The Role of Educational Computer in the Effectiveness of Educating the Kindergarten Child
A Field study

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Abstract
The study aimed to identify the effectiveness of the educational computer use at kindergartens and its impact on educating these kindergarten’s children. Two instruments were used, one for the families of children enrolled at kindergartens, the other for kindergartens’ teachers. A child observation card regarding the effectiveness of the computer in educating the child at kindergartens was also used. The study concluded that the educational computer effectiveness in bringing up and teaching the kindergarten child was in general, positive. It also showed no statistically significant differences among the responses of both of the families and teachers of kindergarten children towards the effectiveness of the educational computer’s role in the lives of those children.

Key Words: Educational Computer, Kindergarten Child, Computer Skills, Computer Activities, Kindergartens.

Introduction
The use of computers at kindergartens makes it easier for teachers to enhance and reinforce the children’s’ abilities in particular. Discovery learning approach is much interested in using the information technology to fortify the capabilities of kindergarten children, Lehrplan für den Kindergarten, (2008). In Germany, a study was conducted on parents to understand the importance of the computer at kindergarten for children. Their responses were: 37% said that it was too early to use the computer at the kindergarten, 42% reported that it might be a suitable teaching aid among other teaching aids, whereas 21% asserted its necessity for their children at kindergartens, http://www.kikaninchen.de/eltern/votingcomputerinderkita102.html.

Kindergartens look forward to educating the child on the acquisition of teaching multimedia, Aufenger, (2007). Therefore countries have tended to use the computer so that children can benefit from it in their qualification for renewed labor market, Ali, (1994). The computer makes available opportunities that can enrich the children’s positive reality. It allows them to work together, discover the multimedia world, and
The Computer in Children’s Life

The educational computer is available at kindergartens as an aid for teaching, learning, and autonomous work. It improves the ways of learning and teaching as well and promotes the final educational outcomes as it takes individual differences among children into consideration. Taking into account this point, the use of educational computer can be discussed through three basic positions:

1. Rejecting or opposing ideological views: these attitudes meet in the first place with the philosophical and educational reasons where there are those who claim that using the computer is harmful for the child development at this early age. They also believe that children at early stages are not capable of coping with the computer as a teaching aid. They think that linking the child to the direct experience in teaching is better than using the computer in the teaching learning process. They usually point to studies which focused on this aspect such as Hentig, (2002), Weizenbaum, (2002), and Feibel, (2001).

2. Supportive ideological views: these views focus on the necessity of using the educational computer for children widely. They claim that children must learn how to use the teaching aid very early as quickly as possible where they can easily build their skills and later on use the appropriate teaching aids. Supporters of this view usually cite some studies in this field like for example the study of Tapscott, (1988).

3. Teaching situations: teaching situations stress the fact that using the educational computer is effective. It is an inseparable part of the reliability of the child’s curriculum which believes in the necessity of a balance between the use of teaching aids among which is the computer, and other teaching activities. The computer provides children with a wide range of experience and various learning opportunities such as the choice of the purposeful teaching aid. Through practice and experience, the computer helps children to acquire varied skills. The results of such situations were found in different studies and researches at Germany such as Palme, (1999), and Neuss and Michaelis (2002).

In light of the modern trends, it has been proved that the use of computerized games and teaching programs at a suitable age is an acceptable addition at kindergartens. The family has an effective role in the development of these skills. It takes care of the individual and sets things right for him in the most important and sensitive periods that not only affect much his character building and his attitudes and values formation in every life aspect but also the shaping of his private life in particular. The family begins teaching the child the language by which he gains the ability to express himself and acquires experience in different aspect. Ganawi, (2005). Some has mentioned that computer use as a teaching aid develops within the learner the ability to notice, reflect and think which at the end leads to creation and innovation. Yousef, (1999). The computer is distinguished in its way of teaching by reducing the time needed for learning process. It has a remarkable ability to store information and then stimulate them in the time needed. Al-Alawi, (2013).

On the other hand, Fiebel, (2009) has raised an important issue related to whether the computer games can make the child sick or not. The answer was yes and no in the same time. He pointed to the necessity of taking care to put forward solutions for the educational expected fears in order to create a balance which will be suitable for the use of these computerized games by the pre-school child. Others, on the other hand, argued that educators should encourage males, as well as females who have the same interest to cope with
the computer with regard to their benefits and to stop gender differentiation at early stages, Winkle & Ogletree, (1992). Lang, (2003) believes that there are many computer games that depend on violence and excitement which can affect negatively the child’s behavior and increases his aggression and violence levels. Furthermore, those who consider them normal will eventually reach a mentality that does not identify the humanistic situations such as compassion, affection, love and care, (P. 3). Neuss, (2002) argues that the coming danger that is facing the child during playing alone on the computer is associated with problematic situations that cannot be ruled out, especially for children who lack experience alternatives in their social life. Lang, (ibid) mentions that the computer means life for the child where by pressing on a button it starts and then they can wander in the farm to see the plants and maize bags, smell the grains, watch them packed, see the grains being grinded at the mill and watch the flour being kneaded and baked. He thinks that watching these things requires tolerance from the children’s part. They are living and they should learn these skills. Neuss, (2002), points out that the computer gives children a simplified image of the world where by clicking on the mouse, everything becomes possible and the farmer jumps on his tractor, birds sing, and the door opens …etc. This, of course indicates the simple correlations of computer games in different contexts of their daily social lives, p. 58.

Previous Studies

Among the studies in this field is Kumtepe, (2006) which concluded that children use the computer set skillfully with a better improvement in their social skills which were evaluated high by their teachers. Abd Al- Wahhab, (2005) found out that computer use increases the development level of children’s communication skills. Hamzah, (2009) emphasized the fact that the use of computers helps in the reinforcement of learners’ abilities and raise the level of their knowledge. Al- batayneh, (2009) asserted the necessity of the educational computer at kindergartens from the point of view of kindergartens’ headmistresses and teachers. Baytak, (2011) concluded that students can express their own ideas through the design and development of some computer games in light of their relation with the natural environment. Hwang, et al., (2012) discovered that the educational computer games improve the students’ scientific achievement. Zambala, (2013) clarified that students’ use of teaching aids helped them to reinforce their skill, mainly in using the computer.

All the above mentioned studies, whether Arabic or foreign confirmed that the trends of computer use have an effect on the extent of using it. Palme, (1999) assured that using computers in the educational activities increases the social interaction among children. Bayr, (2005) revealed the importance of the computer in the development of the free play activities.

In conclusion, the present study is in general consistent with the previous studies with regard to the importance of using computers in teaching. On the other hand, it is different from those studies in accordance to its application, as it was conducted on the kindergarten children at Najran, Saudi Arabia, the nature of the sample, the time gap between them and the importance of activating the educational computer at kindergarten stage.

Methodology and Procedures

Study Population and Sample

The study population consisted of all parents, teachers, and a sample of children enrolled at the kindergartens at Najran city, Saudi Arabia in the first semester of the academic year 2013- 2014. The study sample consisted of (63) parents of children enrolled at the kindergartens and (46) kindergarten teachers. The observation card applied on (46) kindergarten children. All of them were randomly chosen from the
kindergartens at Najran city, Saudi Arabia. Table one below shows the distribution of the study population and sample.

<table>
<thead>
<tr>
<th>Total number of kindergartens</th>
<th>Random sample of the population</th>
<th>Percentage of sample to population</th>
</tr>
</thead>
<tbody>
<tr>
<td>25 kindergartens</td>
<td>12 kindergartens</td>
<td>48%</td>
</tr>
</tbody>
</table>

(1) The records of education directorate at Najran

### Study Methodology and Instruments

#### Methodology

The descriptive method was used through the collection and analysis of data where ways of classification, explanation, and inferring significant relations to the study problem are used. In addition, the study problem is analyzed and solutions that contribute to the formation of positive attitudes towards educating the kindergarten child are proposed.

#### The Study Instrument

Following the steps below, two scales were developed. The first one was for the parents of kindergarten children whereas the second was for kindergarten teachers. In addition, an observation card for the kindergarten child was developed.

1. The comprehensive access and careful review of the study subject literature, the theoretical framework and previous studies.
2. Field visits to researchers at kindergartens.
3. Identification of the main aspects that can be included in the scale.
4. Preparing the initial images of the study scales.
5. Editing and finalizing the scales after submitting them to arbitrators and making the necessary adjustments in light of their remarks.

#### Reliability of the Scales

Table two below indicates the reliability significance of parents and teachers’ scales regarding the effectiveness of using the educational computer at kindergartens using Cronbach Alpha. Data collected from the whole sample were used.

<table>
<thead>
<tr>
<th>Scale aspects</th>
<th>No. of items</th>
<th>No. of participants</th>
<th>Reliability coefficient</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Parents</td>
<td>Teachers</td>
</tr>
<tr>
<td>Evaluation of the importance of educational computer in children’s life.</td>
<td>17</td>
<td>63</td>
<td>46</td>
</tr>
<tr>
<td>Reasons why children use the educational computer.</td>
<td>13</td>
<td>63</td>
<td>46</td>
</tr>
<tr>
<td>Evaluation of the role of the educational computer in the society.</td>
<td>5</td>
<td>63</td>
<td>46</td>
</tr>
</tbody>
</table>

Cronbach Alpha values shown in table two above indicate a high degree of internal consistency which in turn means that the significance of the scales’ reliability is high, too.
Validity of the Scales

Content validity

Testing the content of the developed scales, it was found that they involved, to a large extent the main aspects related to the study subject. The study, in particular depended on studying a sample of parents and teachers of kindergarten children, in addition to an observation card to identify the role of the educational computer in educating kindergarten children.

Arbitrators’ validity

The items of scales were presented to a set of arbitrators of the education colleges’ professors and those who are interested in the study of using computers at the educational institutions to check their validity for testing what they aimed to test. Some modifications were made on the items in light of those arbitrators’ scientific views. Perhaps, the series of procedures used to calculate reliability, internal validity and the trust of the scales indicate a respectable amount of their appropriateness.

Statistical Processing

Since the study was descriptive, the researchers tried to vary in the ways of statistical analyses. They used SPSS program to transfer the nonparametric values (yes, to some extent, no) or (often, rarely) into parametric ones that can be compared. To answer the questions of the study, the mean score and standard deviation for each item were calculated. Percentages and T. test were used to check the significance of the differences between mean scores.

The Results

Table three below illustrates the mean scores and standard deviations of the parents and teachers’ evaluation of the computer’s role in the life of children.

<table>
<thead>
<tr>
<th>Items</th>
<th>Parents’ responses</th>
<th>Teachers’ responses</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>N= 63</td>
<td>N= 46</td>
</tr>
<tr>
<td></td>
<td>Mean score</td>
<td>Standard deviation</td>
</tr>
<tr>
<td>The computer expands the learning opportunities for kindergarten children.</td>
<td>1.87</td>
<td>0.381</td>
</tr>
<tr>
<td>Children should learn computer at kindergartens.</td>
<td>1.81</td>
<td>0.396</td>
</tr>
<tr>
<td>Computer using increases the experiences of kindergarten children.</td>
<td>1.75</td>
<td>0.474</td>
</tr>
<tr>
<td>Learning via computer develops the energies and creations of kindergarten children.</td>
<td>1.62</td>
<td>0.556</td>
</tr>
<tr>
<td>Computer use has become such as reading and writing in a child's life.</td>
<td>1.52</td>
<td>0.692</td>
</tr>
<tr>
<td>Computer helps the kindergarten child to understand his duties.</td>
<td>1.51</td>
<td>0.592</td>
</tr>
<tr>
<td>Computer enriches the language of kindergarten children.</td>
<td>1.46</td>
<td>0.591</td>
</tr>
<tr>
<td>Computer use is suitable for kindergarten children.</td>
<td>1.43</td>
<td>0.665</td>
</tr>
<tr>
<td>Computer use develops the kinesthetic skills of kindergarten</td>
<td>1.33</td>
<td>0.741</td>
</tr>
</tbody>
</table>
Table three shows that the computer widens the teaching and learning opportunities for the child. He can follow and identify what is presented to him in a serial and organized manner. That is, respondents, parents and teachers have realized the positive value of using the computer at kindergartens. This finding is consistent with Muller, (2005) with regard to the fact that children who practice playing and activities on computer continually need to master different aspects such as communication skills, cooperation, decision taking, problem solutions, group work, forgiveness, control experience, and the acquisition of independent knowledge p. (10). It is also in agreement with Schäfer, (2007) which clarified that children at early stage are capable of explaining and comprehending the presented activities via the computer in the right way. For instance, children show much interest when presenting a series of pictures, p. (67). Parents and teachers highly evaluate the computer use at kindergartens because it is characterized by excitement and attractiveness through the sound, image, movement, and acting of interactive contexts especially at kindergartens. It is also conforms with the results of Charlton, (2007) on the fact the child’s growth and coping with the computer needs these three basic requirements namely, communicative and cognitive skills in addition to the sentimental aspects. He adds that by the availability of these things the child will possess the appropriate abilities to communicate with the computer. The researchers of the present study asked parents of kindergarten children about their reaction to their children’s use of the computer at kindergartens. Results showed that 79.4 % were positive whereas only 20.6 were negative. Teachers were asked the same question, too. Their replies indicated that 84.1 % were positive whereas 15.9 % were negative. It was found through an interview of the study sample that using the computer at kindergarten has helped them to:

- provide students with the skills needed to qualify them to be positive individuals to cope with technology and
- distinguish early the various teaching and learning ways that are suitable for children teaching, Etman, (2004).

Besides, the answers of the participants during the interview indicate computer use by the kindergarten child helped them to:

- provide children with the skills that qualify them to be positive members to cope with and communicate with technology and
- identify early the varied teaching learning ways suitable for children teaching. Etman, (ibid)

These results indicate that studying the effectiveness of using the educational computer at kindergartens has
many benefits. It has made parents and teachers more aware, better viewers and evaluators of the children education in the programs for kindergarten teachers’ preparation in order to be able to plan and implement the suitable teaching activities for kindergarten child. Etman, (2006).

In light of the mean scores, standard deviations, and T. value, it was found that there were no statistically significant differences ($\alpha= 0.01$) among the responses of study sample. This finding is congruent with Al-Batayneh, (2009) that concluded that workers at kindergartens have positive attitudes towards the use of educational computer. In general table four below illustrates the positive attitude towards the computer as indicated by the responses of the study sample.

Table 4: mean scores and standard deviations for why children use the computer

<table>
<thead>
<tr>
<th>Reasons for using the educational computer</th>
<th>Parents N= 63</th>
<th>Teachers N= 46</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Mean score</td>
<td>Standard deviation</td>
</tr>
<tr>
<td>Children use the computer to play.</td>
<td>1.98</td>
<td>0.126</td>
</tr>
<tr>
<td>Children use the computer to watch pictures.</td>
<td>1.90</td>
<td>0.346</td>
</tr>
<tr>
<td>Children use the computer to watch cartoon programs.</td>
<td>1.79</td>
<td>0.408</td>
</tr>
<tr>
<td>Children use the computer for fun.</td>
<td>1.73</td>
<td>0.482</td>
</tr>
<tr>
<td>Children use the computer to color.</td>
<td>1.71</td>
<td>0.489</td>
</tr>
<tr>
<td>Children use the computer for drawing programs.</td>
<td>1.62</td>
<td>0.521</td>
</tr>
<tr>
<td>Children use the computer to prepare for school.</td>
<td>1.54</td>
<td>0.658</td>
</tr>
<tr>
<td>Children use the computer for learning.</td>
<td>1.48</td>
<td>0.535</td>
</tr>
<tr>
<td>Children use the computer because they are used to it.</td>
<td>1.46</td>
<td>0.692</td>
</tr>
<tr>
<td>Children use the computer to surf the net.</td>
<td>1.24</td>
<td>0.777</td>
</tr>
<tr>
<td>Children use the computer for writing.</td>
<td>1.19</td>
<td>0.779</td>
</tr>
<tr>
<td>Children use the computer because they are bored.</td>
<td>1.00</td>
<td>0.762</td>
</tr>
<tr>
<td>Children use the computer for mathematics.</td>
<td>0.84</td>
<td>0.807</td>
</tr>
</tbody>
</table>

Table four illustrates the importance of using computer in the play activities of kindergarten child. There nowadays a set of purposeful educational games that covers all kinds of teaching aims for the kindergarten child, namely knowledge, skills, attitudes, and values. All offer help to choose the appropriate teaching learning methods. Such a finding is in agreement with Fitz, (2009) which believes that by the educational games on the computer, the child identifies reality through being related to play, (p. 52). It also asserts what Schäfer, (2007) has emphasized regarding the fact that children show big interest when presenting a series of pictures, (p. 67). Study sample interview also revealed that the computer should be used at kindergartens to satisfy the child’s interests and attitudes at early age and then to teach him the creative thinking. In light of the mean scores, standard deviations, and T. value, no statistically significant differences were found ($\alpha= 0.01$) between the responses of the study participants with regard to the reasons of children’s computer use at kindergartens. But this does not mean that the educational computer is a substitute for the teacher at the kindergarten in developing the child’s creative and innovative thinking. It is used as a stimulating environment for the creations imaginations, and innovations of children under the teacher’s observation. Table five represents the mean scores and standard deviations of parents’ evaluation of the educational computer’s role at the society.
Table 5: parents’ evaluation of the role of the educational computer at society

<table>
<thead>
<tr>
<th>Items (the importance of educational computer at society)</th>
<th>Parents’ responses N= 63</th>
<th>Teachers’ responses N= 46</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Mean score</td>
<td>Standard deviation</td>
</tr>
<tr>
<td>The computer is important in many cases, but it is given too much importance.</td>
<td>1.64</td>
<td>0.548</td>
</tr>
<tr>
<td>Computer use has become essential for the work in any profession.</td>
<td>1.56</td>
<td>0.590</td>
</tr>
<tr>
<td>The computer is important, but there are other things which are more important.</td>
<td>1.54</td>
<td>0.563</td>
</tr>
<tr>
<td>The computer is necessary the future of our children, but it is no so for my generation.</td>
<td>1.08</td>
<td>0.809</td>
</tr>
<tr>
<td>Without the computer, man cannot do his/her work.</td>
<td>0.92</td>
<td>0.768</td>
</tr>
</tbody>
</table>

The table above illustrates that interaction between the child and computer helps to achieve all aspects of good and effective learning if carefully planned programs and activities are provided. In addition, the interview of the study participants revealed that the evaluation of the computer’s role at society is always connected to the conviction of parents and teachers that the use of computers:

- At work is beneficial and a real investment in time, effort and money, especially for kindergarten children and
- Serve the objectives of self-education that leads to the improvement of the quality of teaching and learning in early childhood.

With regard to participants’ evaluation of the use of computer in developing children’s skills, 52.4 % of parents and only 6.80 % of teachers reported it was excellent, 36.5 % of parents and 50.0 % of teachers replied it was very good, whereas 04.8 % of parents and 29.5 % of teachers reported it was good, none of the parents and 4.50 of teachers believed it was acceptable and 6.30 % of parents compared with 9.10 % of teachers said it was not acceptable.

Table six below reveals no significant differences (α= 0.01) between the participants’ responses to the computer’s role in the society.

Table 6: participant’s responses to how to activate the computer in children’s education *

<table>
<thead>
<tr>
<th>Items</th>
<th>Frequency</th>
<th>Percentage (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>The use of computers in learning reading and the reciting the holy Koran and religious values .</td>
<td>53</td>
<td>84.1</td>
</tr>
<tr>
<td>Using the computer use to refine the child’s behaviors.</td>
<td>50</td>
<td>79.4</td>
</tr>
<tr>
<td>Design channels for children on the Internet containing audio visual educational programs that can be entrenched in the mind of the child.</td>
<td>48</td>
<td>76.2</td>
</tr>
<tr>
<td>Provide children with a disc containing the curriculum and educational programs being taught.</td>
<td>48</td>
<td>76.2</td>
</tr>
<tr>
<td>Limit the use of electronic games and replace them by kinetic ones.</td>
<td>47</td>
<td>74.6</td>
</tr>
<tr>
<td>The presence of qualified teachers to train the child to use a computer with the proper preparation for the computer labs equipped for the child</td>
<td>45</td>
<td>71.4</td>
</tr>
<tr>
<td>Use the computer to communicate an idea or a way not to teach</td>
<td>43</td>
<td>68.3</td>
</tr>
</tbody>
</table>
reading and writing
Adoption of e-learning from kindergarten in the Ministry of Education. 43 68.3
Design the child’s age appropriate programs that simulate boys and girls’ wishes. 42 66.7
Use the computer in mathematics, English language and numbers instead of playing, entertaining, and viewing. 40 63.5
Use the computer in things that helps to focus on the child’s skills. 39 61.5
Teaching and training the child to exchange roles with his companions on the computer to be accustomed to sacrifice re-order and give others their rights. 37 58.7

The above table illustrates the religious nature of the society who wishes to benefit from the computer in learning and reciting the holy Quran besides entrenching the Islamic values at kindergarten child. Other suggestions asserted the necessity of more computer use activation at kindergarten along with the necessity of making available other computer equipments that are suitable for children.

Table 7 represents the mean scores and standard deviations of teachers’ evaluation of the educational computer’s role at the society.

<table>
<thead>
<tr>
<th>Items</th>
<th>Frequency</th>
<th>Percentage (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Teaching the Islamic, educational, and social arts such as prayers and Holy Koran</td>
<td>40</td>
<td>87</td>
</tr>
<tr>
<td>The need to take into account the selection and implementation of programs appropriate to the age of the child.</td>
<td>38</td>
<td>82.6</td>
</tr>
<tr>
<td>Provide trained teachers on the use of computers at kindergarten.</td>
<td>37</td>
<td>80.4</td>
</tr>
<tr>
<td>Make CDs of religious and behavioral programs to support child’s learning.</td>
<td>35</td>
<td>76.1</td>
</tr>
<tr>
<td>The provision of computers in every class with the provision of display screen.</td>
<td>33</td>
<td>71.7</td>
</tr>
<tr>
<td>Learning to read and write and know the sound of the alphabetical letters.</td>
<td>30</td>
<td>65.2</td>
</tr>
<tr>
<td>Purposeful storytelling for kindergarten children.</td>
<td>30</td>
<td>65.2</td>
</tr>
<tr>
<td>Provide lounge devoted for displaying educational stories, songs and programs (activities) that fit kindergarten children.</td>
<td>27</td>
<td>58.7</td>
</tr>
<tr>
<td>Make available a number of computers be suitable for the number of children at kindergarten.</td>
<td>25</td>
<td>54.3</td>
</tr>
</tbody>
</table>

The above table shows the interest in the computer as a teaching aid that helps the kindergarten child to acquire the Islamic values. Other ideas were to show the awareness of kindergarten teachers of the educational computer at kindergarten children education.

Analysis of the observation card data with regard to the effectiveness of using the educational computer in the process of teaching kindergarten children revealed that they were to some extent skillful. Detailed results are shown below:
• 82.6 % can start the computer
• 76.1 % can use the mouse
• 89.1 % can play on the computer
• 84.8 % can learn via the computer
• 67.4 % can use the computer in drawing
• 69.6 % can use the computer in writing
• 65.2 % can type on the computer
• 54.3 % can use the computer in reading
• 56.5 % can use the computer in painting
• 50.0 % identify the computer’s importance in learning and teaching
• 60.9 prefer using the computer to the pen and pencil
• 91.3 % show interest and enthusiasm to use the computer
• 76.1 % can identify and use the keyboard which agrees with Zembala, (2013) which concluded that 80 % of children could do so.
• 78.3 % can identify the monitor
• 50.0 % can use the computer to add numbers
• 39.1 % can use the computer to subtract numbers
• 34.8 % can use the computer to divide numbers
• 28.3 % can use the computer to multiply numbers
• 60.9 % identified that the computer was effective in expression development learning
• 76.1 % identified that the computer was effective communication skills development
• 80.4 % believe that the computer develops their creative thinking
• 52.2 can design a teaching activity on the computer
• 58.7 % can identify the scientific concepts
• 50.0 % can identify the social concepts
• 78.3 % identified that the computer helps them to develop their reading readiness skill
• 73.9 % identified that the computer helps them to acquire and develop their writing readiness skill
• 82.6 % identified that the computer helps them not to be afraid of the use other devices.

Findings of the Study

The following set of findings and conclusions were achieved through the present study:

1. The study confirmed the computer’s active role as an important educational and interesting teaching aid for children kindergartens, as it illustrated the positive attitudes towards the significant effectiveness of computers at kindergartens, Hamzah, (2009).

2. This field study showed the important role of computer use at kindergartens, in particular, and its usefulness to the whole society, in general.

3. The study showed that the positive attitudes of the study sample toward the use of the educational computer helped to provide the means and the appropriate activities to meet the child's needs and capabilities in this area.

4. The study showed the importance of the computer’s role to overcome the children fears and increase their self-confidence, as well as the computer’s positive role in community development.

5. The field study illustrated the use of computers at kindergarten helped to create conditions for children that encourage them to innovate. Children also acquired the good social interaction through
participation in group activities with peers and family. Kinder et al. (2005) nearly had the same finding which stated that the child’s involvement and participation in the educational activities using Computer education has helped them to take advantage of the free play activities.

6. The study showed the positive society's perception toward the computer use at kindergartens and the/she conviction of the need to provide the equipment and specialist teachers in this area. The desire to learn the teaching aid is not sufficient. Kindergarten teacher must be capable and has experience to use these educational aids, Schneider and Scherer, (2010, P. 11).

Through a thorough study of the results, it can be noticed that making effective the role of the educational computer needs paying attention to various aspect like:

1. The Provision of computers and teaching aids that fit the number of children in the kindergarten and that help mainly in the development of the child’s skills.

2. Kindergartens should not only focus on specific and fixed content based curricula and programs that are stemmed from the traditional philosophy that promotes rote learning and memorization. Such a philosophy looks at the child’s computer practice as a waste of time which, in turn leads to impede the kindergarten child’s innovation and creativity. Some studies like Tillmann, et al. (2014) mentions that the computer is the child’s special world of his daily life. They claim that supporting the children and their experiences to develop their skills computer associated skills satisfies their needs and develops their creativity.

3. Media should be interested in and increase awareness of the development of children’s capabilities and skills to use the computer. Media should adopt the support of our children in this vital area. Some studies such as, Bundesministerium, (2013) mention that the computer plays a crucial role in all ages and various teaching contexts among children and young people.

Discussion of the Study Results

In light of the above findings, answers to the study questions can be provided as follows:

- How effective is the computers use at kindergarten from the perspective of the parents and teachers of kindergarten children? The study findings make it clear that the effectiveness of the use of the educational computer at kindergarten is associated with essential aspects like:
  - The teacher’s awareness of the computer’s role as a necessary teaching tool for kindergarten children’s educational and recreational activities.
  - The awareness of the educational process stakeholders at kindergartens of the importance of computer for the development of the child’s skills at early stage.
  - Parents’ identification of the importance of computers in the educational process for kindergarten children and its impact on the cognitive, social …etc. aspects of child education.

The responses of kindergarten children’s parents and teachers’ indicated the need for the following things in order to make the use of computer effective at kindergartens:

- The provision of computers that fit the number of children in each kindergarten.
- Assigning a teacher who is highly qualified and trained to use computer.

Answers to the sub questions related to the first question are as follows:
The First question

What is the current status of computers’ special equipment at kindergartens?

The results revealed that the majority of kindergartens have computers and already equipped, but may not be adequate compared with the number of their children. Some kindergartens did not have computers at all. Therefore study sample claimed the need to provide enough and equipped computers to exercising activities at the kindergarten.

The Second question

What are the institutional factors that affect the effectiveness of the educational computer use at kindergarten?

It was clear that the practice institutional factors at kindergarten have a significant effect on the use of computers in activities such as classrooms - the number of children - the number of qualified workers – the kindergarten’s curriculum or educational program. It was also made clearer that teachers and parents were interested in preparing kindergartens and making the computer active in the educational process to practice different activities.

The Third Question

What skills does the child master to cope with the computer? There is no doubt that the answer to this question is related to the extent of his teacher’ qualification and training to carry out educational activities for children via computer. Results indicate that the computer increases the effectiveness of a child’s learning through:

- The acquisition of a variety of educational skills.
- Improving teaching effectiveness through presenting information in a logical and serial manner.
- The contribution to the attitudes and values’ learning, such as the implanting of honesty value, where he/ she can be subjected to story told by computer
- Raising the children’s level of achievement, as well as a shortening the learning process.

The Fourth Question

What are the advantages of learning via computer for kindergarten children? In light of the study results, it is found that the computer was an assistant teacher in the teaching process. It provides immediate feedback to the child while supporting the correct answers and corrects the mistakes.

Does the presentation of teaching activities via the computer increase the child’s learning motivation?

In light of the answer to this question, one can claim that significant differences between the responses of study participants were found. It was revealed that the computer increases the child’s learning motivation through sound, movement, and attention stirring. It also provides the child with useful opportunities to acquire the religious, social, physical, linguistic…etc. values. The computer causes the child to take part in group work, search, explore, try, increase his self-confidence, and become fear free.

Recommendations

In light of the study results with regard to the effectiveness of using the educational computer at
kindergartens, the researcher recommends.

1. Raising the kindergarten teacher’s computer culture through holding training workshops in this area.

2. Conducting studies concerned with exploring the computers’ effectiveness in cooperative learning and free play activities for kindergarten children.

3. Benefit as much as possible from the expertise of the developed countries in supporting and encouraging teaching via computer at kindergartens. For example, the German experience in equipping the teaching halls with computers, and granting freedom to the child for self-learning and then try to exploit in the Saudi society according to the existing circumstances and potentials.

4. Reconsider kindergarten programs to become more effective and positive towards the use of educational computers and consequently be positive in all educational and recreational activities for kindergarten children.

5. Organize workshops and seminars for responsible and working people at kindergartens which include ways to activate the attitudes towards the use of educational computer at kindergartens.

6. Direct the results of this study to people responsible for kindergarten specialties at the departments of kindergartens, child education and early childhood at universities and the Ministry of Education, to determine the effectiveness of the educational computer at kindergartens in order to promote the development skills of our children.

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