

Education of Craft with Fabrics in Home Economics for Elementary School Students

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Abstract. The effects of the teacher types in charge of home economics class survey of elementary school education of craft with fabrics was analyzed by the questionnaire for the junior high school student immediately after enrollment. There were no significant differences of the impressions and the experiences of the craft classes. However, there were significant differences in the knowledge and some skills of the craft. Higher results were obtained by the students studied with classroom teachers than a home economics major teacher. We made some suggestions on craft education in elementary school teacher course at university were made.

Keywords: craft education; fabric; home economics; elementary school students

Introduction

Craft with fabric in home economics is a compulsory content for all students from fifth grade of elementary school to junior high school in Japan. It is regarded as one of the important educational activities to have interests and attitudes to devising for the students' lives and their families. If there are different learning environments in studying craft with fabrics in elementary schools, the subsequent effects may be greatly affected because the students learn most fundamental knowledge and techniques in elementary schools. We studied how the environments of studying craft with fabrics in elementary school, especially the differences of teacher types in charge, influenced the basic knowledge, skills and awareness of the students on craft.

Background

Learning craft with fabrics in home economics

In Japan, the goals and the contents of school education subjects are decided by The Course of Study of the Ministry of Education, Culture, Sports, Science and Technology (MEXT). The Course of Study have been revised approximately every ten years. The latest revision for elementary and junior high school took place in 2017. According to the Course of Study, craft with fabrics is named "Craft with fabrics to enrich our daily lives". It is one of the contents for healthy, comfortable, safe, and rich life with food, clothing, and housing. Its purposes for elementary school students are as follows (MEXT, 2017).

- Students can acquire the knowledge and skills to understand the materials or procedures necessary for production.
- Students can acquire the knowledge and skills to make a production plan.
- Students can acquire the knowledge and skills to understand sewing methods and safe handling of tools according to purpose for hand sewing or machine sewing, and to do them properly.
- Students can make a production plan of things using fabric to enrich their daily lives.
- Students can devise for production of things using fabric.

In actual situation of craft education, many students favored craft learning with fabric, but they felt they were not good at it. About craft with fabric, 73.1% of boys, 85.7% of girls answered "I like studying craft with fabric" in the survey of Takeyoshi and Tatano (2005). However, 49.0% of boys and 33.1% of girls answered "I am rather good at" only. Watase (2010) pointed out that one of the reason for the diffidence was that they had no experience of craft with fabric except home economics classes. Ogino & Iwaki (1977) point out that craft skills with fabric can be efficiently learned from 5th grade of elementary school to 3rd grade students of junior high school students. In addition, the skill was also retained even being college students (Inoue, 1983).

Home economics Teachers in elementary schools

At elementary schools in Japan, one class teacher is responsible for all subjects for class students (up to 40 students for 5th and 6th graders) in general. Some subjects are exchanged in charge with another teacher or sometimes by teacher of the subject major. Regarding home economics teaching, the most common teacher is the classroom teacher, then the other class teachers or home economics teacher (Elementary and Secondary Education Bureau of MEXT, 2015).

We thought that each types of teachers in charge for teaching home economics have some advantages and some disadvantages. Classroom teachers know well about the students' abilities and living conditions, but many of the teachers have little substantial experience of teaching home economics (Yamamoto & Ito, 2016, Takagi, 2015). Teachers in the home economics majors have a high level of knowledge and skills. However, they do not know much about the students and the students' daily lives as they get together with the students only in home economics class.

Literature Review

Teaching of craft with fabrics

According to the survey of university students in the teacher education course by Morita (2015), the correct answer rate of craft education was lower than food and nutrition. Kobayashi and Yanagi (2007, 2008) pointed out that most of the skills of craft with fabrics were learned in school education, the actual skill (back stitch, sewing machines uses, ball knots, end knots, etc.) of university students was considerably low in contrast with their high self-evaluation. Kashiwazaki, Maeda & Hikage (2008), and Maeda, Kashiwazaki & Hikage (2009) also pointed out that university students of teacher education courses had clearly lower craft skills than cooking skills from the survey of students of elementary school, junior high school, and university. Morita (2015) also pointed out the correct answer rates of the craft were the lowest by the survey of university students in the teacher education course.

The skills acquired at elementary school tended to decline after junior high school. Miwa et al. (2001) revealed that the skill differences at the early stages of craft at the elementary school had great influences on the proficiency of the subsequent skills. Takamori (1985) also surveyed the students of the teacher education course and inferred that the difference in study experiences of home economics at elementary schools had some serious impacts on students' view of home economics.

Education of craft with fabrics in elementary school

Elementary school teachers recognize the importance of craft education. Home economics teachers strongly grasped the two points of educational significance of craft education; acquisition of living skills and accomplishment feeling and satisfaction by production (Tatano & Takeyoshi, 2006). Teachers who instructed the craft with fabrics thought that the students worked more diligently than other teaching materials (Tatano & Takeyoshi, 2006, Ikezaki, 2006). The students also perceived the craft activities as meaningful activities (Takeyoshi & Tatano, 2005). Okawa et al. (1976) analyzed the students' impressions and pointed out the pleasure of learning, the sense of accomplishment, and the desire for further learning. Kaji (2011) also described that the students realized feeling of satisfaction, joy, excitement, refined sensitivity, and were able to learn the power to live by themselves.

In the 1998 survey of university students, 91.3% of females and 65.9% of males were interested in craft with fabrics. However, they were dissatisfied with "I do not have enough time" or "I could not ask to the teacher as soon as I wanted" (Miwa et al., 2001). Skills acquired at elementary school tended to decline after junior high school (Kashiwazaki, Maeda & Hikage, 2008, Maeda et al., 2009). Hayami and Kuromitsu (2014) also pointed out the necessity of repeat learning to acquire the reliable skills.

Early learning of craft in home economics at elementary school is very important. It has been clarified that the difference in their experience had a great influence on the degree of proficiency of the subsequent skills (Miwa et al., 2001) and the view on subjects to home economics. (Takamori, 1985)

It was indicated that one of the reasons for teachers' difficulty in teaching craft was in teaching materials (Kawai et al, 2008). In the 1980's, teaching materials of the craft education were designated the things to be produced, such as "cover of the pillow". Since around 1990, only the objectives such as "Let's make it with cloth." or "Let's make things to make life fun" were shown (Takagi, 2012). The students should decide what to make themselves. As a result, some problems occurred such as the skills to be acquired were not clearly recognized, only completion was the purpose, the burden of teachers increased markedly (Sasaki & Saikai, 2017, Ogawa & Maeda, 2012). In order to improve these situations, some researches to propose new teaching materials and teaching method for craft education have also been reported, for example, mask making (Nakazawa et al., 2011), finger knitting (Suzuki et al., 2007), machine sewing materials (Matsui et al., 1992, Goto et al., 1992), use of table for production plan (Kobayashi & Kotani, 2010), teaching materials considering the continuity of learning in elementary and middle school (Kawai et al., 2008) and a proposal to reorganize clothing education with focusing on craft (Takeyoshi & Tatano, 2005, Tatano & Takeyoshi, 2006).

New value of craft education

In recent years, new values and meanings have been reported about craft education, such as the means of learning problem solving (Pöllänen, 2009), the significance as a mean of self-expression (Pöllänen, 2009), the significance of fostering communication skills (Okada & Kawahara, 2009), the collaboration with science, technology, engineering, and math education (Shirley & Kohler, 2012), the collaboration with technology education (Zuga, 1996, Volane, 2014, Mawson, 2013, Jarvinen & Rasinen, 2015), the significance of collaboration with Social study (Bennett, 2008), the collaboration with design education (Ahlberg, Aanismaa & Dillon, 2005), the effect of suppression of violent behavior in teens (Crane, 2010), and the prevention of aging (Parisi et al., 2012). Making things, especially craft education with fabrics of soft and good touch is value reviewed.

From these studies, the craft education in home economics at the elementary school is significant and have a serious impact on subsequent impression, knowledge and skills for the students. If there are some differences of knowledge, impression, knowledge and skills acquired in elementary school, they will have influences on subsequent skills, knowledge and impressions. Improvement of craft education of home economics in elementary school is one of urgent issues.

Objectives

This research is aimed to study the influences of different types and numbers of the teachers of craft education in elementary school on impression, knowledge and skills for the craft of the students by the survey of the junior high school students immediately after entering junior high school. From the actual situation of the types of the teachers, we thought that the classroom teachers know well about the students' abilities and living conditions as they spend much time with the classroom students. But many of the classroom teachers have little

substantial experiences of teaching home economics (Ito & Yamamoto, 2016, Takagi, 2015). The teachers in the home economics majors have high level of knowledge and skills. However, they do not know much about the students or students' daily lives since they spend time together in home economics classes only. Additionally, the lessons by two teachers might be more capable of responding to the students than one teacher's lessons.

Therefore, we surveyed the students who studied craft at elementary school with a classroom teacher, a home economics major teacher, and two teachers (a classroom teacher and an assistant teacher). From the results of this research, we would like to consider what are the influences on craft education, and make some suggestions for teacher education curriculum to improve.

Methodology

A questionnaire survey was conducted for first-year 219 students (91 male, 128 females) immediately after enrolling in junior high school in Takamatsu city in Japan in April 2011. The contents of the questionnaire were impression, skills, and knowledge of the craft with fabrics in elementary school. In the survey and analysis, we adhered to the code of ethics in dealing with respondents. Only statistical processing was done in order not to identify individuals considering privacy.

Of all the questionnaires, we analyzed those from four elementary schools in the school district. The teachers who were in charge of home economics at these four elementary schools were one classroom teacher at two schools (abbreviated as CR), one classroom teacher and one assistant teacher at one school (abb. as CR&TA), and one home economics major teacher at one school (abb. as HE). Table 1 shows the number of the students of those who were the subject of the analysis. There is no significant difference in the ratio of male and female students for each type of the teacher.

Even though six years have passed since the survey was carried out, the data of this survey will be very valuable for the students and teacher education programs, as there are few such surveys.

Table 1: Respondents' gender and their home economics teachers at elementary school

	CR		CR&TA		HE		Total	
	n	%	n	%	n	%	n	%
Male	16	44.4	50	42.7	19	36.5	85	41.5
Female	20	55.6	67	57.3	33	63.5	120	58.5
Total	36	100.0	117	100.0	52	100.0	205	100.0

Results and Discussion

Students' impression

Table 2 shows the students' impression of the craft with fabric. The numbers and percentages of students who answered "agree," "a little agree," "a little disagree," and "disagree" are listed. For both questions, about half of the students had positive answers, and half had negative answers as a whole. More students of

HE had negative impression than CR and CR&TA. But it had no significant difference from other groups.

Study situation of craft with fabrics at elementary school

Table 3 shows the answers of the students to the question of "Did you finish the craft work?" or "Did you use the items you made?". As a whole, about 30% students did not finished the craft, and about 35% of the students did not use the items they made. This seems to be one of the causes of negative feelings for production learning.

By the types of teachers in charge, more students answered "finished" in the order of CR, HE, CR&TA. And more answered "used" was HE, CR&TA, and CR. In CR&TA and HE group, the percentage of "finished" and "used" were almost equal, while the difference of the percentage of "finished" and "used" in CR group is 16.7%.

Table 2: Students' impression of the craft with fabric

	CR		CR&TA		HE		Total	
	n	%	n	%	n	%	n	%
Do you like craft with fabric?								
Agree	5	13.9	26	22.2	9	17.3	40	19.5
A little agree	16	44.4	51	43.6	18	34.6	85	41.5
A little disagree	10	27.8	22	18.8	17	32.7	49	23.9
Disagree	5	13.9	18	15.4	8	15.4	31	15.1
Total	36	100.0	117	100	52	100.0	205	100.0
Are you good at craft with fabric?								
Agree	3	8.3	12	10.3	2	3.8	17	8.3
A little agree	15	41.7	49	41.9	17	32.7	81	39.5
A little disagree	11	30.6	35	29.9	22	42.3	68	33.2
Disagree	7	19.4	21	17.9	11	21.2	39	19.0
Total	36	100.0	117	100	52	100.0	205	100.0

Table 3: Students' answers to the questions "Did you finish the craft work?" and "Did you use the items you made?" in craft with fabrics in elementary school.

	CR		CR&TA		HE		Total	
	n	%	n	%	n	%	n	%
Did you finish the craft work?								
Yes	29	80.6	75	64.1	40	76.9	144	70.2
No	7	19.4	41	35.0	12	23.1	60	29.3
NA	0	0.0	1	0.9	0	0.0	1	0.5
Total	36	100.0	117	100.0	52	100.0	205	100.0
Did you use the items you made?								
Yes	23	63.9	78	66.7	39	75.0	140	68.3
No	13	36.1	38	32.5	12	23.1	63	30.7
NA	0	0.0	1	0.9	1	1.9	2	1.0
Total	36	100.0	117	100.0	52	100.0	205	100.0

Table 4 shows the results of the typical presentation methods of crafting process with fabrics by the teachers. In all cases, most of the responses answered that they looked the process that the teacher did. No significant differences were observed for the teachers in charge.

Table 5 shows the result of asking whether the method of craft with fabrics was easy to understand or was hard to understanding. About 65% of the 3 groups answered that it was easy to understand, but about 30% was difficult to understand. There were not significant differences among 3 groups.

Table 6 shows the results of what students did when the methods were unknown. The most common answer was "I asked my friends," then "I asked the teacher." The percentage of "I asked the teacher" was highest in the CR group, followed by the HE and CR & TA. The CR & TA group was expected to have many opportunities to ask to the teacher, but the result was different.

Table 4: The most typical presentation method of crafting process with fabrics by the teachers

	CR		CR&TA		HE		Total	
	n	%	n	%	n	%	n	%
looking at the steps by the teacher	29	80.6	98	83.8	44	84.6	171	83.4
handout showing the steps	3	8.3	3	2.6	1	1.9	7	3.4
sample made by the teacher	2	5.6	11	9.4	7	13.5	20	9.8
Others	2	5.6	4	3.4	0	0.0	6	2.9
NA	0	0.0	1	0.9	0	0.0	1	0.5
	36	100.0	117	100.0	52	100.0	205	100.0

Table5: Students' impression of understanding of the crafting process with fabrics

	CR		CR & TA		HE		Total	
	n	%	n	%	n	%	n	%
Easy to understand	24	66.7	78	66.7	35	67.3	137	66.8
Hard to understand	12	33.3	38	32.5	16	30.8	66	32.2
NA	0	0.0	1	0.9	1	1.9	2	1.0
Total	36	100.0	117	100.0	52	100.0	205	100.0

Table 6: The most typical behavior of the students when the methods were unknown

	CR		CR&TA		HE		Total	
	n	%	n	%	n	%	n	%
I asked the teacher.	15	41.7	29	24.8	19	36.5	81	39.5
I asked my friend.	16	44.4	72	61.5	28	53.8	116	56.6
I asked my family.	0	0.0	2	1.7	0	0.0	2	1.0
I examined by myself.	3	8.3	9	7.7	3	5.8	15	7.3
I did suitably.	2	5.6	2	1.7	1	1.9	5	2.9
I gave up.	0	0.0	2	1.7	1	1.9	3	1.5
NA	0	0.0	1	0.9	0	0.0	1	0.5

Student's knowledge of craft with fabrics

Table 7 shows the numbers and percentages of the student who answered correctly the name of the craft tools. In three groups, the correct rates were high with iron, thread trimmer, tailor's choke and needle, but low with hand sewing thread, sewing needle and sewing thread. CR&TA group had high rates of correct answers. Significant differences were found in sewing needle, machine sewing threads, tailor's chalk, pincushion, scissors. CR & TA group was significantly higher than other two groups.

Student's skills of craft with fabrics

Table 8 shows the percentage of students who responded that they acquired the basic skills of craft with fabrics, namely threading needle, knot, end knot, and ball binding and button sewing. The numbers and percentages of the students who acquired the most basic skills were listed. Significant differences were observed among three groups for the knot, end knot. The results of CR and CR&TA were higher than HE. In this survey, the teacher's skill was not related to students' skills. It is worth noting that those who answered that they were not acquired were about 35% in threading needle, about 15% in end knot, about 40-50% in button sewing for all groups.

Table 7: The student who answered correctly the name of the craft tools

	CR		CR & TA		HE		Chi-test
	n	%	n	%	n	%	
Sewing needle	10	27.8	53	45.3	14	26.9	*
Pin	26	72.2	101	86.3	42	80.8	-
Hand sewing thread	6	16.7	26	22.2	5	9.6	-
Machine sewing thread	9	25.0	56	47.9	10	19.2	***
Tailor's chalk	28	77.8	102	87.2	34	65.4	***
Pincushion	12	33.3	98	83.8	29	55.8	***
Clippers	32	88.9	107	91.5	45	86.5	-
Scissors	13	36.1	74	63.2	25	48.1	**
Iron	34	94.4	115	98.3	48	92.3	-

* $p < 0.05$, ** $0.05 > p > 0.005$, *** $p < 0.005$

Table 8: Percentage of students who responded that they acquired the basic skills of craft with fabrics

	CR		CR & TA		HE		Chi-test among 3 groups
	n	%	n	%	n	%	
Threading needle	24	66.7	80	68.4	35	67.3	-
Knot	34	94.4	111	94.9	41	78.8	***
End knot	29	80.6	103	88.0	35	67.3	**
Button sewing	20	55.6	72	61.5	30	57.7	-

From these results, there was no significant difference among CR, CR&TA, and HE in the students' impression of craft education at the primary school. The percentages of respondents who answered they got the skills were significantly higher in CR & TA. Regarding knowledge, CR and CR & AT were significantly higher than HE. The teacher's knowledge and skills were supposed to be higher in HE than in CR and AT, but the responses of students' knowledge and skills did not match these. It was presumed that the relationship between teachers and students affected these results rather than the teacher's knowledge and skills.

This might be the results of education for elementary school students. CR teachers spent much more time with the CR students. Therefore, they understood their CR students much more than HE teacher did. It is presumed that the relationships between the teacher and the students are more closely related to the students' knowledge and skills than to the teachers' knowledge and skills.

On the other hand, the problems that the overall retention rates of some knowledge and skills of the students were low. As this, most basic knowledge and skills will be a foundation for future learning, they will become bigger problems in junior high school. Improving knowledge and skills of CR teachers will be an indispensable task in teacher education of university.

Conclusion

In this research, the survey of craft learning in elementary school for junior high school students immediately after enrollment was analyzed with the types of the teacher in charge of home economics class. As a result, there were not significant differences of impression and experience of the craft classes. However, there were significant differences in the knowledge of the craft tools and some skills. Higher results were obtained by the students studied with classroom teachers than a home economics major teacher. From these results, it was presumed that the deep daily relationship between students and teachers was highly effective in craft education for elementary school students.

Especially about half of the students with negative emotions such as dislike, weakness, and about 30% students answered that they felt difficulty to understand the crafting process. About 40% of respondents answered that they could not do the most basic manufacturing techniques such as threading and button sewing. The results of craft education as a whole were not so high. It is urgent and essential to solving this problem.

Mitsuno & Oguchi (2009) pointed out that demonstrations by teachers were effective for understanding the crafting process for elementary school students. Utilizing IT equipment will help the students to acquire the knowledge and skills as they can look the demonstrations repeatedly with talking with their classmates. In teacher education in university for elementary school teachers, it is desirable to acquire skill knowledge perfectly and to demonstrate it clearly with using IT.

Limitations

This survey was conducted at one junior high school and is a small-scale survey. The influence of the community, the school, and the individual teacher also might be great. Also, because students' knowledge and skills were also impression of students, even if students answered they could do, it did not mean what they were actually able to. However, recognizing the positive and negative effects of the type of the teacher will make it possible to suggest for teacher education to lead to better craft education.

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