

**論文****Off-campus Classes at a Park and Their Learning Effects at an Institution  
that Trains Childcare Workers**

Rie Kikuchi

**1. Introduction**

The content of the Health section in the Course of Study for Kindergarten issued by the Ministry of Education, Culture, Sports, Science and Technology includes “playing outdoors willingly.” Outdoor play with teachers facilitates various encounters for children, allowing them to engage in activities and build confidence. When a child is calm, they can actively engage with the outside world, satisfy their curiosity for the surrounding natural environment, and fulfill their eagerness for exercise. Teachers need to guide and protect the children so that they can fully enjoy outdoor activities. In the future, it will not be possible for student childcare workers, who are training to stand in front of children, to miss out on first-hand experiences in the natural environment.

According to Nishijima (2007), it is likely that students in training need first-hand experiences within the natural environment if they are to understand how young children might experience it. The need for first-hand experiences within the natural environment is well known at places of education for young children, but it is not often included as a subject at institutions that train childcare workers. Some institutions arrange for their students to stay overnight at an organized camp. The programs at such organized camps include environmental education, first-hand experiences within the natural environment, and adventure education. However, the number of institutions that hold such camps is not thought to be high.

Institutions that train childcare workers should facilitate immediate first-hand experiences within the natural environment. This institution uses a city park for practical training involving outdoor activities. This is incorporated as an integral learning method that provides opportunities for first-hand experiences within a natural environment and can be implemented as an ordinary segment of the curriculum.

In this study, such a learning session was held off campus. A questionnaire was administered before and after the session; among the results of the questionnaire, there was a particular focus on items showing changes in awareness, feelings, and impressions. The study examined changes in the following, before and after the session: 1) awareness related to the natural environment; 2) awareness of peers; 3) awareness as a childcare worker; and 4) awareness of exercise. The intention was to review the nature of subsequent changes related to the hands-on learning session based on these results.

## **2. Research method**

### **2.1 Research subjects**

The participants involved in this study were 166 students (3 male and 163 female) taking a sports and exercise course who had entered the University in April 2018. It should be noted that two members of the teaching staff and six student assistants administered the session.

### **2.2 Outline of the session**

Since 2011, a hands-on learning session involving outdoor activities has been held as part of the core first-year subject course on sports and exercise. The campus of this university is located in a mixed residential and commercial district, around 2.5 km from the center of N City. The nearby natural environment consists only of a small children's playground and the grounds of a Shinto shrine. To cultivate first-hand experiences within the natural environment for students on campus, use is made of the planted trees, flowerbeds, and limited number of small empty plots within the site. Thus, given the need for a place where a large number of students could move around safely, the decision was made to use a city park as a location for integrated learning where hands-on learning sessions involving outdoor activities could be held.

Broadly, the content of the session centers around group activities; provides first-hand experiences within the natural environment (seen as essential for future childcare workers), which includes observations at the zoo; and creates a plan for teaching off-site

activities to young children.

### 2.3 Location of the session

Higashiyama Zoo and Botanical Gardens has an area of around 59 hectares, making it one of the biggest sites of this type in Japan. The Gardens are used for outings by many of the kindergartens and daycare centers in N City. It is worth noting that the session was held on May 12, the Saturday immediately after the Golden Week holidays; many kindergartens were holding organized parent-child outings. The highest temperature the day of the session was 27.9 degrees, humidity was 29%, and the weather was fine.

### 2.4 Tasks set during the session

As shown in Table 1, there are four major tasks for the session: creating a teaching plan, observing and sketching an animal, five kinds of “nature games” (nature awareness activities), and a “quiz rally.”

Table 1: Tasks for the hands-on learning session with outdoor activities, and their content

Task	Content
Creating a teaching plan for a visit to the zoo	Assuming that you have come to plan a visit to the zoo that you will lead, create a day's program (individual task)
Observing and sketching an animal	As a group, select one type of animal and produce a sketch with a commentary (individual task)
"Nature games"	"Blindfold walk with bare feet," "Sound map," "Micro-hike," "field pattern hunt" (four individual tasks)
Step count	Use an app to count your steps for the day until the presentation of the completed tasks (individual task)
"Quiz rally"	While touring the zoo, answer 8 quiz questions about things such as the biology of the animals and the history of the zoo (group task)

### 2.5 Survey content

As shown in Table 2, an orientation was conducted immediately before the session began. An awareness survey was administered prior to an explanation of the specific session contents. In addition, students were asked to freely describe their feelings and impressions of the session. A questionnaire with the same set of questions was distributed at the end of the session; students were asked to return the survey the next

time they were at the university.

In the awareness survey, there were three questions under each of the four aims of the session, the four aims being “awareness related to the natural environment,” “awareness of peers,” “awareness as a childcare worker,” and “awareness of exercise.” For all 12 questions, students were asked to respond using a six-level scale: 6 Completely agree; 5 Agree; 4 Somewhat agree; 3 Somewhat disagree; 2 Disagree; and 1 Completely disagree. During aggregation, these scale values were converted into points.

Table 2: The structure of the hands-on learning session

Date and time	Content of activities
April 7 and 8 (Thurs, Fri)	Announcement of the implementation of the hands-on learning session with outdoor activities at the time of the first orientation session
May 9 and 10 (Thurs, Fri)	<ul style="list-style-type: none"> <li>• Administration of pre-session questionnaire before the orientation at the beginning of the class and immediately before the hands-on learning session</li> <li>• Orientation (1. Creating groups, 2. Description of tasks, 3. Distribution of tickets and maps. 4. Discussion)</li> </ul>
May 12 (Sat) 9:30 - 10: 00	<ul style="list-style-type: none"> <li>• Gather at the venue After rollcall, setting off in groups</li> </ul>
14:00 - 14: 30	<ul style="list-style-type: none"> <li>• Eat lunch during the activities, pass through check points</li> <li>• Gather in groups at the appointed time, roll call, present completed tasks</li> <li>• Take photos, distribute the post-session questionnaires, disperse</li> </ul>
May 14 (Mon)	Collection of the post-session questionnaires when each class first meets, submission

## 2.6 Data analysis

The data obtained in the awareness survey was cleaned and then simply totaled. For items that were different after the session compared to before, a paired sample t test was applied. IBM SPSS25 Statistics software was used in the analysis. In addition, an analysis of the free description and text mining methods were used, while the phrases that emerged for feelings and impressions were analyzed by word (by morpheme). The intention was to investigate the effect of the hands-on learning session by analyzing the changes in data obtained before and after the session. For text mining, phrases were analyzed using KHcoder 3 software (Keiichi Higuchi).

### 3. Results and discussion

#### 3.1 Awareness survey results

The questions in the questionnaire were created in reference to Nishishima (2008) and Tanaka (2006), to highlight the aims of the hands-on learning session that includes outdoor activities. The survey presented the questions in the pre-session questionnaire in the present tense and those in the post-session questionnaire in the past tense. The analysis confirmed significant difference for almost all items.

As can be seen in Table 3, the score for “awareness of the natural environment using all five senses” was 3.64 before the session and significantly higher at 4.72 after the session. The score for “being interested in animals” was high before the session at 4.47 and was even higher after the session at 5.07. That for “being interested in plants” was 3.72 before the session, which also increased to 4.57 after the session. Most of the change for “awareness of the natural environment using all five senses” seems to have been contributed to the “nature games.” “Nature games” are designed to allow participants to engage all of the sensory sensations associated with a close-up and direct first-hand experience of natural environments. In their ordinary lives, students rarely have the experience of making full use of all five senses, and the session appears to have allowed them to accumulate a great deal of such experiences.

Considering the questions and aims for “awareness of peers,” the scores for “communication with friends,” that is for students’ conversation with their usual friends, was high at 5.53 whereas little had changed after the session, at 5.28. This may be explained by way the pre-session survey was administered; the members of the activity groups had not yet been decided and this may be why there was no significant positive change after the activities. Additionally, in regard to the post-session responses, it seems that communication may have been awkwardly worded, because the members of each group were decided randomly at the beginning of the activities. However, it seems that group members gradually became more relaxed with each other as they answered the problem-solving tasks and communicated actively as they cooperated during the nature games.

When looking at the questions for the “awareness as a childcare worker” aim, it

was clear that such awareness in the students was already high. These were after all students attending an institution for training childcare workers, and the score for this was predictably high, at 5.23. The score for “having a viewpoint from a teaching perspective” rose sharply from 3.73 before the session to 4.81 after the session. This is probably because these students have always been interested in children, and this awareness was raised during the session by witnessing the behaviors of other childcare workers. On the day of the session, many kindergartens, daycare centers, and child centers were holding their organized parent and child outings, and it is likely that watching what happened during these outings aligned with their own futures as childcare workers. At the session location, the students were able to observe how childcare workers interact with children, and the techniques used to stop children from getting lost during the outings. Additionally, the students focused on the children’s actions and were able to observe how children speak to each other, as well as the relationships between parents and children.

Looking at the questions under the “awareness of exercise” aim, the score for “being interested in diet” was quite high before the session, at 4.77, and given that the score for “awareness of how one is walking” was 3.53 and that for “routine awareness of

Table 3 Results of the awareness survey

Aims	Item	Before the session	After the session	Difference (After-Before)
Awareness related to the natural environment	Awareness of the natural environment using all five senses	3.64	4.70	1.06*
	Being interested in animals	4.47	5.07	0.60*
	Being interested in plants	3.72	4.51	0.79*
Awareness of peers	Communication with friends	5.36	5.28	-0.07
	Expressing one’s own opinion	4.38	4.93	0.56*
	Active problem-solving	4.15	4.84	0.69*
Awareness as a childcare worker	Routine childcare worker awareness	5.23	5.19	-0.04
	Developing a teaching perspective	3.74	4.81	1.07*
	Being interested in children	5.32	5.37	0.05
Awareness of exercise	Awareness of how one is walking	3.53	4.24	0.71*
	Being interested in diet	4.77	4.62	-0.15
	Routine awareness of exercise	3.58	4.3	0.72*

\* t test (paired) result significant difference at 5% level

exercise” was 3.58, it is possible to understand that interest in this area overall was not very high. However, all the scores under this heading were higher after the session, making it safe to say that awareness related to exercise rose. One of the session’s tasks was for the students to use a pedometer and report their step-count for the day just before they presented their work. With an average step-count of 10,784, the session was indeed physically tiring for students not used to taking long walks.

### 3.2 Free description results

The words collected in the free description section were entered as text into Excel and analyzed using KHcoder3 software (Higuchi 2014). KHcoder3 is used for linguistic content analysis; by separating the morpheme, the entered text is analyzed using a frequency of occurrence for each word and shows how it is connected to other words.

In the context of the students’ feelings and impressions within the pre-session free description, the total number of extracted words was 5,373 and the number of different words was 60; for the students’ post-session feelings and impressions, the total number of extracted words was 16,247 and the number of different words was 1,047.

Frequently occurring words before and after the session differed greatly; therefore, the minimum number of extracted words was set at five, and the top hundred were extracted. Meanwhile, the minimum number of words in the post-session data was set at ten, and the top hundred were extracted.

When using the frequently occurring words in Table 3 to make a comparison, words in common between those extracted before and after the session were “animal,” “child,” “see,” and “go.” The notable top-ranking extracted words before the session were “plants,” “observation,” “Shabani” (the name of a famous gorilla in the zoo), and “learn.” The notable words after the session were “hands-on learning session,” “speak,” “feel,” “enjoyable,” “childcare,” “outing,” and “activities.” This result shows that, before the session, the students were looking forward to visiting the zoo and were interested in learning in off-campus classes. It is thought that the students’ awareness as childcare workers rose after the session because they had been able to observe young children and childcare workers engaged in activities at the park during the session.

Table 3: Frequently occurring words before and after the sessi

Frequently occurring words before the session			Frequently occurring words after the session		
Rank	Word	No. of occurrences	Rank	Word	No. of occurrences
1	Animal	141	1	Animal	193
2	See	99	2	Child	167
3	Looking forward to	62	3	See	163
4	Go	53	4	Think	130
5	Plant	49	5	Child	82
6	Child	46	6	Go	79
7	Enjoy	34	7	Many	74
8	Observation	29	8	hands-on learnin session	67
9	Natural environment	28	9	Speak	67
10	Nostalgic feeling	27	10	Real	59
11	Shabani	22	11	Enjoyable	58
12	Higashiyama	21	12	Natural environmmnt	58
12	Zoo	21	13	Care	58
14	Learn	20	14	Outing	55
14	Interaction	20	15	Exercise	55

A co-occurrence network allows for a visualization of the number of words extracted and the relationships between words. The grouping of the expressed words makes it possible to gather an overall image of the feelings and impressions being analyzed. The number of words before the session was not large; the number is bigger after the session because the students were writing immediately after their direct first-hand experience. An investigation of the relationships between the words showed that, before the session, students mentioned, for example, apprehension about the content of the tasks and that this was their first visit since elementary school. After the session, they mentioned, for the first time, cooperating to tackle group tasks, having awareness as a future childcare worker, not doing enough exercise, gaining knowledge through the quiz, and using all five senses.

In particular, regarding grouping, because the teaching staff randomly assigned the students, many mentions of “talk” gained from group activities were extracted. The session was held about a month after the students entered the University, so there had not been many opportunities for students to interact with everyone in the class. Most of the students had members in their group with whom they had never spoken to until

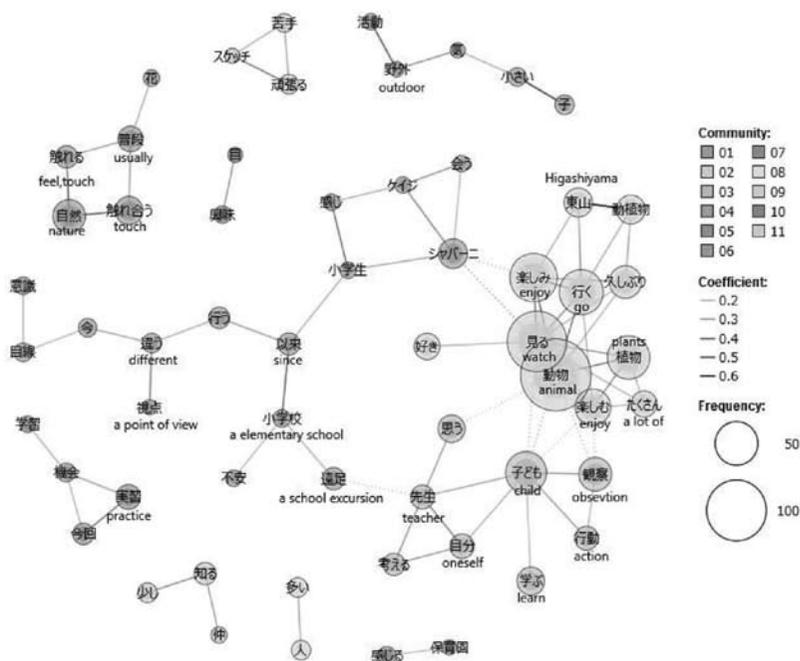


Figure 1: Pre-session co-occurrence network

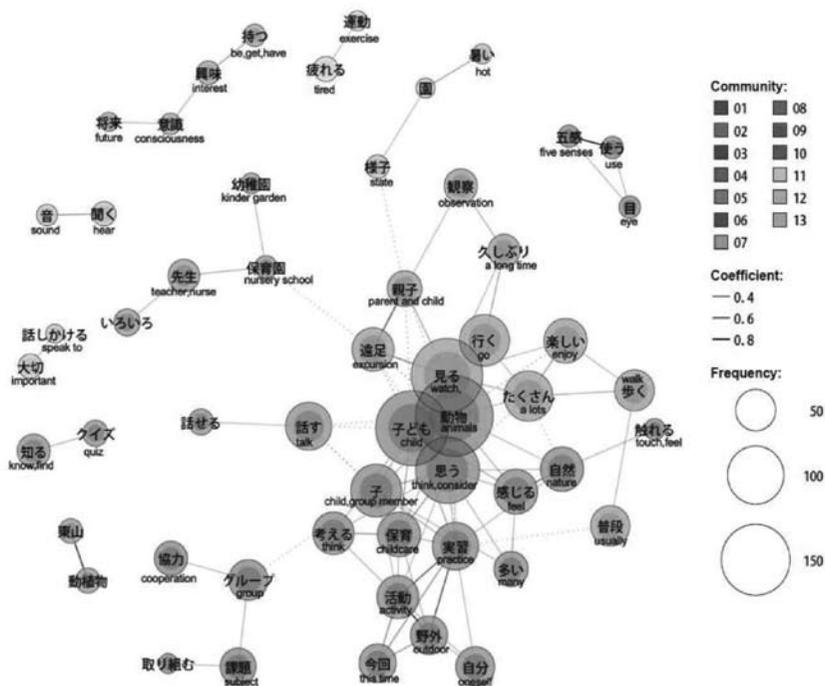


Figure 2: Post-session co-occurrence network

the groupings were announced. It seems that, by the end of the session, cooperation while tackling the tasks had led to the development of friendly relationships between the group members.

#### **4. Conclusion**

This study verifies changes in the awareness of students intending to become childcare workers, using pre- and post-session results of an awareness survey and of free descriptions of feelings and impressions by students who participated in an off-campus activity as part of a hands-on learning session at a city park. The results of the study are summarized below.

1) A questionnaire created using the aims of the hands-on learning session produced results that were broadly aligned with expectations. In particular, there was a large improvement regarding an “awareness of the natural environment using all five senses” and “developing a teaching perspective.” The scores for “being interested in animals,” “being interested in plants,” “expressing one’s own opinion,” “active problem-solving,” “awareness of how one is walking,” and “routine awareness of exercise” increased. The scores for items under the four aims of the hands-on learning sessions involving outdoor activities rose more or less across the board, suggesting that the session had a positive effect. However, some post-session item scores were not very different from pre-session scores; notably, the session had no direct relationship with diet. Looking ahead, it may be necessary to restructure the content of the questions.

2) For the free description section before the session, words that were frequently found included “animal,” “see,” “looking forward to,” and “plant,” while after the session the descriptions included not only language related to observation and first-hand experiences such as “animal,” “child,” “think,” “many,” and “feel,” but also specific subjects of observation, namely “parent and child” and “observation

3) From the changes in average scores in the awareness survey and in the words

expressed when text mining, it is possible to infer that the session itself raised the students' awareness as childcare workers and was effective regarding an increased awareness and first-hand experience of the natural environment using all five senses. In the text mining, computer software was used to analyze the relationships and frequencies of the words used by the students, meaning there was no distortion in deciphering the meanings of the sentences.

In this study, the effect of outdoor classes was investigated using both awareness surveys and free description. In the awareness surveys and the free description, students' awareness as childcare workers was higher after the session than before, and positive relationships developed via group activities. This indicates that the session's effectiveness is verifiable. Scores for awareness as a childcare worker increased, and indications for chosen location and date contributing to this improvement were provided. On the day of the session, off-premises activities or organized outings were being held by kindergartens and daycare centers, and the students were able to study how these events progressed in practice. This point is a major characteristic of this session.

This study demonstrated the effectiveness of holding hands-on learning sessions off campus in a different environment, even if only for a short time. Looking ahead, I would like to investigate items in the questionnaire and further investigate session content, taking into account the qualitative data in the free description.

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## Off-campus Classes at a Park and Their Learning Effects at an Institution that Trains Childcare Workers

Kikuchi, Rie\*

幼稚園教育要領における領域「健康」の内容では、幼児は進んで戸外で解放感を味わいながら様々な活動を主体的に展開し、そのために教師の果たす役割は大きいとされている。保育者養成校の学生は、将来現場に立つために、野外での学習経験も必要であると思われる。そこで、大型都市公園を利用して学外授業を実施し、野外での学習効果をアンケートによって明らかにした。学外授業の直前と直後においてどのように変化したか検証をした。対象者は、養成課程の学生166名（男子3名、女子163名）で5月の土曜日に大型都市型公園（動物園・植物園が併設）で、スケッチや保育者としての簡単な指導案、自然を使った体験ゲームなどの課題を小グループで活動した。実習の目的に沿った質問での評価アンケートは、6段階尺度にて分析を行った。実習前後の感想は、テキストマイニングの手法で分析し、使われる言葉の頻出数を比較した。その結果、評価アンケートでは、保育者を意識するものや自然を見つめる課題において変化が見られた。また感想では、動物や来園者の子どもの様子、グループ活動についての言葉が多く述べられた。学外授業の一つとして大型都市公園を利用する学習は、保育者養成校として総合学習が展開できる場として活用できる可能性があると思われる。

キーワード：保育者養成, 野外活動実習, 学外授業, 都市公園

