DIGITAL SKILLS OF 5-6 YEARS OLD CHILDREN

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Abstract – Children from early years access and use digital tools and information as a critical part of their daily lives. Current technological innovations supply them many opportunities to improve technological skills. This study aimed to search technological skills of 5-6 years old children. Data were collected from 302 children attending to preschool education institutions. "Digital skills Instrument for children" were applied to each child. Results show that more than half of the children reported they use tablet, most of use the technological tools during 60-120 min. in a day and preferred playing games. There is no statistical differences between children' ages and digital skills.

Keywords— Technology, children, digital literacy, media.

I. INTRODUCTION

Children are growing variety of media options and technology is playing an increasingly large role in their lives (1, 2). The recent studies indicated that the children lived in digitally-rich homes. (3). Children informed about technological changes from mass media, advertisement, movies in tv., pictures in newspaper and magazines, received as a toy. Surrounding with digital diversity they are inherently getting use to the technology. If child start to text a message at eight years old use mobile phones easily(4) Prensky (2001) claim thatchildren who have grown up with technology and feel comfortable using it are the digital natives (5). Today's children have been born into a digital world, and have known nothing else during their lives. When asked, children sometimes told us that using computers was "hard" (6) and it can be observed their initial timidity with the play console and tasks on play laptops (7).They are more advanced in their capabilities with technology and more responsive and flexible to new developments (8, 9).

Rapid development of technologies, changed children's learning (10). Carrington (2005) lists varied ways that children may be active in multimodal global spaces, as they play and interact with and within environments created through digital technologies such as computer games and virtual worlds (11).Through simulations and three-dimensional models children more quickly engrossed in the material, and as such are able to absorb the information more quickly. Electronic material can be more stimulating and interactive for children (12). Research stated that when children have used technological tools for learning their problem solving and literacy skills have increased (7). Although digital tools improve children's leaning if it is not controlled it may be led behavior problems, isolation from the social environment, addiction, violence, physical illness (3). Higher digital skills ensure children to use digital tools appropriately, effectively, and safely. If children have higher digital skills they can manage any situation to achieve a task, make an urgent call or message in the early years. Current study aimed to examine digital skills of children aged 5-6. Two hypotheses were createdto fulfil this purpose;

Hypotheses 1: *What is digital knowledge and practices of 5-6 years old children?*
Hypotheses 2: is there gender and age differences among digital skills of children?

II. METHOD

2.1. Participants

Children, aged between 5 and 6, attending to kindergarten and reception classes participated in the study. A combination of qualitative and quantitative data was gathered from 302 children and their mothers. The search focused on the children' use of digital technologies, such as computer, tablet, laptop and mobile technologies.

2.2. Measures

2.2.1. Interviewform

It occurred from two parts as demographics and digital practise and knowledge parts. Child's gender and age, maternal age, education level, employment status, number of the children were recorded in the demographic part. Open ended question on digital practices and knowledge of children recorded to second part of the interview form.

2.2.2. Digital skills form for the children

It was created to estimate how capability children to know, identify and use symbols, images, equipment in their digital activities. It has items and four sub test such as image identification, image usage, digital tools knowledge and digital tools/equipment skills.

2.3 Procedure

Data were collected in a 15-20 min interview sessions with each child, after receiving the approval from the parents. Children voluntarily participated the research and were informed about aim of the research before the answering the measures. Instruments applied to each child in interview room. Children who never used to any technological tools were not included the study.

2.4. Data analyses

Data analysis was carried out in third steps. First frequency of the digital practices and digital knowledge of children were estimated. Second, gender and age differences in digital skills of children were conducted. And third correlations among digital skills and subtests were computed.

III. RESULTS

To explore first hypothesis, digital practices and knowledge of children assessed with open ended questions. Table 1 show that more than half of the children reported they use tablet (56.0%), over a quarter (28.5%) were mobile phone user, 15.6 percent prefer laptop and just 9.3% count as computer. Results indicates decreasing on the computer usage between children. It was obtained from mothers how much time children access digital tools at home. Regardless of gender and ages children who used digital tools 60-120 min. had higher percentage. When they accessed the tools majority of the children preferred (72.5%) playing games, only 7.6 percentage of the children aimed searching.

Table 1 Digital practices of children

	Gender		Age		
	Girls N %	Boys N %	5 years old N %	6 years old N %	Total N %
Mobile phone	5531.2%	3124.6%	5726.1%	2934.5%	8628.5%
Laptop	2413.6%	2318.3%	3214.7%	1517.9%	4715.6%
Tablet	9956.2%	7055.6%	12256.0%	4756.0%	16956.0%
Computer	126.8%	1612.7%	2511.5%	33.6%	289.3%
Daily digital screen usage					
0-60 min.	3218.2%	2620.6%	3717.0%	2125.0%	5819.2%
60-120 min.	8447.7%	5644.4%	9845.0%	4250.0%	14046.4%
120+ min	6034.1%	4434.9%	8338.1%	2125.0%	10434.4%
Why do you use digital tools?					
Play game	13275.0%	8769.0%	15571.1%	6476.2%	21972.5%
Watch video, film etc.	3218.2%	2822.2%	4520.6%	1517.9%	6019.9%
Search something	126.8%	118.7%	188.3%	56.0%	237.6%

Table 2 Digital knowledge of children

Digital knowledge of the children	Gender		Age		
What is technology?	Girls N %	Boys N %	5 years old N %	6 years old N %	Total N %
Tool	6742.9%	5752.3%	8444.2%	4053.3%	12446.8%
Electricity	4025.6%	2522.9%	4925.8%	1621.3%	6524.5%
Internet	3119.9%	1311.9%	3116.3%	1317.3%	4416.6%
Other	1811.5%	1412.8%	2613.7%	68.0%	3212.1%
Why we need technology?					
Spend time	7145.5%	5651.4%	9449.5%	3344.0%	12747.9%
Create something	149.0%	1715.6%	2211.6%	912.0%	3111.7%
Communicate	5233.3%	3128.4%	5528.9%	2837.3%	8331.3%
other	1912.2%	54.6%	1910.0%	56.7%	249.1%

Almost half of the children describe technology as "tool", 24.5 % "electricity", 16.6% internet. When "why we need technology" asked half of them (47.9%) stated "to spend time", 11.7 % "to create something" and 31.3% reported as "to communicate".

Table 3. Age and gender comparison of children' digital skills.

	Age	N	Mean	Std. Deviation	Gender	N	Mean	Std. Deviation
Image identification	5 years old	218	17.7982	2.36246	Girls	176	17.9545	2.39957
	6 years old	84	17.9286	2.21596	Boys	126	17.6667	2.20182
Image usage	5 years old	218	15.6560	2.28519	Girls	176	15.7955*	2.37202*
	6 years old	84	15.3095	2.17309	Boys	126	15.2302*	2.04807*
Knowledge of Digital tools and equipment	5 years old	218	5.7431	1.02866	Girls	176	5.8523*	1.02025*
	6 years old	84	5.7381	.99540	Boys	126	5.5873*	.99816*
Digital tools and equipment usage	5 years old	218	21.5092	2.33633	Girls	176	21.2500	2.60439
	6 years old	84	21.0000	2.73311	Boys	126	21.5317	2.24031
Total	5 years old	218	60.7064	5.83301	Girls	176	60.8523	6.29928
	6 years old	84	59.9762	5.93941	Boys	126	60.0159	5.17530

*p<.05

Table 3 showed that there is no statistical differences between children' ages. However girls had higher means on the "Image Usage" and "Knowledge of Digital tools/equipment" than boys.

Table 4.Correlations among digital skills subtests

	Image identification	Image usage	Knowledge of Digital tools/ equipment	Digital tools and equipment usage	Total Digital Skills
Image identification	1	.427**	.312**	.172**	.687**
Image usage	.427**	1	.444**	.458**	.823**
Knowledge of Digital tools/ equipment	.312**	.444**	1	.355**	.617**
Digital tools and equipment usage	.172**	.458**	.355**	1	.726**
Total Digital Skills	.687**	.823**	.617**	.726**	1

It was examined if there were correlations among digital skills in Table 4. There were moderate

correlations between sub tests, on theother hand total digital skills were found highly associated with sub tests ($p<.01$).

IV. DISCUSSION

This study aimed to examine digital skills of children aged 5-6. Results show that more than half of the children reported they use tablet, mobile phone laptop and computer respectively. Previous studies indicated that majority of the families owned one or more desktop computers and/or laptops, owning two or more mobile phones, cd player, video camera, internet access (4, 13, 14). Owing to the technological explorations computer consumption were decreasing between children. Formby, (2014) stated use of tablet computers by five to 15-year-olds has increased three-fold (14% to 42%) and 28% of three to four-year-olds use a tablet computer (15).Neuman and Neuman (2014) stated the popularity of the tablets in the technology based societies. This enables young children to use tablets relatively quickly to explore, learn new skills, and gain early literacy knowledge (16, 17).

Majority of children accessed them during 60-120 min. in a day and preferred playing games Marsh, Brooks et al 2005) reported on a typical day, the mean number of minutes children engaged in screen use was 126, which is 2 hours and 6 minutes (18).

Children mostly describe technology as "tool"and stated they need it "tospend time". Younger children mostly play games, do work for school, make something, video games and cheats, download music and get information for other things when they used internet (19) (14)

There is no statistical differences between children' ages. AlthoughZevenbergen and Logan (2008) found that boys had higher computer related skills (14), this research stated that girls had higher means on the "Image Usage" and "Knowledge of Digital tools/equipment" than boys. Boys had more internet access than girls, online, to use the internet more often, children who had more home access tend to spend more time online per day and to have higher levels of online skills and self-efficacy (19).

There were moderate correlations between sub tests, on the other hand total digital skills were found highly associated with sub tests ($p<.01$). This result implied that, sub skills support digital skills on the whole.

There are some limitations for this study. Data were collected children, a few question were taken from mother. Next studies can involve parents and children all together. Ages of children were fairly closed to each other. Following studies can compare different age periods. Digital skills of children can be compared with creativity, temperament, wellbeing.

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