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DIGITAL TECHNOLOGY DIMENSIONS FROM THE PERSPECTIVE OF SOCIO-EMOTIONAL DEVELOPMENT AT SCHOOL CHILDREN

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Abstract

The new era of digital immersion has arrived faster than we ever anticipated. The importance of digital instruments has proved vital for the works of many teachers and children in the current times of March 2020. The new focus is put on the kind of activities children access through their digital devices and the outcome of these activities. Teachers have been using digital instruments to facilitate their teaching for children outside the classroom and the benefits of this are still to be found. We might have a gap in knowledge or we might find the perfect balance between online learning and face-to-face methods. We are still learning and improving and there has never been a more excellent time for self-improvement and self-awareness. There is still a missing element of social and emotional connection between the teacher and the pupil and we are currently trying to fill that gap. How children see their digital instruments is something to consider. Their own window into the world of technology makes a better understanding for future improved experiences. This paper focused on children's self-view of digital technology usage. Teachers and parents can make sense of the children's perceptions and emotions during online connections and learning

Keywords: Well-being, self-awareness, social interaction, online games, primary school children

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1. Introduction

New era of digital technology, all developments in all areas occur at a fast moving pace and this includes also the development of children's social and emotional skills. These skills include social interaction, emotional awareness and self-regulation. Along this path of discovery and accumulation of experience, children encounter all kinds of instruments that they try to use in acquiring self-awareness. Teachers and parents have an important role in managing this acquisitions and offering the most reliable sources for knowledge through engaging activities. Children will chose to play video games with someone else and parents have a role in choosing the best games for their children for a meaningful and complete emotional and social learning experience (Maitland et al., 2018). The activities which children chose to do online aren't all limited to informal environments (i.e., at home, in the park), but also in formal environments (i.e., in school breaks). These actions that the children undertake have a tendency to increase the time spent in online interactions and less in live interactions, when they chose to chat/play online on different social media platforms or online gaming activities (Schilhab, 2017). The study suggests that the use of tablets (i.e., iPads) in school interferes with the time spent by the children in social offline interactions and it also explored the role that the school has in ensuring children with the proper technological literacy that will help them engage in socio-emotional learning during their time between class hours. More and more schools implement digitalization methods that help both the teacher and the pupil in having meaningful learning experiences. The new "electronic" alphabet mentioned by Glava and Baciu (2015) in their paper seems to be more present than ever in children's daily lives. Computers, laptops, smartphones, interactive whiteboards are all part of the digital technology that the teacher could and will use at least once a week in their teaching process.

1.1. Social and emotional development in the digital era

The socio-emotional development of children begins at an early age (0-2 years) in relation to cognitive development in according with early childhood development theories. Emotional competence refers to the ability to successfully express emotional feelings and experiences in the context of socio-personal relationships. For emotional development, the children use strategies which are designed to transform their skills into abilities and then into capacities such as self-confidence, curiosity, motivation, perseverance, self-control and self-esteem. Emotional competence from a practical point of view represents a reaction of the human body from a mental, hormonal, reactive and sensitive point of view, all these actions being represented by emotions. Expressing emotions by children or young teens through digital technology can be effective in some cases as reported by Tichon (2015) in a study that analyses the impact of communication between members of a group of support online for siblings of children with special needs. The participants felt comfortable sharing a wide range of emotions with other members of the online group offering children the opportunity to relate with other peers in same situations giving them a feeling of social-engagement.

Studies by the Organization for Economic Cooperation and Development (OECD), such as "Program for International Student Assessment" (PISA) and "The Program for the International Assessment of Adult Competencies" (PIAAC) cover a growing range of social skills and emotional and

have shown not only that these skills are related to important outcomes in life, but also that they can be significantly assessed within and between cultures and beyond specific linguistic boundaries.

Children's emotional and social development is an important aspect that is not neglected this being also the case for cognitive development in young children (0-2 years). For healthy emotional development, the child must possess previously acquired skills, such as self-esteem, self-confidence, curiosity, motivation, perseverance and self-control. These skills develop in the context of a balanced family, where the child develops harmoniously, the relationship between the child and the parent being an important aspect for future skills. The results of the studies carried out by Lozada and Halberstadt (2015) show that emotional competence is closely linked to social competence, this connection being conceptualized with the phrase "affective-social competence" (Schaffer, 2010, p.149). Digital media is capable of giving children the chance to have a quick and fast interaction with others across the wide internet giving them the necessary skills for fast responses even though these replies often are left for future analyze, more or less, by the unskilled child in critical thinking and reflection on emotions and behaviour (Globokar, 2018). Prosocial online games can be used for learning a wide range of prosocial behaviours (e.g., cooperation and sharing, the tendency to maintain positive affective relationships, empathy), but can also be a source for anti-social behaviours (Harrington & O'Connell, 2016). The study explored the relationship between the use of these types of online games and social behaviours of children and adolescents. The authors concluded that online games can be seen as "virtual teachers" but without guidance there seems to be a present danger of learning anti-social behaviours that are detrimental for socio-emotional development of the child.

Emotional regulation involves the balance between manifesting negative emotions and positive emotions, although suppressing negative or positive emotions can in time lead to other ramifications that are not beneficial to the child, thus the emotions are divided into two types of emotions: adaptive and maladaptive. Adaptive emotions are those feelings that help to manage emotionally charged situations. Children will also have to experience negative emotions, but of a functional nature. Dysfunctional emotions are emotions that refer to patterns of thinking and behaviour and cause emotional problems.

An important consequence of managing negative emotions is the adaptation to school life regardless of context. The expression of strong emotions, either positive or negative, is a maladaptation to the social environment, the consequences of this behaviour being borne by the children, then failing to make social contacts with the other members of the group.

Children prefer having feedback for the task they perform at school or at home and they need this feedback for both correct and incorrect actions shown in a study for determining the type of corrective feedback in a computerized task (García-Blanco et al., 2016). Social interactions have an important role in the development of socio-emotional competence all through life, but starting with the early years and there seems to be a link for positive emotional expression and social interactions. Quality time spent with the child is an investment parents and caregivers can make for the future of the child's well-being.

2. Problem Statement

Information, Media & Technology Skills are among the 21st century skills to be learned by children of all ages and to continue to acquire these skills along with adulthood because of the importance

of these skills. These skills include - Information Literacy, Media Literacy and ICT (Information, Communications and Technology) Literacy and are necessary for an informed and capable citizen for the 21st century that means being able to express a wide range of skills ready for use for people to be successful in life and work as well. Transfer of ICT skills from the level of teaching to that of learning has its challenges and is certainly never automatically accomplished (Manea & Stan, 2018).

Educators and policy-makers have overlooked the role that digital games have in children's lives outside school and the reasoning behind this kind of activities (Jung Huh, 2017). It is easy to consider that playing online games on their tablets or phones is bad for the child, but the use of these devices seems to be a coping mechanism for the child of the 21st century. Caregivers have a responsibility in providing the child with correct and entertaining activities rich of meaningful learning experience, but there seems to be a discrepancy between "want" and "need". The parents will give the child the instruments that they would consider proper for the 21st century, but will not always provide the skills to use these technological means. It would appear that at least online games can moderately improve "Executive Function - focused concentration, ignoring extraneous stimuli, and planning complex sequences of actions to achieve a goal" (Fietzer & Chin, 2017, p. 167). The skills that children develop during game play can be a base for certain abilities that can be transferred towards other daily cognitive activities in school. Attention and problem solving seem to be highly represented in the gaming activities as children are confronted with identifying patterns and puzzle solving in most games suited for children.

3. Research Questions

The hypothesis was that by using games online frequently the children would show preference for digital activities and that their socio-emotional behaviour would be revealed.

The questions of the current study considered the type of games children play, their interaction in the game, how they make sense of the games features.

4. Purpose of the Study

There is a continuous concern for children's use of digital technology online/offline and there is a consensus in regards to benefits and threats alike for the use of unsupervised games and other activities that children partake in their everyday life. The study aimed to identify children's preferred games, frequency of play, and source of the game. The second goal focused on looking further into the social interactions and emotional expression that children might have accessing their favourite games online.

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5. Research Methods

5.1. Participants and design

The present study implemented a survey of 25 questions for the purpose of gathering children's response about their online gaming usage, emotions and social interactions. A cohort of 40 primary

school children (M=10.75, SD=0.69) was recruited from one school and demographics was obtained from 26 females (65%) and 14 males (35%). The age for the moment the children recalled as started to play games (M=6.82, SD=1.61) was an element for use and obtained. Children have a certain number of siblings or they were a single child (no siblings = 14, one sibling = 22).

Children had to answer the questionnaire in their own time without any pressure to do so and their teacher was there to supervise their enquiry if the case would arise. Data was then collected and analyzed using SPSS v.23 giving a view into the research objective of finding out the children's own perspective on games and digital time spent on their phone or computer. The questions were divided into categories for a better insight: details into the game they chose to play, type of social interactions in the game, emotional expression in the game.

5.2. The games the children play

These items from the questionnaire were used to assess the type of games children chose to play there were three principal item recorded: preferred type of game (team games or solo games), game analysis (perceived difficulty of the games and the game aspects including colours, design, characters, story etc.) place of play and frequency (where do they play during the day, how often during the week they chose to play, how do they get the games they play).

5.3. Social interactions in the game

These set of skills were important part of the assessment of game play and this was provided by the data obtain from four questions regarding friends the children made by using the game, communication in their native language and also in foreign languages with other people in the game, the number of friends after the start of the game.

5.4. Emotional expression and self-awareness

These items reflected on the type of emotions the children exhibit during their time playing their favorite game in both cases of winning and losing at the game. The data obtain from the four items in the survey gave insight into the perceived role of the child in the game, emotions exhibited by the children when either winning and playing their favorite game and motivation for playing the games they choose.

6. Findings

Current trends have an impact of the type of games children chose to play. They can be influenced by media advertisement, internet and TV ads, pop-up from different sites the children find and navigate the internet, media influencers, siblings, friends or even parents. Notably at least 2-3 games were common in the top games that the children preferred. Furthermore, they either preferred playing team games or solo games, when they are the main character (Figure 01). Out of the number of children 35.1% of them prefer to play games that give them the chance to be in control, as leading character, 19.3% prefer games that are based on team play and 19.3% also prefer construction games (e.g., Minecraft). From the female participants 27.5% play solo games and 22.5% play construction games, followed by 17.5% who chose to

play strategy games. The percentage of males who chose to play solo games was 22.5% followed by team games chosen by 17.5%.
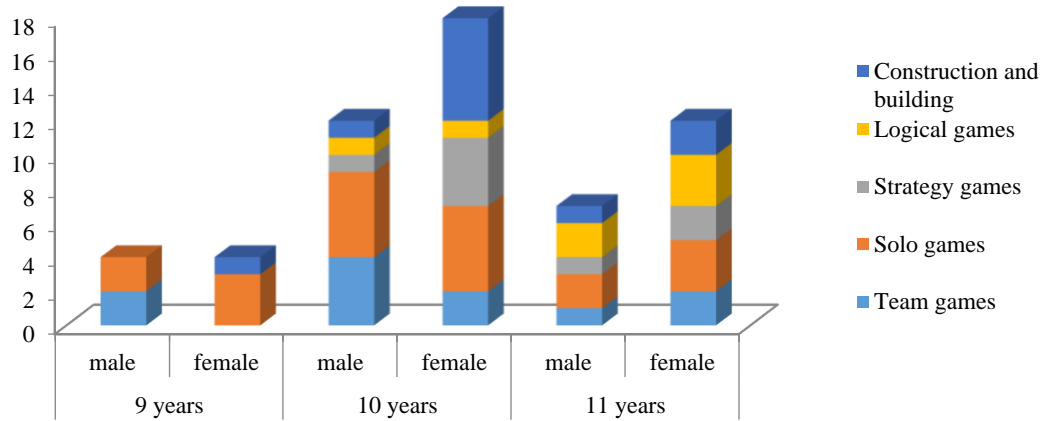

Figure 1. Type of games preferred by the children

Considering the game aspects the study focused on relating on the perceived quality of the game and the appeal per total. Graphics, characters, action and story were taken into consideration (Table 1). Children have high consideration of the game they play and consider the game to be satisfactory in all aspects. The frequency of play is rather diverse ranging from 35% of the children playing on a regular basis and 20% only rarely playing games online.

Table 1. Game aspect perceived by the children of their favorite game

	Graphics and colors	The characters	The action	The story	Multiple levels of play	Accessibility of the game	The speed of the game
Mean	4.60	4.48	4.60	4.20	4.48	4.38	4.40
Median	5.00	5.00	5.00	4.50	5.00	5.00	5.00
Std. Deviation	.744	.986	.632	1,042	.933	1.054	.777

We calculated Pearson correlations between frequency of play and gender and we found a positive correlation, but it doesn't have a significant statistical importance such being also the case for the Pearson correlation between frequencies of play and age where we obtained a negative correlation (Table 2). Games are procured online and 52.5% of the children said the games are free.

Table 2. Correlations between frequency of play and gender and age

		How often do you play online games?
Gender	Pearson Correlation	.109
	Sig. (2-tailed)	.502
	t-value	0.675
	Df	38
Age	Pearson Correlation	-.173
	Sig. (2-tailed)	.285
	t-value	-1.082
	Df	38

Social interactions are a part of the online world and have an effect on the way the children perceive the internet world and the game in effect. The children in the study had a less influence for social interactions considering the level of positive scoring for the four categories of questions included in the process (Figure 02).
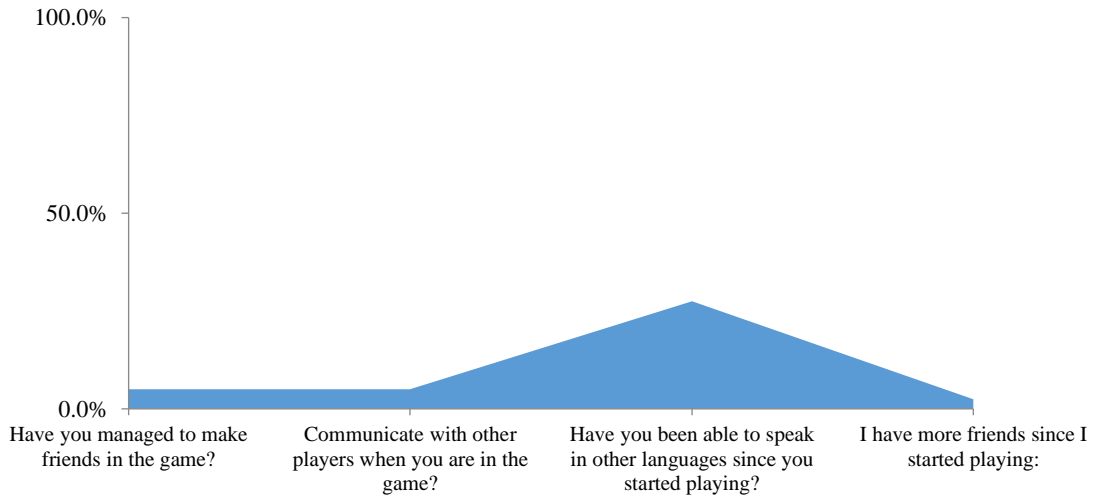

Figure 2. Levels of social aspects perceived by the children

The role that children assume in the game varies accordingly to the type of game played and most of the roles identified are: leader, strategist and constructor (each with 15%), soldier/fighter (27.5%), negotiator and architect (each with 5%) and other roles (17.5%). Playing games gives a certain level of emotional expression and the type of emotions have a range when considering the analysis for the emotions expressed in the game and after winning or losing a favorite game (Table 3). Losing a game creates another range of emotions and for the purpose of this study the answers were divided into three categories: positive, negative and neutral emotions (Figure 03).

Table 3. Emotional response when playing a favourite game

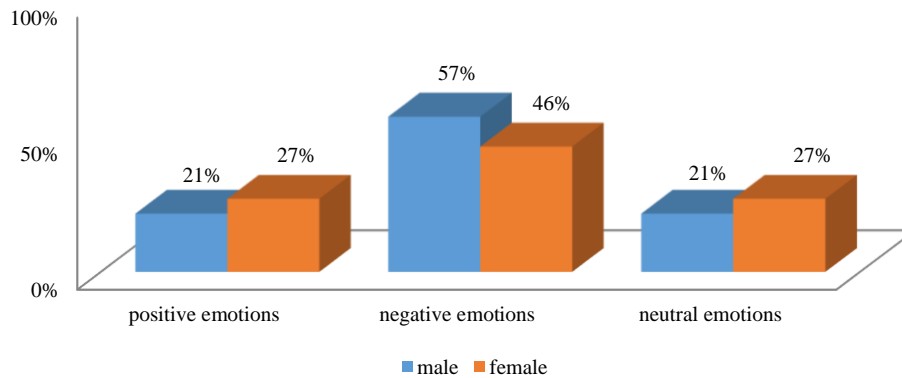|	Happy	Fulfilled	Content	Excited	Nervous	Concentrated	Frustrated
Mean (male)	1.428	1.857	1.928	1.714	1.928	1.642	2.000
Std. Deviation	.513	.363	.267	.468	.267	.497	.000
Mean (female)	1.461	2.000	1.846	1.730	2.000	1.769	2.000
Std. Deviation	.508	.000	.367	.452	.000	.429	.000
Mean (total)	1.450	1.950	1.875	1.725	1.975	1.725	2.0000
Std. Deviation	.503	.220	.334	.452	.158	.452	.000

Figure 3. Range of emotions expressed by the children when they lose in their favourite game

The current study revealed children's view of the online games they play, the frequency and time spent on playing the games of their choice. Children prefer to play online games that have a certain theme: construction, logical, strategy. Female participants tend to prefer construction games (e.g., Minecraft) and male participants chose to play solo games where they are the main character in most cases. Logical and strategy type games are preferred by older children (10-11 years old). The children could also score the game by all the factors that the study used. They scored graphics, colors, characters, the action and the story among other visual characteristics of the game they chose to play. There was no correlation between gender/age and frequency of play time during the week. It would appear that with age the children tend to play less over a period of one week. Children prefer to have the role of a soldier/fighter when they chose to play followed by the role of leader or architect in terms of frequency. The results show that the children don't have meaningful social interactions with other players online, even though some of them expressed that they would like some of their games to have more options for multiple players and exchange facilities provided in game. The majority of the children expressed a rather high level of opportunities for foreign language use in the game. This might be because most games are in English and children have the opportunity to either communicate with others or simply learn and exercise new terms in a foreign language while using the games menu, planning their strategies or level play. Almost none of the children considered that they have more friends since they started playing. The children either chose to play alone in the game, in teams with other people from other countries or simply with their current friends. Children's emotional response to the games in question varies depending on the moment of the game. While in the game children express emotions of happiness, content and excitement, along with frustration and impatience. When losing a game almost half of the children express negative emotions (e.g., sadness, anger, disappointment). Some of the children also express positive emotions when feeling positive about the next time they will play also gives them a purpose for playing more and trying to win for "next time". While considering the motivation for playing online games the children seem to care about their "friends" there, the action offered by the game, the logical aspect of the game and the skills they develop during the play. Like any games, online games provide a certain environment that looks more vivid to the imagination and offers plenty of opportunities for discovery.

7. Conclusion

The results of the study gave insight into certain levels of emotional and social interactions that the children have during online gaming. Virtual environments are created to give the user a certain level of emotional experience and while in the game this might seem as vivid as reality there is a trust that people and children can make the distinction between what is real and what is not real (Mousas et al., 2018). Being online has a particular influence on children who are more likely to see/hear inappropriate images/sounds which could impact them negatively (Staksrud et al., 2013). There is a considerable high chance of children being bullied when they have a public profile than children who don't have an online presents. Preventing these types of actions can be made through correct information about the risks and threats that the online presents for the unadvised. To have an impact in the way children use the internet and online games, teachers and parents have to be prepared with honest answers and prevention methods tailored for each child. Considering the child starts using digital technology at a very young age his/hers every moment spent online and in online gaming has to be monitored to limit/avoid harmful information in reaching the child.

Acknowledgments

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