

# Preschool Teachers' Views and Experiences about ICT Use in Instruction: A Case Study

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## Abstract

*Problem Statement:* Three to five years, or preschool children's activities and experiences with computers will evolve over time as they grow and develop. The teacher's role moves from guidance toward monitoring and active facilitation the role of the classroom teacher and the learning environment determine how effectively technological tools, curriculum, and standards support children's learning.

*Purpose of the Study:* The purpose of this paper was to explore preschool teachers' views and experiences about Ict use in instruction.

*Methods:* This research was designed as a case study which is a qualitative research design. The research was carried on in a preschool which is the only preschool which uses ICT as a part of its instruction. The participants were determined by convenience sampling which is a type of purposeful sampling. As a result the work group consisted of eight teachers teaching three, four and five year-old children.

*Findings and Results:* In the first stage the participants were interviewed using a standardized open-ended interview form. In the second stage classroom observations were made using check-lists, photos and videos. The data were analysed by content analysis technique using NVivo 10. According to the findings preschool teachers seem to have media literacy skills to a moderate level because they deal with ICT such as Scanners, computers and communicating via social network. The findings show that they use Ict for two reasons; first for managerial issues and secondly, for instructional issues. According to the results when each child is given a personal computer, teachers can be able to communicate each child separately and as a result classroom management becomes easier in a more positive classroom climate. Non-disciplinary behaviours occur less or at least change in nature.

*Conclusions and Recommendations:* Consequently, especially when it is available per-person, in preschool classrooms, ICT use enhances students' interest and learning. As a result there is a

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need to control and supervise the way a computer is used. The time allowed for each student should be restricted. Teachers should be provided with more personal and professional developmental opportunities for more complicated implementations of information and communication technologies in the future; physical and technical capacities of the schools should be made available for individualized learning and finally teachers should be given the opportunity to develop the program and material for a more effective instruction.

**Key Words:** Ict, pre-schooling, teacher training, computerized instruction

The use of information and communication technologies have been spreading all over the world including, preschoolers, the children below six-year-age. This process seem to be non-controlled and spontaneously in nature. It can be asserted that after a short period of confusion about realizing the nature of this new period, as in all other disciplines educational authorities also started to think about its impact on education. This paper deals with the smallest clients of this process. We know that computers are increasingly becoming a part of preschoolers' lives (Clements & Saramo 2002: 341). Clements (2002) also reported that preschoolers are more competent than has been thought and even young children can use appropriate computer programs. Scoter, Ellis and Railsback (2001:14) predicted that preschool children's activities and experiences with computers will evolve over time. Sackes, Trundle and Bell (2011) concluded that computers had a positive effect on the kindergarten classrooms and development of children's computer skills. They also highlighted that the current state provided empirical evidence for the rationale for inclusion of computers in kindergarten classrooms.

Judge, Puckett and Çabuk (2004) asserted that access to, and use of, a home computer, the presence of a computer area in classrooms, frequent use of the Internet, proficiency in computer use and low-poverty school status were correlated positively with academic achievement. According to Vernadakis, Avgerinos, Tsitskari and Zachopoulou (2005) the findings demonstrated a significant contribution of computer use in the classroom as a learning tool. Upon achieving one level of knowledge they can proceed to the next, which is not the case in traditional teaching. Li and Atkins (2004) asserted that children who had access to a computer performed better on measures of school readiness and cognitive development. It has been proved that instruction with computers result with cognitive-conceptual development and more success compared to traditional education in preschool period (Ankara Üniversitesi, 2006; Demir & Kabadayı, 2008; Kacar & Doğan, 2010). Aktaş-Arnas (2005) found that computer programs provide children significant gains in conceptual skills, verbal skills, problem solving and abstraction. Gök, Turan and Oyman (2011) stated that when preschool teachers use Ict affectively, they can enhance students' interest and attention better. Gimbert and Cristol (2004) asserted that the use of technology with developmentally appropriate software has positive results on socialization and language development, encourages children to explore, use their imagination and solve problems and enhance the development of attention span. They, additionally, claimed that young children with special needs also benefit from multiple uses of technology. Hutinger and Johanson (2000) found positive outcomes for young children with a wide range of disabilities when teachers integrated appropriate computer software.

In this regard the key issues of using technological devices in pre-schooling have been addressed as 1) establishing learning goals for the children, 2) identifying the hardware or

device(s),3) analyzing features and content of the software/program. It is also important to note that programs used in the computer should be designed focusing on learning for example, Plowman and Stephen (2005) reported that examples of software that informed children that their answer was incorrect without explaining why and other games that gave the correct response after repeated incorrect answers having no explanation about the correct response, 4) planning how the educational technology will be integrated into the curriculum (Mcmanis & Gunnewing 2012; Tsantis, Bewick & Thouvenelle, 2003), 5) a process of mutual support between classroom teachers, university faculty, children parents and other adults (Gimbert & Cristol, 2004), 6) additionally, the ratio of students to computers should be favourable (Becker, 2000). Gimbert and Cristol (2004) claim that classroom teacher and the learning environment determine how effectively technological tools, curriculum and standards support children's learning.

As Tsantis et al. (2003) and Judge et al. (2004) highlighted well, there is no threat that computers will replace classic classroom teaching methods and materials. In this sense, Klein, Nir-Gal and Darom (2000) concluded with significant finding that children interacting with adults trained to mediate in a computer environment, scored significantly higher than other children. Tsantis et al. (2003) also concluded that it is the teacher's knowledge and skills about how to use the technology that makes the difference, not the technology itself. It is important to note that implementation of technology was hindered by two essential factors first lack of time and expertise to explore and understand available software and secondly teachers' lack of understanding and confidence in the potential of the use of technology in the early years (Turbill, 2001).

The purpose of this paper was to explore preschool teachers' views and experiences about ICT use in instruction and to contribute to the debate of use of ICT's in early ages of schooling.

## **Method**

### *Research Design*

This research was designed as a case study in which embedded single-case design was used. The single case in the research consisted perceptions and expectations of preschool teachers about their educational ICT competencies. The embedded sources of data observed for the single case are behaviours and reactions of the students, the way the ICT's used in the classroom, documents and the climate of the classroom. In the research the data were gathered using two techniques: standardized open-ended interviews and observations (Patton, 1990; Yildirim & Şimşek, 2011).

### *Study Group*

The participants were determined by criterion sampling which is a type of purposeful sampling. The criteria were ICT equipped schools, teachers using ICT as a part of instruction regularly. The criteria were met by only one independent pre-primary school located in the central provinces of Antalya, it was chosen as the analysis unit and the data source. Kindergartens in Turkey are constituted in two types: 1) within a primary school as a part of it

and they are also managed by the principals of these primary schools, 2) as an independent building and body. The second type differs by their independent buildings and management bodies (Milli Eğitim Bakanlığı [MEB], 2012; MEB 2012a). In this study the scope was limited with Ict use in second type which is an independent kindergarten. As a result 8 teachers working in this school their 90 students, the ICT's and documents used, and the classroom consisted of the analysis unit in the study.

#### *Research Instrument and Procedure*

The data were gathered in the first stage using standardized open-ended interviews in spring semester of 2013. The participants were interviewed face to face. In the interviews, teacher and student respondents were addressed 14 specific questions in order to determine their perceptions and expectations about their educational ICT competencies. In the second stage each teacher was observed in the classroom twice in order to check the physical and technical conditions, students' behaviours and their responses to both the ICT'S used in the classroom environment and teachers in the natural process. In order to gather data again a semi-structured check list was used. The data were supported by videos and photos taken during to observation sessions.

In order to improve the validity and reliability the following were considered internal consistency, confirmation of the data, consistency of the data with estimations and generalizations, limitations of the study, sample availability, giving details about individual sources of the data, setting conceptual framework and assumptions, clearing data collecting techniques and analysis methods, introducing the data directly, including more researchers to the processes and finally testing and comparing the findings with other related researches (Rubin & Rubin, 1995; Yıldırım & Şimşek, 2011).

#### *Data Analyses*

The data were analysed by content analysis technique in two ways: first the interviews were read through in order to get a feel for what is being said, identifying key themes and issues in each text; secondly, NVivo 10, computer software package was used for further analysis (Mason, 2002; Patton, 1990; Rubin & Rubin, 1995; Yıldırım & Şimşek, 2011).

## **Findings**

### *Characteristics of the School by Means of Ict Used*

The sample school consisted of four classrooms, one computer classroom and a conference hall in the school. There was a camera in each classroom. Each classroom consisted of a computer, a projection apparatus and a scanner. The computer classroom had 13 computers which were connected to the teacher's computer. Each computer had a sound system and headset. The classrooms of the preschool included between 24 and 28 students. While bringing their students to the laboratory some teachers (teachers 3 and 4) who had assistants (a trainee), divided the lab time into two spaces in order to let the students use the computers individually. So they preferred to leave half of the students in the classroom while taking the other half to the lab. The teachers who did not have assistants (teachers 1, 2, 5, 6, 7 and 8) had to bring the whole class members to the lab. In this case two students were asked to sit in front of the computer and use the computers by turns of 15 minutes.

*Teachers' views about their Purposes and Acquisition in the Use of Information and Communication Technologies in the School*

According to the results of the observations and interviews in the school, focusing in the computer classroom, it was found that teachers used Ict's for two purposes. They stated that they used Ict's first for managerial and daily bureaucratic issues and to develop effective relationship with their stakeholders. For this purpose, they reported that they used OGEP (School development project) which was a software used in education, to share information with parents, to educate parents, to follow up students attendance, to save and share students' developmental issues, to share announcements interactively. Moreover they stated that Ict's were used to announce their weekly or monthly lunch menu, to share photograph lists of the school activities and announce teachers' surveillance duty lists.

Table 1 *Teachers' views about their Purposes and Acquisition in the Use of Information and Communication Technologies in the School*

<b>Categories</b>	<b>Exemplary quote</b>
Managerial issues	Teacher 1- <i>"We use Ict's when training parents"</i> . Teachers 1, 3, 4 and 5- <i>"We have software called OGEP which we use to follow up students and share information with parents"</i> . Teacher 6- <i>"We are using the projection in order to play instructional videos very often"</i> .
Daily bureaucratic issues	Teachers 3 and 5- <i>"I use Ict's in order to follow up students' attendance and save their developmental information on the computer."</i> Teacher 7- <i>"We use cameras to prepare materials as well"</i> .
Educational and Instructional effectiveness	Teacher 1 <i>"I presented tails and stories accompanied by sound effects or visual creations in order to attract children's interest and strengthen their sense of humour and imaginations."</i> Teacher 3- <i>"I use web sites to download musical material to develop the sense of music in the children. I downloaded songs, instrumentals and popular musical pieces to use at physical activities in the classroom."</i> Teacher 6- <i>"I use software on teaching mathematics and concrete concepts and downloaded materials from web sites such as <a href="http://www.morpacocuk.com.tr">www.morpacocuk.com.tr</a>"</i> . Teacher 7- <i>"Easily find instructional material in the web or use software to create an effective and amusing learning atmosphere"</i>

The second purpose that Ict was used, as stated by teachers, was about providing educational and instructional effectiveness. Teachers reported that they used Ict's in the following instructional areas as parental involvement, science teaching (n3), mathematics (n3),

music (n3), orientation to reading and writing (n2), game activities (n2) and Turkish language activities (n6). About science activities, for instance teacher 5 stated that many activities such as teaching seasons or sounds found in nature could be practiced well on the computer. Teacher 6 stated that she used software on teaching mathematics and concrete concepts and downloaded materials from web sites such as "[www.morpacocuk.com.tr](http://www.morpacocuk.com.tr)". Teacher 3 stated that she used web sites to download musical material to develop the sense of music in the children. She added that she downloaded songs, instrumentals and popular musical pieces to use at physical activities in the classroom. Teacher 1 stated that she presented tails and stories accompanied by sound effects or visual creations in order to attract children's interest and strengthen their sense of humour and imaginations. Teacher 7 stressed that she could easily find instructional material in the web or use software to create an effective and amusing learning atmosphere

Table 2 According to the analysis what the participants believed they acquired by using Ict in preschool education were as follows:

<b>Categories</b>	<b>Exemplary quote</b>
Ict use helps teachers to instruct using activities addressing more than one sense (n5)	Teacher 4- <i>"Children listen to me to understand the instructions and at the same time they look at the screen to see how the instruction proceeds."</i>
Ict use visualises the concepts and reinforces learning (n5).	
Ict facilitates learning by making the subject attract their interests (n4).	Teacher 5- <i>"I observe that students reflect more willingness to deal with the challenge."</i>
Ict helps a teacher to concretize concepts easily and transfer them to new learning cases (n4).	Teacher 1- <i>"A student asked me what the world was like a few days ago, I sought it through Internet in few seconds, found a simulative video and had him get a quick respond."</i> Teacher 7 said <i>"Although the students do not have the knowledge of the numbers, they can easily learn when trying to match the numbers and train wagons as they are moving in the screen of a computer."</i>
It helps to provide a significant increase at creativity in students (n4).	Teacher 2- <i>"When I showed a video about a trainer of a turtle and asked students to express their estimations about his job, they responded using a lot of nouns and adjectives reflecting the knowledge of the jobs in their environment. Contributing and exchanging information process created a collaborative and competitive learning climate."</i>
It helps students experience and gain the	Teacher 8- <i>"I believe that the more the Ict's are used the more the mechanical skill can be developed. Because once they get</i>



language of the mechanical side of this virtual world (n4).

*acquainted with the mechanical devices, the children start to guess and operate on any new device successfully."*

Ict use increases students' attention (n4).

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### *Results about the Effect of the Use of Ict's on Classroom Management*

In this part we summarized our findings about the effect of Ict use on the classroom management, for this aim we focused on the analysis of the interviews and observations about computer class.

We observed that teacher 3 and teacher 4 brought their students to the computer class by turns, dividing them into two groups in order to provide individual learning. Both teachers were observed to follow timing neatly. This was clearly provided with special efforts as stated in the following quotation from teacher 4. *"I always warn my students 5 minutes before their computer time finishes so that the next group can start on their time."* When we observed the computer classes their deal topic was "numbers". The students were instructed to open the game which was previously determined out of a number of games in the same software. They were told that they were allowed to only play this game. The students of teacher 3 and teacher 4 were observed to use the computers competently (Q.1: *They could use the mouse and key board easily*). We also observed that their hands-eyes coordination was quite well.

In the process, these two teachers visited each student continuously. As they reported they did so first to follow up learning and secondly to prevent a possible problem and to give quick responds to any question appears. Meanwhile they used motivational strategies and techniques orally and by gestures and mimics. Both of the teachers kept saying such words as "well done", (T3); "very good", "ok.", "Brilliant", "Fantastic" (T4).

These teachers reported that students asked questions about the game itself, such as how to skip to the next stage or which ones on the keyboard were to use to play the game. Teacher 4 stated that students asked for help when they made a wrong touch and failed to go further. We observed that in this process these two teachers could respond each student exactly on the time and we had the impression that students did not reflect any kind of panic or failure feeling. Additionally, these students' were highly concentrated to the games on the computers. The scene seemed us to include two interrelated parts: one was the student and the other was the computer. This scene was interrupted only in some occasions by the teacher. It was observed that this scene included almost no relationships among the students. This result is a matter of discussion issue which seems to be a negative effect of the use of Ict in a way. According to the findings, it can be asserted that teachers were more comfortable and successful in classroom management due to close relationship and successful choice of the material. In our observations we can understand from the attitudes of the students that the learning material used in Ict classroom was found to be partially attractive, amusing and instructive. However, teachers proposed that the material should be developed based on their expertise and experiences. (Q.1: Teacher 3 said *"As teachers sometimes we feel the necessity to*

*review the material by removing or adding some details in relation to the students' ages, readiness level and psychological state as much as we can. I believe even expertise is not the only requirement at preparing preschool learning material using information and communication technologies what we need also to consider current conditions of the school and the needs of the students."*

Although the portrayed scene seems to give more optimistic impression about classroom management, it should also be noted that discipline problems are likely to occur due to technological problems, the extent that the material used meets students' learning needs and interests, the availability of the material timing and its difficulty, the students' physical and psychological state etc.

Teachers 1, 2, 5, 6, 7 and 8 brought their students all together to the computer class. Students were placed by two in front of one computer and were let to use the computers by turns of 15 minutes. The learning material included "numbers" the same as what teachers 3 and 4 thought.

These teachers, after having the students settled, instructed them to use the computers by turns of 15 minutes. Unlike teacher 3 and 4, these teachers asked their students to choose one game on their own out of a number of games which the software included. In our case, at the beginning some students were heard to raise a small quarrel about who will start first. Later on some students were observed to fail at starting a game and asked for help. In this process, the age three group was observed to face more difficulties and asked for more help compared to the other age classes. In general, students had difficulties at such as seeing the "error" window, asking for how to start the game, how to use the mouse, how to use the keyboard, which keys were to play the game, mislaying the curser etc. These were also confirmed by the results of the interviews (n6). In this sense, for instance, Teacher 2 stated that *"these days children meet technological devices at a very early age at home (ex. mobile phones) and all of the stimulators in their environment such as cartoons in tv. help students become familiar with technology. More over the characters and technological supplies of the cartoons they watch have been reproduced and put up for sale in every market, so that children use the prototype of the products of this imaginative new technology."*

As they were observed, these teachers preferred to sit during most of the lesson time at their tables and manage the class using their computers to which all students' computers were connected. In this case accordingly, these teachers faced more difficulties at managing the classroom. Some students using the first half of the time on the computer did not want to leave their turn to the student next to him/her. The opposite was also true that some students complained of being asked to wait his/her turn. In this process, some students grumbled and complained of their partners orally or pushed sometimes one another physically. Some students could not decide on a game and searched for another continuously. All of these discipline issues were observed to cause to some extent complexity, quarrel and waste of time. Intervention strategies of these teachers, unlike teachers 3 and 4, seemed to be more authoritative based on gradually obtaining eye contact, advising, warning orally, going close to the student and talking. On the other hand, half of these teachers (T5, T6, T8) did not even use any kind of reinforcement strategies. These teachers tended to contended with oral warnings



most. On the other hand, Teacher 1, teacher of the three-age-group, reinforced her students using the words such as “*well done*”, “*very good*”; teacher 2 used such words as “*yes, very good, brilliant*” and teacher 7 used “*well done*”, “*yes*” and “*right*”.

In general the students of the second group teachers seemed also to be competent at using computers and their hands-eyes coordination was quite well the same as the first group. This fact draws us to note, and we also understand from the interviews, that students have computers at their homes and develop their skills benefiting from both informal activities at home and formal activities at school. The findings and teachers’ views depending to their experiences confirm our premise that home activities contribute to students learning. Teacher 7 said “*After I start the computers I ask the students to open the game about calculation, and I see that they can do that on their own successfully. Their success draws me to think that they have had some experience on that gained previously.*” Teacher 2 said “*They use the mouse very competently, placing the curser on the space where necessary. This shows to me that their eye-hand coordination has been developed*”. Teacher 6 said “*My students can open the computer, know how to proceed. Sometimes surprisingly some of the students do something new for me.*” Teacher 4 and teacher 7 added that Ict use helps their students develop in many ways and very helpful in their physical, psychological and intellectual developments.

#### *The Findings about Evaluating the Outputs of the Instruction Using Ict*

In this part, the findings about evaluation of the learning outputs of the instruction using Ict were given and discussed.

About the evaluation techniques in regard to Ict use in preschools, teachers reported that first they evaluated the learning outputs using “question-answer” technique during the instruction. Secondly, they stated that they follow students’ performance during the activities, observe their oral and behavioural outcomes in order to collect data and finally evaluate the output. Teachers 1, 2, 6, and 8 stated that they used what they observed during the activities for evaluating their students. They reported that students’ reactions to the activities in the class tell them whether they can learn or not. Thirdly, teachers stated that they used three criteria to evaluate their output. This kind of evaluation includes observing, searching for clues and evaluating. In this sense teacher 1 said “*I try to trace learning through looking for clues whether what I taught in an activity, for instance numbers in mathematics, mentioned in another activity by the student with a happy exclamation. In this case you can hear him/her saying I did the same thing in this or that activity.*” Finally, teachers reported that planning activities for both classroom and computer class mutually supportive, including games, animation, painting etc. help teachers observe the learning outcomes in various times and activities in the long term. Teacher 2 said “*If I teach for instance the number five to the class in one activity, shortly after I have the students deal with another activity including the number five or if I teach calculation in the classroom, again soon after it, I ask them to deal with the software including calculation.*” Consequently, this evaluation process helps them revise the current learning subject by means of effectiveness and availability and plan the next step. Some quotations from the participants were as follows: *We do evaluate students using the data we observe in all process of the classroom activities (T2, T6, T8). I make an overall evaluation at the end of the day using all the*

*data I observed and collected in many ways (T8). I ask questions after the activities. For example I ask them which one is short and which one is tall in this scene (T3, T4, T6). If I am not satisfied learning outcomes I repeat the same issue with different activities (T1, T4).*

## **Conclusions and Recommendations**

The purpose of this article was to explore teachers' views and experiences about Ict use in pre-primary schools. The findings of the observations showed first that, preschool teachers are to some extent experienced at using information and communication technologies especially such as computers, Internet, social networks and a number of software. Support for this finding was found in Aral, Ayhan, Ünlü, Erdoğan and Ünal's (2007) review. They found that pre-primary school teachers were highly motivated to use computers due to their computer education in their pre-service education. Teachers' preliminary competencies can be considered to be encouraging for the educational authorities to bring available implementations of information and communication technologies into preschool classrooms.

It can be asserted that the preschool teachers used information and communication technologies for two aims basically. First of all teachers' use their skills for managerial and daily bureaucratic issues, for communicating parents faster and more effectively, for contributing to parents' education needs. The second purpose was to provide instructional effectiveness. Our findings are consistent with the findings of Lynch and Warner (2004) by means of instructional use. They found that extending concepts, allowing children to explore and play with technology, teaching basic skills needed in school and life, provide appropriate use of free time and to reward children for good behaviour were the aims of using computers in preschool education. It is significant to note that in our case it seems that computers were used first for bureaucratic and parental involvement issues and then for instruction. The developments in the information and communication technologies in the last ten years signifies a paradigmatic change in instructional issues and the curriculum of preschool education as well as the other levels of education. This change appeared, in the short run, in teaching science, maths, music, reading and writing skills and language learning. The current state of the materials developed in instruction of preschool age children seem to be partially attractive, provoking curiosity and amusing in nature. Teachers believed that as a result of using Ict they acquired more opportunity to implement diversity of material, to provide visualisation, to attract students' interest and attention easier and to confront students with the virtual world of the new age.

The findings based on the experiences of teachers 3 and 4 showed that when each student has an opportunity to use a computer he/she can concentrate better and the teacher can fulfil the required guidance more efficiently. This conclusion is consistent with the findings of Agina (2012), that young children can professionally use and perfectly rely on their own process of learning when they talk and think while act alone with nonhuman's external regulator. This kind of learning design may bring into mind the idea of social isolation or becoming antisocial. Tsantis et al. (2003) wrote that this was a myth and there is no research evidence that even begins to suggest this. Heft and Swaminathan (2002) asserted that children exhibit a rich versatility of social interactions at the computer on the other hand, Scoter Ellis and Railsback (2001:8) noted that socialization into computer use can be provided by placing

two seats in front of the computer to encourage children to work together and to facilitate sharing ideas. These different faces of the phenomena seem to be tightly related to the nature and content of the program, game or whatever put in screen of the computer. The game chosen may draw a student to concentrate on the screen or to communicate the one sitting nearby.

The findings based on the experiences of teachers 1, 2, 5, 6, 7 and 8, proved that when students were allowed to use the computers in turns more difficulties were observed, they asked for more help with a feeling of uneasiness and proceeded in a more instructive-directive teaching method. These difficulties were likely to occur because of the implementation of having students “wait” and waiting does not mean working in pairs. These facts arouse as a result of the lack of enough Ict’s both qualitatively and quantitatively. As Becker (2000) noted this was reported among the major problems associated with using computers by teachers. Additionally, these two kinds of implementations in occupying the students draw us think that the more the students are in number the more authoritative in classroom management the teachers are. In this case, the time a teacher spends for each student will be restricted, teachers are likely to avoid close relations with students and feel the necessity to warn the students more. The consequences of such a relationship are likely to be the appearance of undesirable behaviours. In our case, students sometimes tried to open another game than the teacher asked perhaps because they were attracted more by the graphics of these games. It seems that non-disciplinary behaviours are likely to be different in nature and subject to new debate and research by means of classroom management in the presence of Ict in instruction.

The suggestions based on interviews with teachers were determined as follows: 1) It is very urgent to use the information and communication technologies and especially web applications under controlled processes for educational purposes. Children should be protected against violence including web sites, (n4). 2) Children should be let only limited times using computers and web (N4). 3) Each child or student should be able to work on a personal computer in order to provide effective learning (n5). However, in this case as Heft and Swaminathan (2002) pointed out it is also important to place the computers to allow students look at each other's computers, comment about their own work or their peers' and respond to the actions on the computers' screens, either verbally or with a gesture. The number of the computers should allow each student work individually and more over the material needs to be developed both qualitatively and quantitatively (n3). As Lynch and Warner (2004) highlighted well that the preferred method of instruction in computer use was individual instruction. But it is equally important to profit from what Vygotsky’s dialectical constructivist perspective suggests about peer teaching and learning. Hyun (2005) added that paired children who differed in computer proficiencies but shared similar interests worked very well. 4) The curriculum should have been developed, updated and the objectives should be revised accordingly, (n5). 5) Teachers should be trained by pre and in-service training programs, (n2) in order to undertake their new roles in the process of learning. Heft and Swaminathan (2002) asserted that the teacher may encourage the children to communicate their problems, rather than be confrontational. Heft and Swaminathan (2002) contended that the teacher may encourage the children to communicate their problems, rather than be confrontational.

According to Agina (2012) teachers' new roles should enable children to regulate their own process of learning and engage with a free-will without the need of their regulations. 6) The material used in information and communication technologies should also be designed to meet the mentally disabled students' needs, (n2). This suggestive finding is consistent with the findings highlighted by Gimbert and Cristol (2004) and Hutinger and Johanson (2000).

Consequently all of the teachers' views and attitudes reflected a strong belief in the affectivity of Ict use in the learning experiences of early ages. In this sense, teachers should be provided with more personal and professional developmental opportunities for more complicated implementations of information and communication technologies in the future. On the other hand, physical and technical capacities of the schools should be made available for individualized learning. The core issue can be said to be developing instruction materials which meets learning needs of the students and teachers preferences in regard to the purpose of the lesson, flexible enough to provide individualized or socialized frameworks.

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