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## The use of interactive CD-ROM in early childhood education: teachers' thoughts and practices

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### Abstract

The purpose of the research is to determine the opinions of the early childhood teachers working in Denizli about the use of interactive CD-ROMs in the education programs. The research has been conducted with the qualitative research methods. In the research, semi-structured interview has been used as a way of gathering data, which is one of the interview ways. The research has been conducted with five early childhood teachers teaching different age groups of children. According to the findings gathered in the research, it has been found that the teachers use the interactive CD-ROMs in the classrooms very rarely because of the lack of the computer equipments in the classrooms. Moreover, it has been also found that they aim at children's psychomotor and cognitive development with the use of the interactive CD-ROMs. Among the other findings in the research, it has been found that the teachers recommend the virtual and audio elements of the interactive CD-ROMs to be prepared more elaborately and carefully. Furthermore, It has been found striking that the recommendations of the preparation of interactive CD-ROMs on the topics supporting the development of sociality and the abstract topics that the adults have difficulty in understanding. At the end of the research, considering the findings gathered, the suggestions have been made for the educationists and the teachers.

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### 1. Introduction

The use of the information and communication technologies by the individuals enables the bringing of the ideas together, the sharing of the information, benefiting from the services more efficiently and effectively and the reflection of the natural opinions. The use of the information and communication technologies on children develops the active use of the cognitive processes such as the memory, the perception, problem solving, the cause-effect relationships and the independent thinking and the adaptation with the specific attitudes. The studies have shown that the children in younger ages are more reluctant to learn and use the technology. Besides the technological innovations the increasing use of the internet and other digital technologies have also led to the increase of the use in all education levels in the classrooms [1, 2].

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Since the very young ages, the children have been using the technological equipments actively both at home and at school. The interactive CD-ROMs are some of the tools that can be used actively in the computers. The interactive CD-ROMs prepared especially for the educational use include efficient designs including texts, images, pictures, vivifications, music, visions and other multimedia types. The interactive CD-ROMs used for the early childhood education are very important. The CD-ROMs prepared with the purpose of education and which are efficient enable the development of hand- eye coordination, attention, perception skills of the children, and also provide the support of all developmental areas and the independent learning. The teachers use the interactive CD-ROMs as the supporting element of their daily plans and those CD-ROMs can be applied to all group or individual activities. The use of the CD-ROMs effectively by the teachers, the following of the updated CD-ROMs should be done in the daily plans in a balanced way. Moreover, while the teachers use the interactive CD-ROMs in the activities, they should also guide the children about the individual use of the computers and the finding of the right answers for the questions [3, 4, 5, 6, 7, 2].

When the researches made in this field have been examined, it has been found that the studies including the early childhood years focus on the use of the interactive CD-ROMs in children's reading books and math [3, 8, 9, 10, 11, 12]; the studies made with the adults and the adolescents focus on the use of the interactive CD-ROMs in the education and health fields [13, 14, 15, 16, 6]. The variety of the interactive CD-ROMs in early childhood period and the increase in the quality of the CD-ROMs and their generalization are very significant. To enable those, the determination of the opinions of the teachers on the interactive CD-ROMs and the activities about the interactive CD-ROMs are important. So, in this research, the determinations of the opinions of the teachers on the interactive CD-ROMs and the activities done with the interactive CD-ROMs have been aimed at.

## 2. Method

This research is a qualitative study. Five teachers working in the formal early childhood education foundations in Denizli in 2009-2010 academic year have been chosen randomly with the help of modeling method and participated in the research. The general information about the teachers participating to the research has been shown in the Table-1.

Table-1: general information about the participants

Participants	Gender	Profession year	Education level	The type of the school worked in	Age group	Number of the students in the class	Assistant teacher	Computer
P-1	Male	8	University graduate	Early childhood	6	15	No	Yes (1 computer)
P-2	Female	8	University graduate	Early childhood	6	18	No	No
P-3	Female	14	University graduate	Early childhood	5	33	No	Yes (1 computer)
P-4	Female	19	University graduate	Early childhood	5	22	No	Yes (1 computer)
P-5	Female	3	University graduate	Early childhood	4	15	No	No

Four female and one male teacher have participated to the research. All the teachers are university graduates. Two of the teachers work in a kindergarten dependent on an elementary school and the other three of the teachers work in independent kindergartens. Two of the teachers teach the group of children who are 6 years old; two of the teachers teach the group of children who are 5 years old and one teacher teach to the group of children who are 4 years old. While two of the teachers state that they do not have any computer equipments in their classes, the others state that they have one computer equipment in their classes, and all of them state that they do not have any assistant teachers in their classes.

In the research, semi-structured interview method has been used. The interviews have included approximately 18 questions and taken almost 45 minutes. The interviews have been made in person and one to one. The interviews have been recorded with the permission of the participants. The interviews have started with the warm-up

conversations and then the questions have been asked to get the general information (the profession year, education level, the age group teaches, the number of the students in the classes, the assistant teacher and whether the classes include computer or not). After that, the questions about the use of the interactive CD-ROMs and the questions tended to determine their opinions on the use of the interactive CD-ROMs have been asked.

After the interview records have been transformed to the computer, the content analysis has been made to determine the distributions and the periodicity of the opinions of the participants about the topics determined previously. Three researchers have made the content analysis separately and then the findings have been mixed and finally decided on the categories.

### 3. Findings

The findings gathered in the research have been presented in two different categories. In the first category, the analysis results related to the statements about the use of the interactive CD-ROMs have been included and in the second category, the analysis results related to the opinions of the participants about the use of the interactive CD-ROMs have been included.

Table 2: The statements of the participants about the use of the interactive CD-ROMs.

QUESTIONS	1. PARTICIPANT	2. PARTICIPANT	3. PARTICIPANT	4. PARTICIPANT	5. PARTICIPANT
The frequency of the use	He uses everyday and changes the CD-ROM once in a month	As she does not have a computer, she uses them very rarely.	She uses them two times in a week and each takes 15 minute.	She uses once in a week and it takes 30 minutes.	She uses 2-3 times in a month and each takes 10 minutes.
Which activities have been participated to	Free-time activity When there is an issue to be mentioned about	Math	Science-nature Math History	Math Language activities	Transition period between the activities The preparation activities for literacy Music
Which development area have been aimed at	Cognitive Psycho-social	Cognitive Psycho-motor	Cognitive	Cognitive Language	Cognitive
How many children use at the same time	1 child	2 children	All the children	1 child	All the children
Organizing of the environment	To make them separate from each other and keep others in silence	It provides a silent environment	It provides a silent environment	She does not care	Uses slides, the dark lightening
The problems encountered	Because of the CD-not appropriate to the age groups	Other children wonder and disturbs the other Every children cannot find the opportunity	The lack of time-as the time is not enough, every child cannot find the same opportunity	About the use of the computer	No problems encountered
Assessment	Question-answer method The game gives feedbacks and observations of them	By talking with the children The game gives feedbacks and observations of them	Question-answer method	No assessment	No assessment
What standards have been taken as the basis while choosing	The appropriateness to the age group and the developmental level The brand heard about mostly Sharing with other teachers	Being clear and comprehensible Including of the current topics Confirmed by the specialists. Right direction and including no wrong information Objectivity Audio-visual features	Te appropriateness to the levels of the children Sharing with the other teachers Audio-visual features	Sharing with the other teachers Visual features Being clear and comprehensible	The appropriateness to the ages of the children Time

Only one of the teachers participated to the research has stated that he uses the interactive CD-ROM every day. It is clear that the other participants use them less than this teacher uses. The teachers who stated that they use very seldom have showed the reason as not having the computer equipment in the classroom and so they have to bring their own computer to the school. Moreover the teacher coded as P-2 (the second participant) among the other teachers has stated that as she cannot bring his own computer to the classroom often, she encounters problems in the period of application and so cannot use the interactive CD-ROMs very often:

*“To be honest, I cannot use the interactive CD-ROMs very often. Actually I want to use them but the conditions are not appropriate. So I cannot use...There is not any computer in our school now, and as there is not any, I have to bring my own laptop. And after some time, it becomes hard for me to bring it to the school. Because my husband also uses it at home. So, I cannot always bring it with me. And when I bring, as the children have never seen such equipment, they give different reactions. All of them want to play with it and be busy with it at the same time. So the children who cannot be busy with it lose their attentions and they want to come to near their friends who are busy with the computer. Because of all these reasons, I cannot use them, but I really want to.”*

While three of the teachers state that they use the interactive CD-ROMs to support the math activities more, one of the teachers states that she uses in the free-time activities. Furthermore, all the teachers aim at the children’s cognitive development by using the interactive CD-ROMs; they also state that they aim at the psycho-social, psycho-motor and language development. Moreover, the teacher coded as P-2 states his faith in the use of the interactive CD-ROMs as being the supporting element in all developmental areas:

*“I believe that the computer addresses to all areas when used efficiently.”*

In the question regarding with how many children the interactive CD-ROM is used, two participants state that they use the interactive CD-ROMs with all the students at the same time in the class. The participant coded as P-3 among the participants explains how she can use the interactive CD-ROMs with all the students at the same time in the class:

*“For example, we have one visual CD-ROM, they put their hands up to say what image follows the other. I choose one of them. And the one I choose generally is the one who notices it newly instead of the ones who know it already. This way. All of them cannot answer.”*

In the question regarding with the problems encountered with the interactive CD-ROM, two participants state that all the children cannot join the activity as the time is not enough. Moreover, while two participants state that they encounter problems because of the CD-ROMs and the computer, one participant states that she does not encounter any problem.

In the question regarding with the assessment after the activity in which interactive CD-ROM is used, almost every participant states that they make assessment with the children. There are some statements about the methods used during the assessment which are question-answer method and conversations with the children. Moreover, one teacher states that she does not make assessment and the other teacher states that she cannot make assessment. The teacher coded as P-5 stating she cannot make assessment explains the reasons below:

*“As they are 4 years old, after the CD-ROM ends, they want to play games and get social with the toys; so I cannot make any assessment with them.”*

Moreover, two teacher states that as the game in the interactive CD-ROM gives feedbacks, they can make assessments by observing the child. As an example, the statement teacher coded as P-1 has made is presented below:

*“...I check the questions asked there and the answers the children give, when they give the right answer, it says “right” and when they give the wrong answer, it says “wrong, try again”, so according to the sound I hear, I make the assessments of the children by observing how many right and wrong answers they give. This is how I make the assessment.”*

In the question regarding with the standards taken as the basis while choosing, it has been observed that the appropriateness to the age and development level, the audio-visual features have been decided after sharing with other teachers, which has been stated more often when compared with others.

In the research, the teachers have also been asked what they think about the interactive CD-ROMs they have bought and used so far. And later, after being asked the question “*if you were asked to give some suggestions about preparing the interactive CD-ROMs by a press, what would you say?*”, it has been enabled to find out their suggestions. The findings about this have been presented in the Table-3.

Table-3. Opinions and suggestions for the interactive CD-ROMs

Participants	Opinions	Suggestions
P-1	Vocalization is good Stops occur in the vision The child gets the answer late Vision and vocalization are not prepared elaborately It is under the age level	Sound must be chosen well It must hardens the age level It must be prepared by the specialists It must follow the topics from close view to the distant view There must be topics and aims for the socialization, social life and behaviors It can be prepared in relation with finding the direction.
P-2	She generally likes Some of them are immutable	The languages used must be appropriate to the age level Expressions must be clear, there must not be any difficult concepts The subjects and the expressions must follow the path which is from the easy to the difficult The concepts must be presented in the games The colors and the vision must catch the attention of the child
P-3	There are many (but not many options) Prices are high There are not a lot of professional studies	There must be very clear and comprehensible directions The drawings must be plain and entertaining and the colors must be explicit Moral behaviors must be included
P-4	CD-ROMs are generally good They must be prepared more elaborately	Expressions must be clear, there must not be any difficult concepts Teachings must be done through games Child must get the feedback immediately Turkish must be used efficiently It must not be very complicated There must be striking, pretty figures
P-5	Sometimes she cannot find the ones appropriate to the age level	Sound must be good Expressions must be clear, there must not be any difficult concepts There must be the subjects about the topics (sexuality, death etc.) the adults have difficulty in explaining

Two of the teachers participated to the research have stated that they generally like the interactive CD-ROMs they have bought and used. One of the teachers has stated that there are not many choices and prices are very high. The teacher coded as P-3 has stated this in these words:

Moreover two teachers (P-1 and P-5) have stated that they cannot find the CD-ROMs which are appropriate to the age level; and other two teachers (P-1 and P-4) have stated that the interactive CD-ROMs have not been prepared elaborately.

When the suggestions of the participants about the preparing of the interactive CD-ROMs have been examined, it has been found that their statements are often about the audio-visual features. The teacher coded as P-4 has stated his opinions about the sound element with these words below:

*“The tone of the sound and vocalization are really significant. For example, there must not be a sudden volume up, when the child is making a operation, there must be a sound like boom...there must not be a lot of sudden volume ups, in my opinion.”*

Moreover, two teachers (P-1 and P-3) have stated that there must be some moral and social elements. The statements of the teacher coded as P-1 are below:

*“...maybe there must be the CD-ROMs showing them what they should do in their social environment such as “what we should do when we see each other”, “we must say good morning to our family when we get up or how are you” etc. The must be those kinds of CD-ROMs. Because I could not find those kinds of examples in the interactive CD-ROMs. For example, a person walks, falls down, and the other must help him to stand up, I could not find any interactive CD-ROM including this kind of examples so far.”*

Among the statements made by the participants, it has been striking that the teacher coded as P-5 has stated that the subjects the adults have difficulty in answering and explaining must be included. For example:

*For example, what is death? When the child asks me so, maybe I will not be able to explain it in that moment...But if a CD-ROM regarding to this subject has been prepared, it would be great.”*

#### 4. Conclusions and Recommendations

In this research, finding out the opinions of the early childhood teachers about the interactive CD-ROMs and the activities they make in their classrooms with the interactive CD-ROMs. At the end of the research, it has been found that the most of the participants do not use the interactive CD-ROMs a lot and the reasons for this is that two teachers do not have computers in the classrooms so they have to carry their own computers to the classroom. It has also been found that by using the interactive CD-ROMs, they aim to support the cognitive development of the children and the number of the teachers using the interactive CD-ROMs for the math activities is higher.

Among the findings of the research, it has been found that two of the teachers use the interactive CD-ROMs with the whole classroom at the same time; one of the teachers does not make assessment at the end of the use of the interactive CD-ROM and at the end, she does not make any assessment as she cannot take the attention of the children in the classroom.

Furthermore, it has been found that the teachers care about the appropriateness of the interactive CD-ROMs to the age and development level while choosing them and they choose the interactive CD-ROMs by sharing with other teachers.

In the findings about the opinions of the teachers on the interactive CD-ROMs, the teachers state that the interactive CD-ROMs have not been prepared elaborately and there are not many options about the variety of the CD-ROMs. Moreover, the teachers have made suggestions about the audio-visual elements of the CD-ROMs to be prepared more elaborately and carefully. Moreover, It has been found striking that the teachers have made some suggestions regarding with the preparation of interactive CD-ROMs for the abstract subjects the adults have difficulty in explaining.

In the light of findings reached in the research, it has been considered that as the technology develops very fast and the access to the information becomes easier, the use of the interactive CD-ROMs must be made widespread for the increasing of the quality of the early childhood activities. To enable that, formal courses, symposiums and workshops about the use of the interactive CD-ROMs, its importance and the fields to be used at can be conducted. The National Education Ministry, universities, media foundations, non-government foundations and the publishing houses must work in corporation and work out to increase the qualities of the interactive CD-ROMs, to make their use widespread and enable their appropriateness to the age, developmental field levels and the subjects.

Moreover, it has been thought that by using different kinds of research methods in bigger sampling groups, there will be significant contributions to the related field with the increase in the descriptive and experimental studies about the use of the interactive CD-ROMs in early childhood education.

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