Preschool teachers' perspectives and use of digital game-based learning

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ABSTRACT

The increasing interest in digitalization in education has resulted in the introduction of new digital tools in schools, one of which is digital games. Research on digital games and their educational potential has been mostly focused on primary, secondary and upper-secondary education. This study intends to explore the use of digital games in preschools in the Swedish context. The study focuses on preschool teachers as regards their perspectives and use of games, as well as the type of school where they work at. The objectives of the research are to explore: (i) what the teachers' perspectives on digital game-based learning (DGBL) are and whether these perspectives have an implication on the use of games; (ii) how digital games are selected and used by the teachers and whether there are any barriers to their use; and (iii) whether the perspectives and use of digital games differ between independent and public preschools. The data was gathered through qualitative semi-structured interviews with preschool teachers from the region of Stockholm. Findings indicate that the role of the teacher is critical when it comes to the use of digital games in preschools, especially when it comes to their evaluation and implementation. The study further reflects on the importance of teachers in the strengthening of a school's digitalization.

Keywords: digital game-based learning, digital games, early childhood education, teachers' perspective

Note to readers: This article is a summarized and updated version of my master thesis published in 2015 (Raptopoulou, 2015). Many of the sections might be regarded as outdated since further research has been conducted in the field of DGBL in early childhood education since 2015. However, I decided to keep as close to the original manuscript as possible with the exception of some additions when needed for reasons of clarity and contextuality.

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Introduction

In the early 2010s in Sweden, discussions regarding the potential of digital games as learning tools begun emerging following initiatives from Regeringen (the Swedish Government) and Skolverket (the National Agency of Education) aimed at improving digitalization of the Swedish education system. The increased digitalisation of education along with the growing interest in digital games supported the promotion of digital games as learning tools in schools. However, little is known about the use of digital games in formal education settings, especially in early childhood education. The aim of this study is to explore the use of digital game-based learning (DGBL) in preschools by focusing on preschool teachers within Sweden. Using digital games as an example, this study intends to explore how preschool teachers in the city of Stockholm handle school's digitalization as regards their perspectives and use of games. Additionally, it would be of interest to know whether the perspectives of preschool teachers differ depending on the type of preschool they work at. The role of the teacher is perceived as a critical one when it comes to evaluating and implementing new teaching methods. The objectives of the research are to explore: (i) what the teachers' perspectives on DGBL are and whether these perspectives have an implication on the use of games; (ii) how digital games are selected and used by the teachers and whether there are any barriers to their use; and (iii) whether the perspectives and use of digital games differ between independent and public preschools.

Digital games and digital game-based learning

The wide acceptance of ICT and its expansion into education has led to increased interest in digital games in the early 2000s. Growing bodies of research linked digital games to learning theories, arguing that they create a stimulating learning environment, improve student motivation, stimulate creative thinking, and provide challenging and meaningful contexts for learning (Egenfeldt-Nielsen, 2007; Gee, 2007; Shaffer et al., 2005). This was attributed to digital games having challenging, engaging and multimodal features which support and promote learning, while attracting the attention of the user (Steinkuehler, 2008). Such theories led

to a strong belief that digital games can be a powerful educational tool, with possible applications in the classroom settings (Rosas et al., 2003; Squire, 2011). While there are many positive claims, researchers argue that the introduction of digital games in schools might lead to shortened attention spans and social isolation (Marquis, 2013). Others argue that there is not enough hard evidence on the effectiveness of games in learning (Bourgonjon et al., 2013), that there is little evidence regarding the transference of the learning experience (Bennerstedt, 2013; Gros, 2007), and that successful performance in gaming is not necessarily a proof of learning (Linderoth, 2009, 2012).

A basic premise behind DGBL is that any game used in an appropriate context can promote knowledge (Jantke, 2012), which traditionally draws upon a constructivist view of learning (Alexiou & Schippers, 2018). Definitions of DGBL describe it as an approach with learning and/or instructional purposes (Erhel & Jamet, 2013; Poulsen, 2011) where digital games are seen as non-conventional educational tools that empower situated learning (Shaffer et al., 2005). Based on these descriptions, DGBL is seen as a strategy supplementary to more traditional didactic methods (Mordt et al., 2011). In practice, however, its integration into the classroom is seen as a challenge for schools (Sigurdardottir, 2016). More needs to be known when it comes to the everyday use of digital games in formal education settings, since most of the research concerning the use of DGBL in the classroom has either been theoretical (Egenfeldt-Nielsen, 2006) or has been based on intervention-based studies (Katmada et al., 2014; Ronimus et al., 2019; Zheng & Spires, 2014).

Teachers are a key factor in the use of digital games in the classroom. Previous research has indicated that teacher's role is crucial not only in choosing, using and evaluating the games (Hanghøj & Brund, 2010), but also as an orchestrator and integrator of games throughout the teaching process (Berg Marklund & Alklind Taylor, 2015). According to previous research focused on primary and secondary education, the implementation of games through computer technology in schools still creates resistance. Many researchers underline the practical barriers teachers have to deal with when using digital games with their students, which vary from time limitations and lack of understanding of how to use games, to a lack of support and resources (Becker, 2007; Berg Marklund & Alklind Taylor, 2015). Additionally, teachers appear to be reluctant to include digital games in school due to curriculum limitations, lack of access to

effective educational hardware and software, or due to their views on digital games and ICT in general (Beavis et al., 2014; Green & McNeese, 2011; Rosas et al., 2003). The issues covered in current research about primary and secondary teacher perspectives towards digital games may also exist within early childhood settings. However, not much is known about the use or the acceptance of digital games in early childhood education (Vangsnes et al., 2012), despite the increasing importance of digitization and digital competence at all educational levels, including preschools (European Commission, 2016).

Digitalization of Swedish education

In this study, the use of digital games in preschools will be analysed within the context of digitalization of Swedish education. Since 2006, digital and technology-based competence is among the key competencies promoted by the European Commission (European Commission, 2018). Even before the recommendations introduced by the European Commission, the digitalization of Swedish education was perceived as important.

Starting in the 1970s, Swedish students were encouraged to learn with the aid of computers, highlighting the importance of digital literacy and the use of computers as tools for learning. In the 1990s and the 2000s, various initiatives were introduced to Swedish schools aiming to help students and teachers make use of computers for educational purposes (Heintz et al., 2017). In 2009, Regeringen assigned Skolverket to assess the activities regarding the use of ICT at all levels of education (Skolverket, 2009). Subsequently, in the curriculum reform of 2011 (Lgr 11), the increasing importance of digitalization in education was clearly expressed through goals on how to use digital technology, how to develop critical thinking, and the influence of computers in society (Skolverket, 2011). In 2012, the Swedish government established Digitaliseringskommisionen (the Digitalization Committee). This committee was directed to explore the opportunities of digitalization and to present proposals on the strengthening of digitalization, its challenges and effects on society and the individual (Digitaliseringskommissionen, 2016; Heintz et al., 2017). More specifically, one of the reports published by Digitaliseringskommisionen addressed the need for the school sys-

tem to pay more attention to the possibilities of digitalization and to increase its presence (Digitaliseringskommissionen, 2014). Discussions regarding the digitalization of Swedish schools gradually increased around Sweden and increasingly brought the area of digitalization to the foreground of education policy. In September 2015, after the study took place, the government instructed Skolverket to propose national IT strategies for the Swedish education system (Regeringen, 2015). Additionally, computer programming was introduced as a mandatory component starting from the first grade of primary school (Regeringen, 2017; Skolverket, 2016). Overall, Swedish public and independent schools are responsible for ensuring that every student in primary, secondary and upper-secondary education is able to use modern technology as part of their compulsory education when searching for knowledge, communicating, creating and learning (Skolverket, 2018). In early childhood education, the use of technology is also considered a basic element of learning and expression in the promotion of child development (Skolverket, 2011).

The continued digitalization of Swedish schools increased the demand for the integration of digital tools within the classroom. In the early 2010s, digital games began to be promoted as one of these tools, with several articles published in Swedish popular media endorsing the integration of digital games in schools as learning tools (Ryan et al., 2019; Trost, 2013; Wahlgren, 2012).

Public and independent schools

Education in Sweden is situated within the public sector and all schools are publicly tax-funded. From the mid 1980s, changes in the school system policy administration shifted from being highly centralized to decentralized. In the new decentralized education system, the responsibility to provide child care and education for children extended beyond the public sector and "public financial support for independent schools was introduced" (Lindbom, 2010:615). This meant that educational institutions such as schools and preschools could be run by third-parties such as staff and parent co-operatives, foundations, and companies (Skolverket, n.d.). This type of educational institution is referred to as an independent school, non-municipal school or free-school (friskola). Similar to public schools, independent schools are free of charge, have to meet

the standards of public child care, and are entitled to public tax funds for their running costs (Gunnarson et al., 1999). Both public and independent schools follow the national curriculum; they are obliged to match the knowledge and skills mandated by the Ministry of Education, as well as follow the general objectives and values expressed in policy documents. However, a key distinction between these two types of schools is that although public school funds remain within the municipality, independent schools are entitled to keep and use the profits they gain (Erixon Arreman & Holm, 2011). According to Wiborg (2010), independent schools run by private companies are the fastest growing type of independent schools in Sweden. The introduction of independent schools in Sweden signified the rise of a highly competitive school market (Erixon Arreman & Holm, 2011; Lundahl et al., 2013). Independent and public schools compete with each other for the enrolment of pupils (Lindbom, 2010). Due to this competition, in some cases schools allocate greater resources in order to become more attractive and competitive (Antelius, 2007). Thus, a hypothesis emerges whereby independent schools are seen as more likely to adopt alternative teaching methods such as digital games. Subsequently, one of the aims of this study is to explore whether independent school teachers are more likely to use more progressive teaching methods such as DGBL to attract more students.

Methodology

This study is of a qualitative nature and adopts an explorative approach. An explorative approach enables a more in-depth research of teachers' views regarding digital games and the ways they use them. In order to explore whether teachers share similar or different experiences between either public or independent school contexts, several schools from both of these settings were selected to create as broad an understanding of teachers' experiences as possible. A comparative design was utilized in order to seek similarities and differences between the schools and gain deeper understanding of the perspectives of preschool teachers on DGBL within the different contexts. For the collection of the data, semi-structured interviews were used to gain in-depth information through open-ended questions. The interviews were conducted between January and February 2015. The interview guide covered a range of issues to

do with preschool teachers' views on DGBL, their use of digital games (if any) and the challenges they face using games in their preschools. A thematic approach was adopted for the analysis of the material. Working within a broad thematic analysis framework, there were no limits set around the number of potential themes that might emerge, which strengthens the exploratory approach of the study.

The interview participants were 7 preschool teachers working either in public or independent preschools located in the city of Stockholm. To select a suitable number of relevant participants, snowball sampling was employed (Bryman, 2012). Initially, a small group of preschool teachers was sampled that fulfilled the criteria and these participants proposed other participants who were relevant to the research. All the participants worked in different preschools at the time, where between the ages of twenty-six and fifty years of age, and their working experience ranged from 3 to 10 years of employment. The students' ages varied between 1 and 5 years old. Despite its limited size, the selection criteria aimed to capture a varied sample with respect to teacher ages, student ages, years of work experience and school context. Four of the interviewees were employed in independent preschools and three of them in public ones.

Teachers' perspectives on DGBL: positive and sceptical

In general, teachers were aware of digital games and discussions regarding their potential in learning. Most of the participants were using, or had used, digital games with their students while two out of seven interviewed teaches had never used any kind of digital games in the classroom. Interestingly, none of the teachers had heard or read any DGBL related research. From the analysis, the position that teachers adopted towards DGBL separated them into two main categories: those that might be seen as **positive towards the use of DGBL** in the classroom and those who appear to be more **sceptical about the use of digital games** in preschools.

Teachers positive towards DGBL

The group of teachers who view DGBL positively perceive digital games as a teaching method. Digital games are considered important for the children to learn how to interact with digital tools in a digital society. That does not mean that these teachers do not follow traditional teaching methods; instead, they prefer to implement digital games alongside traditional teaching methods whenever they think suitable. These teachers insist that children should develop their social skills foremost and should play with physical tools and learn how to use their bodies; however, that does not exclude digital toys from childhood education since it is regarded as a complementary teaching method. The use of digital games by the positively inclined teachers also exposes them to the consequences of the use of DGBL with their students. That did not seem discouraging, since in their opinion any tool has both positive and negative aspects. However, the exposure to games seems to make them capable of recognizing possible negative effects on children and of finding ways to overcome such issues. This group of teachers claim to have a better idea of what to avoid while using digital games for teaching, and most of them mention ways of balancing the effects of digital games with their students. Some examples mentioned were the controlled use of digital games, under-guidance use, and the rendering of limits such as time limits and usage rules. A common characteristic that positively inclined teachers refer to when talking about themselves is their attitude towards children, i.e., a curiosity for the world of the child in the modern world. Referring to the increasing use of digital media by children, the use of digital games is not merely a fun tool to learn with, but also a way to come closer to students and teach them by using something they are interested in.

Teachers sceptical towards DGBL

The group of teachers identified as sceptical towards the use of DGBL make either no or very limited use of digital games while also expressing their hesitance towards them. They consider themselves to be anti-digital with regard to childhood education, as they believe digital games to be tools that promote antisocial attitudes and isolation. Instead, they

prefer to make use of traditional methods of teaching such as books, physical tools, and oral communication. When these teachers were asked their opinions on digital games, most of them list effects such as violence and lack of personal communication. Many of them mentioned that they do not use the extra resources offered to them by the preschool administration on ICT, digital tools, and games. Another common characteristic expressed among the sceptical teachers is their desire to protect children from technology. They believe that children's use of digital toys limits their social and emotional development and results in receiving information rather than engaging in interaction. Additionally, they tend to place digital games and social interaction in opposition to one another, referring to digital games as an obstacle to children's social skills and development. In contrast with the teachers who view DGBL positively, the teachers who are more sceptical towards it prefer to significantly limit use of digital games and digital tools in general.

The use of DGBL in the preschool

In both types of preschools, digital games were used for teaching subjects tied to the preschool curriculum such as language and mathematics. The positively inclined teachers claimed that the use of DGBL is always goal-specific and its use is for teaching playfully, or simply for the incorporation of an additional teaching method.

According to the teachers, children are always encouraged to play together. That may be happening for two reasons: firstly, because they want to give the DGBL activities a more social character with elements of interaction between the students; and secondly, for reasons of practicality, as teachers need to team up as many children as possible from their group. Normally, the teacher-student ratio in a Swedish preschool is 1:6. Regardless of reason, the result seems to be the same. According to the teachers, the children learn how to cooperate and work with the digital devices by interacting with their friends. The digital devices of preference when it comes to DGBL are most often tablets or sometimes mobile phones. All of the interviewees, either based on their practical experience or on their opinions of using DGBL, share the same opinion that children should not play without supervision and teacher-guidance. The presence of a teacher is regarded as obligatory when children are using

digital games or any other kind of digital tools; needless to say, teachers have no fear of substitution by the digital devices. They are aware of the fact that children need an instructor who guides them through the games and supports them in making the best use of the game.

When teachers were asked how they usually implement digital games, four different implementation methods emerged: (i) taking-turns, (ii) teacher-led, (iii) projection, and (iv) small-team. The most common is the taking-turns method, which means the teacher gathers the children in a circle and one child has the tablet while the rest of the children are waiting for their turn. According to the teachers, this teaches children how to be patient, but it can also be time consuming. This is usually applied in small groups of children, e.g. groups of five or less. In contrast, in the teacher-led method the teacher is holding the tablet and the children sit in a circle watching and collaborating with each other. In the projection method, the screen of the tablet is mirrored on a screen or projector, allowing the teachers to work with larger groups of children. Finally, the small-team method consists of two or three children sharing the tablet by playing together under supervision. The former two approaches are mentioned by most of the teachers, whereas the latter two are mentioned only by the teachers who are positive towards digital games. Apart from the first, the methods allow for social communication and interaction. Like any other game, this use of digital games has students cooperate and team up in order to be part of the gameplay.

The selection of digital games

Language and mathematics games are most commonly used by the teachers. The teachers' goal is to teach children the basics of how to spell, read, count, etc. with the help of games. Other popular choices were natural sciences games, experiments, and construction games. From the teachers' answers it is clear that they look for games related to goals set by the national curricula or the preschools' programme. Teachers claimed they search for games with some specific criteria in mind. Such criteria can be summarized into three main categories: **educational**, **game-design**, and **age-specific**. The teachers who search for digital games with educational criteria follow the guidelines from the national curriculum, the preschool's schedule, and activities they orga-

nize for their students. Besides these guidelines, some of the teachers pick digital games that suit their perception of education and pass along positive messages through their gameplay. The teachers who search using the game-design criteria focus on the graphic design of the games, multiplayer features, and slow-moving gameplay, which gives children the opportunity to repeat their actions and learn. Furthermore, teachers are also focusing on the age-specific factor, meaning the game should be age appropriate for their students. Most of the teachers admit, however, that they rarely or never search for games due to a lack of time and guidance. Instead, the digital games used by the teachers are the ones either suggested during training sessions, seminars and education fairs, or are given to them by the administration of the school. Sometimes the games are discovered by the children themselves. Only one of the teachers admitted that they search for games actively and methodically in their own spare time.

Barriers to the use of DGBL

When discussing barriers to the use of DGBL in the classroom, teachers from both groups provided several examples. The nature of these barriers can differ depending on the individual or the working environment. From the analysis, three factors emerged as critical to the use of digital games within the classroom: the **practical limitations**, the **ideological limitations**, and the **lack of training and/or information**.

Practical limitations

Practical limitations most often refer to working environment barriers. A common reason why teachers avoid the use of digital games in the classroom is the difficulty to implement them effectively. This was common among teachers who only used the taking-turns method with their students. According to the teachers, the application of DGBL can be time consuming, if not applied in an efficient way. Teachers do not usually have extra time to spare on DGBL, thus they prefer to use other tools. Another practical limitation is the shortage of equipment. Some of the teachers reported shortages of tablets, obsolete laptops, and no wireless internet connection, which prevent the implementation of DGBL.

Ideological limitations

Ideological limitations are connected to the individual teacher or their peers, such as the employer, colleagues and parents. The sceptical teachers, who admit to being negatively biased against digital games, tend to avoid DGBL. These biases are the result of the teachers' opinions on video games based on stereotypes, their personal beliefs, or on the way they grew up. In the latter, memories from the teachers' childhood are often mentioned and which point to technology was not present. Some of the teachers believe that digital games are merely a leisure activity or a way to keep children occupied without having a specific goal. Furthermore, digital games are perceived as a lone activity, which isolates children and prevents them from socially and emotionally developing. The demand and the bias of parents are another important barrier that teachers refer to. Some parents, similarly to the sceptical teachers, perceive digital games as a mere leisure activity. They believe that digital games are a waste of time, and that there is no purpose in playing digital games when someone can accomplish the same goals with traditional activities. Another barrier, which can be perceived as ideological, is the collaborative support that teachers get in their working environment. It seems that supportive colleagues can facilitate the use of digital games in the classroom, whereas colleagues that are not in favour of DGBL can prevent their use.

Lack of training and/or information

An interesting pattern emerging from the interviews is that none of the teachers, positive or sceptical, have ever encountered digital games or DGBL related readings. When it comes to in-service training and information, only two of the seven teachers have been offered relevant training on the use of tablets and digital games by their employers, and while there is a person responsible for ICT provided by the municipality, the teachers do not necessarily use this resource. Most of the teachers' knowledge on ICT comes from their personal interest, rather than from courses and seminars. From the interviews with these teachers, there was no mention of any organization or initiative that would help them navigate the use of DGBL in their preschools more easily.

Perspectives on DGBL between independent and public preschools

Based on the competitive relationship between public and independent Swedish schools, a hypothesis was expressed suggesting independent schools might be more likely to adopt alternative teaching methods such as the use of digital games for learning purposes than public schools. A comparative research question was directed at exploring whether independent schools use digital games in the preschool to increase their student enrolments. The analysis of the material did not indicate any notable differences or patterns between the preschool teachers working in public and independent schools. Instead, the preference on the use of DGBL was dependent on the individual teacher rather than the type of preschool. In both public and independent schools, there were teachers who were positive or sceptical towards digital games, and in both types of schools there were parents who did not approve of the use of digital games during preschool hours. Acknowledging the small sample of this study, however, a larger number of participants might have led to different results.

Discussion

The material presented above explored interesting aspects of the use of digital games in Swedish preschools and the impact on teachers' perspectives. As previous research on primary and secondary education indicated, the role of the teacher is also critical for the use of DGBL in early education, and not only as an orchestrator and integrator of games. This study shows that whether games are going to be used in the classroom at all is dependent upon teachers and their perspectives. The importance of the role of the teacher in the use of digital games was further highlighted by the lack of notable differences between public and independent schools. Nevertheless, and this is important to mention, the teacher's role and the importance of digital games is not limited to the use of DGBL in the classroom. Instead, it refers to the use of digital tools in general. As the results revealed, teachers connected digital games to digital technology in general and the digitalisation of education. More specifically, teachers who are positive towards the use of DGBL referred

to the necessity of teaching students how to navigate in a technology-oriented society and the use of digital tools such as games to encourage this. Similarly, teachers who were sceptical towards the use of digital games expressed a distrust towards technology in general and a reluctance of using digital tools in early childhood education. Reflecting on these results, teachers' perspectives are not only relevant when it comes to digital games, but when it comes to digitalization of education in general. When it comes to the numerous education policy attempts to further digitalization and introduce new digital tools in the classrooms, we should value and even prioritise the importance of teachers; listening to teachers' voices and improving professional learning should be a priority.

Another interesting finding was the resourcefulness of teachers regarding the integration of digital games with their students. This resourcefulness and the variety of ways mentioned for incorporating DGBL indicates the use of digital games as yet another learning tool. And indeed, digital games are just another digital learning tool; the same learning goals could be accomplished with the use of any other tool or method of teaching. Furthermore, selection criteria indicate that teachers prioritise the learning goals and choose the games in accordance with the national curriculum and guidelines. Regarding the barriers to the use of digital games in preschool, the results are in agreement with previous research from primary and secondary schools showing a lack of time, shortage of technological equipment, and a lack of training and information. An element that was interesting to discover was the influence of parents and colleagues. Parents' opinions on digital games, as well the support and help from colleagues, seem to play a role in whether teachers are going to implement DGBL in their classrooms and to what degree. That indicates that teachers' attitudes might be of critical importance, however these have to be in accordance with the rest of the preschool stakeholders.

Since the study was conducted in 2015, interest in the digitalization of education has increased and the scenery regarding digital games has changed. As mentioned in the introduction, in mid-2018 a new curriculum for Swedish compulsory education has been introduced, which aims at strengthening the digitalization of education and introduces programming as a mandatory element starting from the first grade of primary school. This changed the context when it comes to DGBL.

Discussions on the use of digital games for learning purposes in formal education were replaced by the teaching of programming and the various digital tools used for it. From such a perspective, digital games can be seen as yet another digital tool or another teaching method that was at some point very popular, but now its popularity has been decreased due to a new trend emerging. Nevertheless, the arguments as to why programming should be taught in schools are quite similar to those of DGBL and it could be assumed that the attitudes of teachers will not be much different. Further research is needed to compare the discourses between the various digitalization trends that emerge over time in formal education settings, as well as of teachers' perspectives and use of them.

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Π ΕΡΙΛΗΨΗ

Το αυξανόμενο ενδιαφέρον για την ψηφιοποίηση της εκπαίδευσης έχει οδηγήσει στην εισαγωγή νέων ψηφια-κών εργαλείων στα σχολεία, ένα από τα οποία είναι τα ψηφιακά παιχνίδια. Η έρευνα για τα ψηφιακά παιχνίδια και τις εκπαιδευτικές τους δυνατότητες έχει επικεντρωθεί κυρίως στην πρωτοβάθμια, δευτεροβάθμια και τριτοβάθμια εκπαίδευση. Στόχος αυτής της έρευνας είναι να διερευνήσει τη χρήση των ψηφιακών παιχνιδιών στα νηπιαγωγεία. Έμφαση δίνεται στους δασκάλους προσχολικής ηλικίας, τόσο όσον αφορά τις απόψεις τους και τη χρήση παιχνιδιών, αλλά και όσον αφορά το είδος του σχολείου στο οποίο εργάζονται. Τα δεδομένα συ-γκεντρώθηκαν μέσω ποιοτικών ημιδομημένων συνεντεύξεων με νηπιαγωγούς που εργάζονται στη Σουηδία, πιο συγκεκριμένα στην πόλη της Στοκχόλμης. Τα ευρήματα δείχνουν ότι ο ρόλος του εκπαιδευτικού είναι κρί-σιμος όταν πρόκειται για τη χρήση ψηφιακών παιχνιδιών στα νηπιαγωγεία. Η μελέτη αντανακλά περαιτέρω τη σημασία των εκπαιδευτικών στην ενίσχυση της ψηφιοποίησης των σχολείων.