CHAPTER 10

Social-Emotional Learning Opportunities in Online Games for Preschoolers

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INTRODUCTION

Television programming for children has a history of not only entertaining but also trying to educate children. With new forms of children’s digital media emerging, there is an effort to provide more educational content and most recently, an emphasis placed on social-emotional development. Social-emotional learning is becoming a priority in the planning and goal-setting process of large networks. Sesame Workshop, for example, has incorporated emotions and emotional coping into its curricular goals (Wilson, 2008); Disney Junior has stated that social-emotional development is as much of a priority as cognitive skills enhancement (Press Release, 2010); and Nick Jr. devotes a lot of transmedia resources to preschoolers’ social-emotional skills. This spike of interest is not surprising, as according to research, social-emotional development contributes to various areas of well-being: from life satisfaction, mental and physical health, to academic achievement and employment success (e.g., Austin, Saklofske, & Egan, 2005; Brackett, Rivers, & Salovey, 2011; Payton et al., 2000).

As more and more children interact with digital media, it is important to identify the components that might support greater social-emotional development. Currently, it is unclear whether children’s media content equally focuses on various social-emotional needs, or whether some skills are more targeted than others. Further, little is known about the intensity or superficiality of social-emotional skills offered through digital media. Looking at preschool online games offered on three major networks, this study assessed the breadth of social-emotional skills addressed and the level of complexity of the presentation and learning provided by these online games. Data are drawn from a larger study of the educational affordances and developmental...
appropriateness of online games designed for preschool-aged children. Before presenting the study details, we begin with an overview of various social-emotional skills and their importance. Then we cover the study design and learning affordances assessment tool, and finally discuss the frequency, developmental complexity, and methods of presenting specific social-emotional skills in preschool online games across three major networks. Enhancement of social-emotional skills is a goal of many providers of online games for preschoolers, however, the actual opportunities for development of these skills is yet to be tested.

WHAT IS SOCIAL-EMOTIONAL DEVELOPMENT?

Social-emotional development is a multidimensional construct that includes a number of inter- and intra-personal processes related to the acquisition of fundamental social-emotional competencies, such as: the ability to understand, recognize, and label one’s own and others’ emotions; appropriately express, control, and regulate one’s own feelings and behaviors; effectively establish, maintain, and manage social relationships; and make responsible choices and decisions (Cohen, Onunaku, Clothier, & Poppe, 2005; Hoffman, 2009). Researchers describe five core dimensions of social-emotional development in children: (1) self-awareness that manifests itself in the ability to identify and describe one’s feelings, desires, and intentions; (2) self-management or ability to reflect, introspect and regulate one’s emotions; (3) social-awareness and capacities to recognize, empathize, and respond appropriately to the feelings of others; (4) relationship skills to interact effectively and establish and maintain relationships with others; and (5) responsible decision-making, based on careful analysis of information (Collaborative for Academic Social, and Emotional Learning, 2005).

CORRELATES AND OUTCOMES

Social-emotional development is important in its own right and in relation to cognitive development. Researchers find that children’s academic success is often predicted by positive child–teacher interactions, positive representations of self, emotion knowledge, emotion regulatory abilities, social skills, and peer inclusion (Denham, McKinley, Couchoud, & Holt, 1990; Zins, Bloodworth, Weissberg, & Walberg, 2007). As children are able to recognize and regulate their own emotions, identify the feelings of others, select responses to others that are appropriate, and engage in ways that
facilitate social relationships, they are better able to—develop friendships; gain popularity (Denham, 2007); work cooperatively; sustain attention to a task; exhibit empathetic behaviors (Blair & Razza, 2007); follow directions; communicate their own wishes and desires (Bodrova & Leong, 2008); achieve higher scores on standardized assessment tests (Malecki & Elliott, 2002); and be less at-risk for problems of aggression and anxiety disorders (Greenberg, Domitrovich, & Bumbarger, 2001).

Emotionally competent children, that is, children who are able to feel and express emotions appropriately, are consistently rated as more prosocial by their teachers, and are more liked by their peers (Denham, 2007). Students, who start kindergarten with better social-emotional skills successfully and quickly adjust to the new environment, develop positive attitudes about school, and receive better grades than their peers with less advanced social-emotional skills (Blair, Denham, Kochanoff, & Whipple, 2004). Research has found that first-graders’ social skills predict literacy achievement (Miles & Stipek, 2006) and children’s social-emotional skills at the age of 8 years predict marital quality at the age of 36 years (Kinnunen, & Pulkkinen, 2003).

Children’s deficits in the social-emotional domains, on the other hand, present a risk for psychopathology and academic failure, both short- and long-term. For example, preschoolers who are low in emotional knowledge have a harder time making friends at school (Arsenio, Cooperman, & Lover, 2000), and aggressive kindergarteners are at-risk for academic difficulties (Miles & Stipek, 2006).

**SOCIAL-EMOTIONAL DEVELOPMENT IN THE EARLY YEARS**

Social-emotional development begins very early in life, as infants demonstrate basic emotions and react differently to the emotions of caregivers (Denham, Wyatt, Bassett, Eccheverria, & Knox, 2009). From a very young age, children take an interest in people, crave personal attention, participate in coordinated interactions, and acquire some emotion-regulation by learning to self-sooth with the help of trusted adults. Young toddlers tap into social relations by participating in group play and playing alongside their peers. They also expand on emotional knowledge by discriminating “good” and “bad” emotions, and widening the repertoire of expressive emotions, such as guilt, shame, and empathy. Children’s social-emotional development rockets during preschool years, when they develop and master Theory of Mind, begin to express “blended” emotions, understand expressions and
situations of basic emotions, and exhibit more independent emotion regulation (Denham et al., 2009). Social-emotional skills continue to develop as children mature, with greater perspective-taking skills and understanding of emotional complexity, children begin to form more intimate and stable relationships, acquire various cognitive strategies to regulate emotions, assert themselves in socially-acceptable ways, and learn to navigate and balance relations with parents and peers (Denham et al., 2009).

**PREDICTORS OF DEVELOPMENT**

Social-emotional skills develop in a context through interactions with others, exposure to various social situations, the need to build relationships with peers and adults, and the ability to observe and emulate others. Close adults, such as parents, caregivers, and teachers play a crucial role in young children’s healthy social-emotional development. Researchers have found associations among children’s social-emotional skills and parental discussions of mental states, having child-aged siblings, socioeconomic status, preschool quality, parenting styles, media exposure, and history of deprivation (Kochanska, Kim, Boldt, & Nordling, 2013; Mar, Tackett, & Moore, 2010; Nathanson, Sharp, Aladé, Rasmussen & Christy, 2013).

One interesting and rapidly expanding context is digital media. Modern children are born into and are growing up in a world saturated with digital media, which can shape their social, emotional, cognitive, and even physical development (Blumberg & Fisch, 2013; Ito, 2009). Many adults view technology as a way to support and promote children’s development (Ito, 2009) and believe that internet helps their children learn (Tezer, 2013). Others express concern that digital media is supplanting face-to-face interactions. For example, the author of a Wall Street Journal article, “Why Gen-Y Johnny Can’t Read Nonverbal Cues” (Baurlein, 2009) expressed fear that children are losing opportunities to read verbal and non-verbal cues and thus are less socially and emotionally competent.

Parents from different socioeconomic status (SES) and cultural backgrounds allow their children to engage with digital media and many believe that technology promotes young children’s creativity and basic academic skills (Tezer, 2013; Wartella, Rideout, Lauricella, & Connell, 2013). In considering opportunities to learn from digital media, the internet is a prominent and well-accepted form of learning media, as it contains a multitude of educational destinations aimed to teach while entertaining children (Shuler, 2007). These educational web portals and online game sites are routinely visited by
children—according to Compete and Inc. (2012), 20 million children visit online game sites each month. However, although marketed as educational, it is largely unknown which and how many educational opportunities are present within these contexts. This question, however, is of great importance, since accumulating evidence from research on educational digital games for young children highlights the importance of quality design; well-designed games have been shown to enhance children’s learning and development, whereas poorly-designed games are believed to have few educational benefits, may contribute to a sedentary lifestyle, and some extremely poorly-designed games can be harmful for mental health and development by encouraging aggressive behaviors, creating anxiety and fear, and instilling stereotypes (Lieberman, Fisk, & Biely, 2009; Prot, McDonald, Anderson, & Gentile, 2012).

There are a number of television programs designed to teach prosocial behaviors and social skills to preschoolers, such as Sesame Street (PBS), Dora the Explorer (Nickelodeon), Dragon Tales (PBS), and Daniel’s Tiger Neighborhood (PBS) (Wilson, 2008). Research on the effects of media on social-emotional development is limited and conflicting. Some studies show that older children are learning and transferring emotional lessons from TV programs, and there is some evidence that preschoolers have some increases in emotional knowledge from watching Sesame Street (Calvert & Kotler, 2003; Weiss & Wilson, 1996; Wilson, 2008). However, a study by Nathanson et al. (2013), demonstrated a negative association between the amount of television exposure and children’s developing abilities to attribute mental states to self and others (i.e., theory of mind skills). Furthermore, the type of media might matter. Mar et al. (2010) found that children with more exposure to films performed better on Theory of Mind tasks than those children exposed to children’s television programming. However, one possible explanation for the difference between film and TV may be parent–child communication, as film might provide more opportunities for discussions of mental state than television, since children’s television watching is often a solitary activity (Mar et al., 2010; Nathanson & Fries, 2014).

Although children’s television has been studied, little research has focused on online forms of digital media, especially games.

PROGRAMS, MEDIA, AND GAMES

The body of literature on associations among children’s social-emotional competence and its far-reaching implications have prompted most educational organizations from schools to children’s media networks to include
social-emotional development in their list of learning goals and develop curricula and programs with a focus on enhancing social-emotional skills. Some State Departments of Education have established specific standards for social-emotional learning, implemented teacher trainings, and developed assessment materials. A number of organizations, corporations, and websites offer training programs, curricula, and workshops on the topic (Hoffman, 2009). It is estimated that in 2003, nearly 200 different classroom-based social-emotional learning programs were adapted in US schools (Collaborative for Academic, Social, and Emotional Learning [CASEL], 2003, as cited in Hoffman, 2009).

Although many programs claim to focus on social-emotional development, little is known about the scope and depth of the targeted skills. In considering digital media and the development of these social-emotional skills, television programming is one of the few forms of media to be assessed. However, children actively engage with online games, tablet, and phone applications, and yet little is known about the educational affordances of these resources for the development of children’s social-emotional skills. Several non-profit organizations, such as Common Sense Media, attempt to review, categorize, and critique online games and sites for children. Even with this effort, it remains unclear which skills are targeted in the games: games cataloged as teaching social-emotional skills vary considerably in themes and descriptions. For example, games in the Social-emotional Development section of the Top Pick list on Graphite.org by Common Sense Media list diversity, honesty, responsibility, social-emotional cues and vocabulary, health and hygiene, Asian history, art, and more, as targeted skills.

Therefore, the prevalence of learning opportunities for social-emotional development as well as understanding the depth and complexity of the presentation of these skills remains largely unclear. Lack of information on these topics makes it difficult to assess the quality of games for preschoolers and their educational benefits, effectiveness, and appropriateness. To close this gap, the current study examined the social-emotional educational opportunities of 66 online games for preschoolers from three major media networks. The study was guided by the following questions:

1. Which delivery methods of educational tasks targeting social-emotional development are most common across the games?
2. How prevalent and diverse are educational opportunities for social-emotional learning in educational games?
3. What is the breadth and complexity of educational tasks targeting social-emotional learning?
METHOD
Materials and Procedure
Using rankings of internet traffic via compete.com website, we selected the three most common sites for preschool games: PBS Kids, Nick Jr., and Disney Jr. As of summer 2012, collectively, these three sites offered 543 games listed for young children (2–6 years old). Using site information about the games, we divided all games into one of eight major themes: (1) Literacy and Language; (2) Math, Measurement and Patterning; (3) Memory and Puzzles; (4) Music; (5) Science; (6) Health, Nutrition or Exercise; (7) Art; (8) Social Games. We then randomly sampled two or three games from each of these eight categories for each of these three sites, yielding a total of 66 games (22 games per site) to be coded. It is important to note that games were categorized based on how they were listed on the network and that the themes of the games and targeted skills did not necessarily coincide (e.g., games identified on the website as targeting Memory and/or Puzzles may involve a complex story line that contains social elements, literacy tasks, and musical tasks). Games across all the themes were analyzed for social-emotional tasks.

Systematic Coding of Online Preschool Games
Since efforts to assess the educational opportunities and developmental appropriateness of games for children are not commonplace, we adapted a normed tool for assessing these skills in preschool-aged children, the desired results developmental profile—preschool scale (DRDP-PS). The DRDP-PS is a standardized instrument developed by the California Department of Education specifically to measure developmental progress in children aged 3 years to the age of kindergarten entry (DRDP; California Department of Education, 2012). This standardized assessment is mandated for any preschools receiving California State funding and has been adopted by federally-funded preschool programs, such as Head Start. The DRDP-PS assesses development across seven domains: self and social development; language and literacy development; English language development; cognitive development; mathematical development; physical development; and health. All DRDP scales are developed to align to the California Infant/Toddler Learning and Development Foundations and the California Preschool Learning Foundations. Each domain contains several measures and every measure is presented in the form of developmental continuum from “exploring” to “developing” to “building” to “integrating.” There are a total of 43 measures across all the domains. For the purpose of this chapter, we focus exclusively on
the Self and Social Development Scale. The scale was designed to correspond to the Social-emotional Development domain in the California Preschool Learning Foundations (California Department of Education, 2013).

The expected overall outcome of the Self and Social Development scale assessment (desired result) is evidence that the child is personally and socially competent. The scale consists of 12 measures assessing various aspects of social-emotional development. For the purpose of the study, we adapted the measures to represent opportunities for a player to exercise 12 different skills. The skills are: (1) Identity of self; (2) Recognition of own skills and accomplishments; (3) Expressions of empathy; (4) impulse control; (5) taking turns; (6) awareness of diversity; (7) relationships with adults; (8) cooperative play with peers; (9) socio-dramatic play; (10) friendships with peers; (11) conflict negotiation; (12) shared use of space and materials.

Adapting the DRDP to assess preschool games necessitated consideration of how these domains are represented in digital space. For many games, there are opportunities for children to demonstrate and work on developing specific skills. Additionally, many online games include non-player characters (NPCs) who can model specific skills for the user. Further, preschool games often offer ways to bypass game features. Thus, opportunities for demonstrating or developing specific skills may be present in games but optional. Therefore, in adapting the DRDP to this context, special attention was paid to the education delivery method: whether educational opportunities required active play, offered optional play, and/or provided modeled behavior.

Thus, rather than observe and score the demonstrated skills of a child playing the online games, we used the DRDP to code the educational affordances of the game itself. As in the original instrument, every measure was presented in the form of a developmental continuum or progression towards the mastery of the measure: exploring, developing, building, and integrating. Thus, the adapted version of DRDP assessed the levels of task complexity as exploring (usually the most basic task), developing, building, and integrating (usually the most challenging). For instance, for Measure (3): Expression of empathy, the most basic level of exploring would involve allowing the player to move next to or away from a character in distress, while integrating could involve having the user or NPC actively engage or be friendly with a character who appears to be lonely.

Reliability

Three researchers, two undergraduate students and one graduate student, coded all games. Both undergraduate students majored in psychology and
had prior research experience involving children’s games. The graduate student had a background in child development and studied instruction and technology. A School of Education faculty member oversaw the study and the graduate student served as the master coder. Coders participated in a 3-week training course and achieved at least 85% agreement with the master coders before coding games independently. Reliability checks were conducted throughout the study in order to maintain an acceptable level of agreement. A total of 10% of all games were recoded to assess interrater reliability ($\alpha = 0.89$).

**RESULTS**

**Question 1: Which Educational Delivery Methods are Used?**

To explore the differences in delivery method across games, a summary score of learning affordances for each of the three delivery methods (essential, optional, modeled) was computed for each skill and the frequency of each delivery method across all games was calculated. A single game could possibly employ different delivery methods. Results demonstrated that opportunities for social-emotional development in digital games in our sample came predominantly from modeling, rather than direct play: most of the games (62, 94%) used modeling to teach the skills, whereas only 15 (23%) games required user experience (i.e., essential—required to complete the tasks in order to proceed in the game), and 17 (26%) games included optional user experience (i.e., player had an option to practice the skill, but could bypass it without penalty). Games modeled social behaviors in different ways. For example, Minnie’s Skating Symphony game by Disney Jr. demonstrated Cooperative Play with Peers at the developing level by showing Minnie and Daisy rehearsing their dance routine together, i.e., the characters modeled an activity involving a common purpose and cooperation (Figure 10.1).

Some games modeled higher levels of social-emotional skills. For example, Daizy’s Kickety-Kick Ball game by Nick Jr. showed NPCs engaging in Cooperative Play with Peers at the developing level by showing Minnie and Daisy rehearsing their dance routine together, i.e., the characters modeled an activity involving a common purpose and cooperation (Figure 10.1).

We then investigated whether games employed different delivery methods to teach the same skill (i.e., when there were opportunities for
players to observe and practice the skill). To address this question, we first dichotomized the summary scores of learning affordances for each of the three delivery methods (essential, optional, modeled) and then combined them. Combined scores greater than 1 indicated that the skill was taught using several delivery methods. In our sample, only one game, Dora’s Fairy Fiesta by Nick Jr., included both modeling and optional direct play to teach the same skill. Specifically, Expressions of Empathy skill was modeled when Dora labeled the emotions of other NPCs: “The Three Pigs were very excited about the fiesta” (Figure 10.2). Players were also given an option, but not required to practice the skill by having an opportunity to help find dwarfs hidden by the mean witch.

**Question 2: Prevalence and Diversity of Social-emotional Learning Opportunities**

To explore the prevalence of social-emotional learning opportunities in these online games, we created a summary of all opportunities for each measure, regardless of the type of delivery (essential, optional, modeled) or complexity level (exploring, developing, building, integrating). We then dichotomized the summary score, so that if the opportunity in the game was present one or more times, it was coded as 1, and if it was not present, it was 0.
coded as 0. Finally, we calculated the frequency of the measure across all games (Figure 10.3). It was possible for a single game to target several skills.

On average, games targeted 2.5 social skills with a range from 0 to 7 skills per game, $SD = 1.4$. The most frequent learning affordance was “recognition of own skills and accomplishments”: 45 games out of 66 (68%) attempted to teach children to appreciate their own abilities to perform skillfully. Frequency analysis of the raw summary scores of the delivery methods indicated that all 45 games used modeling, or in other words, demonstrated recognition of achievement by providing praise and positive feedback. Often, positive feedback of different complexity occurred in the same game. At the most simple level (exploring), positive feedback was nonspecific, such as “Good job” along with a laughing or smiling NPC. A total of 30 games employed nonspecific feedback. Slightly more complex, developing-level praise was provided in terms of general skill/success, such as, “You did it!” Developing-level praise appeared in 22 (33%) games. A smaller number of games, 14 (21%), included building-level feedback, i.e., described positively player’s specific skills involved in the game. For example, in Scrub a Pup game from the Martha Speaks series by PBS Kids, the narrator praised the player for cleaning dogs “You did a good job dog washing!” Finally, only seven (11%) games modeled the most complex, integrating-level feedback.

Figure 10.2 Dora labels emotions of others, thus modeling an exploring level of Expressions of Empathy skill.
or characterized the child positively in terms of generalized ability or skills. For example, in an Elmo’s World: Books game by PBS Kids, Elmo told the player “You are a great artist!”

The second most frequent learning opportunity corresponded to the “interaction with adults” measure. In total, 29 (44%) games contained possibilities to learn about socializing with adults in various ways, such as being provided with instructions or help by an adult voice or character, showing NPCs having a conversation with a familiar adult, or working alongside an adult character; 13 (20%) games employed optional tasks of exploring the level of complexity, i.e., had a help button/instruction option that, if used, delivered instructions through an adult character or voice; and 12 (18%) games used modeled tasks of building level complexity, i.e., had feedback and instructions provided by an adult game character or voice. For example, in the Curios George Apple Picking game by PBS Kids, The Man with the Yellow Hat gave players instructions and provided feedback (Figure 10.4);
“Shared use of space and materials” and “impulse control” skills were only present in games three and four, respectively. Players practiced sharing space and materials through direct play in Rosita’s Fiesta game from PBS Kids, by dividing party supplies and food among amigos after Rosita’s prompting. Preschoolers could learn the basics of impulse control in the Ready, Set, HOOK game by Disney Jr. The exploring level of impulse control involves needing direct guidance in order to move from one activity to another. In that game, the alarm went off signaling that the time was up, and the activity stopped and another activity started, preventing children from playing further.

Finally, across all 66 games, learning opportunities for conflict negotiation, turn taking, and socio-dramatic play were present only once, each at the exploring level of complexity. Conflict negotiation and socio-dramatic play were demonstrated by NPCs in two different Nick Jr. games (Piper Bubble Guessing Game and Dora’s Ride-Along City Adventure, respectively), and Turn Taking was taught as essential direct play activity in Lambie’s Ballet game by Disney Jr. game. To teach the basics of turn taking, Lambie in the Lambie’s Ballet game demonstrated specific moves with no option for players to skip, while the narrator gave instructions and told players that their turn to play would come when the button lit.

Figure 10.4 Instructions are provided by The Man with the Yellow Hat, an adult character. This corresponds to building level of complexity of Relationships with Adults skill.
up. Only after Lambie finished the demonstration of the activity, and the button lit up, did the narrator say “Your turn!” and allowed the player to begin the game.

**Question 3: Breadth and Complexity across Games**

To address the third goal of the study and explore the prevalence of various levels of complexity of the tasks corresponding to the developmental continuum of the skills, we calculated a summary score of opportunities for each of the four complexity levels of developmental continuum (exploring, developing, building, integrating) for every skill across the three delivery methods (essential, optional, modeled), and then calculated the frequencies of the complexity levels across all games. It was possible for a single game to include tasks of differing levels of complexity. Overall, most games (52, 79%), contained tasks of the very basic, exploring level of complexity, whereas many games (39, 59%) also had learning opportunities of the developing level and building complexity levels (34, 52%). A smaller subset of games (14, 21%) involved learning opportunities for the skills of the highest level of complexity, corresponding to the integrating developmental stage.

We then investigated whether any of the games in our sample targeted all four different complexity levels within one skill. We dichotomized the summary score for each complexity level, so that if the complexity level in the game was present one or more times, regardless of the delivery method, it was coded as 1, and if it was not present, it was coded as 0. We then combined these scores for each skill within the game. The score of four meant that the skill could be learned or practiced at each complexity level of the developmental continuum within one game. Only three games targeted skills at all four complexity levels: two games demonstrated Recognition of Own Skills and Accomplishments (Ride Along City Adventure and Dora Star Mountain Mini-golf, both by Nick Jr.) and one game modeled four levels of Expressions of Empathy (Dora’s Fairy Fiesta by Nick Jr.).

**DISCUSSION**

Social-emotional skills are reported to be an important focus in children’s digital media and our study of online games designed for preschoolers found that at least some social-emotional skills are present in most games. Interestingly, the bulk of the opportunities for learning social-emotional skills were from watching a non-player character model the behavior. Less than a third of the games we coded allowed for optional use of a social-emotional skills,
and less than a quarter of the games made practicing these skills essential for successful game-play. Additionally, we found that although online games for preschoolers provide learning opportunities for some social-emotional skills, many important skills within the domain, such as taking turns and conflict negotiation, remain untargeted. Finally, results revealed that the majority of games relied on tasks at the lowest level of complexity (i.e., exploring) and rarely were highly complex tasks (i.e., integrating) offered.

Methods of Teaching Social-emotional Skills

Researchers of social-emotional curricula stress the importance of systematic social-emotional skill instruction through various methods: teaching, modeling, and practice (Durlak, Weissberg, Dymnicki, Taylor, & Schellinger, 2011). They believe that although modeling social behavior is a beneficial teaching strategy, application and practice is crucial for comprehensive learning (Greenberg et al., 2003). Studies on principles of effective learning in technology-supported student-centered learning environments also highlight the necessity for students to access multiple perspectives, representations, and resources (Land, Hannafin, & Oliver, 2012). Despite this body of literature, games in our sample relied predominately on modeling as the delivery method; only a quarter of the games required children to practice actions in order to progress on the game (essential) and another quarter gave only an option to practice social-emotional tasks. In other words, players often observed social-emotional skill demonstrated but rarely had an opportunity to complete a task by themselves. Thus, there was no way to transfer observed learning into practice while playing and for the learning to be most effective, games should include various methods of teaching children social-emotional skills.

Comprehensive Social-emotional Development through Games: Successful Solutions and Missed Opportunities

As mentioned above, social-emotional development is a construct that encompasses several different interrelated competencies. Researchers name social competence or relationship skills and emotional regulation (part of self-management competency) as two areas of social-emotional development that greatly contribute to preschoolers’ school readiness (Blair & Razza, 2007; Denham, 2006; Graziano, Reavis, Keane, & Calkins, 2007; Kim, Nordling, Yoon, Boldt, & Kochanska, 2013; Snow & Van Hemel, 2008, as cited in DRDP–PS Summary Results scale, 2012). Thus, it would be highly desirable for games that market themselves as educational to target
skills pertaining to these two areas. Yet, in this study most of the online games for preschoolers contained opportunities for children to practice or observe only relationship skills, such as following instructions from an adult, playing with peers, or requesting help from the person in charge, whereas opportunities for learning self-management skills were overlooked. In other words, children did not have opportunities to practice and learn impulse control, taking turns, conflict negotiation, and sharing. Research-based strategies exist to teach emotion-regulation in the classroom (Blair & Razza, 2007; Diamond, 2012), and could be potentially further adapted to be used in computer games.

Advancing Social-emotional Skills through Tasks of Various Complexity

Social-emotional skills emerge early in life and evolve with age, through contexts and interactions with others. Children begin with learning basic skills and then advance and develop more complex skills through social contexts and situations. Almost all of the games in our sample provided children with opportunities to learn social-emotional skills of basic levels of complexity (exploring level); half of the games included tasks of more advanced, developing and building levels of complexity, but only a fifth of the games allowed players to graduate to the most challenging tasks of integrating level of complexity. These results indicate that these online games for preschoolers provide few opportunities to improve in many social-emotional tasks or master them. Furthermore, being stuck at the same level of complexity and not being challenged may lead players to lose interest in learning social-emotional skills through the game. Previous work with games has noted the golden path (Bateman, 2006; Thomas & Young, 2010), in which players must have a nice balance of success and challenge. Lacking increasing complexity might diminish motivation to play. Finally, social-emotional tasks at the integrating level are rare in the games. Yet, to be considered kindergarten-ready, children are expected to perform tasks corresponding to the integrating level of the DRDP–PS developmental continuum. Therefore, despite many claims of educational games for preschoolers that their purpose is to get children ready for kindergarten, very few games provide such opportunities within the social-emotional domain.

CONCLUSION

As indicated by previous research, high-quality game design is paramount to children’s learning (Lieberman et al., 2009). Researchers believe that in
order to design high-quality, effective digital learning environments, designers should be informed of the findings from the field of developmental science (Revelle, 2013). Our study makes a step in this direction by analyzing the learning affordances of online games for preschoolers through developmental and educational lenses.

The results highlight the strengths and uncover the gaps in the design of online games for preschoolers specific to social-emotional development. Games are prolific in the lives of children and thus have a great potential to improve children’s performance in many areas, including social-emotional development. Thus, designers need to capitalize on children’s abilities by targeting a larger spectrum of skills responsible for positive social-emotional development, designing tasks and challenges of various complexity levels, and providing opportunities for children to learn by performing, and not only observing, behaviors.

REFERENCES


