

Extended Abstract

Early Childhood Pre-service Teachers' Awareness on Digital Game Addiction*

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Abstract

This study examines the factors that lead to digital game addiction in children based on the perspectives of early childhood pre-service teachers and has defined the relationships among the factors. For this purpose, basic interpretive research has been used as the research design. The study's participants consist of 55 early childhood pre-service teachers studying in the 2nd grade of Early Childhood Education Department in a public university during the 2017-2018 school year. The data have been collected using a semi-structured interview form developed by the researchers. Content analysis has been used to analyze the data. The findings reveal that family, children, environment, and games are the main themes that cause digital game addiction. Being an improper role model, improper technology use, wrong roles assigned to technology, work intensity, lack of knowledge, lack of control, apathy, and doing everything the child wants are the sub-themes for family. The sub-themes for children are finding an imaginary world, age characteristics, enjoyment, struggling to belong, lack of socialization, and lack of self-confidence. Bad urbanization, insecurity in the streets, and the digitalized world are sub-themes for environment, while the theme of games has two sub-themes: a game's attractiveness and physiological effect.

Keywords

Game addiction • Early childhood • Pre-service teachers • Digital games • Addiction factors

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Technology has become an inseparable part of daily life, and the age for using technology has dropped to early childhood. Researches have indicated 52% of children between the ages of 0-8 use technology (Guersbey, 2012) and 6% of children between 2 and 5 have their own phones (Choing & Shuler, 2010); these rates rise to 93% in the 13-17 age group (Logicalis UK, 2016). Digital gaming is one of the main reasons for using technology in early childhood. Digital gaming helps children gain certain abilities like spatial visualization (Green & Bavelier, 2003), communication, language, calculation (Gentile, 2011), helpfulness, empathy (Anderson, Gentile & Dill, 2012), self-care, and computer literacy (Gentile & Anderson, 2006). Despite these benefits, digital gaming brings some risks such as addiction to early childhood, and these may cause some problems like tending toward violence (Fischer, Kastenmueller, & Greitemeyer, 2010), obesity, skeletal and blood flow disorders (Gentile & Anderson, 2006), decreased positive social behaviors (Greitemeyer & Mge, 2014), attention deficit (Gentile, Swing, Lim, & Khoo, 2012), and decreased academic achievement (Gentile, 2009).

This study considers early childhood to be a crucial point for preventing certain risks caused by digital gaming, and digital game addiction is a significant risk for children in early childhood nowadays. In addition to this, research has show that early childhood education with well-educated teachers helps children more sensitively and positively (Koak & Alako Pirpir, 2012), which brings better performance results (La Paro, Pianta, & Stuhlman, 2004). This relationship between well-educated teachers and better results may be an indicator for how to prevent digital game addiction. First of all, early childhood teachers need to be aware of digital game addiction and be well educated for preventing digital game addiction. Therefore, the purpose of this study is to investigate early childhood pre-service teachers' awareness about digital game addiction.

Method

Research Design

The basic interpretative design has been used as the research design of the study. The basic interpretative design focuses on how people explain their experiences, how they construct knowledge according to these experiences, and how these knowledge and experiences give meaning to their lives (Merriam & Tisdell, 2015). Primarily, the aim of basic interpretative design is to reveal and explicate these meanings (Merriam, 2009).

Participants

The participants of the study consist of 55 early childhood pre-service teachers studying in the 2nd grade of Early Childhood Education Department in a public university during the 2017-2018 school year. Participants have taken the *Computer I and II* courses, but they have not received any education about digital game addiction.

Pre-service teachers had only taken two courses prior to the study related to early childhood education: *Introduction to Early Childhood Education* and *Mother-Child Health and First Aid*.

Data Collection Tools

The data has been collected using an online semi-structured form developed by the researchers. The semi-structured form has been developed in line with the purpose of the study, and the pre-service teachers have been asked to answer five questions. These questions are based on certain topics like the reasons for digital game addiction and the role of the family. The online semi-structured form was established in a computer lab using a local network where pre-service teachers were unable to access the Internet for any information on game addiction. Thus, pre-service teachers are expected to answer questions about digital game addiction with their existing knowledge and experiences. The online semi-structured form was sent to 66 pre-service teachers. Because participation in the study is voluntary, 55 pre-service teachers filled out the form.

Data Analysis

Content analysis has been used to analyze data. The first cycle of the coding process uses in-vivo coding, and axial coding is performed in the second cycle. Two different researchers carried out the coding process independently. In order to ensure the validity and reliability of the research findings, the findings obtained by the researchers were compared and inter-researcher consistency examined. In addition, the findings have been supported with quotations and the relationships between the findings have been described in detail.

Findings

As result of the analysis, the findings are gathered under four themes: family, children, environment, and games. Being an improper role model, improper technology use, wrong roles assigned to technology, work intensity, lack of knowledge, lack of control, apathy, and doing everything the child requests are the sub-themes for family. The sub-themes for the theme of children are finding an imaginary world, age characteristics, enjoyment, struggling to belong to something, lack of socialization, and lack of self-confidence. The sub-themes for the theme of environment are bad urbanization, insecurity in the streets, and the digitalized world; the theme of games has two sub-themes: games' attractiveness and physiological effect. After determining the themes and sub-themes, the relations between the themes and sub-themes were revealed in line with the pre-service teachers' opinions. These relations have been examined in eight different aspects: family, children, games, family and child, family and environment, family and game, child and game, and child and environment. The

aspects of the relations most emphasized by the pre-service teachers are family, family and child, and child and game in that order.

In the family aspect, families' carelessness toward their children is one of the most indicated behaviors leading to game addiction. In addition to this, parents who are careless and who also don't have enough knowledge about creating environments for their child's development may cause game addiction. Pre-service teachers have suggested that children's lack of socialization leads them to play digital games. This behavior occurs due to parents who are careless and see technology as a savior. Pre-service teachers have also claimed that parents become improper role models to their children by using technology too often. Early-aged children often learn through imitation and curiosity. When children observe their families using technology too often, they tend to spend more time with technology. This may cause game addiction. The most remarkable finding in the child-and-game aspect is that the attractiveness of games relates to children's age characteristics. According to pre-service teachers, early-age children are curious and in the playing stage. Games which have both attractive visual and auditory features attract students' notice. This situation may trigger the risk of game addiction.

Discussion and Conclusion

This study has revealed the factors that lead to digital game addiction in children from the perspectives of early childhood pre-service teachers and has defined the relationships among the factors. This study reveals the reasons that lead children to become addicted to digital games according to early childhood pre-service teachers' opinions. The first theme determined at the end of the analyses is the theme of family. Being an improper role model is a sub-theme of family. [Toran, Ulusaoy, Aydın, Deveci, and Akbulut \(2016\)](#) indicated that when games are concerned, children in early childhood take their families as a role model. Early childhood pre-service teachers mentioned that, as the main reason, children become addicted to digital games because they observe their family using technology all the time. [Plowman, Setevenson, Stephen, and McPake \(2012\)](#) also indicated that introducing children to digital games starts with families offering them digital games. One of the reasons that families let their children play digital games is to make time for themselves and finish housework ([Toran et al., 2016](#)). In this study, the pre-service teachers have been seen to make similar conclusions. Pre-service teachers mentioned that the improper roles families assign to technology lead children to become addicted to games. These improper roles are: using technology as a savior, silencer, reward, and punishment tool. The other sub-theme for family is lack of control. Pre-service teachers stated that families who do not control their children's technology use may cause digital game addiction. [Kıran \(2011\)](#) mentioned that adults need to control what kind of games children play in order to protect children's mental

and physical health. As both Kırın (2011) and the pre-service teachers emphasized, lack of control over children may cause digital game addiction.

Another reason that leads children to become addicted to digital games is children's characteristics. Finding an imaginary world, age characteristics, enjoyment, struggling to belong to something, lack of socialization, and lack of self-confidence are the sub-themes for the theme of children. Pre-service teachers mentioned that children find their imaginary world in games. Ertuğrul (2000) emphasized that games can develop children's imagination, planning, and organizing skills; however, according to the pre-service teachers, this may also cause game addiction. The other sub-theme for children is age characteristics. Pre-service teachers mentioned that early children are curious and in the age for play. Gökşen (2014) also indicated playing to be children's second basic need after eating. Children's game play and duration differ from adults (Gökşen, 2014). These variables may cause digital game addiction. Lack of socialization, feeling alone, struggling to belong to a group, and lack of self-confidence are the other sub-themes for children. Kuss and Griffiths (2012) indicated that children who disconnect from the social world feel alone, have low self-confidence, wear a digital mask, and become the desired character in a digital social world. This may lead children to become addicted to digital games.

The other two themes are environment and games. According to pre-service teachers, bad urbanization and insecure streets make children stay at home and play digital games. Irmak and Erdoğan (2015) indicated a similar opinion, which is urbanization makes children prefer to play digital games rather than traditional games. Most studies in literature mention children's need to spend quality time outside in order to meet their physical and mental needs (Akçay & Özcebe, 2012; Christensen, 2002; Kandır & Alpan, 2008; Türkoğlu, Çeliköz, & Uslu, 2013). These changes limit children's time outside and increase the time spent inside. Playing digital games is one of the first choices children make. According to pre-service teachers, this may cause digital game addiction.

Day by day games in the gaming industry becoming more visual and interactive. These improvements relate to the theme of games. In pre-service teachers' opinions, games have high-quality graphics, which make them very attractive. Because of this, children enjoy playing digital games. In the literature, some studies mentioned playing digital games to be an enjoyable behavior (İnan & Dervent, 2016; Karakuş, İnal, & Çağıltay, 2008; Kiili, 2005). This may also be a reason for digital game addiction.

As a result, the findings have revealed early childhood pre-service teachers to have overall knowledge about digital game addiction and what may cause it. In particular, educating early-age children between 0-7 years about game addiction by both parents and early childhood teachers is recommended in a controlled way. In this context, early childhood education curricula have been suggested to involve content related to game addiction.

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