Play and games: means to support emotional development

Zaharia, Alexandra; Dell'Angela, Linda; Sander, David; Samson, Andrea C.

How to cite

ZAHARIA, Alexandra et al. Play and games: means to support emotional development. In: Handbook of Emotional Development. Dukes, D., Samson, A.C. & Walle, E. (Ed.). [s.l.] : Oxford University Press, 2022. p. 354–370. doi: 10.1093/oxfordhb/9780198855903.013.9

This publication URL: https://archive-ouverte.unige.ch/unige:162840
Publication DOI: 10.1093/oxfordhb/9780198855903.013.9

Acknowledgement:

This is a draft of a chapter that has been accepted for publication by Oxford University Press in the forthcoming book *The Oxford Handbook of Emotional Development* edited by Dr. Daniel Dukes, Prof. Andrea C. Samson, and Prof. Eric A. Walle, and due for publication in 2021.

Play and games: Means to support emotional development

Alexandra Zaharia[1,2,3], Linda Dell'Angela[3], David Sander[3,4], and Andrea C. Samson[1,2,3]

1 Faculty of Psychology, Swiss Distance University Institute, Brig, Switzerland

2 Institute of Special Education, University of Fribourg, Switzerland

3 Swiss Center for Affective Sciences, University of Geneva, Switzerland

4 Faculty of Psychology and Educational Sciences, University of Geneva, Switzerland

Abstract

The present chapter examines the mechanisms through which play may contribute to emotional development. First, we discuss different types of play that can be identified across developmental stages. Second, we focus on the emotional benefits of play and its potential role as a protective factor against the manifestation of psychopathologies. Next, we specifically refer to the experience of positive emotions and to emotion regulation, which are triggered in play, as key elements for adaptive emotional functioning. Furthermore, we characterize board games as a particular type of play that holds powerful learning value through their design and mechanics. Finally, we briefly summarize the first study to date to examine theory-driven board games that were explicitly designed to support emotional competences in school-age children.

Keywords: play, board games, emotional competences, positive emotions, emotion regulation

This chapter focuses on the idea that play is essential for emotional development. We highlight the benefits of play for emotional development and discuss the potential of board games as tools to train emotional competences and support children's adaptive functioning.

Play: definition and types

Play has been described as being considerably supportive of human development in various ways and in different domains (e.g., social, intellectual, emotional) at all ages (Eberle, 2014). Over the years, numerous conceptualizations of play have been formulated, highlighting its complex nature and the different perspectives from which it can be studied and understood (Eberle, 2014; Glenn, Knight, Holt, & Spence, 2013; Graham & Burghardt, 2010; Miller, 2017; Nicolopoulou, 1993; Van Vleet & Feeney, 2015). Play can be examined on at least two levels: an *intra-individual level*, focusing on individual psychological processes, and an *inter-individual level*, focusing on play as a social activity (Nicolopoulou, 1993). Despite the multiple theories, classifications, and different characteristics regarding its structure and function, one can notice that the term *play* is a dynamic concept, which changes with societal evolution (e.g., apparition of digital games; Etzel, 2010) and across development, from infancy to adulthood (Zosh et al., 2017). Moreover, multiple theories have consistently highlighted a set of characteristics inherent to play: positive emotions, intrinsic motivation, engagement and immersion, and a relaxed and safe environment (Burghardt, 2005; Hirsh-Pasek & Golinkoff, 2008; Krasnor & Pepler, 1980; Miller, 2017; Perry, Hogan, & Marlin, 2000; Zosh et al., 2017).

In Piaget's view (Nicolopoulou, 1993; Nijhof et al., 2018; Piaget, 1978), play evolves with the child's cognitive level from sensorimotor or practice play (up to around 18 months) to symbolic play (e.g., pretend or socio-dramatic play; emerging around 18 months), and, then, towards rule-based play (i.e., play with explicitly stated rules; emerging around 7 years old). From 2 to 6 years

of age, different types of play can be identified (Pellegrini & Smith, 1998; Whitebread et al., 2017): physical (locomotor; e.g., chase, rough-and-tumble play), object (e.g., puzzles, building blocks), language (e.g., repetitions, humorous rhymes), and pretend (i.e., role-playing in narrative sequences). Obviously, these types of play do not exclude each other: they can merge and be alternated depending on the individual's age, mood, preferences, and interests (Nijhof et al., 2018; Piaget, 1978). For instance, while playing with dolls (play with object), children may assign roles and create a narrative (pretend play). Given this overlap, neatly distinguishing different types of play and attributing them to a particular developmental stage is a difficult task for experts in the field.

One possible way of conceptualizing play is on a continuum from free play to rule-based play (e.g., card games, board games; Evaldsson & Corsaro, 1998; Piaget, 1978). In free play, rules might exist, but they are rather spontaneous, transient, implicit, and child-guided, whereas in games with rules, often designed by adults, they are explicit, unchangeable, and imposed (Hsu, 2006; Zosh et al., 2017). Most research concentrates on free play in children, especially on physical and pretend play. However, play behavior can be identified throughout adolescence and adulthood. These older ages are often neglected in research (Nicolopoulou, 1993; Van Vleet & Feeney, 2015), with the exception of digital games, which provide a rich and complex research area (e.g., in relation to addiction, violent or prosocial games; Connolly, Boyle, MacArthur, Hainey, & Boyle, 2012; Festl, Scharkow, & Quandt, 2013; Greitemeyer & Mügge, 2014; Maynard, Monk, & Booker, 2011).

Despite the non-exhaustive definition of play and the approach biased towards childhood, various lines of research have contributed to build a research field on play within the developmental framework. Play can still be easily recognized when one sees it, as it is universally

present and widely spread in humans' lives, holding important roles as a knowledge and skill transfer tool, bridging developmental stages and binding generations.

Benefits of Play

Play is not simply a fun activity that fills children's free time. In fact, play holds a crucial role during development and affords multiple benefits at all ages (Elkind, 2008; Ginsburg, 2007; Gray, 2011a; Hromek & Roffey, 2009; Piaget, 1951; Smith & Pellegrini, 2013; Vygotsky, 1966; Whitebread et al., 2017). It fuels development and accelerates various learning processes (Elkind, 2008; Perry et al., 2000). It has been argued that the competences required in play need to lie in the zone corresponding to a child's development (Perry et al., 2000). If the difficulty is too high, children will not engage in play or their play might take maladaptive forms with negative outcomes (e.g., violence, bullying; Brown, 2012; Cohen & Mendez, 2009; Smith & Pellegrini, 2013; Veiga, De Leng, et al., 2016). As such, play creates a zone of proximal development (ZPD; i.e., a zone slightly ahead of the development of psychological functions – originally referring to children's learning processes – that may stimulate the maturing of these functions), extending and shaping skills (Nicolopoulou, 1993; Veiga, Ketelaar, et al., 2016; Vygotsky, 1966).

Interestingly, play is considered as a primordial right (United Nations, 1989), constituting a buffer against the manifestation of physical and mental health pathologies (Gray, 2011a, 2013): For instance, it has been suggested that play can alleviate anxiety symptoms, or facilitate behavioral inhibition in attention deficit hyperactivity disorders (Li, Chung, Ho, & Kwok, 2016; Panksepp, 2007; Takis, 2018). It is therefore important to promote and use it to foster development.

Play deprivation, in particular deprivation of physical and outdoor play, can negatively impact physical (e.g., brain and muscle fiber development, weight gain), cognitive (e.g., problem-

solving), social (e.g., conflict resolution, social communication), and emotional (e.g., emotion regulation) development (Brown, 2012; Gray, 2011b; Lauer, 2011; Pellegrini & Smith, 1998).

As children grow, play is often cut back, devalued, and gradually replaced by work and other activities (Hirsh-Pasek & Golinkoff, 2008; Whitebread et al., 2017; Wohlwend & Peppler, 2015). The time children spend playing could be viewed as a function of age. For instance, researchers have found a decrease of almost 50% of the weekly number of hours engaged in play behaviour from pre-school age (3-5 years old children play approximately 17 hours per week) to school age (9-12 years old children play approximately 9 hours per week) (Hofferth, 2009; Hofferth & Sandberg, 2001). Moreover, it is thought that the general decline of play in society over recent decades may be linked to the increase in psychopathologies, including emotion-related disorders such as anxiety or depression (Bodrova, 2008; Gray, 2011a). Thus, play deprivation is a matter of high concern for authorities in charge of children's protection (e.g., medical staff, childcare and social workers), because it may hinder child development and adult functioning (Eberle, 2014; Lauer, 2011).

One particular domain to which play contributes significantly is emotional development. Play elicits a variety of emotions, both negative and positive (Gleave & Cole-Hamilton, 2012; Gray, 2013). Although the emotional benefits of play have been previously acknowledged (Howard, Miles, Rees-Davies, & Bertenshaw, 2017; Nicolopoulou, 1993), the mechanisms through which these benefits occur remain elusive, as well as which specific emotional competences may be acquired. Here, we aim to shed light on two key benefits that play may provide to the development of emotional competences. One obvious immediate benefit is the experience of positive emotions, which may have favorable and protective long-term effects on development (Krasnor & Pepler, 1980; Miller, 2017; Perry et al., 2000; Van Vleet & Feeney, 2015;

Zosh et al., 2017). A second important component may be exercising and fine-tuning several emotional competences during play, especially the regulation of both positive (e.g., amusement, interest, pride, satisfaction) and negative emotions (e.g., sadness, anger, frustration; LaFreniere, 2013; Van Vleet & Feeney, 2015).

Positive emotions at the heart of play

The experience of positive emotions is central in play and constitutes an intrinsic motivation for players to engage in this activity (Gray, 2011a, 2013; Sweetser & Wyeth, 2005). Positive emotions represent not only a reason for engaging in play, but also an objective. For example, interest is at the heart of play, and fun, joy, and amusement act as a reward reinforcing subsequent play behavior and exploration (Weber, 2003). Therefore, play is beneficial in the short term by reducing momentary stress and increasing individuals' well-being. Play may also have long-term benefits through repetition and practice supported by rewarding emotions. According to the broaden-and-build model (Fredrickson, 1998, 2001; Tugade, Fredrickson, & Feldman Barrett, 2004), positive emotions contribute to a broader mindset, creativity, and exploration. Consequently, these behaviors facilitate resource-building and promote resilience. Specifically, positive emotions may even be elicited while adhering to the rules and goal of a game (Gobet, de Voogt, & Retschitzki, 2004; Gray, 2013; Vygotsky, 1966). For instance, the main goal of many board games is often to compete against others or against the game to eventually win while having fun and experiencing pleasure. In this regard, play elicits positive achievement emotions that are both *activity-related* (e.g., enjoyment, pleasure) and *outcome-related* (e.g., joy, hope, pride, gratitude, relief), as it can be extrapolated from the Control-Value theory of achievement emotions (see chapter PEKRUN, this volume; Pekrun, 2006). Players are motivated, not only to have fun

and enjoy pleasant moments with their peers, but also to perform at their best in order to improve their skills and ultimately to win, acquire mastery, and self-confidence (Perry et al., 2000).

I play, therefore I regulate emotions

Emotion regulation is presumed to be a primary function of play, transcending all forms of play (Dillon, 2009; LaFreniere, 2013; Schaefer & Drewes, 2014). Emotion regulation can generally be described as the processes through which people monitor, evaluate, and influence the emotions they experience, and how they express them (Gross, 1998; Thompson, 1994). Both positive and negative emotions occurring during play need to be regulated in some fashion (i.e., downregulated, maintained, or upregulated) to carry on the activity. Although the role of positive emotions in play is well documented in the literature, the role of negative emotions (e.g., frustration, anger, boredom, fear of being laughed at or fear of losing) remains under-researched. In the field of video games, researchers have highlighted the importance of experiencing and regulating negative emotions (Lobel, 2016), which may also be relevant in other forms of play.

Next, we further develop how play can be considered as a safe context providing opportunities to use and practice emotion regulation skills, or as a form of emotion regulation.

First, play may offer opportunities to learn how to regulate: moderate amounts of negative emotion are induced and need to be regulated in order to sustain the activity and teach individuals to adapt to unexpected and unpleasant events (Flanders et al., 2010; Gray, 2013) and to handle social interaction characteristics such as teasing and sportsmanship (Burghardt, 2005; Hromek & Roffey, 2009; Schaefer & Drewes, 2014). Play provides a dynamic setting in which players continuously exchange information and adjust their emotions depending on the course of play. A player could use emotion regulation to show appropriate reactions to winning or losing so that the relationship with other players is preserved, or to modify other players' behaviors to maintain

158 suspense or cover up their next move. Furthermore, play provides an opportunity to learn from
159 others by observing how they express and regulate emotions.

160 In free play, young mammals and children engaging in rough-and-tumble or chase
161 deliberately put themselves into moderately risky and stressful situations (see chapter VEIGA, this
162 volume). By doing so, they actively practice regulating their fear at an intensity which is
163 challenging, but still manageable. Children engaging in pretend or rule-based play learn to act
164 contrary to their will and immediate impulses in order to follow the rules (Vygotsky, 1966). One
165 might also need to deal with their own emotions while respecting or defying the game rules and
166 its flow: turn-taking, cheating or bluffing, increased difficulty level, or time pressure. In this safe
167 environment of play, individuals challenge themselves by creating situations of high arousal and
168 vulnerability, experience thrill (as a combination of fear and joy), and are allowed to withdraw at
169 any moment if the emotional or physical challenge is too high (Gray, 2013; LaFreniere, 2013). We
170 could therefore argue that the fictional worlds and objects generated in play prepare the individual
171 to face future life events while eliciting "real" emotions, very similar to the ones experienced in
172 non-playful contexts of daily life, which certain experts refer to as *quasi emotions* (e.g., emotions
173 generated by fiction, such as movies and books; Cova & Friend, n.d.; Saatela, 1994). Although
174 some studies show that pretend play is positively associated to emotion regulation skills in
175 children, more research is required to better understand how play and emotion regulation are
176 specifically intertwined (see Lillard et al., 2013; Whitebread et al., 2017).

177 Second, play may help to regulate negative emotions that have previously been experienced
178 in "real" life and substitute them with positive ones. In line with these assumptions, it is stipulated
179 that play holds a cathartic function (Freud, 1961; Menninger, 1942; Saracho & Spodek, 1995). For
180 example, during pretend play, it has been suggested that children repeatedly re-enact stressful and

unpleasant experiences while in a safe space, gaining a sense of control over the situation and their emotions (Verenikina, Harris, & Lysaght, 2003). Such practice may help children improve the use of reappraisal (i.e., reinterpretation of the emotion-eliciting situation to alter its emotional impact; Gross, 1998) by considering the distressing event from a playful point of view and by imagining positive consequences.

Finally, play itself can be seen as a form of emotion regulation, tapping into different categories of emotion regulation strategies (see Gross, 1998): situation selection (e.g., selecting or approaching play to up-regulate positive emotions or to avoid unpleasant activities), attentional deployment (i.e., diverting attention away from negative stimuli or stressful situations), or response modulation (e.g., venting anger). On one hand, play has the potential to increase positive emotions while indirectly reducing negative emotions. For example, pretend play or role-playing digital, board or app-assisted games (e.g., World of Warcraft, Dungeons and Dragons, Mansions of Madness) can offer alternative realities in which one can "escape" and temporarily forget about worries (Granic, Lobel, & Engels, 2014; Gray, 2013). On the other hand, play has also the potential to increase negative emotions. The paradox of negative emotions and sensation-seeking may explain the engagement in forms of play eliciting negative emotions, although in "real" life we tend to avoid them (see Cova & Friend, n.d.). For instance, video game players are drawn to and strive to up-regulate negative emotions, such as disgust or shock, as these can then switch to positive emotions, such as amusement and excitement (Cova & Friend, n.d.; Lazzaro, 2004).

However, some forms of play have also the potential to lead to detrimental outcomes. For example, certain types of solitary play in children can be linked to socio-emotional difficulties (Veiga, Ketelaar, et al., 2016). Excessive gaming can lead to behavioral addictions such as for video gaming (Grüsser, Thalemann, & Griffiths, 2007) or for gambling. Individuals with gambling

disorders use gambling to up-regulate positive rewarding emotions such as thrill and excitement, to escape from anxiety and stress, or to modify boredom (Rogier & Velotti, 2018). It is therefore important to consider the turning point of play from adaptive to maladaptive emotion regulation (Granic et al., 2014).

In addition, it has been suggested that play can be also used as a form of interpersonal emotion regulation during social interactions (Zaki, 2020). For example, parent-child dyads and romantic couples (Keltner, Capps, Kring, Young, & Heerey, 2001; Miyazaki, 2004; Zaki, 2020) may engage in play using teasing (e.g., tickling, peek-a-boo, use of repetitive and humorous phrases or nicknames) in order to increase fun or amusement, or to distract the other from an unpleasant or stressful event. Once again, this particular form of play might sometimes slip into maladaptive behavior if becomes one-sided and transforms into bullying or harassment, with the intention to increase negative emotions in others (Burghardt, 2005; Zaki, 2020).

A particular type of play: Board Games

Board games involve a particular type of play eliciting emotions and requiring emotion regulation skills. There is little consensus about how to define board games, in spite of several attempts. In this chapter, we define board games as a socially interactive rule-based form of play, with an incorporated theme, including one or more physical component (e.g., boards, cards, dice), in which actions are limited by rules and influenced by a certain amount of unpredictability, and in which the end is determined by the achievement of a goal[1] (Chircop, 2017; Dillon, 2009; Gobet et al., 2004; Hays, 2005). It has been argued that board games can be used as tools to foster behavioral changes and to facilitate learning in an enjoyable manner and in various settings, such

[1]Based on this view, board games refer here to social non-digital games, whether they include a board or not, but which use a tabletop setting with two or more players. As such, card games, dice games, and any games using tokens that do not require a physical board are also considered as board games.

as in school contexts, in social and emotional learning (SEL) programs (see chapter MAXWELL, this volume), and in therapy (Hromek & Roffey, 2009; Matorin & McNamara, 1996). They have also the potential to accelerate skill development and help improve regulative and social skills (Hawkinson, 2013; Salmina & Tihanova, 2011; Treher, 2011). Although more research is required to confirm this, it has been shown that educational games lead to positive behavioral changes in a variety of areas, especially those related to health (e.g., tobacco use, sexual health, nutrition) and social behavior (e.g., bullying) (for review, see: Gauthier et al., 2019a; Nakao, 2019; Noda, Shirotsuki, & Nakao, 2019).

Such promising effects of board game-based interventions may be due to certain characteristics of board games. Board games can be appealing, stimulate communication, and relieve tension (Breen & Daigneault, 1998; Clary, 1991). Group discussions emerging during gameplay can help individuals gain insight into their difficulties and facilitate discussions around sensitive topics using a positive and fun frame, and can provide opportunities to approach emotion-related topics that may be difficult to access using traditional methods (Bruneau & Protivnak, 2012; Matorin & McNamara, 1996; van der Stege, van Staa, Hilberink, & Visser, 2010; Wiener, Battles, Mamalian, & Zadeh, 2011). Moreover, games tend to be inclusive, relatively inexpensive tools, easy to implement and adapt to the target public and to different settings, such as school, family, or therapy (Lennon & Coombs, 2007; Matorin & McNamara, 1996).

However, several experts (e.g., Catalano, Luccini, & Mortara, 2014; Gobet et al., 2004; Hromek & Roffey, 2009; Lennon & Coombs, 2007; Nakao, 2019) have highlighted that methodologically sound research designed to test the impact of board games on emotional competences is scarce. In our view, board games could be optimal tools to teach and train adaptive behavior, including emotional competences, in children, adolescents, and adults. To achieve these

goals, games should incorporate different difficulty levels, which should be carefully calibrated to correspond to the player's ZPD. Theoretically, playing games on a difficulty level slightly above the individual's level of emotional competences should stimulate players' emotional development, building upon already existing competences and training new ones. This idea aligns with the game flow model (Sweetser & Wyeth, 2005), which refers to the fact that games should challenge the players at an appropriate level matched to their skills, while maintaining players' positive emotions of interest and enjoyment. Importantly, since the game experience will help to reach the learning goals (e.g., acquire knowledge about a certain topic, train a specific skill), it is important to find the right balance between the player-based dynamics (e.g., skills, knowledge) and game-based dynamics (e.g., mechanics; Hawkinson, 2013).

The mechanics underlying a board game (e.g., turn-taking, point-scoring) contribute to its interactivity and each player's game experience (Hawkinson, 2013). Many educational games designed for behavioral change use particular types of game mechanics such as question-and-answer or trivia (Gauthier et al., 2019b). This might be useful to convey knowledge, but not necessarily to maintain interest and to train competences. To do this, researchers advise to integrate adaptive behavioral patterns into the game design in an action-consequence learning style (Gauthier et al., 2019b). Players should then be able to actively apply the competences in order to make progress in gameplay and experience immediate reward when the target behavior emerges. Not only should game designers and educators collaborate, but also initiators of such projects should rely on sound psychological theories and integrate learning-based processes within game mechanics such as trial-and-error and immediate feedback (e.g., win or lose points) (Catalano et al., 2014; Mega, Ronconi, & De Beni, 2014; Wohlwend & Peppler, 2015).

Some guidelines for conducting research on games exist, but they are mostly emerging from the video game literature (Catalano et al., 2014; Granic et al., 2014; Kemble, 2014). However, based on previous work on video and board games (Azmi et al., 2016; Gauthier et al., 2019b; Hays, 2005), we have identified certain research guidelines that could be applicable to designing and testing board games:

(A) Test the quality criteria for game mechanics and feasibility. Possible measures include intrinsic motivation, positive emotions, immersion, and flow (see Dell'Angela et al., 2020).

(B) Compare specific effects of games to conventional interventions (not involving games) using a randomized control trial. Game specific effects on outcome measures (e.g., emotional competences) should be assessed with sufficiently large samples and adequate control groups. For example, a control group playing traditional games without embedded emotional competence training can help disentangle general effects of play from effects of the specifically designed games on outcome measures. In addition, a control group receiving conventional teaching/intervention about the competences can clarify the benefits of games.

(C) Assess long-term effects in interventional designs using follow-up measures to examine the stability of the effects and of the stipulated benefits. The trained competences should be assessed in order to measure the differences between pre-test (baseline), post-test and follow-up measures.

(D) Verify the generalizability of learned skills to various real-life situations or settings: home, school, peer interactions. Direct measures, such as diaries, ecological momentary assessments (Moskowitz & Young, 2006; Stone et al., 2019) and indirect measures, such as teachers' observations (e.g., classroom climate, absenteeism) are recommended and would help maximize the ecological validity of the findings.

(E) Test the use of the game in different settings (educational, therapeutic; stand-alone, or part of a program). Instructions on how to use the game in different settings should be specified, along with the trained competences, the developmental stage, and the degree of adult scaffolding required.

Board Games Focused on Emotional Competences

Although we have identified several studies using board games to train different competences, the research in this field is still nascent, especially concerning the links to emotion. To our knowledge, no study to date has examined board games specifically focusing on the improvement of emotional competences. Although certain commercially available games might implicitly tap into emotional competences, their goal remains tangential to learning (Hassinger-Das et al., 2017). We therefore suggest a type of board game holding a targeted learning goal, marrying the educational content to the game design (Hassinger-Das et al., 2017). Such board games could answer the needs emphasized by educational policy makers: teaching emotional competences to students in a playful way. Only recently were emotional competences officially recognized as an important educational outcome, but the work necessary to perform this requires valid material and rigorous preparation (Rawolle, 2013). In this regard, Dell'Angela and colleagues (2020) have designed board games focusing on emotional competences (i.e., emotion recognition, differentiation, and regulation) and tested their feasibility with school children (aged from 8 to 12 years old). While the results did not reveal any significant difference between the board games focused on emotional competences and the commercially available games in terms of game experience (e.g., all games seemed to have similar patterns in terms of inducing high positive emotions and high immersion), the new board games triggered the intended emotional competences. Most importantly, and in line with the ZPD and game flow theories, the children's

emotional competences predicted the perceived game experience (e.g., children who showed higher performance in an emotion recognition task rated the emotion recognition game less difficult and invested less effort during gameplay). This suggests that such board games could challenge individuals who have more difficulties with a specific emotion competence to implement their skills. Future research is required to test the potential of these board games focused on emotional competences as tools to promote emotional competences using interventional and follow-up study designs.

Conclusion

In this chapter we have emphasized the different mechanisms through which play may facilitate valuable opportunities to support emotional development. Play may represent an experiment mirroring real-life events (e.g., negotiation, problem-solving, dealing with rejection and loss, competition, cooperation), which players of all ages can approach and explore in a safe way. Positive emotions experienced in play pave the way for well-being, broaden the individual's behavioral repertoires and build new resources (Fredrickson, 2004; Garland et al., 2010; Tugade & Fredrickson, 2007). Conversely, negative emotions elicited during play can provide opportunities to implement and practice emotion regulation skills. Traditionally, the conceptualization of play functions has centered on the alleviation of negative emotions and the elicitation of positive ones. Nevertheless, play activates various emotional states that can be maintained, upregulated, or downregulated, independently of their valence. In addition, we have highlighted the bi-directional link between play and emotion regulation: on one hand, play may implicitly lead to the enhancement of the emotion regulation skills and, on the other, the engagement in the emotion regulation process may lead to the use of play as a strategy to regulate one's own emotions. Furthermore, we have drawn attention to the potential of board games to

promote emotional competences. Although research in this area continues to develop, promising evidence exists supporting the idea that board games could constitute learning tools that may be used to implicitly teach and train adaptive functioning. Our own research on this topic suggests that trait emotional competences are linked to game experience in board games focused on using specific emotional competences. We suggest that such board games can provide opportunities to shape players' socio-emotional skills. Although merging content to game structure may be challenging for both designers and educators, the promise represented by such games presents a fascinating opportunity to encourage transmission of knowledge and the training of targeted competences in an interactive and appealing way.

Biography

Alexandra Zaharia is research and teaching assistant at the Faculty of Psychology (Swiss Distance University Institute, Brig, Switzerland). She pursues her doctoral studies at the Institute of Special Education (University of Fribourg, Switzerland). Her research topics focus on interventions (training programs, board games) to promote positive emotions and emotion regulation in individuals with or without neurodevelopmental disorders.

Andrea Samson is the director of the Swiss Emotion Experience, Regulation and Support Lab (chEERS Lab) and professor at the Department of Special Education (University of Fribourg, Switzerland) and at the Faculty of Psychology (Swiss Distance University Institute, Brig, Switzerland). Her research focuses on affective processes in psychopathology with a particular focus on positive emotions, emotion regulation, and games.

Linda Dell'Angela obtained her master in clinical and affective psychology, during which she worked on the development of board games for children to train emotional competences.

David Sander is full professor at the University of Geneva where he directs the Laboratory for the study of Emotion Elicitation and Expression, and the Swiss Center for Affective Sciences. His research focuses on the mechanisms involved in emotion elicitation, and how these mechanisms modulate attention, memory, and decision-making.

References

Azmi, S., Yusof, M., Herman, S., Adzi, M., Nadera, S., Din, S., & Khalid, N. (2016). A Study on the Effectiveness of a Board Game as a Training Tool for Project Management. *Journal of Telecommunication, Electronic and Computer Engineering*, *8*(8), 171–176.

Bodrova, E. (2008). Make-believe play versus academic skills: a Vygotskian approach to today's dilemma of early childhood education. *European Early Childhood Education Research Journal*, *16*(3), 357–369. https://doi.org/10.1080/13502930802291777

Breen, D. T., & Daigneault, S. D. (1998). The use of play therapy with adolescents in high school. *International Journal of Play Therapy*, *7*(1), 25–47. https://doi.org/10.1037/h0089417

Brown, F. (2012). Playwork, Play Deprivation, and Play: An Interview with Fraser Brown. *American Journal of Play*, *4*(3), 267–284.

Bruneau, L., & Protivnak, J. J. (2012). Adding to the Toolbox: Using Creative Interventions With High School Students. *Journal of School Counseling*, *10*(9), 1–27.

Burghardt, G. M. (2005). *The Genesis of Animal Play: Testing the Limits*. Cambridge, Massachusetts: The Massachusetts Institute of Technology Press. https://doi.org/10.7551/mitpress/3229.001.0001

Catalano, C. E., Luccini, A. M., & Mortara, M. (2014). Guidelines for an effective design of serious games. *International Journal of Serious Games*, *1*(1). https://doi.org/10.17083/ijsg.v1i1.8

Chircop, D. (2017). An Experiential Comparative Tool for Board Games. *Replay. The Polish Journal of Game Studies*, *3*(1), 11–28. https://doi.org/10.18778/2391-8551.03.01

Clary, L. M. (1991). Getting adolescents to read. *Journal of Reading*, *34*(5), 340–345. Retrieved from http://www.jstor.org/stable/40032072

Cohen, J. S., & Mendez, J. L. (2009). Emotion regulation, language ability, and the stability of preschool children's peer play behavior. *Early Education and Development*, *20*(6), 1016–1037. https://doi.org/10.1080/10409280903305716

Connolly, T. M., Boyle, E. A., MacArthur, E., Hainey, T., & Boyle, J. M. (2012). A systematic literature review of empirical evidence on computer games and serious games. *Computers and Education*, *59*(2), 661–686. https://doi.org/10.1016/j.compedu.2012.03.004

Cova, F., & Friend, S. (n.d.). How does fiction elicit emotions? In A. Scarantino (Ed.), *The Routledge Handbook of Emotion Theory.* Routledge.

Dell'Angela, L., Zaharia, A., Lobel, A., Vico Begara, O., Sander, D., & Samson, A. C. (2020). Board Games on Emotional Competences for School-Age Children. *Games for Health Journal*, *9*(3), 1–10.

Dillon, J. A. (2009). *Play, Creativity, Emotion Regulation and Executive Functioning*. Case Western Reserve University. Retrieved from http://www.albayan.ae

Eberle, S. G. (2014). The Elements of Play: Toward a Philosophy and Definition of Play. *Journal of Play*, *6*(2), 214–233.

Elkind, D. (2008). The power of play: learning what comes naturally. *The American Journal of Play*, 1–6. Retrieved from http://www.ncbi.nlm.nih.gov/pubmed/24910958

Etzel, R. A. (2010). Foreword. *Current Problems in Pediatric and Adolescent Health Care*, *47*(6), 101. https://doi.org/10.1016/j.cppeds.2017.06.001

Evaldsson, A. C., & Corsaro, W. A. (1998). Play and games in the peer cultures of preschool and preadolescent children: An interpretative approach. *Childhood*, *5*(4), 377–402. https://doi.org/10.1177/0907568298005004003

Festl, R., Scharkow, M., & Quandt, T. (2013). Problematic computer game use among adolescents, younger and older adults. *Addiction*, *108*(3), 592–599. https://doi.org/10.1111/add.12016

Flanders, J. L., Simard, M., Paquette, D., Parent, S., Vitaro, F., Pihl, R. O., & Séguin, J. R. (2010). Rough-and-tumble play and the development of physical aggression and emotion regulation: A five-year follow-up study. *Journal of Family Violence*, *25*(4), 357–367. https://doi.org/10.1007/s10896-009-9297-5

Fredrickson, B. L. (1998). What Good Are Positive Emotions? *Review of General Psychology : Journal of Division 1, of the American Psychological Association*, *2*(3), 300–319. https://doi.org/10.1037/1089-2680.2.3.300

Fredrickson, B. L. (2001). The role of positive emotions in positive psychology. The broaden-and-build theory of positive emotions. *The American Psychologist*, *56*(3), 218–226. https://doi.org/10.1037/0003-066X.56.3.218

Fredrickson, B. L. (2004). The broaden-and-build theory of positive emotions. *Philosophical Transactions of the Royal Society*, *359*(1449), 1367–1377. https://doi.org/10.1098/rstb.2004.1512

Freud, S. (1961). *Beyond the Pleasure Principle*. (J. Strachey, Ed.). New York: W. W. Norton & Company, Inc.

Garland, E. L., Fredrickson, B., Kring, A. M., Johnson, D. P., Meyer, P. S., & Penn, D. L. (2010). Upward spirals of positive emotions counter downward spirals of negativity: Insights from the broaden-and-build theory and affective neuroscience on the treatment of emotion dysfunctions and deficits in psychopathology. *Clinical Psychology Review*, *30*(7), 849–864. https://doi.org/10.1016/j.cpr.2010.03.002

Gauthier, A., Kato, P. M., Bul, K. C. M., Dunwell, I., Walker-Clarke, A., & Lameras, P. (2019a). Board Games for Health: A Systematic Literature Review and Meta-Analysis. *Games for Health Journal*, *8*(2), 1–16. https://doi.org/10.1089/g4h.2018.0017

Gauthier, A., Kato, P. M., Bul, K. C. M., Dunwell, I., Walker-Clarke, A., & Lameras, P. (2019b). Board Games for Health: A Systematic Literature Review and Meta-Analysis. *Games for Health Journal*, *8*(2). https://doi.org/10.1089/g4h.2018.0017

Ginsburg, K. R. (2007). The Importance of Play in Promoting Healthy Child Development and Maintaining Strong Parent-Child Bond: Focus on Children. *Pediatrics*, *119*(1), 182–191. https://doi.org/10.1542/peds.2011-2953

Gleave, J., & Cole-Hamilton, I. (2012). *A world without play : A literature review*. Retrieved from http://www.playengland.org.uk/media/371031/a-world-without-play-literature-review-2012.pdf

Glenn, N. M., Knight, C. J., Holt, N. L., & Spence, J. C. (2013). Meanings of play among children. *Childhood*, *20*(2), 185–199. https://doi.org/10.1177/0907568212454751

Gobet, F., de Voogt, A., & Retschitzki, J. (2004). *Moves in Mind: the psychology of board games*. New York: Psychology Press.

Graham, K. L., & Burghardt, G. M. (2010). Current perspectives on the biological study of play: signs of progress. *The Quarterly Review of Biology*, *85*(4), 393–418. https://doi.org/10.1086/656903

Granic, I., Lobel, A., & Engels, R. C. M. E. (2014). The benefits of playing video games. *American Psychologist*, *69*(1), 66–78. https://doi.org/10.1037/a0034857

Gray, P. (2011a). The Decline of Play and the Rise of Psychopathology. *American Journal of Play*, *3*(4), 443–463.

Gray, P. (2011b). The Decline of Play and the Rise of Psychopathology. *American Journal of Play*, *3*(443–463), 443–463.

Gray, P. (2013). *Free to learn: why unleashing the instinct to play will make our children happier,*

458 *more self-reliant, and better students for life*. New York: Basic Books.
459 https://doi.org/10.5860/choice.50-6461
460 Greitemeyer, T., & Mügge, D. O. (2014). Video Games Do Affect Social Outcomes: A Meta-
461 Analytic Review of the Effects of Violent and Prosocial Video Game Play. *Personality and*
462 *Social Psychology Bulletin*, *40*(5), 578–589. https://doi.org/10.1177/0146167213520459
463 Gross, J. J. (1998). The Emerging Field of Emotion Regulation : An Integrative Review Ih Ih.
464 *Review of General Psychology*, *2*(5), 271–299. https://doi.org/10.1037/1089-2680.2.3.271
465 Grüsser, S. M., Thalemann, R., & Griffiths, M. D. (2007). Excessive Computer Game Playing:
466 Evidence for Addiction and Aggression? *CyberPsychology & Behavior*, *10*(2), 290–292.
467 https://doi.org/10.1089/cpb.2006.9956
468 Hassinger-Das, B., Toub, T. S., Zosh, J. M., Michnick, J., Golinkoff, R., & Hirsh-Pasek, K. (2017).
469 Infancia y Aprendizaje Journal for the Study of Education and Development More than just
470 fun : a place for games in playful learning / Más que diversión : el lugar de los juegos reglados
471 en el aprendizaje lúdico. *Infancia y Aprendizaje*, *40*(2), 191–218.
472 https://doi.org/10.1080/02103702.2017.1292684
473 Hawkinson, E. (2013). Board Game Design and Implementation for Specific Language Learning
474 Goals. In *The Asian Conference on Language Learning (Official Conference Proceedings)*
475 (pp. 317–326). Osaka, Japan.
476 Hays, R. T. (2005). *The Effectiveness of Instructional Games: A Literature Review and Discussion*.
477 Hirsh-Pasek, K., & Golinkoff, R. M. (2008). Why Play=Learning. In R. E. Tremblay, R. G. Barr,
478 R. D. Peters, & M. Boivin (Eds.), *Encyclopedia on Early Childhood Development* (pp. 1–7).
479 Montreal, Quebec: Centre of Excellence for Early Childhood Development.
480 Hofferth, S. L. (2009). Changes in American childrens time - 1997 to 2003. *Electronic*
481 *International Journal of Time Use Research*, *6*(1), 26–47.
482 https://doi.org/10.13085/eijtur.6.1.26-47
483 Hofferth, S. L., & Sandberg, J. F. (2001). Changes in American Children's Time, 1981-1997.
484 *Children at the Milennium: Where Have We Come From, Where Are We Going?*, *6*, 193–
485 229.
486 Howard, J., Miles, G. E., Rees-Davies, L., & Bertenshaw, E. J. (2017). Play in Middle Childhood:
487 Everyday Play Behaviour and Associated Emotions. *Children and Society*, *31*(5), 378–389.
488 https://doi.org/10.1111/chso.12208

Hromek, R., & Roffey, S. (2009). Promoting Social and Emotional Learning With Games: "It's Fun and We Learn Things." *Simulation & Gaming*, *40*(5), 626–644. https://doi.org/10.1177/1046878109333793

Hsu, L. (2006). Play , Games, and Sports Contests: Clarification through Rules. *Journal of National University of Tainan*, *40*(2), 77–86.

Keltner, D., Capps, L., Kring, A. M., Young, R. C., & Heerey, E. A. (2001). Just Teasing: A Conceptual Analysis and Empirical Review. *Psychological Bulletin*, *127*(2), 229–248. https://doi.org/10.1037/0033-2909.127.2.229

Kemble, W. R. (2014). *A proposed model for designing children's health-focused serious games*. *Graduate Theses and Dissertations*. Iowa State University. Retrieved from https://lib.dr.iastate.edu/etd/14169

Krasnor, L. R., & Pepler, D. J. (1980). The Study of Children's Play: Some Suggested Future Directions. *New Directions for Child Deuelopment*, *9*, 85–95. https://doi.org/10.1017/CBO9781107415324.004

LaFreniere, P. (2013). Children's play as a context for managing physiological arousal and learning emotion regulation. *Psychological Topics*, *22*(2), 183–204.

Lauer, L. M. (2011). *Play deprivation: is it happening in your school setting?* Retrieved from https://eric.ed.gov/?id=ED524739

Lazzaro, N. (2004). Why We Play Games: Four Keys to More Emotion in Player Experiences. In *Game Developer Conference (GDC)* (pp. 1–8). https://doi.org/10.1111/j.1464-410X.2004.04896.x

Lennon, J. L., & Coombs, D. W. (2007). The utility of a board game for dengue haemorrhagic fever health education. *Health Education*, *107*(3), 290–306. https://doi.org/10.1108/09654280710742582

Li, W. H. C., Chung, J. O. K., Ho, K. Y., & Kwok, B. M. C. (2016). Play interventions to reduce anxiety and negative emotions in hospitalized children. *BMC Pediatrics*, *16*(1), 1–9. https://doi.org/10.1186/s12887-016-0570-5

Lillard, A. S., Lerner, M. D., Hopkins, E. J., Dore, R. A., Smith, E. D., & Palmquist, C. M. (2013). The impact of pretend play on children's development: A review of the evidence. *Psychological Bulletin*, *139*(1), 1–34. https://doi.org/10.1037/a0029321

Lobel, A. (2016). *Game On: The relationship between gaming and the development of emotion*

regulation skills. Radboud University Nijmegen.

Matorin, A. I., & McNamara, J. R. (1996). Using board games in therapy with children. *International Journal of Play Therapy*, *5*(2), 3–16. https://doi.org/10.1037/h0089022

Maxwell, B., & Peplak, J. (n.d.). Developing Emotional Intelligence in Social and Emotional Learning. In D. Dukes, E. A. Walle, & A. C. Samson (Eds.), *The Oxford Handbook of Emotional Development*. Oxford University Press.

Maynard, A. S., Monk, J. D., & Booker, K. W. (2011). Building empathy through identification and expression of emotions: A review of interactive tools for children with social deficits. *Journal of Creativity in Mental Health*, *6*(2), 166–175. https://doi.org/10.1080/15401383.2011.579874

Mega, C., Ronconi, L., & De Beni, R. (2014). What makes a good student? How emotions, self-regulated learning, and motivation contribute to academic Achievement. *Journal of Educational Psychology*, *106*(1), 121–131. https://doi.org/10.1037/a0033546

Menninger, K. (1942). *Love Against Hate*. New York: Harcourt, Brace and Company.

Miller, L. J. (2017). Creating a common terminology for play behavior to increase cross-disciplinary research. *Learning and Behavior*, *45*(4), 330–334. https://doi.org/10.3758/s13420-017-0286-x

Miyazaki, R. (2004). *"I am just teasing you": Parental use of teasing in the context of parent-child relationships*. University of British Columbia.

Moskowitz, D. S., & Young, S. N. (2006). Ecological momentary assessment: What it is and why it is a method of the future in clinical psychopharmacology. *Journal of Psychiatry and Neuroscience*, *31*(1), 13–20. Retrieved from papers2://publication/uuid/C0ABA0CF-9FE8-41FE-8331-95A57E87BB87

Nakao, M. (2019). Special series on "effects of board games on health education and promotion" board games as a promising tool for health promotion: A review of recent literature. *BioPsychoSocial Medicine*, *13*(1), 3–9. https://doi.org/10.1186/s13030-019-0146-3

Nicolopoulou, A. (1993). Play, cognitive development, and the social world: Piaget, vygotsky, and beyond. *Human Development*, *36*(1), 1–23. https://doi.org/10.1159/000277285

Nijhof, S. L., Vinkers, C. H., van Geelen, S. M., Duijff, S. N., Achterberg, E. J. M., van der Net, J., … Lesscher, H. M. B. (2018). Healthy play, better coping: The importance of play for the development of children in health and disease. *Neuroscience and Biobehavioral Reviews*, *95*,

421–429. https://doi.org/10.1016/j.neubiorev.2018.09.024

Noda, S., Shirotsuki, K., & Nakao, M. (2019). The effectiveness of intervention with board games: A systematic review. *BioPsychoSocial Medicine*, *13*(22), 1–21. https://doi.org/10.1186/s13030-019-0164-1

Panksepp, J. (2007). Can PLAY diminish ADHD and facilitate the construction of the social brain? *Journal of the Canadian Academy of Child and Adolescent Psychiatry*, *16*(2), 57–66.

Pekrun, R. (n.d.). Development of Achievement Emotions. In D. Dukes, E. A. Walle, & A. C. Samson (Eds.), *The Oxford Handbook of Emotional Development*. Oxford University Press.

Pekrun, R. (2006). The control-value theory of achievement emotions: Assumptions, corollaries, and implications for educational research and practice. *Educational Psychology Review*, *18*(4), 315–341. https://doi.org/10.1007/s10648-006-9029-9

Pellegrini, A. D., & Smith, P. K. (1998). The Development of Play During Childhood: Forms and Possible Functions. *Child Psychology and Psychiatry Review*, *3*(2), 51–57. https://doi.org/10.1017/S1360641798001476

Perry, B. D., Hogan, L., & Marlin, S. (2000). Curiosity, Pleasure and Play: A Neurodevelopmental Perspective. *HAAEYC Advocate*. Retrieved from http://childtrauma.org/cta-library/child-dev-early-childhood/

Piaget, J. (1951). *Play, Dreams and Imitation in Childhood*. Reprint, London: Routledge, 1991.

Piaget, J. (1978). La classification des jeux, et leur évolution à partir de l'apparition du langage. In *La formation du symbole chez l'enfant*. Reprint, Paris, Neuchâtel: Delachaux et Niestlé, 1994.

Rawolle, S. (2013). *Emotions in education policy: A social contract analysis of asymmetrical dyads and emotion*. *Advances in Research on Teaching* (Vol. 18). Emerald Group Publishing Limited. https://doi.org/10.1108/S1479-3687(2013)0000018007

Rogier, G., & Velotti, P. (2018). Conceptualizing gambling disorder with the process model of emotion regulation. *Journal of Behavioral Addictions*, *7*(2), 239–251. https://doi.org/10.1556/2006.7.2018.52

Saatela, S. (1994). Fiction, make-believe and quasi emotions. *The British Journal of Aesthetics*, *34*(1), 25–35.

Salmina, N. G., & Tihanova, I. G. (2011). Psychological and Pedagogical Expertise of Board Games. *Psychological Science & Education*, (2), 18–25.

582 Saracho, O. N., & Spodek, B. (1995). Children's Play and Early Childhood Education: Insights
583 from History and Theory. *The Journal of Education*, *177*(3), 129–148.
584 Schaefer, C. E., & Drewes, A. A. (2014). *The Therapeutic Powers of Play*. (C. E. Schaefer & A.
585 A. Drewes, Eds.). Hoboken, New Jersey: John Wiley & Sons Inc.
586 Smith, P. K., & Pellegrini, A. (2013). Learning through play. *Encyclopedia on Early Childhood*
587 *Development*, *June*, 1–6. Retrieved from http://www.child-
588 encyclopedia.com/sites/default/files/textes-experts/en/774/learning-through-play.pdf
589 Stone, L. B., Mennies, R. J., Waller, J. M., Ladouceur, C. D., Forbes, E. E., Ryan, N. D., … Silk,
590 J. S. (2019). Help me Feel Better! Ecological Momentary Assessment of Anxious Youths'
591 Emotion Regulation with Parents and Peers. *Journal of Abnormal Child Psychology*, *47*(2),
592 313–324. https://doi.org/10.1007/s10802-018-0454-2
593 Sweetser, P., & Wyeth, P. (2005). GameFlow: A Model for Evaluating Player Enjoyment in
594 Games. *Computers in Entertainment*, *3*(3), 1–24. https://doi.org/10.1145/1077246.1077253
595 Takis, G. (2018). *Associations between children internal representations, play capacity and*
596 *clinical level of anxiety*. Istanbul Bilgi University.
597 Thompson, R. A. (1994). Emotion Regulation: a Theme in Search of Definition. *Monographs of*
598 *the Society for Research in Child Development*, *59*(2–3), 25–52.
599 https://doi.org/10.1111/j.1540-5834.1994.tb01276.x
600 Treher, E. N. (2011). *Learning with Board Games: Tools for Learning and Retention*.
601 Tugade, M. M., & Fredrickson, B. L. (2007). Regulation of positive emotions: Emotion regulation
602 strategies that promote resilience. *Journal of Happiness Studies*, *8*(3), 311–333.
603 https://doi.org/10.1007/s10902-006-9015-4
604 Tugade, M. M., Fredrickson, B. L., & Feldman Barrett, L. (2004). Psychological resilience and
605 positive emotional granilarity: Examining the benefits of positive emotions on coping and
606 health. *Journal of Personality*, *72*(6), 1161–1191.
607 United Nations. Convention on the Rights of the Child (1989).
608 https://doi.org/10.3126/jnps.v29i1.1601
609 van der Stege, H. A., van Staa, A. L., Hilberink, S. R., & Visser, A. P. (2010). Using the new board
610 game SeCZ TaLK to stimulate the communication on sexual health for adolescents with
611 chronic conditions. *Patient Education and Counseling*, *81*(3), 324–331.
612 https://doi.org/10.1016/j.pec.2010.09.011

Van Vleet, M., & Feeney, B. C. (2015). Young at Heart: A Perspective for Advancing Research on Play in Adulthood. *Perspectives on Psychological Science*, *10*(5), 639–645. https://doi.org/10.1177/1745691615596789

Veiga, G., Da Silva, B. M. S., Gibson, J., & Rieffe, C. (n.d.). Emotions in Play: The Effects of Physical Play on Children's Social Well-Being. In D. Dukes, E. A. Walle, & A. C. Samson (Eds.), *The Oxford Handbook of Emotional Development*. Oxford University Press.

Veiga, G., De Leng, W., Cachucho, R., Ketelaar, L., Kok, J. N., Knobbe, A., … Rieffe, C. (2016). Social Competence at the Playground: Preschoolers During Recess. *Infant and Child Development*, *16*. https://doi.org/10.1002/icd

Veiga, G., Ketelaar, L., De Leng, W., Cachucho, R., Kok, J. N., Knobbe, A., … Rieffe, C. (2016). Alone at the playground. *European Journal of Developmental Psychology*, *14*(1), 44–61. https://doi.org/10.1080/17405629.2016.1145111

Verenikina, I., Harris, P., & Lysaght, P. (2003). Child's Play : Computer Games , Theories of Play and Children' s Development. In *IFIP Working Group 3.5 Conference: Young Children and Learning Technologies* (pp. 99–106).

Vygotsky, L. S. (1966). Play and Its Role in the Mental Development of the Child. *Voprosy Psihologii [Problems of Psychology]*, *12*(6), 62–76. https://doi.org/10.2753/RPO1061-040505036

Weber, K. (2003). The relationship of interest to internal and external motivation. *Communication Research Reports*, *20*(4), 376–383. https://doi.org/10.1080/08824090309388837

Whitebread, D., Neale, D., Jensen, H., Liu, C., Solis, S. L., Hopkins, E. J., … Zosh, J. M. (2017). *The role of play in children's development: a review of the evidence (research summary)*. Billund, DK: The LEGO Foundation. https://doi.org/10.13140/RG.2.2.18500.73606

Wiener, L., Battles, H., Mamalian, C., & Zadeh, S. (2011). ShopTalk: A pilot study of the feasibility and utility of a therapeutic board game for youth living with cancer. *Supportive Care in Cancer*, *19*(7), 1049–1054. https://doi.org/10.1007/s00520-011-1130-z

Wohlwend, K., & Peppler, K. (2015). All rigor and no play is no way to improve learning. *Phi Delta Kappan*, *96*(8), 22–26. https://doi.org/10.1177/0031721715583957

Zaki, J. (2020). Integrating Empathy and Interpersonal Emotion Regulation. *Annual Review of Psychology*, *71*, 517–540. https://doi.org/10.1146/annurev-psych-010419-050830

Zosh, J. M., Hopkins, E. J., Jensen, H., Liu, C., Neale, D., Pasek, K. H., … Whitebread, D. (2017).

Learning through play: a review of the evidence. Billund, DK: The LEGO Foundation. https://doi.org/10.13140/RG.2.2.11789.84963