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