Kindergarten Teachers' Understanding on Multimedia Application

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Abstract

The study conducted a survey targeting a total of 161 currently in-service teachers in early childhood education institutes in Daejeon and Chungnam area in order to understand the teachers' recognition and present status on multimedia activity that would be frequently performed in the early childhood education institutes. For the data analysis, frequency analysis was carried out with SPSS 17.0. First, the teachers' interest level in multimedia educational activity in the early childhood education institutes was examined. According to the results, most of the teachers answered that they would have average interest in such activity which proved that the teachers are willing to know about multimedia educational activity in some degree. Second, how the multimedia is being actually used in the real field was observed. The findings reported that in a classroom, no multimedia region as an interest region was discovered, and as a result, more than half of the institutes were reported to possess computers. In addition, when multimedia activity is conducted, the teachers would basically choose a large group type the most while most of the activities for those preschoolers are instructed by homeroom teachers. When it comes to give instructions during multimedia activity, the teachers were observed to mostly use references and data from the Ministry of Education and the Internet. Third, the teachers understand that three, four and five-old preschoolers would benefit the most from the multimedia education. They added that they are adopting the multimedia activity into teaching because such activity feels convenient to conduct as the preschoolers would take a great interest in the activity. Moreover, the teachers understand that those multimedia activities in current practice are proving their necessity to be used in teaching and learning to some degree saying that the preschoolers would have certain experiences that would be available only through multimedia activity. Fourth, regarding benefits that the preschoolers would receive during multimedia activity, the teachers mentioned that the preschoolers would have various experiences even if they are indirect ones. The teachers also understand that the preschoolers would not feel distant from multimedia as they get to have an interest in learning with multimedia provide them with chances to learn with various learning materials.

Keywords: Multimedia, early childhood teacher training

1. Introduction

In the 21st century, in globalized and information age, we exchange and share various information with the internet and communications network, and interchange information in remote places with high speed. Now technology is everywhere, and users don`t aware that they are using technology.

With the development of computer, the society is becoming information–oriented society over time, and as understanding, delivery use, and share of information is getting simple and easier with wide use of cutting edge multimedia tools such as Wi-Fi and smart phone thanks

to accelerated development of computer and the internet. With this, multimedia is used in daily life, requiring fast response and challenge. Many media are employed not only computer in early childhood education sites, and thanks to developing technology, the number of technology that we can use for education in developmental and meaningful ways are growing(Kim Hyunok, 2011; Gwak Eunsun, 2009; Park Eunmi·Han Seongtak, 2007; Keengwe & Onchwari, 2009).

There are many examples of using multimedia where many media are combined(Lee Ingyu, Lee Huigyu, 1995)in early childhood education are found in 2007 amended kindergarten education process and new Nuri Education Process. The aim of 2007 amended kindergarten education process is to nurture Korean leading knowledge and information age in the 21st century. As contents about 'Aware there are both good and bad media and make proper use.' Is added in the amendment, it predicts negative effect of multimedia and emphasizes achieving responding knowledge, technology, and attitude. Also in Nuri Education Process, there is contents about 'TV, the internet, communicative function' as detail of 'safe living; in 'physical activity·health'. This means science technology and multimedia based on science technology is in our daily life, making us available to make them use anytime anywhere, meaning there are growing attention for educational application of multimedia in early childhood education and practical use.

In kindergartens, multimedia has to be employed in proper ways to help children`s development, and role of infant teachers is important to make better use of multimedia. So, it is important to understand what they have in mind about multimedia and how they use it(Kim Eunkyung, 2002).

But there`s no detailed education process or plan for teachers in early childhood education institutions for multimedia application, some of teachers have lack of understanding(Kim Eonju, 2004), and it is used for their convenience without consideration of educational fact, effective approach, and level of educational development. So, in early education site, teachers` attention and right awareness about multimedia are required to make better use of it.

The aim of this research is to basic data for multimedia application in early education site with investigation of teachers` awareness and reality for multimedia application in kindergartens. Detailed research matters for the aim are as follows.

Research subject. What is teachers` awareness and reality about multimedia application in early educational institutions like?

2. Research Method

2.1. Research Object

The objects of this research are 161 present teachers in early educational institutions located in Deajeon and Chungnam. 142 of them are private kindergarten teachers, ten are daycare center teachers, and nine are public kindergarten teachers. Table 1 shows the general feature.

Table 1. General Feature of the Objects

Variable	Separation	Sample size(%)
Age	21~24	51(31.7)
	25~29	51(31.7)
	30~34	22(13.7)
	35~40	18(11.2)
	Over 40	19(11.8)

Career	Less than 3 years	60(37.3)
	3~5 years	39(24.2)
	5~10 years	29(18.0)
	10~15 years	17(10.6)
	More than 15 years	16(9.9)
Academic History	College graduate	98(60.9)
	University graduate	54(33.5)
	Graduate school graduate	8(5.0)
	Others	1(0.6)
Position	Teacher	117(72.7)
	Master teacher	21(13.0)
	Assistant director	6(3.7)
	Director	17(10.6)
Kindergarten type	Public kindergarten	9(5.6)
	Private kindergarten	142(88.2)
	Daycare center	10(6.2)
Class type	Half day program	97(60.2)
	All day program	64(39.8)

2.2. Research Tool

In this study, survey is delivered to understand teachers` awareness and reality of multimedia application in early childhood educational institutions. Based on previous researches handling multimedia application and reality(Kim Eunjeong, 2002; Yang Yeongran, 2003; Kim Hyejin, Park Hyekyung, 2006), the survey with 30 questionnaires are developed. This survey is modified and improved under two early childhood educational experts supervision, final 20 questionnaires are settled. Table 2 shows the questionnaires of the survey.

Table 2. Survey Questionnaire Composition

Sub factor	Content	Amount
Attention for multimedia educational activity	Possession of certificate for computer, Teacher`s interest	2
Multimedia application and reality	Install of interest area in class, amount of computers in class, children group form in multimedia activities, guide activities using computer, reference data for guiding multimedia activities, difficulties in multimedia activities	8
Necessity and reason of multimedia application	Suitable age for starting multimedia education, reason of applying multimedia activities in education process, necessity of current multimedia activities, reason of necessity of current multimedia activities	4
Effect of multimedia application	Effect of multimedia activities on children, merits and demerits of multimedia activities	3(21)
Multimedia vitalization measure	Requirements for multimedia education vitalization, desirable development way of multimedia activities, desirable relation of conventional computer activities and multimedia activities	3
Total		20

3. Research Result

3.1. Interest for Multimedia Educational Activities

Table 3 shows the interest of multimedia educational activities.

Table 3. Interest of Multimedia Educational Activities

Possession of certificate for computer	Yes	55(34.2)
	No	106(65.8)
Interest of teacher	A lot	29(18.0)
	Normal	127(78.9)
	No interest	5(3.1)

As Table 3 shows, 34.2% of teachers have certificate for computer and the other 65.8% don`t. 78.9% of teachers answer they have normal interest, showing the highest rate.

3.2. Multimedia Application and Reality

Table 4 shows multimedia application and reality.

Table 4. Multimedia Application and Reality

Install of interest area in class	Yes	36(22.4)
	No	125(77.6)
Amount of computer in class	1	64(39.8)
	More than 2	11(6.8)
	None	81(50.3)
	Not in class	(5(3.1)
Group type in multimedia activities	Entire children	29(18.0)
	Big group	103(64.0)
	Small group	18(11.2)
	Separate activities	11(6.8)
Guide activities with computer	Teacher	152(94.4)
	Computer teacher	3(1.9)
	Guest computer teacher	2(1.2)
	Children themselves	4(2.5)
Level of intervention of teacher in multimedia activities	No intervention	26(16.1)
	Help in the beginning	21(13.0)
	Help when children ask	25(15.5)
	Select parts first to help	38(23.6)
	Help from the beginning to the end	31(19.3)
	Other	20(12.4)

Time for multimedia activities	Free activity time	46(28.6)
	Small group time	5(3.1)
	Bing group time	81(50.3)
	Prepare time for multimedia activities	9(5.6)
	Extracurricular activity times after school	5(3.1)
	Other	15(9.3)
Reference for guiding multimedia activities	CD-ROM bought from kindergarten teachers	44(27.3)
	Educational CD-ROM provided by the Education Ministry	84(52.2)
	General multimedia books	12(7.5)
	Internet websites for children education	107(66.5)
	Data prepared by teacher	38(23.6)
	Other	9(5.6)
Difficulties for multimedia activities	Lack of understanding of teachers for computer	32(19.9)
	Lack of tools and software data children of each class can employ	111(68.9)
	Children`s lack of understanding and interest	7(4.3)
	Limitation from small room and place	11(6.8)

As Table 4 shows, 77.6% of the objects answered they don`t install interest area in classes for multimedia activities. When it comes to amount of computers in class children can employ, 50.3% of classes don`t have, which is the highest rate, and followed by one computer with 39.8%.

64.0% of the objects answered they run big children group for multimedia activities, which is the highest rate, and 94.4% of computer exercises in multimedia education are run by teachers.

When it comes to intervention level of teachers for multimedia activities, 23.6% of them select parts to help and 19.3% help from the beginning to the end.

Most of multimedia activities are performed in big group time which is account for 50.3%, and as a result of overlapped response for reference of guiding multimedia activities, 66.5% of them employ children education internet websites and 52.2% of them use educational CD-ROM provided by the Education Ministry.

For difficulties in running multimedia activities, 68.9% of them chose insufficient of tools and software data children can employ.

3.3. Necessity and Reason of Multimedia Application

Table 5 shows the necessity and reason of multimedia application.

Table 5. Necessity and Reason of Multimedia Application

Proper age for starting multimedia education	3 years old	51(31.7)
	4 years old	57(35.4)
	5 years old	39(24.2)
	From entering elementary school	14(8.7)
Reason of applying multimedia activities in education process	Convenience of application	90(55.6)
	Children`s huge interest	62(38.5)
	Central policy of kindergarten	3(1.9)
	Will of teacher	6(3.7)
Necessity of current multimedia activities	Very necessary	13(8.1)
	Necessary in some degree	133(82.6)
	No matter	8(5.0)
	Not necessary very much	7(4.3)
	No necessity	0(0)
Reason of necessity of current multimedia activities	To give various experiences that only multimedia can provide to children	77(47.8)
	To nurture capacity for informed-oriented society	29(19.3)
	They help teaching of teachers	31(19.3)
	To nurture leaning ability	8(5.0)
	Other	2(1.2)

As Table 5 shows, 35.4% of the objects answer proper age to start multimedia is 4 years old, followed by 3 years old with 31.7%. 55.6% of them answer the reason of applying multimedia activities in education process is for convenience of application. 82.6% of them respond current multimedia activities are necessary in some degree, and 48.8% of them answer the reason is to give various experiences that only multimedia can provide to children, showing the highest rate.

3.4. Effect of Multimedia Application

Table 6 shows necessity and reason of multimedia application.

Table 6. Effect of Multimedia Activities to Children

	Very positive	Little positive	Normal	Little negative	Very negative
Allow various experience with indirect experience	34(21.2)	84(52.2)	41(25.5)	2(1.2)	0(0.0)
Nurture rich color sensation	17(10.6)	54(33.5)	73(45.3)	17(10.6)	0(0.0)
Nurture creativity and imagination	12(7.5)	46(28.6)	66(41.0)	34(21.1)	3(1.9)
Nurture active leaning attitude	16(9.9)	55(34.2)	71(44.1)	16(9.9)	3(1.9)
Give friendliness to multimedia	24(14.9)	73(45.3)	59(36.6)	5(3.1)	0(0.0)
Nurture logical thinking skill with process experience	5(3.1)	50(31.1)	86(53.4)	16(9.9)	4(2.5)
Help interaction between peer	2(1.2)	29(18.0)	72(44.7)	48(29.8)	10(6.2)
Help language development and communication	7(4.3)	35(21.7)	82(50.9)	30(18.6)	7(4.3)
Nurture problem solving skill with activities including beginning and close	4(2.5)	45(28.0)	85(52.8)	20(12.4)	7(4.3)
Let children have interest in leaning with various materials	35(21.7)	74(46.0)	43(26.7)	7(4.3)	2(1.2)
Give opportunities to express thinking	5(3.1)	42(26.1)	84(52.2)	27(16.8)	3(1.9)

As Table 6, when it comes to effect of multimedia activities to children, 52.2% of the objects answer it allows various experience with indirect experience, 45.3% say it give

friendliness to multimedia, 46.0% respond it gives interest in leaning with various materials, showing the highest rate in little positive. The other parts show the highest rate in Normal.

Table 7 shows merit of multimedia activities.

Table 7. Merit of Multimedia Activities

	Very positive	Little positive	Normal	Little negative	Very negative
Interaction and communication	2(1.2)	33(20.5)	91(56.5)	28(17.4)	7(4.3)
Many functions such as video and audio give various experiences to children	84(52.2)	46(28.6)	27(16.8)	3(1.9)	1(0.6)
Separate leaning, small group, and big group activities are available	31(19.3)	76(47.2)	44(27.3)	7(4.3)	3(1.9)
Induce active study leaning with giving initiative to children	17(10.6)	62(38.5)	63(39.1)	12(7.5)	7(4.3)

As Table 7 shows, for the merit of multimedia, 52.2% of the objects answer very positive for 'Many functions such as video and audio give various experiences to children'.47.2% of them answer little positive for 'Separate leaning, small group, and big group activities are available'. The other parts show the highest rate in Normal.

Table 8 shows the demerit of multimedia activities.

Table 8. Demerit of Multimedia Activities

	Very positive	Little positive	Normal	Little negative	Very negative
Contents of software doesn`t have link with education process in kindergartens	4(2.5)	41(25.5)	80(49.7)	36(22.4)	0(0.0)
Rely on products of companies	9(5.6)	46(28.6)	80(49.7)	25(15.5)	1(0.6)
Short activity time available with limited amount of tools	42(26.1)	45(28.0)	58(36.0)	14(8.7)	2(1.2)
Children cannot see the result after activities	17(10.6)	55(34.2)	72(44.7)	14(8.7)	3(1.9)
Teachers are not available to evaluate children`s activities	10(6.2)	55(34.2)	72(44.7)	23(12.3)	1(0.6)
Children have difficulties choosing affordable activities	20(12.4)	55(34.2)	72(44.7)	12(7.5)	2(1.2)

As Table 8 shows, the demerit of multimedia activities is that it doesn`t have link with education process in kindergartens. Every question shows the highest rate in Normal including 'Rely on products of companies'.

3.5. Multimedia Vitalization Measure

Table 9 shows measures of vitalizing multimedia.

Table 9. Measures of Vitalizing Multimedia

Necessity for multimedia education vitalization	The Education Ministry produces and provides CD and data proper to level of children	120(74.5)
	Produce contents by teachers or kindergartens	4(2.5)
	Purchase multimedia data from computer related companies	11(6.8)
	Demand interest and professionalism of teachers	26(16.1)
Desirable development measure of multimedia activities	Educational improvement of software contents	24(14.9)
	Popularization of multimedia tools with cooperation of civil authorities and companies	30(18.6)
	Develop various multimedia technologies	77(47.8)
	Other	6(3.7)
Desirable relation of conventional computer activities and multimedia activities	Should be delivered separately	9(5.6)
	Should be delivered at the same time	123(76.4)
	Requires now media brining out the best of them	28(17.4)
	Others	1(0.6)

As Table 9 shows, 74.5% of teachers answer the Education Ministry produces and provides CD and data proper to level of children for multimedia education vitalization, showing the highest rate. 47.8% of them, the highest rate, answer development of various multimedia technologies which can be combined with early childhood education process is required, and 76.4%, the highest rate, answer conventional computer activities and multimedia activities should be delivered at the same time for desirable relation. In the 21st century, in globalized and information age, we exchange and share various.

4. Discussion and Conclusion

This study looks into infant teachers' recognition and current condition on multimedia activity in childhood education center. As we had analysis the data of study subjects, we've got to some conclusions and implications as below.

First, regarding infant teachers' interest in educational activity of multimedia, most of teachers answered as general while almost no one were not interested at all. It indicates that most of teachers are interested in multimedia education activity and it is same result shown in YoungRan Yang's study (2004), where teachers were generally interested in it.

Second, regarding current situation how they use multimedia, mostly they did not have multimedia area as an interest area while they generally had a computer. When they have multimedia activity, majority were doing in large group form. And the teacher in charge leaded child's overall activity.

Teachers supported the infants on the part they simply need or explaining throughout their activity using internet website and Education Ministry data in general. This is same result shown in EunJung Kim's study(2002) with the fact that the multimedia teachers like to use is internet site aside from CD included in general course of recent revision.

Most difficult parts teachers thought were the lack of multimedia equipment and software data.

Third, teachers thought that age of 3, 4, 5 were fit for starting multimedia education since multimedia activity is convenient and good to attract infants' interest. They also regard that current multimedia activity are important because it provides with various experience to them. In fact, most of centers we studied at did not have computer set and proper area. Thus, even

though teachers consider multimedia education as a good system for infants' interest, it's still not easy to use multimedia system in the real educational field.

Fourth, concerning the effect of multimedia activity, it was that infants were able to have indirect and various experience building getting used to multimedia. Also, they got interested in study with different materials. Advantages of multimedia teachers point are that diversed function including audio (voice and sound) and video (moving image) can provide them with different experience while individual study, small group and large group activity are all possible.

Meanwhile the disadvantage of multimedia activity is that, software contents are not actually connected to curriculum as well as depending on business product. Also, the lack of equipment limits child's use that they cannot see the result what they did causing that teachers have difficulty to evaluate their activity to select the level of activity that is fit for them.

According to EunJung Kim's study(2002), in the same manner, teachers consider the reason they need multimedia that it attracts infants' focus and curiosity with plentiful data. However, they felt difficulty to apply the system to the real education field since it's not exactly connected to curriculum with the fact that they are unable to evaluate the fitness for infants whether it's proper or not.

Fifth, they consider that in order to revitalize multimedia activity, the Education Ministry has to spread CD and data which is fit for infant level with various multimedia technique developments. And most desirable way is to combine current computer activity with multimedia activity.

Different researches (EunJung Kim, 2002; HyoSeung Jang, 2003; JunKwon Kim, MiYeol Baek, 2007; EunJin Kang, EunJa Hyun, 2005) indicates same opinion that we need to accept the system wholeheartedly concerning gradually increasing researches on multimedia ever since 21c with teachers regard multimedia activity as needs of the times. It is of great value giving infants basic ability to use information and teachers to approach to many different data of lesson to expand or make connection with different classes (EunJung Kim, 2002). This study shows that teachers think importantly of multimedia activity and necessity and its effect and influence to infants in the affirmative asking for proper multimedia activity where they can combine it with the national level curriculum in order to invigorate it in the real education field.

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