



Do Parents Prefer Digital Play? Examination of Parental Preferences and Beliefs in Four Nations

Nesrin Isikoglu Erdogan¹ · James E. Johnson² · Pool Ip Dong³ · Zhihui Qiu⁴

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Abstract

Recently play environments and materials have changed with digital materials becoming increasingly available for young children. Parents' preferences about the importance and appropriateness of digital play may influence the quality and the quantity of digital play opportunities children receive at home. The purpose of this research is to examine parents' preferences and beliefs about their children's digital play across four countries: USA, Turkey, China and South Korea. Participants of this mixed method research study were 500 parents who had a child aged 4–6 years old attending pre-schools or kindergarten in four countries. The data collected through the Parent Play Preferences Questionnaire (PPPQ) and semi-structured interviews with parents. The results revealed that digital play was the least preferred play across the four countries. Parents with college and above degree preferred digital play less than did parents with less than college education. Results are discussed in relation to the literature, with implications explored.

Keywords Children · Digital Play · Parents · Play Preferences · Play Beliefs

Introduction

Since the beginning of the new millennium, there has been a rapid increase in the quantity of digital play materials; and children's interest in playing with them creates an emergent phenomenon called "digital play." Although defining digital play has proven to be a challenge (Stephen and Plowman 2014), it generally refers to using technologies in a

play-based way (Marsh et al. 2016). Playing a digital game is a specific case because it cannot always be labeled as "traditional" play; sometimes digital play is placed in opposition to traditional play (Mustola et al. 2016). These perceptions result in various concerns about digital play that have been reported in the literature (Bergen et al. 2016; Edwards 2014; Ernest et al. 2014; Stephen and Plowman 2014). Some claim that children need "free play" instead of watching and interacting with screens (Levin 2015). They mainly argue that technology might have negative impacts on children's development (Agger and Shelton 2007; the AAP 2016). Those who advocate digital play claim that it supports children's learning through play (Bird and Edwards 2014; Edwards 2014; Hirsh-Pasek et al. 2015; Lovato and Waxman 2016; Marsh et al. 2016; Yelland 2015). They argue that many characteristics and types of traditional play, such as epistemic and ludic or dramatic or exploratory and creative, are applicable in digital play contexts. As a part of play based learning, digital play also fosters children's development and learning (Bird and Edwards 2014; Marsh et al. 2016). Both critics and supporters of digital play agree that young children are becoming more and more engaged in digital play (AAP 2016; Marsh et al. 2016).

In the current debate not much empirical research exists on the role of digital play in the lives of young children

✉ Nesrin Isikoglu Erdogan
nisikoglu@pau.edu.tr

James E. Johnson
jej4@psu.edu.tr

Pool Ip Dong
poolipdong@gmail.com

Zhihui Qiu
qzh1217@aliyun.com

¹ Faculty of Education, Early Childhood Education Program, Pamukkale University, Denizli, Turkey

² College of Education, Penn State University, 145 Chambers Building, University Park, PA 16802, USA

³ College of Education, Penn State University, 144 Chambers Building, State College, PA 16804, USA

⁴ College of Education, Early Childhood Program, JiangXi Normal University, Nanchang, China

(Stephen and Plowman 2014; Bergen and Davis 2011). Studies mainly have examined how young children use digital media (Fleer 2014; Given et al. 2016; Marsh 2010; Ruckenstein 2010; Stephen and Plowman 2008; Wohlwend 2015) or how accessible digital devices are (Connell et al. 2015; Ernest et al. 2014; Nikken and Schols 2015). Such studies have been useful in informing the current positions mentioned above without evaluating whether digital play is a predominant play type. In particular, remaining unexplored are parents' preferences and beliefs about digital play by their young children across cultures (Lovato and Waxman 2016). Since parents' preferences about the importance and appropriateness of digital play may influence the quality and the quantity of digital play, opportunities children receive at home, and in an attempt to address the current need for research in this area, the present study investigated culturally diverse parents' preferences and beliefs about their children's play with a primary focus on digital play. The current study also extends previous research by examining the effects of family factors on parental play preferences. By doing this the study seeks to contribute results that are relevant to discussions on the ways to enhance play at homes taking into account both family and cultural variables.

Parents' Play Preferences and Beliefs

Play is meaningful and important for young children and viewed as an integral factor in learning and child development across cultures (Roopnarine et al. 2015). From the beginning as a part of the child's immediate environment, parents influence the course of their children's learning and development by providing play environments and materials to their young children (Johnson 1986; Roopnarine 2011). The Vygotskian tradition is useful to conceptualize scaffolding, support and affordances enabling children to use of the digital media (Vygotsky 1978). According to the social cultural theory, learning through play occurs when children interact with adults and observe their behaviors (Bodrova and Leong 2007). Young children do not entirely decide for themselves what, where, when and with whom to play. Parents help make these decisions for young children and supervise, monitor and engage in children's play (Johnson 1986; Bhavnagri and Parke 1991); and with appropriate parental encouragement children do play at higher levels than they would if playing alone (Bodrova and Leong 2007; Vygotsky 1978). While parents fulfill a significant role in fostering children's play, parental beliefs influence the way they structure their children's early play and learning experiences, which in turn influences developmental outcomes (Fisher et al. 2008).

Parental beliefs and practices are constructed within a cultural and historical context (Fleer 2009; Göncü et al. 2000; Roopnarine et al. 2015). Many research studies demonstrate

that there are cultural variations in parental play beliefs and behaviors (Göncü et al. 2000; Gaskins 2014; Roopnarine 2011). One of the earliest studies that examined cultural variations in parental play beliefs was conducted in 1950, before mass markets and media invasion occurred in Kenya, Mexico, Philippines, Okinawa, India, and the United States (Whiting and Edwards 1973). Later reanalysis of those data demonstrated that cultural norms and opportunities determined whether adults encouraged work versus play, and whether the environments provided easy access to models and materials for creative and constructive play. Before the many technological developments that have since occurred in these societies, parents valued creative-constructive play in all six countries; and games with rules and role play were more prevalent in the privileged communities (Edwards 2000). In a well-known cross cultural study, Göncü et al. (2000) found that cultural disparities existed in the quality and quantity of play across four countries: United States, Turkey, Guatemala and India. Several other studies have even claimed that parents in European-heritage cultures valued play more than do parents of non-European-heritage cultures (Becker 2014; Lancy 2008; Roopnarine and Jin 2012). In contrast, others have asserted that play research has been framed in ways that privilege European heritage cultural practices, and have not seen play as culturally specific (Fleer 2009; Göncü et al. 2000; Roopnarine and Jin 2012). Still, surprising similarities in children's play across 16 nations have been described by mothers who reported that the decline in children's free play and the increase in the amount of time their children spend on television were troubling to them (Singer et al. 2009).

Play Types and Digital Play

Given the complexity in characterizing children's play, many efforts have been made to classify types of play in order to understand play in the early years. For example, Smith and Pellegrini (2013) suggested locomotor play, social play, parallel play, object play, language play and pretend play as the main types of play. Fjørtoft (2004) used three types of play: functional play, constructive play, and symbolic play, Whitebread (2012) offers five types based upon the developmental purposes: physical play, play with objects, symbolic play, pretence/socio-dramatic play and games with rules. As time goes on, the types of play will keep adding or disappearing and modifying. Recently, digital play has emerged as a prevalent play type.

As a recent phenomenon, defining digital play is challenging because it can range from games with pre-defined rules, through competition against a virtual partner, to employing a simulated technology in an imaginative play setting (Stephen and Plowman 2014). In the widest sense, digital play is defined as using technologies in a play-based way

(Marsh et al. 2016). This includes play activities related to video and computer games, internet sites and search engines, electronic toys, mobile technologies, smart phones, iPads and tablets. Bird and Edwards (2014) created a digital play framework and defined digital play behaviors in relation to epistemic (exploration, problem solving, skill acquisition) and ludic (symbolic, innovation). In a recent study, others argued that many types of traditional play except “recapitulative and rough and tumble play” were applicable in digital play contexts (Marsh et al. 2016). For this present research, digital play was considered one category with, traditional play another but with types for physical, pretend, constructive and game play.

Digital devices have become increasingly popular and children enjoy playing with them (Abdul Aziz 2013; Heider and Jalongo 2015; Kabali et al. 2015). Recent evidence shows that children ages 0–8 years use some sort of screen media in a typical day spending, on average, an hour and a half watching TV, 25 min with computers, 15 min with smart phones and a half hour with tablet computers (Lauricella et al. 2015). The screen times were higher than average in low income children (Fletcher et al. 2014). Touch screen technology enables young children to engage easily with games, applications and websites; thousands of educational or entertainment apps target young children, even newborns and toddlers (Ernest et al. 2014; Hirsh-Pasek et al. 2015). These apps can be downloaded and used worldwide via the internet. These easy accesses help young children to engage in digital play along with traditional forms (Lee 2015).

Digital play is often perceived as a nontraditional play or competitor of traditional play (Mustola et al. 2016) or as an inferior form of play (Marsh et al. 2016). For example, Levin (2015) argued that digital play changes the way children typically play and the quality of play declines. Digital games may be less developmentally, socially and culturally valuable to children (Agger and Shelton 2007; Levin 2015; Shaheen 2014). Marsh and Bishop (2014) documented peoples’ concerns that play is diminished by technological objects in children’s immediate environments. Takeuchi (2011) noted that a consideration is whether parents are concerned that children should spend more time on non-media-related activities. Children’s play has been changing whether or not we have accepted this fact; and young children in the future will participate more in highly digital play. Even the AAP (2016) has changed its position from discouraging exposure to any screen viewing for children under the age of 2 years to recommending high-quality programming and co-viewing for children ages 18–24 months of age.

Recently a growing number of early childhood scholars (Donohue 2016; Edwards 2014; Marsh 2010; Plowman et al. 2012; Wohlwend 2015; Yelland 2015; Zevenbergen 2007) have been advocating the inclusion of digital play for young children both at home and in schools. The

National Association for the Education of Young Children (NAEYC) approves technology when used intentionally to promote learning and development. It must be responsive to the ages and developmental levels of the children, and their individual needs and interests, also taking into account their social and cultural contexts (Copple and Bredekamp 2009; NAEYC 2012). Supporters of digital play claim that digital play provides children with many of the same learning opportunities that they encounter with traditional toys at home and in school, and that they even offer new possibilities (Fleer 2014; Marsh 2010; Miller et al. 2012; Stephen and Plowman 2014; Wohlwend 2015).

Studies focused on children’s digital play at home have shown positive learning outcomes for children. For example, Plowman et al. (2012) suggested that playing with digital devices can assist children’s acquisition of operational skills, and extent their knowledge and about the world, as well as develop dispositions to learn and understand the role of technology in everyday life. Additionally, internet-based activities add to family learning experiences (Palaologou 2016). For positive child outcomes to result from digital play, parents’ mediation strategies are important (Nevski and Siibak 2016). Research results showed that active parental involvement in young children’s computer use is related to children’s cognitive development (McCarrick et al. 2007). During the digital play in one study parents gave instructions, modelled engagement and prompted actions and answers (Stephen et al. 2013). Other investigations have reported that parents were not worried about negative effects; they believed that they had the right proportion of technological activities for their family (Plowman et al. 2010). O’Hara (2011) found that parents reported that their young children could use digital devices with certain levels of autonomy and that they played the roles of guardians and gatekeepers of digital play.

Parental and family characteristics are important factors contributing to parental beliefs and reports about digital play by their children. Parental educational level, age, race and parents’ own technology use have been examined for their potential effects on children’s daily screen time (Connell et al. 2015; Eynon and Helsper 2015; Nikken and Schols 2015). Results suggest that less educated parents are more likely to report that their children have electronic screens in their bedroom and spend more time using computers (Nikken and Schols 2015). Moreover, parents’ own screen time was strongly associated with child screen time (Lauricella et al. 2015). The amount of time that the parent is at home with the child is a strong predictor of co-use of media technology (Connell et al. 2015). Such factors seem to be important in relating to children’s exposure to digital devices; however, the role of family factors on parents’ play preferences for children and parents’ beliefs about digital play in particular need to be studied.

Purpose of Study

The present study aims to examine parental preferences and beliefs about their children's digital play. Parents are from four countries: USA, Turkey, China and South Korea. Four questions guide the investigation.

1. Among five play types (digital, physical, pretend, games, and constructive), what types of play do parents prefer for their children?
2. How do parent and family variables relate to the parents' play preferences?
3. What are the beliefs parents express about their children's digital play?
4. What are the similarities and the differences in parents' play beliefs and preferences over the four countries?

Method

This study is framed as mixed method research using both qualitative and quantitative research tools and is intended to produce preliminary results about the play preferences and beliefs of parents. The quantitative questionnaire was employed to examine the participants' play preferences. The qualitative follow up interview was utilized to add to the questionnaire data by generating more in-depth information about parental play beliefs and preferences. In this two-phase research design, the investigation began with a quantitative phase. In the second phase, after quantitative analysis of questionnaires, volunteering parents were selected to conduct qualitative semi-structured interviews (Creswell 2009). As an international study, the results in each country and across the four countries were examined to see possible likeness and unlikeness about the global phenomena of child play in general and digital play in particular. The research team of cross national comparativists appreciated and benefitted from the opportunity to share and use different cultural perspectives throughout the research, to learn to understand the play beliefs and preferences of parents of young children in four different countries. Each researcher was keen to examine and discuss the data from both a native's and a foreigner's point of view (Hantrais and Mangen 1996).

Participants and Procedures

Through purposeful sampling method 500 parents of children 4–6 years old were selected for this study from four countries: USA, Turkey, China and South Korea. Convenient preschools or kindergartens, mostly campus based programs in each country, were contacted by email and follow up phone calls. Following institutional review board and local school approvals, the invitation letter, informed

consent form, and the questionnaire were put in a sealed envelope and the appropriate number were sent together to the directors of the schools. The participant schools' directors distributed consent and questionnaire forms to all parents with a 4–6 years old child attending at that school. The returning rate of the questionnaires 60% Turkey, 49% USA, 90% China, and 55% South Korea. Since generally middle income parents were target of the study, campus care or schools close to campuses were selected in each country. In the USA sample data were gathered from three campus programs and one Montessori center in the local area. Two public preschools near the campus were used to collect the data in Denizli, Turkey. Participants from China came from one large campus care center. Korean participants were come from two private and one public kindergarten centers in urban areas. There were 87 parents from USA, 123 parents from Turkey, 180 from China and 110 from South Korean who participated in the study. Only one parent answered the survey and information gathered regarding to education, working status and daily technology usage represented the parent responding to the survey. Table 1 presents detailed accounts of demographics variables.

As seen in Table 1, mostly mothers participated in each country. Considering all participants in each nation, the percent having a college and above degree was the highest among USA parents; and the percent is having a lower than college degree was the highest among South Korean parents. Similarly, daily working hours were highest among the USA parents; and 46% of the South Korean parents were not employed. Results showed that parents from each country used technological devices on average 1 or 2 h or less daily.

The data reported in Table 1 indicate that there were national differences in parental reports about kinds of digital devices children had open access. For example, 55.2% of the USA parents reported that their children had open access to a Ipad/tablet, with 46% reporting their child had freedom to use the TV. Among Turkish parents 50.9% reported this for TV and 49.6% for Ipad/tablet. While Ipad/tablet was the highest reported device by Chinese parents, 53.2% of South Korean parents reported that their children freely used TV. Findings were that TV and Ipad/tablet were reported to be the most common digital devices children used freely at home. In all of the four countries, parents reported their 4–6 years olds watching TV the most each day relative to digital devises. Ipad/tablet usage took second place in USA, Turkey and China, with smartphone usage second highest in South Korea. Total of screen time of children also varied across the countries from 2 to 4 h.

Instruments

The Parent Play Preference Questionnaire (PPPQ) was created by the researchers to assess parents' beliefs and

Table 1 Descriptive Information about the participants of the study

	USA		Turkey		China		South Korea	
	n	%	n	%	n	%	n	%
Parent								
Mother	71	81.6	105	85.4	123	68.3	102	92.7
Father	16	18.4	18	14.6	57	31.7	8	7.3
Total parents	87	100	123	100	180	100	110	100
Education								
Below college	5	5.7	65	52.8	50	27.8	60	54.5
College and above	82	94.3	58	47.2	130	72.2	50	45.5
Working status								
Not employed	14	16.1	55	45.5	25	13.9	51	46.4
Working 1–4 h	4	4.6	5	4.1	20	11.1	9	8.2
Working 5–8 h	20	23.0	35	28.9	77	42.2	21	19.1
Working more than 8 h	48	55.2	24	19.8	58	32.2	29	26.4
Parents' daily use of tech								
Not at all	1	1.1	11	9	9	5	3	2.7
1–30 min	26	29.9	42	34.4	39	21.7	25	22.7
31–59 min	23	26.4	33	27	34	18.9	28	25.5
1–2 h	24	27.6	30	24.6	68	37.8	36	32.7
3 h or more	13	14.9	6	4.9	30	16.7	18	16.4
Children								
Girls	35	40.2	52	42.6	80	43.3	52	49.5
Boys	50	57.5	70	57.4	100	55.6	43	41.0
Digital play devices children freely use ^a								
None	28	32.2	11	8.9	32	17.8	16	14.5
Ipad/tablet	48	55.2	61	49.6	65	36.1	24	21.8
Computer	5	5.7	13	10.6	7	3.9	5	4.6
Smart Phone	18	20.7	53	43.1	30	16.7	51	46.8
TV	40	46	62	50.4	46	25.6	58	53.2
Children's daily DP time	Average minutes							
Plays with computer/tablets	42.29		53.43		39.62		46.42	
Uses smart phones	22.60		38.87		42.24		47.20	

^aParents were allowed to pick more than one answer

practices about their children's play. To develop the instrument, a research review was conducted and items were carefully chosen to represent different aspects of parents' beliefs and practices about play (Bergen et al. 2016; Johnson 1986; Roopnarine and Davidson 2015). Part A contained 14 multiple-choice questions about parent's demographic and personal information and open-ended questions regarding frequency and types of their daily technology usage and play.

The 20 items in Part B asked about parents' play preferences in a paired comparison format. This format required parents to select one of two activities as the preferred one for their children to spend time doing. These activities represented five types of play: (1) Digital (2) Physical; (3) Pretend; (4) Constructive and (5) Game play. A paired comparison format was used to produce rankings of the play types. Ranking of play types provided information different from using a rating scale for the items; it forced parents on

each item to select the more important of two play types for their children. Ratings of examples of different play types would have permitted parents indicating that all play is rated highly; this study sought to have parents show a more differentiated play type preference. Accordingly, on each item parents were asked to indicate which stem of each a pair they believe "is more important for their child to play." To illustrate, one questionnaire item was "(a) Playing with tablet games(educational apps and games); (b) Climbing and exercising. (See "Appendix" for play type exemplars used in constructing the questionnaire).

The order of appearance (a and b or top stem and bottom stem) was counterbalanced with approximately half the respondents receiving the two different versions of the questionnaire. Preliminary analysis revealed that the responses to the two versions were not statistically different. The t tests comparing mean scores of Version I and Version II

scores were insignificant. Hence, an exemplar of a play type appearing on the top of each item pitted against an exemplar of a different play type appearing on the bottom did not affect the rankings.

For each stem selected on the paired items, the play type represented by the stem (example of the play type) earned one point: the type not chosen received zero points. Exemplars of the same play type were not pitted against each other but were systematically placed in opposition to exemplars from the other play types in such a way that each play type could end up with a maximum score of 8 and a minimum score of zero summing across the 20 paired comparison items of the questionnaire.

Five experts in early childhood education were asked to review the questionnaire to provide evidence for its face or content validity. Based on experts' recommendations, two questions from part A were removed from the questionnaire (the child's birth order and whether or not the child had a TV or tablet/computer in the bedroom) and all other items retained. 97.85% agreement was calculated from the experts' feedback. The wording of some items was also adjusted in accordance with the experts' feedback. Later, the questionnaire was piloted with a convenience sample of 20 parents who had children enrolled in preschools or kindergartens. Test–retest reliability was conducted by re-administering the PPPQ after 1 week of the first administration and 87% agreement was found. Cronbach's Alpha for overall Part B was = .89. After finalizing questionnaire items, the PPBQ was translated into Turkish, Chinese and Korean languages by researchers. In order to evaluate language and cultural validity, the questionnaire was retranslated back to English using two bilingual people from each country. The results verified the comparability of the items' meanings across the languages (Douglas and Craig 2007).

Interview

Semi-structured interviews were conducted with ten parents from each country. Based on the questionnaire results of parents who were willing to be interviewed, five parents who scored higher and five who scored lower on digital play items were chosen from each country. The selected volunteers in each country were contacted over a 3 week period for the interview by Skype, telephone or face-to face based on parents' comfort or availability. Interview questions focused on parents' beliefs about the value of digital play, descriptions of their play preferences, and the meaning of digital play for their children.

Semi-structured interviews had six main questions and to follow up on the answers of the interviewees two probes were also prepared. Questions included: "How important is play for your child? Why do you prefer digital play or do not prefer digital play? What is the difference when your child

does digital vs non-digital play?, Follow-up questions were: "please give an example, why, can you tell me more." The interviews were conducted participants' native language and lasted from 20 to 40 min and were digitally recorded with the participants' permission. Participants were informed of the confidentiality of the recordings and the interview; transcripts were in English or translated into English.

Data Analysis

Data were analyzed in four steps. First, parent play preference scores were calculated. The scores in each play type subscales (Digital, Physical, Games, Pretend, and Constructive) were obtained by summing the number of chosen stems for each play type across the 20 items. The mean and standard deviations of the five subscales of PPPQ were calculated. Second, correlations were computed between parental play preferences scores and family variables (educational level, parents' own use of technology and working status) for each nation. Third, to explore group effects on parental education (under university degree educational level compared to bachelor's degree and above bachelor's degree educational level) and countries (USA, Turkey, China, and South Korea), multivariate analysis of variance (MANOVA) was performed.

Lastly, interviews were examined through content analyzing techniques appropriate for illuminating shared meanings across participants (Patton 1990; Seidman 1998). Analyses of the data were carried out in two stages. During the first stage, each researcher independently reread each participants' responses which were coded according to keywords and phrases and then organized thematically. Researchers separately constructed profiles of each country. In the second stage, researchers negotiated the emerging categories. Then, they compared their codes and categories to revise and resolve any differences. After this discussion, they negotiated the emerging themes, representative excerpts and agreed upon the categories within these themes (Seidman 1998).

Results

In order to determine parents' play preferences, descriptive statistics were computed and are presented in Table 2.

Of the five play types, digital play received the lowest ratings from parents in all four countries. Parents did not prioritize digital play over traditional play. Constructive play was most preferred play type for Turkish and Chinese parents. Physical play was the most popular choice for American and South Korean parents.

Table 2 Parents' play preferences for their children across four countries

	Digital		Physical		Pretend		Games		Constructive	
	M	sd	M	sd	M	sd	M	sd	M	sd
USA	1.47	1.94	5.76	2.15	3.95	1.80	3.51	1.61	4.96	1.62
Turkey	2.38	2.19	4.33	1.80	3.45	1.98	4.38	1.80	5.54	1.81
China	2.17	1.94	4.91	1.81	2.96	1.51	4.08	1.72	5.81	1.52
S. Korea	0.93	1.66	5.78	1.58	4.44	1.64	3.22	1.54	5.59	1.22

Influences of Family Factors

Pearson correlations were computed to estimate the relationship of parents' educational level, work status and own digital device usage, children's digital device usage and children's average daily screen time with parental play preference scores. Negative correlations between educational level of parents and their digital play preferences were found to be statistically significant in the Turkish sample, [$r(105) = -.203, p < .05$], in the Chinese sample, $r(180) = -.226, p < .01$ and in South Korean sample [$r(110) = -.337, p < .01$]. Significant correlations were not detected in US parents educational level and play preferences [$r(87) = -.175, p > .05$]. Only 5.7% of the participants from USA had a high school and associate degree; this might be the reason for these correlations' failure to reach statistical significance. Nevertheless these results in general showed that parents with less education were more likely to prefer digital play for their children. There were not statistically significant correlations of parental work status with play types across four countries. Parents' reported own daily digital device usage and child gender also were not significantly associated with parental digital play preferences in all countries.

In terms of children's digital device usage and total screen time, there were statistically significant correlations. Among the various digital devices, only children's Ipad/tablet usage was positively correlated with parental digital play preferences in USA [$r(85) = .267, p < .05$], and in Turkey [$r(114) = .224, p < .05$]; and significant correlations were not detected with respect to children's digital usage and Chinese and South Korean parents' play preferences. These results indicated that parents who reported that their children freely use Ipad/tablet more likely to prefer digital play for their children. There were also significantly positive correlations between children total daily screen time and parents digital play preferences in USA [$r(85) = .336, p < .05$], in Turkey [$r(114) = .334, p < .05$], in China [$r(180) = .288, p < .05$] and South Korea [$r(110) = .224, p < .05$]. These results showed that in four countries as children's reported screen time was increasing; parents reported that they preferred digital play over other play types.

Parental Reasons for Digital play

During the interviews parents were asked to explain the reasons for their digital play preferences. The results of the content analysis showed a number of themes indicating that parents have varied complex ideas concerning this topic (cf. Connell et al. 2015); our parents commented on both advantages and disadvantages of digital play for their children. Accordingly, for present purposes, we organized our emerging themes as: (a) advantages of digital play, and (b) disadvantages of digital play.

Advantages

Parents mentioned supporting learning, accruing technological skills necessary for the future and providing entertainment as advantages of digital play. They all stated that digital play has educational benefits, such as learning basic math and reading skills, and absorbing many social and physical facts about the world. Parents felt that YouTube, reading apps, songs and cartoons could also be worthwhile and educational for learning new information. American and Chinese parents emphasized that digital play promoted sustained attention and contributed to young children's concentration, self-regulation and motivation for learning. Moreover, Turkish and Korean parents discussed the benefits of digital play for learning English. One Korean mother asserted that "Through YouTube, we have easily access to good quality of English songs and videos."

Most parents saw the inevitability of technology's importance in their children's lives and they believed that through digital play children could learn how to use technology for the future. One American mother explained that she wanted her children to be on the road to being computer literate and media savvy. Similarly, a Turkish mother argued, "We live in a digital age, and I want him to learn technology. I do not think it is right to keep away children from technology as if it was not there." The majority of parents claimed that digital play is a source of entertainment for children. Parents' comments included "enjoys playing with tablet" and "wants to play" reflecting a belief in the entertainment value of digital play. Not only entertaining the children, digital play is keeping them occupied. A Korean mother reported that "when

parents need a time to work or when children need to stay calm at the public spaces, digital play works.” In general digital play was viewed as an important tool for learning and for entertainment and as a way to manage children.

Disadvantages

Parents raised several disadvantages of digital play by their children. These disadvantages can be collapsed under three headings: health concerns, content concerns and addiction concerns. Digital play activities were described as “passive”; and one American mother stated that “physical activity and sensory experiences are foundational in early life for successful growth and development...digital play does not offer these experiences.” Several Turkish parents also argued that playing with digital devices for a long time causes inactivity in children. Korean and Chinese mothers were concerned about the possibility of children’s vision problems happening due to over-exposure to the screen.

Concerns about content were expressed by parents across the four countries. Parents noted that they definitely had to keep an eye on their child’s diet of digital play, keeping it within bounds of appropriate content and time. Korean parents showed their distrust of digital media content, arguing that some content is “very shoddy, sensational, and not educational for children.” Turkish parents complained about the violence and gender stereotypes in digital games. One American mother was very vigilant about her child’s digital play content and she allowed her child to make choices only of apps that she pre-selected. Similarly, some of Chinese parents were alarmed by the inappropriateness of some of the content of digital games.

The fear of becoming addicted to digital games was raised by parents from the four countries. Korean parents considered computer games as very sensational and habit forming; children cannot control themselves and easily become “zoned out” to computer games. Turkish mothers also expressed this worry of addiction and they tried to prevent this by strictly limiting digital play time for their children. Similarly, several American mothers mentioned how distracting and absorbing digital play can be, that a child can “forget what’s around you”, “can’t break away very easily”, compared to playing outside.

Similarities and Differences Across Countries

Multivariate analyses of variance (MANOVA) (4×2) were conducted in order to examine group differences among the countries (USA, Turkey, China and South Korea) and between two parental education levels (below college degree compared to bachelor’s or graduate degree level). As expected, in the case of the variable “countries”, there were significant differences among USA, Turkey, China and

South Korea in digital play [$F(3, 460) = 14.48$; $p = .001$], physical play and [$F(3, 460) = 12.88$; $p = .001$], games [$F(3, 460) = 8.23$; $p = .001$], pretend [$F(3, 460) = 18.23$; $p = .001$] and constructive [$F(3, 460) = 2.97$; $p = 0.05$]. Post hoc tukey tests showed that Turkish and Chinese parents preferred digital play more than South Korean and American parents did. Turkish parents preferred physical play less than did parents from other countries. South Korean parents preferred games less than did parents from the other three countries. Pretend play was more preferred by South Korean and American parents than by Turkish and Chinese parents. American parents selected constructive play less than did parents from the other countries. Consistent with previous studies, these results showed cultural variations in parental play preferences (Becker 2014; Göncü et al. 2000; Roopnarine and Davidson 2015). Concerning the variable parental education an over-all statistically significant difference was found between the educational levels of parents with respect to digital play, [$F(1, 460) = 12.33$; $p = .001$]. See Fig. 1.

Parents who had more education (college level) selected digital play options for their young children less often than did parents without college degrees. Parental educational differences were not found for the other play types. The nation $\times$ education interaction was also not significant.

Discussion

This study tried to examine parents’ preferences and beliefs about their children’s play, as well as to investigate factors, which may have influenced their preferences of play. Both quantitative and qualitative analysis revealed several important factors. First, of the five play types, digital play received the lowest ratings from parents in all four countries. Parents favored traditional play types over digital play. In line with Plowman et al. (2012), our results indicated that parents

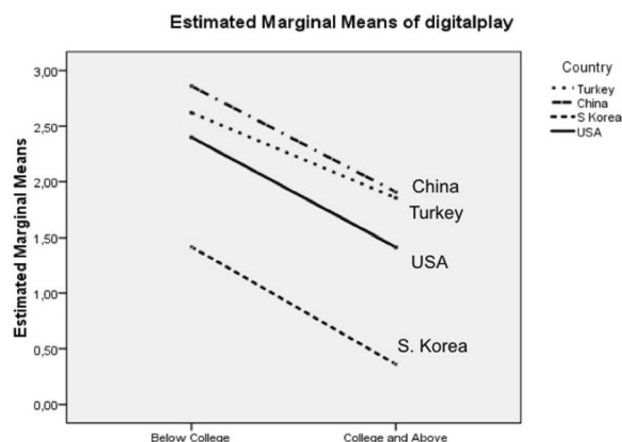


Fig. 1 Parental education and digital play preferences

preferred variation across digital and traditional play forms. In spite of its purported popularity, digital play has been reported to be a contested activity at home and educational settings (Stephen and Plowman 2014). Even from the questionnaire results only, this result showed that digital play is least favorite relative to other traditional play types (i.e., physical play, constructive play, pretend play, and games play). A possible explanation for this finding is that a paired comparison method, where each time a respondent faced an item, one play type was pitted against an exemplar from another play category and the parent was forced to pick.

Certainly, contextualizing these quantitative results with the qualitative data suggests that, if digital play is not straightforwardly negative, neither is it positive. A much more nuanced picture is suggested; perhaps the way parents generally felt about digital play can best be described using words like “curious”, “wary”, “ambivalent”, and “inquisitive”. In general, digital play was viewed as an important tool for learning and for entertainment and as a way to manage children. Parents’ enthusiasm for the study suggested, for some at least, wanting to know more about digital play and young children. They wanted to use the new media wisely but were not sure how. Clearly, parents need to be informed about the appropriate and balanced use of digital play with young children (Stephen et al. 2013).

Second, this study revealed that parents’ play preferences significantly varied among countries. The data from China and Turkey were more similar showing constructive play as the favorite play on average, and the data from South Korea and the United States were more similar in unearthing physical play as the most preferred play. These findings are compatible with traditional views as well as recent early childhood education trends in these countries. China and Turkey have fashioned throughout modern history a high regard for constructive and creative play by young children, and this has intensified in recent years. Being innovative and creative are important values that parents encouraged children to have during the early years (Ivrendi and Isikoglu Erdogan 2015). Similarly, in the United States and South Korea there are currently strong feelings about the value of physical play and being active in early life, as a remedy for childhood obesity and as a foundation for child development.

Third, the analysis showed an over-all statistically significant difference in digital play preferences as a function of the educational level of the parent. Those parents with a college degree, compared to those without a college degree, preferred digital play less relative to traditional play options. Research studies have revealed similar results that higher-educated parents structure their young children’s media environment more than less educated parents do (Connell et al. 2015; Nikken and Schols 2015). Family context is known to influence child development mediated by parental actions and intentions moderated by the educational level of

the parents (Bronfenbrenner 1979). Childrearing authorities in all four countries are currently spreading information to parents of young children cautioning them about digital play. Educated parents are more likely to read about and comprehend these messages from leading child development experts than are less educated parents. There may exist a parental educational level difference or lag in exposure to or the assimilation of latest information about digital play during the early years. This is consistent with other findings in the literature relating social class and parenting that a temporal lag may exist in adopting mainstream of middle class ideas about rearing children (Becker 2014; Bronfenbrenner 1979; Göncü et al. 2000; Roopnarine 2011). Parental income levels might influence children’s access to digital devices but this study could not gather information regarding the income because of economic and currency differences in four nations.

Lastly, the present study found that when parents reported longer Ipad/tablet usage for their children, they more preferred digital play for their children. It is not surprising that Ipad and tablet usage was significantly correlated with parental digital play preference scores. Ipad and tablets have many apps and games available for young children and the feature of touch screen make usage easier for young children (Hirsh-Pasek et al. 2015). These factors might be the reason for this positive correlation. As expected, the result of the study also indicated that children’s reported total screen time was positively related to the parental digital play preferences in four countries. Parents who reported longer screen times for their children tended to prefer digital play more.

Conclusions

This research attempts to explore the play preferences and beliefs held by parents from four different nations. Even though this study is contextualized in four nations, digital play is a global issue. Therefore, the results of this study may be relevant to understand parents’ preferences and beliefs in various cultural contexts. In light of this study’s findings and discussions in the literature, it is possible to conclude that parents valued the traditional play forms over digital play. Their preferences exhibited significant differences across nations with digital play the least preferred play type. Parents voiced in the interviews clear advantages as well as disadvantages to the digital play that has become an important part of the landscape of childhood. They recognized that a great deal of learning can be attributed to digital play, at least the right kind of digital play, educational apps with an interactive partner for instance. Recognizing the ubiquity of the technology and digital play for young children, these parents need to have a better understanding of developmental and educational underpinnings of digital play.

Sharing the parental play preferences and beliefs can provide a valuable source to eliminate extreme worries based on the fact that digital play takes place the traditional play. As mentioned earlier there is a concern that technology can diminish play (Marsh and Bishop 2014). This study's results reveal that traditional play forms still favorable in across different nations. It is also important to note that digital play may become more preferred play type in the future, so empirical research studies are needed to investigate the appropriate usage of digital at home and in schools. Moreover, the significant results pertaining to parental play preferences are an important empirical contribution, given the relative paucity of evidence-based articles on the topic (NAEYC 2012; Pacigam et al. 2017). Additionally, the use of a mixed methodology and a paired comparison format provided more and rich information than rating scales. Quite possibly, the findings of this study will contribute the newly developing knowledge base about digital play in early years.

The current study suggests that parents require strategies for using digital play at home. Specifically, less educated parents need support to recognize the balance their children's play activities. Parental education programs which aim to promote play is urgently needed to raise awareness about appropriate ways to use digital play. Moreover, institutions with global impact, such as AAP and NAEYC, may recommend concrete strategies and make suggestions for the parents; parent education seminars on digital play can be organized locally in different countries.

Even though this research pointed out many important findings and implications, it has some limitations. This study had a limited number of participants from each nation that did not allow us to generalize the entire nation. Additionally, this study used convenient sampling method and the range of parents' educational level is relatively at the upper end and narrow. Future research needs to be conducted with a bigger and random sample. Secondly, only two examples of each play type were built into the questionnaire, because of having ranks of parental preferences (Brunswik and Kamiya 1953). Although this methodology provides the reasonable and interpretable findings, future questionnaire research may include systematically more kinds of play common among young children. Moreover, this study investigates parental play preferences and beliefs, future research can illuminate the many discrepancies that most assuredly happen between preferences, beliefs and actual behaviors. From this study's findings, what parents seem to prefer, does not match what is commonly seen. This much can be anticipated: but the critical question is why and what should or can be done about it.

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Appendix

Play preference items.

Play Type	Item 1	Item 2
Digital	Watching YouTube animations, songs and cartoons	Playing with tablet games (educational apps and games)
Physical	Climbing and exercising	Playing tag, running and jumping
Pretend	Make-believe with small people and animals	Pretending to be a favorite fictional character
Games	Playing a board game	Playing a paper and pencil game like connect dots
Constructive	Building something with table blocks	Making something from different materials

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