

PARENTAL PERCEPTIONS OF THE IMPORTANCE OF COMPUTER USAGE IN THE EDUCATIONAL PROCESS OF THEIR CHILDREN IN ELEMENTARY SCHOOLS:

AN EXPLORATORY STUDY

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ABSTRACT

At present, many families have access to computers that help them with their daily activities, such as finding employment and helping children with schoolwork. However, minority families residing in the Gaza Strip in general, do not own home computers. Questions are therefore raised as to whether parents who are unfamiliar with modern culture view computers as important teaching tools for themselves and their children. The present research was conducted to study parents' perception and young children's usage of computers. The sample for the study comprised 103 parents, majority of whom responded that computers have helped their children in exploring new technologies. Parental perception of computers was found to be independent of parental occupation and educational achievement. However, the duration of computer use by children varied in accordance with parental perception because parents with more positive perceptions of computers allowed their children to use computers more frequently. The study reveals the need to strengthen and support parental perceptions of the use of computers for children's learning process. An exploratory study was conducted by analyzing the perceptions of parents whose children were enrolled in a Rafah-Gaza Elementary School. Findings suggest that parents place a high value on computer usage and view it as vital for job success and academic achievement.

KEYWORDS: Computer Use, Parent Perceptions of Computer Use

INTRODUCTION

With the latest technological advancements in computer design and the accessibility of global knowledge, we find ourselves connected with world events with just a touch of a keyboard. Computers have become a part of everyday experiences, and families are realizing the indispensability of computer access. Moreover, multimedia CD-ROMs, software programs, the Internet, and electronic mail have increased people's understanding of computers. Computers can also function as a multipurpose tool that helps children achieve academic goals and become more creative (Bank and King 1999). Clements and Samara (2003) recommended the use of computer technology as a tool for improving children's learning through exploration, creative problem solving, and self-guided instruction.

However, despite such advancement, certain sectors, such as families from minority backgrounds, which have minimal or no computer skills, are often placed at a disadvantage. Brogan (2000) points out that the emerging digital generation (the current middle school-aged population) has been exposed to computers since birth, and has used technology as an indispensable part of their lives. These children enter school with technology skills and expectations that are very different from those who have not used a computer before they enter school. The difference in level of skills and expectations can be accounted for by several factors. Among the minority children, the lack of necessary guidance from parents who lack experience and knowledge of computer technology is one of the reasons.

Parental Influence on Children's Learning

Parents play an important role in the education of their children (Paul and Attewel, 2003). Generally, parents, whose attitudes considerably impact those of their children, are the entry point or the initial contact by which young children are exposed to the function, purpose, and value of a computer (Yelland and Olgun 2002). This phenomenon occurs in most childhood learning situations (Hao and Bonstead-Bruns, 1998; Hoover Dempsey and Sandler, 1995; Sailor, 2004). For example, if parents hold favorable perceptions of a learning tool, such as computers, the child is likely to incorporate similar attitudes. Therefore, a computer can be beneficial or detrimental to a young learner, depending on how it is modelled as a training tool and on the attitudes of the parents toward computer use (Grunwald, 2003). Understanding parental feelings and attitudes toward computers may assist school personnel in determining the type, frequency, and theme of homework assignments. Such arrangement can allow families to engage in tasks they are comfortable with.

Parental Perceptions of Computer Use

The few existing studies on parental perceptions of computer use indicate that parents associate computer use with academic achievement and job success. Bank and Graham (2000) found that parents desired computers as part of their children's education and believed that with computers, the children's achievement scores would increase. In the study of Scherer (1990), 88 sets of parents were asked to complete a questionnaire that was designed to derive the reasons why they enrolled their 4 to 5 year-old children in computer classes and their attitudes toward the importance of computer proficiency. The two primary reasons provided by the parents for enrolling their children in these classes were the elements of fun and learning. They believed that these classes offer their children a space for enjoyment as well a venue for learning about computers at an early age. Moreover, parents felt strongly that computers would help their children with the acquisition of skills needed for learning other subjects, such as math and reading. Wentworth and Connell (1995) asked 30 parents of elementary school children to complete survey questionnaires on their perceptions of the use of computers for teaching math. The study found that parents deemed knowledge of computers as important and felt that math skills, which they saw as job-related, could be taught using this form of technology.

Although these studies have provided guidance in understanding a specific area of the broad field of computer education, these have likewise allowed the surfacing of certain research gaps. Researchers have concentrated their attention on factors that influence children's computer use, such as their perceptions of technology (Jarvis and Rennie, 1998), the impact of computers on their physical, cognitive, and social development (Anderson and Butcher, 2006; Subrahmanyam, Kraut, Greenfield, and Gross, 2000), and computer use at home and in school (Mumtaz, 2001). Thus, large amounts of data have been collected in these aspects. However, we believe that the role of parents,

particularly their perceptions of the importance of computer usage, which has remained relatively untouched, is just as important. This exploratory study was conducted due to the increase in the number of elementary schools in the Gaza Strip and because of the absence of research on parents’ perceptions of the importance of computer usage for their children. The continuous growth of such schools gives rise to the need to understand the importance that minority parents place not only on educational achievement and employment, but also on the means by which they and their children hope to attain such goals.

METHODS

Participants

The participants in this study consisted of Palestinian parents whose children were enrolled in grades one to six in Rafah Secondary School.

PROCEDURE

The elementary school selected for this study, Rafah elementary School, is located in the Gaza Strip. The researchers conferred with the school principal and requested that the principal speak with the teachers from the first grades to inform them of the proposed study. The researchers provided the principal with the required number of survey forms, which were in Arabic. Subsequently, the principal distributed the survey forms to each teacher and set a two-week deadline for the parents to return the surveys. The incentive of an additional recess period was offered to classes with high survey return rates.

INSTRUMENT

The survey questionnaire, which comprised 32 questions, was disseminated to the families of the entire school population (N=103). The first section of the survey consisted of 12 questions that pertained to the perceptions of parents toward e learning. The second section consisted of five questions, which asked parents about the effects of learning characteristics on students’ achievements. The third section was composed of nine questions, which inquired about constraints that could possibly affect computer use in education. The last section, which consisted of six questions, solicited suggestions on strengthening the role of computers in education.

RESULTS

Table 1: Parents’ Perceptions toward the Use of E-Learning

No.	Perception	%
1	I think that e learning strengthens my child’s relationship with his computer at home through school homework applications	79.4
2	I think that learning with the use of the computer is the right of the students	88.4
3	I think that e learning helps in recognizing the students' computer skills	74.8
4	I think that the computer enhances students’ self-reliance	71.6
5	I think that learning by using the computer aids the early detection of learning deficiencies among students	73.6
6	I think that computer-aided education confirms the importance of students’ time devoted to learning	66.4
7	I see that the e learning confirms and reinforces what students have learned in school	71.6
8	I think that education using the computer develops the spirit of healthy competition among students	84.6
9	I think that learning using the computer develops team spirit among students	69.6

Table 1:Contd.,

10	I think that learning using the computer allows students the opportunity to use additional knowledge sources	84.6
11	I prefer learning through the use of computers over traditional education	74.2
12	I think that learning using the computer addresses some shortcomings of school teachers	77.4

Table 1 shows the percentages of parents' perceptions on the importance of computer usage in their children's educational process. The highest percentage (88.4%) in this domain was achieved by the perception that learning by using the computer is the right of students, followed by the belief that education using the computer develops the spirit of competition among students, and that learning using the computer allows students the opportunity to use additional knowledge sources (84.6%). By contrast, the lowest percentage (66.4%) was obtained by the perception that education using the computer confirms the importance of the time that students devote to learning.

Table 2: Parents' Perceptions of the Effects of Learning Characteristics of Computer Use on Students' Achievements

No.	Perception	%
1	I think that computer use leads to neglect of some of the students' cognitive skills	63.2
2	I think that learning using the computer wastes the students' time.	64.6
3	I think it is difficult to assign first-grade students with computerized tasks (tasks that require using a computer)	66.4
4	I believe that the clerical duties for students in the first grade are useful for students at this stage	79.4
5	I see the need to assign tasks that require the use of computers	67.0

Table 2 shows the percentages of parents' perceptions on the effect of learning characteristics of computer use on students' achievements. The item regarding the usefulness of the clerical duties of students in the first grade showed the highest percentage (79.4%), followed by the need to assign tasks to students that require the use of the computer (67.0%).

Table 3: Constraints that Could Possibly Affect Computer Use in Education

No.	Perception	%
1	I see that computer use leads to the neglect of some of the students' cognitive skills	67.8
2	I think that learning using the computer wastes the students' time	72.2
3	I think it is difficult to assign first-grade students with computerized tasks (tasks that require using a computer)	80.0
4	I support the existence of a computer in every home	88.4
5	I am willing to take the burden of acquiring computer	53.6
6	My commitment to my job does not provide enough time for me to follow up on my children's computer use	62.6
7	I think that the use of the computer may reduce some of the students' skills	58.0
8	I see that students are able to rely primarily on themselves by using the computer as a means of instruction	60.6
9	I consider the computer as a purely educational tool	65.2

Table 3 shows the constraints that could possibly affect computer use in education. Supporting the existence of a computer in every home gained the highest percentage (88.4%); followed by the idea that it is difficult to assign first-grade students with computerized tasks (tasks that require using a computer) (80.0%).

Table 4: Suggestions that can Strengthen the Role of Computers in Education

No.	Suggestion	%
1	I believe in using the computer outside of school to help students acquire more skills	78.8
2	I see the need to reduce the size of the information that elementary students are required to learn	76.8
3	I support my children and help them in the use of computers at home	86.4
4	I know some of the basic skills in using a computer	80.6
5	I join the children on a regular basis to help them learn by using a computer	82.0
6	I believe that the use of computers in the early grades enhances students' creativity	83.2

Table 4 shows the suggestions that can strengthen the role of computers in education based on the participants' point of view. In terms of the perceived importance, the suggestion of supporting the children and helping them in the use of computers at home (86.4%) ranked first, followed by the suggestion that computers should be used in the early grades to enhance students' creativity (83.2%), and the suggestion that parents should join the children on a regular basis to help them learn through the use of computers (82.0%).

STATISTICAL DIFFERENTIATION

Table 5: Statistical Differences between Parents' Perceptions toward the Use of Learning and Parents' Perceptions on the Learning Characteristics of Computer use on Students' Achievements

Variable	Median (IQR)		z-Statistics	p-Value*
	Female	Male		
Parents' perceptions toward the use of e-learning	(1.19) 4.25	(0.50) 3.66	-1.524	0.127
Parents' perceptions on the learning characteristics of computer use on students' achievements	(1.65) 4.00	(0.90) 3.60	-1.381	0.167
Constraints that could possibly affect computer use in education	(0.55) 3.65	(0.60) 3.20	-2.034	0.042*

*Mann Whitney Test.

Table 5 shows that the Z statistics for constraints that could possibly affect computer use in education is -2.034 and p-value is 0.042, which is <0.05. Therefore, a significant difference in the median of constraints that might affect computer use in education between males and females exists.

Table 6: Statistical Differences between Parents' Perceptions of Constraints that Might Affect Computer Use in Education and Parents' Education Levels

Educational Level	Median (IQR)	z-Statistics	p-Value*
	Parents' Perceptions of Constraints		
High school	(0.50) 3.30	(3) 5 117	0.163
Diploma	(0.0) 3.60		
Bachelor	(0.85) 3.45		
Postgraduate	(1.10) 3.20		

*Kruskal Wallis Test.

Table 6 shows that there are no significant statistical differences between the median of parents' perceptions on constraints that could possibly affect computer use in education and the parents' education level.

RECOMMENDATIONS

The success of computer use in the educational process depends on several courses of action, namely: (1) provision of the necessary hardware and software; (2) provision of incentives and support for schools that use the computer in the preparation of teaching aids, and to faculty members who use computers in the educational process including evaluation of students to motivate them; (3) development of a special program to train teachers on the effective use of computers for education; (4) conduct of workshops in the education directorates to activate the role of computers in the educational process and the products used as teaching aids; (5) activation of the role of computer centers in schools and their use to remain updated on technology and Internet use in schools; and (6) identification of the basic specifications for the use of computers and for the acquisition of software because the market is full of programs that are not aligned with the purpose.

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