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The Effect of Art Activities Using Natural Objects based on Forest Experience on Children's Emotional Intelligence

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Abstract

This study aims at investigating effects of art activities using natural objects in the forest on children's emotional intelligence. To accomplish this aim, this study selected as the experimental group 20 children from a class of the 5-year-olds in B Daycare Center located in South Chungcheong Province, Korea. And it selected as the comparative group 20 children from a class of the 5-year-olds and as the non-experimental group 20 children from a class of the 5-year-olds, 40 altogether, in J Daycare Center, near B Daycare Center. The result was found that children's art activities using natural objects in the forest generally had a positive influence on their emotional intelligence, which proves usefulness of the art activities based on the forest experience. This means that art activities using natural objects effect a change in the emotional intelligence by exploring colors, lines, forms and textures of the art materials including natural objects and by making shapes and forms of sculptures by visually expressing their thoughts, feelings and experiences, using as the main material the natural objects(stones, leaves, boughs, petals, grasses, cosmos and fallen leaves)collected from nature and usable for the art activity.

Keywords: Art activities, Natural objects, Forest experience, Emotional intelligence

1 Introduction

Children by instinct try to communicate with people around them through art activities of making, decorating and drawing. They do not aim to show their works to others, but to express their feelings, thoughts and experiences [1]. Art activities that use natural objects can not only grow imagination, creativity and critical mind, but also affect cultivation of the holistic man who can understand nature and have a positive attitude toward it.

During art activities in nature, children play with various materials in nature and explore colors, lines, forms and textures using their senses[2]. These exploration activities can raise children's interest in the art activities, make the time of activity in the forest long, and increase educational effects at the same time [1-5]. Yun Seon-jin[4] mentioned that through various experiences in the forest children can see ceaseless change and harmony, realize that nature is the source of human life and art and discover the order and laws of nature. She also said that activities using natural objects that help have a direct and indirect experience nature have an important meaning as a motif that stimulates emotion and five senses, purifies emotion, and makes creative art works. Playing and acting freely in nature such as forest, children feel living things and have emotions for life.

A latest study on children reported that art activities using nature had a very close association with emotional development. German and overseas studies on the forest [6-8], studies on the future direction for the forest experiment education [9], studies on activation plans for the forest experimental education [10], insist that forest experience activities have a positive influence on the affective aspect, such as children's self-esteem[11], emotional intelligence[12], eco-friendly attitude and life respect recognition[13], and on the cognitive aspect, such as mathematics[14], science[15] and music[16].

Therefore, this study aims to investigate what effect the art activities using natural objects in the forest have on children's emotional intelligence. This study can obtain educational implications that the art activities provide an emotional development strategy differentiated from the previous nature learning-oriented activities and add a new aesthetic sense to children living with nature.

2 Research Method

2.1 Research subjects

To accomplish the aim, this study selected as the experimental group 20 children from a class of the 5-year-olds in B Day-care Center, located in South Chungcheong

Province, Korea. In addition, it selected as the comparative group 20 children from a class of 5-year-olds and as the non-experimental group 20 from a class of 5-year-olds, 40 in all, in J Day-care Center near B.

2.2 Test tools

To find out the recognition level of art activities with natural objects, this study used a questionnaire used by An Hwa-ja[17] and Kang Young-sik[18]. For the research tool to test emotional intelligence, it used a questionnaire of Park Hae-su[19], amended from the questionnaire on EI(emotional intelligency) of Daniel Goldman[20] and Mun Yong-lin[21].

2.2.1 Recognition of art activities with natural objects

To find out children's recognition level of art activities with natural objects, this study amended and complemented sentences and contents of the questionnaire, used by An Hwa-ja[17] and Kang Young-sik[18], suitably for the experimental and control groups' level; the questionnaire was verified by an academic advisor majoring in early childhood education and a kindergarten teacher with more than 10 year' teaching experience. Sub factors of the recognition of art activities with natural objects were divided into 3 domains: 'attitude toward love for nature, knowledge and behaviour ; each sub factor was composed of 8 questions: color composition, detailed description, harmonious composition, shape, theme-related symbol, creativity of symbol, completion of picture and association between symbol and language. Grading for each question was tested by the 5-step scale. Test and grading were conducted through face-to-face interview between teacher and child.

2.2.2 Test for emotional intelligence

For the research tool to test emotional intelligence, this study used a questionnaire amended by Park Hae-su[19] based on the questionnaire of EI by Daniel Goldman[20] and Mun Yong-lin[21]. Sentences and contents were amended and complimented suitably for the level of 5-year-old children, and the questionnaire was verified by an academic advisor majoring in early childhood education and a kindergarten teacher with more than 10 years teaching experience.

Sub factors of the test tool for emotional intelligence were classified into 4: self-awareness, self-regulation, other-awareness and optimism. Each sub factor was composed of 6 questions. Each question was tested by the 5-step scale, and sum of the graded scores is the score of children's emotional intelligence. The higher score means the higher emotional intelligence. Test and grading of the experimental group were conducted by combining the face-to-face interview between teacher and child and observation results by the teacher during the experimental treatment. Test and grading of the control group were conducted by the face-to-face interview between teacher and child and the interview with the teacher who observed children.

2.3 Experimental treatment and test

The research was carried out in the order of pretest, program execution and posttest.

2.3.1 Pretest and posttest

Pretest was carried out for 5 days from 29 September to 4 October 2014.The test was carried out individually, one child each time, in a quiet place distant from the forest. It was carried out in a way that after the tester presented materials prepared by the detailed content and made a child act according to the instructed content with the presented materials, the tester observed the child and graded. The test time was 25~30 minutes for each child overall. For the test, this researcher and an assistant teacher by turns questioned, observed, and filled up the questionnaire based on children's answers. To verify the effect of the experimental treatment, posttest was conducted to both experimental and comparative groups, in the same way and with the same test tool as the pretest, from 1 December to 5 December 2014, after program execution.

2.3.2 Program execution as the experimental treatment

Children's art activities in the forest were carried out a total of 15 sessions, for 8 weeks, every Monday and Wednesday, twice a week, from 6 October to 28 November 2014. The experimental group conducted sculpture-making using natural objects in the forest, as a part of an activity related to a theme, associated with Nuri Curriculum. To develop emotional intelligence, the teacher gave and took feedback based on a lesson plan and made children express their emotion through their works. On the other hand, the control group carried out a free walk activity progressed in the daily schedule, in a free and informal way, not in a teaching method based on the same lesson plan. The test site was located 5 minutes children walking distance from the day-care center, already familiar to them.

2.4 Analysis methods

All materials collected for this study were analyzed by using SPSS(Statistical Package for Social Science) v.18.0 program, after graded according to the scoring criteria. Specifically, to find out the change of the emotional intelligence by group and awareness of self-emotion, regulation of self-emotion, regulation of other-emotion and self-motivation by sub factor, the matching sample t-test was conducted; to find out if there was the difference between groups, the independent sample t-test was conducted

3 Results and Discussion

3.1 Advance homogeneity verification

As a result of verifying homogeneity of the two groups before experiment([Table 1]), it was found the experimental group (M=2.72) was a little higher than the control group (M=2.57) but the difference was not statistically significant ($p>.05$). As a result of verifying by sub factor homogeneity of two groups of emotional intelligence, awareness of self-emotion($p>.05$), regulation of self-emotion ($p>.05$), control of other-emotion ($p>.05$) and self-motivation ($p>.05$) all were not significantly different. Therefore, emotional intelligence of the two groups can be said homogenous.

[Table 1] Test on Homogeneity of Experimental Group and Control Group

Factors	Group	M	SD	t	p
Self Emotional Recognition	Experimental Group	2.62	.393	1.659	.105
	Control Group	2.43	.335		
Self Emotional Regulation	Experimental Group	2.82	.455	1.320	.195
	Control Group	2.66	.283		
Others Emotional Regulation	Experimental Group	2.72	.325	1.322	.194
	Control Group	2.58	.352		
Self Motivation	Experimental Group	2.73	.410	.919	.364
	Control Group	2.61	.450		
Total	Experimental Group	2.72	.262	1.937	.060
	Control Group	2.57	.241		

3.2 The effects on children's emotional intelligence(total)

As a result of analyzing the difference between two groups after art activities with natural objects in the forest([Table 2]), it was found that the experimental group (M=4.28) was higher than the control group(M=2.70). This result showed statistically significant difference (t=15.817, p<.001). Therefore, it can be said that art activities with natural objects in the forest have an influence on the children's emotional intelligence.

[Table 2] Difference between Post Groups on Emotional Intelligence(total)

	Group	M	SD	t	p
Emotional Intelligence	Experimental group	4.28	.302	15.817	.000
	Control Group	2.70	.329		

3.3 The effects on the sub factors of children's emotional intelligence

As a result of analyzing the difference of 'awareness of self-emotion' between two groups after art activities with natural objects in the forest, the experimental group (M=4.34) was higher than the control group (M=2.54), and the two groups showed statistically significant difference (t=13.860, p<.001)([Table 3]).

As a result of analyzing the difference of 'regulation of self-emotion' between two groups after art activities with natural objects in the forest, the experimental group (M=4.30) was higher than the control group (M=2.90), and the two groups showed statistically significant difference (t=0.039, p<.001) ([Table 3]).

As a result of analyzing the difference of 'regulation of other-emotion' between two groups after art activities with natural objects in the forest, the experimental group (M=4.14) was higher than the control group (M=2.63), and the two groups showed statistically significant difference (t=9.024, p<.001) ([Table 3]).

As a result of analyzing the difference of 'self-motivation' between two groups after art activities with natural objects in the forest, the experimental group (M=4.35) was higher than the control group (M=2.71), and the two groups showed statistically significant difference (t=12.180, p<.001) ([Table 3]).

To sum up these results of sub factors of emotional intelligence, it can be said that art activities with natural objects in the forest have an influence on children's emotional intelligence.

[Table 3] Difference between Post Groups on Sub-factors of Emotional Intelligence

Classification	Group	M	SD	t	p
Self Emotional Recognition	Experimental group	4.34	.370	13.860	.000
	Control Group	2.54	.444		
Self Emotional Regulation	Experimental group	4.30	.327	9.039	.000
	Control Group	2.90	.595		
Others Emotional Regulation	Experimental group	4.14	.581	9.024	.000
	Control Group	2.63	.473		
Self Motivation	Experimental group	4.35	.272	12.180	.000
	Control Group	2.71	.546		

4 Conclusion

The overall research results were found that art activities with natural objects in the forest had a positive influence on children's emotional intelligence, which proves that art activities using natural objects in the forest are useful for emotional intelligence. This means that art activities using natural objects effected a change in emotion, through exploration of colors, lines, shapes and textures of art materials including natural objects, through visual expression of their own thoughts and experience they felt, and through activities of making shapes and forms of sculptures, by using as the main material the natural objects (stones, leaves, boughs, petals, grasses, cosmos and fallen leaves)collected from nature and usable for the art activity.

These research results are identical with those of Min Hyun-suk[22] that the nature experience activity also has an influence on emotional development and those of Han Jeong-suk[23] that the nature experience activity of kindergarten has an educational significance. Particularly, it can be evaluated to support Park Hwa-yun's opinion [24], which art activities of children sensitive to environment make them feel an aesthetic sense[25] and this aesthetic sense develops their sensitivity, and Son Yeong-shin's study[26],which children can feel beauty effectively by 'directly experiencing' the actual field through seeing natural environment and on-the-spot study.

These art activities using natural objects are to explore by using five senses with natural objects; it especially has a meaning of developing children's ability to observe aesthetic elements such as color, line, form, texture, etc. and to feel beauty of them. Therefore, these activities can prove the result that children show more positive reaction to their emotions and will be stable emotionally through these activities.

Therefore, these researchers recommend to more positively use creative art activities using natural objects through five senses in the on-the-spot study class or taking a walk class conducted in the early childhood educational field.

This study has a limitation that it started from the content of the autumn unit that targeted 5-year-olds.Therefore, a follow-up study is needed to identify if the same results can be also obtained in the unit activities of four seasons targeting 4-year-olds or 6-year-olds.

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