**SUPPORTS CHILD’S INTRINSIC MOTIVATION TO PLAY**

This section will include articles from literature on play and the importance of play (both to learning and for its own sake).

**2019**

**Brody, D. L., Scheiner, E. Y., Ari, M. D., Tzadok, Y., Aalsvoort, G. M.,**

 **&amp; Lepola, J. (2018). Measuring motivation in preschool**

 **children: A comparison of Israeli, Dutch and Finnish children.**

 ***Early Child Development and Care, 190*(2), 150-160.**

**doi:10.1080/03004430.2018.1459593.**

This international study compared motivational tendencies among pre-school children from Israel, Finland and the Netherlands. Teachers were asked to rate students’ behaviours during semi-structured tasks using the Child Behaviour Motivational Scale (CBeMo) which measures task orientation, task avoidance, and social dependence. Motivational tendencies for 472 children, ages 4–6 were compared by country, age, and gender. Results showed that Israeli children displayed lower levels of task avoidance and social dependence than European children at both ages 4 and 5. Israeli 4-year-olds showed high levels of task orientation similar to the 5-year-olds in the three countries. In all three groups, girls exhibited higher levels of task orientation than boys. Differences in motivational tendencies may result from cultural characteristics, while consistent differences between boys and girls may indicate universal gender influences. Understanding young children's motivational tendencies may contribute to the development of teaching practices that support children's positive dispositions towards learning tasks.

**Tan, C., Lau, X., Kung, Y., &amp; Kailsan, R. A. (2016). Openness to**

 **experience enhances creativity: The mediating role of intrinsic**

**motivation and the creative process engagement. *The Journal of***

***Creative Behavior, 53*(1), 109-119. doi:10.1002/jocb.170.**

Studies indicate that there is a positive relationship between openness to experience and creativity. However, relatively little attention has been given to the mechanism of this relationship. On the basis of previous findings, we hypothesized a conceptual model and tested the mediating role of intrinsic motivation and the creative process engagement in the relationship between openness to experience and creativity. One hundred and ninety‐eight undergraduates in Malaysia participated in the study and completed an online measure of openness to new experience, creativity, intrinsic motivation, and the creative process engagement. Consistent with the hypothesis, people who scored high on openness reported high intrinsic motivation. The high motivation enhanced engagement in creativity‐related activities, which in turn, improved self‐rated creativity. The findings not only shed light on mechanisms that underlie in the openness‐creativity linkage but they also highlight the importance of intrinsic motivation and creative process engagement in the linkage. Together, the study extends the effect of personality trait on creativity and offers a new direction for future studies.

**Burke, J., &amp; Claughton, A. (2019). Playing with or next to? The**

 **nuanced and complex play of children with impairments.**

**International *Journal of Inclusive Education, 23*(10), 1065-1080.**

**doi:10.1080/13603116.2019.1626498.**

This paper examines play as a fundamental children’s activity, giving particular attention to the inclusion of children with impairments at play and children’s shared constructions of their playworlds. Children with impairments are customarily portrayed as incompetent, unskilled or deficient in their play, thus being positioned on the margins (or, as ‘who’s out’?) of mainstream discourses. On the other hand, non-impaired children are usually regarded as competent players, who play in ‘normal’ ways (as ‘who’s in’?). Little attention is afforded to noticing skilful or proficient play by children with impairments and including their perspectives in play research. The Social Model of Childhood Disability offers a perspective for considering ‘disabled childhoods’ and framing enquiry into the culturally-constructed playworlds of children with impairments. Evidence from two ethnographic studies that examine children with impairments at play is discussed, employing vignettes that utilise data from researcher and teacher observation notes. The authors document specific play interactions related to individual experiences and interests and explore how children work together and alone to create meaningful play interactions. The notion that play for children is a mutual, shared and inclusive cultural experience is supported in this paper.

**Sompel, D. V., &amp; Vermeir, I. (2019). “Playing by the book”:**

 **Determinants of children's preference for replicating and**

**originating play. *The Journal of Creative Behavior*.**

**doi:10.1002/jocb.403.**

Play is children's most important daily behavior and when children play, they do so in multiple ways. With two studies, this paper explores how children perceive a continuum of two play types, namely replicating play (in which models, guidelines, and examples are used to reach an intended result) and originating play (in which children create something from the mind, think freely about how they will play, are less restricted by given models, etc.). Study 1 (N = 56, Mage = 9) quantitatively shows that both play types occur and tests if children also describe the play types as we define them. Results show that children who play originating (vs. replicating) believe they follow less (vs. more) rules and do their own thing more (vs. less), which verifies the definitions of both types of play. Study 2 includes 16 in‐depth semi‐structured interviews (Mage = 10) and shows which determinants children identify as triggers for engaging in play that has more replicating or more originating elements.

**Muller, N., &amp; Midgley, N. (2020). The clinical challenge of**

 **mentalization-based therapy with children who are in**

**“pretend mode”. *Journal of Infant, Child, and Adolescent***

***Psychotherapy, 19*(1), 16-24.**

**doi:10.1080/15289168.2019.1701865.**

The “pretend mode” is one of the so-called “pre-mentalizing modes of thinking”, which were first introduced by Target and Fonagy over 20 years ago. In a series of papers about play and reality, “pretend mode” thinking was understood as a mode of pre-mentalizing thinking which is typical in the early years, but which can reappear in a more problematic way in adults. Although the concept of pretend mode was first introduced in a developmental context, as a clinical term it has primarily been discussed in the context of adult or adolescent psychotherapy. This paper suggests that the pretend mode is a valuable clinical concept for therapists working with school-age children, but that its use in this context needs some clarification. After reviewing how pretend mode has been understood as a normal part of early development, this paper goes to demonstrate the various roles of pretend mode in clinical work with school-age children and sets out a number of clinical strategies that may be used in therapeutic work.

**Gastaldi, F. G., Longobardi, C., Pasta, T., &amp; Prino, L. E. (2017).**

 **Pre-K children’s play: Different forms of imitation and**

**exploration behaviours. *Early Child Development and Care,***

***189*(3), 513-521. doi:10.1080/03004430.2017.1330824.**

Playing is essential for the development of higher psychological functions. The purpose of this study is to demonstrate that playing constitutes an essential step in children’s socio-cognitive development by describing playtime as the indicator of the gradual overcoming of self-centred thinking, with a view to acquiring new social adjustment strategies. The research activity included 64 children from nursery schools in Italy (average age 4.3) and was based on the direct and video-recorded observation of children’s spontaneous play at school. Two coding systems were applied to analyse variations in ideation, exploration, socializing, and imitation activities. The preliminary results seem to confirm that playing provides a framework within which it is possible to articulate and express the child’s progress in terms of both social development and cognitive skills. The mutual adjustment of the development of these two processes is also shown in the stepwise changing of the way in which conflicts are negotiated.

**Kowalski, M. J., &amp; Froiland, J. M. (2020). Parent perceptions of**

 **elementary classroom management systems and their children’s**

**motivational and emotional responses. *Social Psychology of***

***Education*. doi:10.1007/s11218-020-09543-5.**

Classroom management systems emphasizing rewards and consequences have long existed in schools within the US, but parental perceptions of the effects of these systems have largely been ignored. This survey study examined the ways in which 99 parents observed their children responding to various elementary classroom management systems. Regression results showed that behavior chart systems were negatively associated with student autonomous motivation to learn, whereas parent–school relationships and teacher autonomy support were positively associated with autonomous motivation. In hierarchical regression models, the frequency of students receiving rewards was negatively related to parent–school relationships. However, when teacher autonomy support (a strong positive predictor) was added to the model, the effects of reward frequency became non-significant. Parents’ open-ended responses revealed frustrations with systems that caused student anxiety, encouraged dependence on rewards, and oppressed students’ personalities. Implications include consideration of classroom management styles that better promote student autonomous motivation.

**Akin-Little, A., &amp; Little, S. G. (2019). Effect of extrinsic**

 **reinforcement on “intrinsic” motivation: Separating fact from**

**fiction. Behavioral Interventions in Schools: *Evidence-based***

***Positive Strategies*,113-132.**

**doi:10.1037/0000126-007.**

The use of rewards or reinforcement is common in schools. Teachers frequently use some sort of reward system for academic output and appropriate behavior, and decades of empirical research support the efficacy of reinforcement-based procedures in the classroom. However, some educators and psychologists have expressed concern over the use of reward contingency systems in classrooms. The perceived problem is the belief that extrinsic reinforcers may have a detrimental effect on a student's intrinsic motivation to perform a task once the reinforcer for that task is withdrawn. This chapter discusses definitions of intrinsic and extrinsic motivation and the theories and investigations of reinforcer–reward effects such as cognitive evaluation theory; overjustification hypothesis; and behavioral investigations. It describes behavioral criticisms of cognitive research. Finally, the chapter discusses best practices in the use of reinforcement procedures in the classroom.

**Kuhaneck, H., Spitzer, S. L., &amp; Bodison, S. C. (2019). A**

 **systematic review of interventions to improve the occupation of**

**play in children with Autism. *OTJR: Occupation, Participation***

***and Health, 40*(2), 83-98. doi:10.1177/1539449219880531.**

Play in children with autism spectrum disorder (ASD) is often atypical, yet consensus regarding effective occupational therapy strategies for improving play is not established. To examine the efficacy of strategies used in occupational therapy to improve play in ASD, authors completed a systematic review of papers from January 1980 through January 2019. Search terms included autism, Asperger's, ASD, autistic in combination with play, playfulness, pretend, imagination, praxis, creativity, and generativity. Twenty papers met inclusion criteria and were reviewed. Reviewed interventions included parent education, modified play materials or environments, imitation of the child, and modeling by an adult, a peer, or video. Moderate to strong support exists for the specific strategies of imitation of the child and modeling for the child, with lesser or mixed support for other strategies. Certain strategies commonly used in occupational therapy may be effective in improving the occupation of play in ASD.

**Godin, J., Freeman, A., &amp; Rigby, P. (2017). Interventions to**

**promote the playful engagement in social interaction of**

**preschool-aged children with Autism Spectrum Disorder (ASD): A**

**scoping study. *Early Child Development and Care, 189*(10),**

**1666-1681. doi:10.1080/03004430.2017.1404999.**

Children with autism spectrum disorder (ASD) experience significant difficulties engaging in meaningful play. Although enabling their playful engagement in social interactions is an important objective, little is known about which interventions effectively promote it. The aim of this study was to conduct a scoping study to map the breadth and summarize the research evidence regarding interventions that promote the playful engagement of preschool-aged children with ASD with adult play partners. Arksey and O’Malley’s (2005) methodological framework for scoping studies was used. Literature from January 2000–December 2015 was included. The results of this study revealed a considerable number and variety of strategies as well as intervention approaches that are coherent with the promotion of playful engagement. The conceptually based approach used allowed the integration of the literature from different perspectives. The results provide specific guidance to therapists and parents on strategies that may be embedded in their daily interactions with these children.

**Chanal, J., Cheval, B., Courvoisier, D. S., & Paumier, D. (2019).**

 **Developmental relations between motivation types and physical**

**activity in elementary school children*. Psychology of Sport and***

***Exercise, 43*, 233-242. doi: 10.1016/j.psychsport.2019.03.006.**

**Objectives:** The objectives of this study were to observe the developmental trajectories of motivation types among young children from 8 to 12 years using a more comprehensive scale of physical education motivation. We also tested the relations between these trajectories and objective physical activity during this period.

**Design:** Students in grades 5–7 (n = 1202; 51.2% boys) were recruited from 17 elementary schools. Three cohorts completed the motivation questionnaire four times and objective physical activity was measured up to four times over a two years school period.

**Method:** Measurement invariance of the scale was tested across cohorts and occasions. Multiple group multiple cohort growth models were estimated to determine motivation types trajectories. Regression models were then built to predict children’s slope of MVPA during this period.

**Results:** We provided strong measurement invariance to a new and more comprehensive scale of PE motivation. Latent growth curve modeling indicated trajectories that decrease on average for all forms of motivations at this early age. Results also revealed some relations between motivation’s scores and objective physical activity trajectories, especially with autonomous motivation.

**Conclusions:** Our study revealed the earliest decline of motivation towards physical education to have ever been highlighted in elementary school children. Relations between the trajectory of intrinsic stimulation and PA behavior permitted us to highlight the possible role of autonomous motivation in minimizing the decline of children’s PA behavior during PE lessons.

**Guay, F., Stupnisky, R., Boivin, M., Japel, C., &amp; Dionne, G.**

 **(2019). Teachers’ relatedness with students as a predictor of**

**students’ intrinsic motivation, self-concept, and reading**

**achievement. *Early Childhood Research Quarterly, 48*, 215-225.**

**doi:10.1016/j.ecresq.2019.03.005.**

The purpose of this study was to examine how teachers’ relatedness with students is linked to academic achievement in reading for elementary students transitioning from kindergarten (five years old) to first grade (six years old). Intrinsic motivation and self-concept in reading were examined as potential mediators of this relation. While data were collected from 820 kindergarten students (441 boys, 379 girls), their teachers also answered questions regarding their relatedness with the students and the students’ reading abilities. One year later, the students completed items measuring their intrinsic motivation and self-concept for reading, while the teachers rated the students’ reading achievement. Structural equation modeling analysis was used to test a sequential mediational model. Overall, the results showed that kindergarten teachers’ relatedness with students predicts intrinsic motivation for reading and that self-concept for reading positively mediates the relation between intrinsic motivation and reading achievement (all relations are significant at p <  .01). These results may have implications for educators aiming to improve reading achievement, strengthen students’ academic self-concept, and encourage intrinsic motivation.

**Rust, K. L., &amp; Thanasiu, P. L. (2019). Parent-mediated,**

 **play-based counseling interventions: Use of affective**

 **engagement to treat Autism Spectrum Disorder in young**

 **children. *Journal of Mental Health Counseling, 41*(3), 189-202.**

**doi:10.17744/mehc.41.3.01.**

Children diagnosed with autism spectrum disorder (ASD) benefit greatly from a comprehensive counseling approach capable of addressing a myriad of associated symptoms that can vary in presentation from one client to another. Parent-mediated, play-based counseling interventions represent a systemic and empirically supported component to treating children with this disorder. The authors review diagnostic criteria for ASD and highlight valuable elements of parent-mediated approaches that can enhance a child's social communication by targeting playful interactions. Joyful, affective engagement through play is highlighted as an essential catalyst of social–emotional growth for children with ASD, since this experience of joy creates intrinsic motivation for the child to seek out additional opportunities to play with others. One particular model, the Play and Language for Autistic Youngsters (PLAY) Project, is presented along with a composite case study that illustrates a sampling of PLAY techniques. Finally, the authors discuss implications for practitioners and recommendations for future research.

**Blanco, P. J., Holliman, R. P., &amp; Carroll, N. C. (2019). The effect**

 **of child - centered play therapy on intrinsic motivation and**

**academic achievement of at-risk elementary school students.**

***Journal of Child and Adolescent Counseling, 5*(3), 205-220.**

**doi:10.1080/23727810.2019.1671758.**

Academic achievement is an important concern for professionals in schools and for school counselors in particular. In this study of at-risk elementary school students, researchers examined the effectiveness of child-centered play therapy (CCPT) on academic achievement and academic self-regulation. The experimental group participated in biweekly, 30-minute play therapy sessions for eight weeks. Findings indicated that the at-risk students participating in the experimental group in this study (n = 21) demonstrated a statistically significant increase on the Early Achievement Composite of the Young Children’s Achievement Test, when compared to children in the waitlist control group (n = 21). The researchers found no significant differences for the Academic Self-Regulation Questionnaire between groups. Additional findings of the analysis indicated that from pretest to posttest, the play therapy (PT) group Intrinsic Motivation scores remained the same over the time of treatment, while the waitlist control (WC) group scores decreased. Results demonstrate continued support for the use of CCPT as an intervention for academic achievement and as an important tool for school counselors to implement in a comprehensive school counseling program.

**Vahlo, J., &amp; Hamari, J. (2019). Five-factor inventory of intrinsic**

 **motivations to gameplay (IMG). *Proceedings of the 52nd Hawaii***

***International Conference on System Sciences*, 2476-2485.**

**doi:10.24251/hicss.2019.298.**

In this study, we develop and validate Intrinsic Motivations to Gameplay (IMG) inventory. In Study 1, psychometric properties of a preliminary 10-item version of IMG were investigated by employing an online survey data collected among Finnish and Danish population (N = 2,205). In Study 2, a 23-item version of IMG was developed based on further interview data and survey data collected among Canadian population (N = 1,322). The 23-item version of IMG revealed five factors of intrinsic motivations for gameplay: Relatedness, Autonomy, Competence, Immersion, and Fun. In Study 3, a third survey was conducted among Finnish and Japanese participants (N = 2,057) to design a SelfDetermination theory (SDT) informed confirmatory factor analysis (CFA). The CFA validated a 15-item version of IMG inventory, which can be utilized widely in studies on digital gaming and gamification to better understand player preferences.

**Shin, J., &amp; Grant, A. M. (2019). Bored by interest: How intrinsic**

 **motivation in one task can reduce performance on other tasks.**

***Academy of Management Journal, 62*(2), 415-436.**

**doi:10.5465/amj.2017.0735.**

While existing research has demonstrated that intrinsic motivation can increase task performance, jobs are composed of multiple tasks, and it remains to be seen how intrinsic motivation in one task affects performance on other tasks. Drawing on theories of psychological contrast, we hypothesize that high intrinsic motivation in one task reduces performance on less intrinsically motivating tasks. In a field study at a Korean department store, employees with the highest maximum intrinsic motivation in one task had lower average and minimum performance across their other tasks as well as more performance variance across their tasks. In a laboratory experiment in the United States, working on a highly intrinsically motivating initial task led participants to perform worse in a subsequent task if it was uninteresting, but not if it was interesting. This effect was mediated by boredom, but not by a range of other psychological processes. Across both studies, moderate intrinsic motivation in one task was associated with better performance in less interesting tasks than high intrinsic motivation, revealing a curvilinear cross-task effect of intrinsic motivation. Our research advances knowledge about the dark side of intrinsic motivation, the design of work, and the drivers of task performance.

**Abdullah, N., Kueh, Y. C., Hanafi, M. H., Morris, T., & Kuan, G. (2019).**

 **Motives for participation and amount of physical activity**

 **among Kelantan Chinese adolescents. *The Malaysian Journal***

 ***of Medical Sciences: MJMS*, *26*(6), 101.**

#### BACKGROUND:Engaging in regular physical activity (PA) has become a worldwide issue for the prevention of numerous chronic diseases; therefore, is important to increase students' desires to engage in PA by triggering their motivation. The purpose of this study was to examine the relationships between the motives for participating in PA and the amount of PA that secondary Chinese school students in Kelantan undertake.

#### METHODS:The participants consisted of 304 Chinese secondary school students (males = 165, females = 139) with a mean age of 13.55 years old (SD = 0.57) who volunteered to complete three measures, consisting of a demographic information form, the physical activity and leisure motivation scale for youth-Chinese version (PALMS-Y-C) and the Godin leisure-time exercise questionnaire-Chinese version (GLTEQ-C).

#### RESULTS:There were significant positive correlations between all the seven PA participation motives with amount of exercise (Enjoyment: *r* = 0.16, *P* = 0.010; Mastery: *r* = 0.23, *P* < 0.001; Competition: *r* = 0.21, *P* = 0.001; Affiliation: *r* = 0.22, *P* < 0.001; Psychological condition: *r* = 0.26, *P* < 0.001; Appearance: *r* = 0.20, *P* = 0.001; Physical condition: *r* = 0.20, *P* = 0.001). There were also significant mean differences among sweating exercise frequency categories in all the seven areas of PA participation motives (Enjoyment: *P* = 0.003, Mastery: *P* < 0.001, Competition: *P* = 0.001, Affiliation: *P* = 0.001, Psychological condition: *P* = 0.038, Appearance = 0.002, Physical condition: *P* = 0.004).

#### CONCLUSION:The present study provided insight into how to promote PA in Kelantan Chinese school-aged children by specifically targeting their motives. Interventions targeting these motives could increase the amount of PA among Kelantan Chinese youths.

**Rauf, A. L. A., & Bakar, K. A. (2019). Effects of play on the social**

 **development of preschool children. *Creative Education*,**

 ***10*(12), 2640-2648.**

This concept paper aims to provide early exposure and an understanding of the effectiveness of playing on the social development of children. Generally, children that play more are better at self-control, cooperation, thoughtfulness, sociable and have a higher social competence. There are various importances of play that are involved in the process of teaching and learning that affects the social development of children. This concept paper focuses on the theories, definitions, interests, and the components of the social development of children. This paper discusses the implications of play on the social development of children.

**Blanco, P. J., Holliman, R. P., Ceballos, P. L., & Farnam, J. L. (2019).**

 **Exploring the impact of child-centered play therapy on academic**

 **achievement of at-risk kindergarten students. *International***

 ***Journal of Play Therapy*, *28*(3), 133–143.**

 **https://doi.org/10.1037/pla0000086.**

This study of at-risk Kindergarten students examined the effectiveness of child-centered play therapy (CCPT) on academic achievement. The experimental group received biweekly, 30 min play therapy sessions for 6 weeks. Findings indicated that the Kindergarten students participating in the experimental group in this study (n = 18) demonstrated a statistically significant increase on the Early Achievement Composite of the Young Children’s Achievement Test (Hresko, Peak, Herron, & Bridges, 2000) when compared to children in the waitlist control group (n = 18). Results demonstrate continued support for the use of CCPT as an intervention for academic achievement.

**MacCormack, J. (2019). Part 1: Why child-centered play therapists**

 **should care about play-based social interventions for youth**

 **with ASD. *International Journal of Play Therapy*, *28*(3),**

 **157–167. https://doi.org/10.1037/pla0000099.**

The field of child-centered play therapy has long recognized the value of play for children’s growth and development, however other fields of inquiry have come to realize the value of play as well, such as play-based social interventions for youth with autism spectrum disorder. Despite the differences between the theoretical and pragmatic applications of child-centered play therapy and play-based social interventions, the purpose of this work is to orient a play-based social intervention study with a child-centered play therapy approach. In particular, this work will discuss the theoretical and pragmatic approaches of the two fields with emphasis on 2 factors of play: (a) play materials and (b) permissiveness. Additionally, the play experiences of 1 boy, Enoch, are reviewed through the typical stages of child-centered play therapy, to demonstrate how permissive play with technology-based play materials functions in play-based social interventions.

**Hajar, M. S., Rizal, H., Kueh, Y. C., Muhamad, A. S., & Kuan, G.**

 **(2019). The effects of brain breaks on motives of**

 **participation in physical activity among primary school**

 **children in malaysia. *International Journal of Environmental***

 ***Research and Public Health*, *16*(13), 2331.**

Brain breaks is a physical activity (PA) video designed for school settings that is used to stimulate student's health and learning. The purpose of this study is to measure the effects of brain breaks on motives of participation in PA among primary school children in Malaysia. Purposive sampling was used to divide 159 male and 176 female students aged 10 to 11 years old, mean (standard deviation (SD)) = 10.51 (0.50), from two schools in Kelantan, Malaysia into intervention (*n* = 183) and control (*n* = 152) groups. Students undertook brain breaks activities on school days (five minutes per session) spread out for a period of four months. Mixed factorial analysis of variance (ANOVA) was used to test the students' motives of participation in PA for pre-, mid-, and post-tests using the Physical Activity and Leisure Motivation Scale-Youth-Malay (PALMS-Y-M). Mixed factorial ANOVA showed significant changes in enjoyment, *F*(2, 392) = 8.720, *p*-value (ηp2) = 0.001 (0.043); competitiveness, *F*(2, 195) = 4.364, *p*-value (ηp2) = 0.014 (0.043); appearance, *F*(2, 392) = 5.709, *p*-value (ηp2) = 0.004 (0.028); and psychological condition, *F*(2, 392) = 4.376, *p*-value (ηp2) = 0.013 (0.022), whereas mastery, affiliation, and physical condition were not significant (*p* < 0.05). Further post-hoc analysis revealed a significant downward trend in the control group (*p* < 0.05). Brain breaks are successful in maintaining students' motives for PA in four of the seven factors.

**2018**

**Moore, A., & Lynch, H. (2017). Understanding a child’s conceptualisation of well-being through an exploration of happiness: The centrality of play, people and place. *Journal of Occupational Science,25*(1), 124-141. doi:10.1080/14427591.2017.1377105**

Given that participation in occupation is a significant predictor of well-being, it seems plausible to argue that participation in play is imperative for child well-being, since play is a fundamental occupation in early childhood in most cultures across the world. However, play is neither included as an indicator nor as a domain in the national set of child well-being indicators in Ireland. In addition, few studies have asked children what they view as important for their own well-being. This qualitative ethnographic study explored children’s conceptualisations of happiness (as a proxy measure of well-being) amongst children living in Ireland aged 6 to 8 years. The study employed a mosaic approach and data were collected through visual, spatial, and language-based methods. Analysis resulted in three core themes with eight subthemes. The first theme describes how the children perceived their participation in pleasurable occupations as vital contributors to their overall sense of happiness (well-being), which typically involved play. The second theme describes the social and physical influences that shape participation in their valued play occupations. The third theme describes the social nature of relationships with people and animals. Children’s conceptualisation of well-being consistently related to play and playful occupation, with or without social partners. Findings illustrate the degree and complexity with which children understand the influences on their happiness (well-being) to be interrelated, highlighting an expanded view of play as a subjective aspect of childhood that is intrinsically connected to well-being and happiness. They also point to appropriate issues that should be addressed, both at a National data monitoring and policy level.

**Godin, J., Freeman, A., &amp; Rigby, P. (2017). Conceptual**

 **clarification of the playful engagement in social interaction**

 **of preschool-aged children with Autism Spectrum Disorder (ASD).**

 ***Early Child Development and Care, 189*(3), 430-440.**

**doi:10.1080/03004430.2017.1324437.**

Children with autism spectrum disorder (ASD) demonstrate limited playfulness. Their difficulty engaging in meaningful interaction with others renders playful engagement in social interactions a challenge. Although little direct evidence exists regarding the promotion of these children’s playful engagement, links can be established with many traits cited in play and social interaction studies. This paper presents the results of a conceptual clarification exercise regarding the key behaviours associated with the construct of playful engagement in preschool-aged children with ASD. Behaviours were identified based on hallmark deficits in early social interactions and play of children with ASD. The analysis revealed the following behaviours: positive affect, engagement, imitation, joint attention, initiation of social interaction, social responsiveness, flexibility, child’s laughter in funny situations and giving and reading non-verbal cues. In conclusion, a conceptually coherent stage has been set for exploring the literature regarding interventions to promote the playful engagement of preschool-aged children with ASD.

**Roberts, T., Stagnitti, K., Brown, T., & Bhopti, A. (2017). Relationship between sensory processing and pretend play in typically developing children. *American Journal of Occupational Therapy,72*(1). doi:10.5014/ajot.2018.027623**

**Objective**:We sought to investigate the relationship between sensory processing and pretend play in typically developing children.

**Methods**: Forty-two typically developing children ages 5-7 yr were assessed with the Child Initiated Pretend Play Assessment and the Home and Main Classroom forms of the Sensory Processing Measure (SPM).

**Results:** There were significant relationships between elaborate pretend play and body awareness (r = .62, p < .01), balance (r = .42, p < .01), and touch (r = .47, p < .01). Object substitution was associated with social participation (r = .42, p < .05)

**Conclusions**: The sensory processing factors (from the SPM)-namely, Body Awareness, Balance, Touch, and Social Participation-were predictive of the quality of children's engagement in pretend play in the home environment. The results indicated that, to engage and participate in play, children are involving sensory processing abilities, especially body awareness, balance, and touch.

**2017**

**Bento, G., & Dias, G. (2017). The importance of outdoor play for young children's healthy development. *Porto Biomedical Journal*, *2*(5), 157-160.**

Changes in current societies are affecting childhood experiences. Time for outdoor play is diminishing, contributing to more sedentary lifestyles, disconnected from the natural world. Recognizing the importance of outdoor play for young children's healthy growth, a project focused on the exploration of the outdoor environment was developed with a group of young children in an early childhood education setting in Portugal. The project aimed to transform educational practices, moving from frequent indoor activities to a regular use of the outdoor environment. In this paper, we present the main dimensions related to outdoor play that emerged during the project (contact with natural elements, importance of risk, socialization opportunities) and highlight the role of professionals and families in creating quality outdoor play opportunities.

**Watchman, T., & Spencer-Cavaliere, N. (2017). Times have changed: Parent perspectives on children’s free play and sport. *Psychology of Sport and Exercise,32*, 102-112. doi:10.1016/j.psychsport.2017.06.008**

**Objectives**:The purpose of this study was to examine parents' perspectives of children's free play and sport using a socioecological lens.

**Design**: Qualitative, interpretive description.

**Method**: Data were collected using semi-structured interviews with 12 parents of children in middle childhood (ages 8–10). Interviews were transcribed verbatim and analyzed inductively according to interpretive description and deductively using a socioecological model.

**Results**: The overarching theme, ‘times have changed’, captured the ways in which children's sport and free play have evolved since parents' own childhoods. Within this overarching theme, two primary themes were identified: 1) not so ‘free’ play and 2) the privileging of sport.

**Conclusions**: Both free play and sport were viewed as important to middle childhood, however, experiences gained in children's sport were seen to be of greater value to the overall development of children, and were therefore prioritized. Ultimately our findings demonstrate the complexity of parenting and the pressures exerted from various levels of influence on the decisions they make with regard to their children's wellbeing in the contexts of free play and sport. How to inform and best support parents in this process remains a significant challenge in moving forward.

**Roberts, T., Stagnitti, K., Brown, T., & Bhopti, A. (2017). Relationship between sensory processing and pretend play in typically developing children. *American Journal of Occupational Therapy, 72*(1). doi:10.5014/ajot.2018.027623**

**Objective**: We sought to investigate the relationship between sensory processing and pretend play in typically developing children.

**Methods**: Forty-two typically developing children ages 5–7 yr were assessed with the Child Initiated Pretend Play Assessment and the Home and Main Classroom forms of the Sensory Processing Measure (SPM). **Results:** There were significant relationships between elaborate pretend play and body awareness (r = .62, p < .01), balance (r = .42, p < .01), and touch (r = .47, p < .01). Object substitution was associated with social participation (r = .42, p < .05).

**Conclusions**: The sensory processing factors (from the SPM)—namely, Body Awareness, Balance, Touch, and Social Participation—were predictive of the quality of children’s engagement in pretend play in the home environment. The results indicated that, to engage and participate in play, children are involving sensory processing abilities, especially body awareness, balance, and touch.

**2016**

**Miller, A., Christensen, E., Eather, N., Gray, S., Sproule, J., Keay, J., & Lubans, D. (2016). Can physical education and physical activity outcomes be developed simultaneously using a game-centered approach?. *European Physical Education Review*, *22*(1), 113-133.**

The primary objective of this study was to evaluate the efficacy of a pilot intervention using a game-centered approach for improvement of physical activity (PA) and physical education (PE) outcomes simultaneously, and if this had an impact on enjoyment of PE. A group-randomized controlled trial with a 7-week wait-list control group was conducted in one primary school in the Hunter Region, NSW, Australia. Participants (n = 107 students; mean age = 10.7 years, SD 0.87) were randomized by class group into the Professional Learning for Understanding Games Education (PLUNGE) pilot intervention (n = 52 students) or the control (n = 55) conditions. PLUNGE involved 6 × 60 min PE lessons based on game-centered curriculum delivered via an in-class teacher mentoring program. Students were assessed at baseline and 7-week follow-up for fundamental movement skills (FMS) of throw and catch, game play abilities of decision making, support and skill performance; in-class PA; and enjoyment of PA. Linear mixed models revealed significant group-by-time intervention effects (p < 0.05) for throw (effect size: d = 0.9) and catch (d = 0.4) FMS, decision making (d = 0.7) and support (d = 0.9) during game play, and in-class PA (d = 1.6). No significant intervention effects (p > 0.05) were observed for skills outcome during game play (d = −0.2) or student enjoyment (d = 0.1). Game-centered pedagogy delivered via a teacher professional learning program was efficacious in simultaneously improving students' FMS skills, in-class PA and their decision making and support skills in game play.

**Waldman-Levi, A., & Bundy, A. (2016). A Glimpse into co-occupations: Parent/caregiver support of Young Children's Playfulness Scale. *Occupational Therapy in Mental Health*, *32*(3), 217-227.**

Cooperative play between parents/caregivers and children is a positive and significant contributor to the development of children’s emotional, social, and cognitive skills and may set the stage for the formation of co-occupations. This article discusses the rationale for the development of Parent/Caregiver’s Support of Young Children’s Playfulness (PSYCP), an assessment that is based on children’s play and playfulness, adult’s playfulness, and parent–child interaction. The use of the PSYCP to assess co-occupations will allow therapists to identify the specific behaviors that either hinder or support playfulness and mutual play.

**Veiga, G., Neto, C., & Rieffe, C. (2016). Preschoolers' free play-connections with emotional and social functioning. *International Journal of Emotional Education*, *8*(1), 48.**

Play has an important role in various aspects of children's development. However, time for free play has declined substantially over the last decades. To date, few studies have focused on the relationship between opportunities for free play and children's social functioning. The aims of this study are to examine whether children´s free play is related to their social functioning and whether this relationship is mediated by children´s emotional functioning. Seventy-eight children (age, 55-77 months) were tested on their theory of mind and emotion understanding. Parents reported on their children's time for free play, empathic abilities, social competence and externalizing behaviors. The main findings showed that free play and children's theory of mind are negatively related to externalizing behaviors. Empathy was strongly related to children's social competence, but free play and social competence were not associated. Less time for free play is related to more disruptive behaviors in preschool children, however certain emotional functioning skills influence these behaviors independently of the time children have for free play. These outcomes suggest that free play might help to prevent the development of disruptive behaviors, but future studies should further examine the causality of this relationship.

**Hyndman, B., Benson, A., & Telford, A. (2016). Active play: Exploring the influences on children's school playground activities. *American Journal of Play*, *8*(3), 325.**

Children spend the majority of their weekdays in schools, making schools an influential and suitable setting to promote active play. The use of school playgrounds to develop an informal curriculum for children’s active play has become a strategy rather than a taxing demand on busy teachers. The authors review the research on children’s active play and explore the complex and multiple influences evident on school playgrounds to provide a useful framework for understanding children’s active play. They look at studies of individual and social play, the effect of physical environments on active play, and the impact of school polices on children’s active play on school playgrounds. They call on teachers, educational leaders, designers, researchers, and play professionals to consider the implications of this research for school playground interventions and plans to enhance children’s active play.

**Pinchover, S., & Shulman, C. (2016). “You’re playing because it’s fun?” Mothers’ and teachers’ perspectives regarding play interactions with children with ASD. *Journal of Developmental and Physical Disabilities*, *28*(5), 643-664.**

Children with autism spectrum disorder (ASD) differ from typically developing (TD) children in their play and social abilities. Consequently, play-interactions, commonly shared enjoyable experiences that create positive connections between caregivers and children, can be complex and challenging for children with ASD. Little is known, however, about the subjective experiences of caregivers (mothers and teachers) who play with young children with ASD. The current study investigates their subjective perspectives and related beliefs through qualitative semi-structured interviews with 12 mothers of children with ASD and 11 preschool teachers who work with children with ASD. As part of the interviews, caregivers were asked to comment on videotaped observations of half-hour free play-interactions between themselves and the child with ASD. The study revealed four distinct caregiver perspectives: playful, goal-oriented, integrated, and perceived incompetence perspective. Each type was characterized using three themes: the child in the interaction, the purpose of the interaction, and the caregiver’s role. These findings contribute to the understanding of subjective perceptions regarding play-interactions with children with ASD. This may be useful for professionals working with caregivers of children with ASD and helpful in developing more effective play interventions.

**Fabrizi, S. E., Ito, M. A., & Winston, K. (2016). Effect of occupational therapy–led playgroups in early intervention on child playfulness and caregiver responsiveness: A repeated-measures design. *American Journal of Occupational Therapy,70*(2). doi:10.5014/ajot.2016.017012**

**Objective:** This study's objective was to investigate the effects of a community playgroup on the playfulness of children with special needs ages 15 mo to 3 yr and the responsiveness of their caregivers.

**Methods:** Using a pretest–posttest, repeated-measures design, we evaluated 8 child–caregiver dyads participating in an 8-wk occupational therapist–led community playgroup recruited from a purposive sample enrolled in early intervention. Video recordings from four time points over 4 mo were used to determine playfulness (Test of Playfulness) of the child and the responsiveness of the caregiver.

**Results:** Blinded raters assessed playfulness and responsiveness outcomes. A repeated-measures analysis of variance demonstrated that participation in the playgroup significantly increased child playfulness (ηp2 = .89, *p* < .01). Analysis did not detect a change in caregiver responsiveness.

**Conclusions:**The results of this study have implications for the use of playgroups in comprehensive occupational therapy practice in early intervention.

**Nowell, A. (2016). Childhood, play and the evolution of cultural capacity in Neanderthals and modern humans. In *The nature of culture* (pp. 87-97). Springer Netherlands.**

The life history pattern of modern humans is characterized by the insertion of childhood and adolescent stages into the typical primate pattern. It is widely recognized that this slowing of the maturational process provides humans with additional years to learn, transmit, practice and modify cultural behaviors . In both human and non-human primates a significant amount of their respective dependency periods are spent in play . In contrast to modern humans, Neanderthals experienced shorter childhoods. This is significant as there is extensive psychological and neurobiological evidence that it is during infancy, childhood and adolescence that milestones in social and cognitive learning are reached and that play and play deprivation have a direct impact on this development. Faster maturation rates and thus shorter childhoods relative to modern humans lessen the impact of learning through play on the connectivity of the brain . In the context of play behavior, humans are unique in that adult humans play more than adults of any other species and they alone engage in fantasy play. Fantasy play is part of a package of symbol-based cognitive abilities that includes self-awareness , language , and theory of mind. Its benefits include creativity, behavioral plasticity , imagination , apprenticeship and planning. Differences in the nature of symbolic material culture of Neanderthals and modern humans suggest that Neanderthals were not capable of engaging in human-grade fantasy play.

**Aras, S. (2016). Free play in early childhood education: a phenomenological study. *Early Child Development and Care*, *186*(7), 1173-1184.**

It is aimed to investigate perceptions and implementations of early childhood teachers on free play and their involvement in children's free play. Recent studies focused on that, although there is an increase in the amount of teacher involvement, the quality of this involvement should be clearly examined. Lev Vygotsky examined play as an opportunity providing a context for socially assisted learning, a key role in abstract thinking, and a tool promoting development and learning. Teachers’ involvement is considered as an important factor for the relationship between play and developmental outcomes. This phenomenological study used interview and observation. Results indicate that teachers respect the children's play. However, they get involved in when children have problems and need help. They use free playtime to complete their daily plans and take attendance.

**Trawick-Smith, J., Swaminathan, S., & Liu, X. (2016). The relationship of teacher–child play interactions to mathematics learning in preschool. *Early Child Development and Care*, *186*(5), 716-733.**

Teacher–child interactions in preschool children's play may enhance mathematics learning in several ways. As teachers interact with children, they may promote more complex, independent, and symbolic play. Resulting increases in play abilities, in turn, can enhance intellectual growth, including mathematical thinking. Teachers may also facilitate math learning directly by engaging children in mathematical thinking as they play. The purpose of this study was to examine the effects on math learning of interactions that enhance play, itself, and those that directly engage children in mathematical thinking. The classroom play interactions of 47 preschoolers and their teachers were video recorded and analysed. The relationship between specific teacher–child interactions – both enhancing play strategies and promoting math approaches – was examined. Pre-test and post-test scores on the Test of Early Mathematics Ability, Third Edition (TEMA-3) showed that three play interactions predicted growth in math learning: ‘good-fit’ interactions to support play, itself, and number and math communication interactions. Findings confirm that teacher interactions in children's play can have an impact on academic performance. Interactions that are a good fit with what children are currently playing and those that prompt children's thinking about number or engage them in communicating about math enhance early math performance.

**2015**

**Tessier, V. P., Normandin, L., Ensink, K., & Fonagy, P. (2016). Fact or fiction? A longitudinal study of play and the development of reflective functioning. *Bulletin of the Menninger Clinic*, *80*(1), 60-79.**

In Fonagy and Target's (1996, 2000) developmental model of mentalization, play is theorized as a precursor of later mentalization and reflective functioning (RF); however, the relationship between play and later mentalization and RF has yet to be empirically tested. These processes are particularly important in the context of trauma, but an empirical model of the relationships among mentalization, play, and trauma is currently lacking. The aim of this longitudinal study was to examine whether children's capacity to engage in pretend play, to symbolize, and to make play narratives was associated with later RF in those children. Thirty-nine sexually abused children and 21 nonabused children (aged 3 to 8) participated in the study. The Children's Play Therapy Instrument was used to assess children's free play. Three years after the play assessment, children's RF was assessed using the Child Attachment Interview, coded with the Child and Adolescent Reflective Functioning Scale. Pretend play completion was associated with later other-understanding. Play was also found to mediate the relationship between sexual abuse and children's later mentalization regarding others. These findings are consistent with Fonagy and Target's emphasis on the role of pretend play in the development of a nuanced sense of the qualities of the mind and reality. In sum, the findings lend support to Fonagy and Target's account of playing with reality, and the development of mentalization suggests that it may be more than “fiction.” Furthermore, these results suggest that children's ability to create meaningful and coherent play sequences after sexual abuse is associated with the development of a better understanding of their relationships with others. Clinical implications and future directions are discussed.

**Kelz, C., Evans, G. W., & Röderer, K. (2013). The restorative effects of redesigning the schoolyard. *Environment and Behavior*,47(2), 119-139. doi:10.1177/0013916513510528**

Contact with nature can have numerous beneficial effects for children. As the school is a place where children spend a lot of time, the physical environment of the school has considerable potential to influence children. This study investigated the influence of a redesign (greening) of a schoolyard on pupils’ physiological stress, psychological well-being, and executive functioning. A pre–post, quasi-experimental design with a multimethod approach was applied. One-hundred thirty-three middle school pupils (*M* = 14.4 years) of three middle schools in a rural area in Austria were assessed. The renovated schoolyard significantly diminished pupils’ physiological stress levels and enhanced their psychological well-being. Pupils in the renovated schoolyard setting also perceived the environment as more restorative following the redesign. However, it did not affect executive functioning as hypothesized. Limitations of the study and future research opportunities are discussed.

**Newell, B. R. (2015). “Wait! Just let me not think about that for a minute”: What role do implicit processes play in higher-level cognition?. *Current Directions in Psychological Science*, *24*(1), 65-70.**

The belief that in certain situations we are better off not thinking has anecdotal resonance and appeals to our tendency to follow a “law of least effort.” But is it good advice? In this review, I examine recent work from two domains of higher-level cognition—perceptual category learning and decision making—in which similar claims have been made about the benefits of disengaging explicit thought to allow for the operation of superior implicit processes. A reevaluation of this literature suggests a less appealing but perhaps also less surprising conclusion: Complex tasks appear to require explicit thought, and there is little reason to think that *not* thinking is optimal in these situations. Far from offering a negative conclusion, this perspective emphasizes not only the powers of human cognition but also our ability to explain our behavior without recourse to the “black box” of the unconscious.

**Dickey, K., Castle, K., & Pryor, K. (2016). Reclaiming play in schools. *Childhood Education*, *92*(2), 111-117.**

Free and independent play—both in schools and in the home—is becoming a rarity in the lives of many children around the world. Even early years classrooms are increasingly faced with political and community pressure to focus more on teaching literacy and other academic skills to young children. At home, overuse of electronic devices means many children are not engaging in active play experiences and parents and community members may not fully facilitate such play. However, prevailing research points to the many benefits of play, showing a strong correlation between play and physical, cognitive, and social well-being. As the ancient philosopher Plato said, “Do not keep children to their studies by compulsion but by play.” In this article, the authors explore play research and suggest how educators and community members can advocate for play for all children.

**Kemple, K. M., Oh, J. H., & Porter, D. (2015). Playing at school: An inquiry approach to using an experiential play lab in an early childhood teacher education course. *Journal of Early Childhood Teacher Education*, *36*(3), 250-265.**

Play is considered an important activity of the early childhood years. Research supports the contribution of play to children’s development, learning, and well-being. In spite of this, time for play is being pushed out in many early childhood programs by greater time allotted to formal instruction in narrow academic skills to be tested eventually by standardized tests. As a result, current preservice teachers are likely to see fewer examples of appropriate time and support for play in their field placements in early childhood settings. The purpose of this study was to document and analyze what happens when an experiential play lab is implemented in an early childhood teacher education program. This qualitative study includes multiple forms of data collection, including two forms of reflective writings and group discussions. After the workshop, preservice teachers made a greater number of references to play in their defense of developmentally appropriate practice, and the nature of their references to play increased in their focus on play process and on teacher roles in children’s play, as compared to prior to the lab. The results of this study of an experiential play intervention support its potential as a means of probing, documenting, and enriching students’ understanding of the importance of providing for and supporting play in classrooms for young children.

**2014**

[**Watts, T**](http://www.ncbi.nlm.nih.gov/pubmed/?term=Watts%20T%5BAuthor%5D&cauthor=true&cauthor_uid=24581412)**.,** [**Stagnitti, K**](http://www.ncbi.nlm.nih.gov/pubmed/?term=Stagnitti%20K%5BAuthor%5D&cauthor=true&cauthor_uid=24581412)**., &** [**Brown, T**](http://www.ncbi.nlm.nih.gov/pubmed/?term=Brown%20T%5BAuthor%5D&cauthor=true&cauthor_uid=24581412)**. (2014). Relationship between play and sensory processing: a systematic review. *American Journal of Occupational Therapy, 68*(2), 37-46. doi: 10.5014/ajot.2014.009787.**

**Objective**: We examined the empirical evidence to answer the research question, What is the relationship between play and sensory processing in children ages 3-12 yr? METHOD. The PRISMA guidelines were followed to complete a systematic review. Academic databases were searched using play, leisure, sensory processing, and sensory integration as primary search terms. Of 6,230 articles initially identified, 35 full-text articles were screened for eligibility. Of these, 8 met the inclusion criteria. **Results**:All 8 studies were conducted within the United States. The evidence of the relationship between play and sensory processing fell mainly into the low levels of evidence: case studies and cohort studies. **Conclusion**:This review provides occupational therapists with an emerging understanding of the relationship between play and sensory processing based on current evidence and its importance in the occupational development of children. Rigorous research is needed in the area.

# **Oostermeijer, M., Boonen, A.J.H., & Jolles, J. (2014). The relation between children’s constructive play activities, spatial ability, and mathematical word problem-solving performance: a mediation analysis in sixth-grade students. *Front Psychol, 5,* 782. doi:10.3389/fpsyg.2014.00782.**

The scientific literature shows that constructive play activities are positively related to children’s spatial ability. Likewise, a close positive relation is found between spatial ability and mathematical word problem-solving performances. The relation between children’s constructive play and their performance on mathematical word problems is, however, not reported yet. The aim of the present study was to investigate whether spatial ability acted as a mediator in the relation between constructive play and mathematical word problem-solving performance in 128 sixth-grade elementary school children. This mediating role of spatial ability was tested by utilizing the current mediation approaches suggested by [Preacher and Hayes (2008)](http://www.ncbi.nlm.nih.gov/pmc/articles/PMC4102248/#B27). Results showed that 38.16% of the variance in mathematical word problem-solving performance is explained by children’s constructive play activities and spatial ability. More specifically, spatial ability acted as a partial mediator, explaining 31.58% of the relation between constructive play and mathematical word problem-solving performance.

# **Lehrer J.S., Petrakos HH., & Venkatesh V. (2014). Grade 1 students’ out-of-school play and its relationship to school-based academic, behavior, and creativity outcomes. *Early Education and Development, 25*(3), 295-317. doi:10.1080/10409289.2013.817231**

This study explored the relationship between play and child development at the Grade 1 level. As previous research has noted a sudden curtailment of classroom play during this period, the relationship between play at home and children's school grades, behavior, and creativity scores was examined using correlational and regression analyses. In particular, this study sought to assess whether particular types of play (pretend play, active physical play, construction play, etc.) and social arrangements during play (play with siblings, with parents, alone, with friends) predicted any of the outcome measures. A total of 56 children ages 6 and 7 from suburban areas outside of Montreal, as well as their parents and teachers, participated in the study. *Practice or Policy:* Findings indicated that children spent between 1 and 2 hr playing after school each day and that the most common form of play was active physical play. The most common social arrangement during play was play with siblings. Children's free time in the morning and freedom to choose their play activities in the afternoon were predictive of children's academic progress. Watching others play and the ability to choose their own activities in the afternoon predicted positive adaptive behaviors at school. Play with commercial toys and playing alone were predictive of creativity scores.

# **Singer E., Nederend M., Penniz L., Tajik M., & Boom J. (2014). The teacher's role in supporting young children's level of play engagement. *Early Child Development and Care, 184*(8), 1233-1249. doi: 10.1080/03004430.2013.862530**

This paper discusses the results of a study of the relationships between teacher behaviour and the level of play engagement in two- and three-year-old children in Dutch childcare centres. We found that the continuous proximity of the teacher had the greatest impact on the level of play engagement, while the teacher's walking around and only brief contacts with the children had a negative impact. In line with earlier studies, two-sided and reciprocal interactions between teacher and children also yielded positive results for play engagement. Both our quantitative and qualitative analyses showed a strong co-variation of variables. When the teacher paid only brief visits, and peers also walked in and out, there was a greater likelihood of one-sided interactions, When the teacher was always nearby, we observed the opposite. Dutch teachers spend most of their time walking around. Their pedagogy seems to be based on a model of individual care and control and insensitiveness of group dynamic processes.

# **Lindsey, E.W. (2014). Physical activity play and preschool children's peer acceptance: Distinctions between rough-and-tumble and exercise play*. Early Education and Development, 25*(3), 277-294. doi:10.1080/10409289.2014.890854.**

Two forms of exercise play (toy mediated and non-mediated) and 2 forms of rough-and-tumble (R&T) play (chase and fighting) were examined in relation to preschoolers' peer competence. A total of 148 preschoolers (78 boys, 89 Euro-Americans) were observed during free play at their university-sponsored child care center. The gender makeup of children's play companions (same gender, other gender, or mixed gender) as well as the type of play that children engaged in was recorded. Sociometric interviews assessed how well liked children were by their classmates. Analyses revealed that toy-mediated exercise play with mixed-gender and same-gender peers was associated with boys' and girls' peer acceptance. Girls' non-mediated exercise play and boys' R&T chasing was associated with peer acceptance. Boys who engaged in R&T fighting with same-gender peers were better liked by peers, whereas boys who engaged in R&T chasing with other-gender peers were not liked by peers. *Practice or Policy:* The results suggest that child gender and the gender of one's playmate are important factors in associations between physical activity play and peer acceptance.

# **Savina, E. (2014). Does play promote self-regulation in children? *Early Child Development and Care, 184*(11), 1692-1705. doi:10.1080/03004430.2013.875541**

This theoretical paper discusses the role of pretend play and games with rules in fostering children's self-regulation. It proposes several pathways through which play facilitates self-regulation processes. First, in play, children learn to inhibit their impulsive behaviour and follow rules which transform their behaviour from impulsive and spontaneous to mediated and voluntary. Second, play liberates children from situational constraints as children begin to act upon the meanings of objects as opposed to their immediate motivational valence. Third, children develop internal representations which guide their behaviour. Finally, play promotes verbal self-regulation as children are engaged in an ongoing dialogue with their partners in order to resolve differences in perspectives, to reach an agreement about roles, and to invent play rules. The paper further reviews empirical studies which explore the effect of play on inhibition, working memory, and private speech. The current status of play and implications for practice are discussed.

# **Jarvis, P., Newman, S., & Swiniarski, L. (2014). On ‘becoming social’: the importance of collaborative free play in childhood. *International Journal of Play, 3*(1), 53-68. doi: 10.1080/21594937.2013.863440.**

There is increasing concern about declining mental health amongst children in the UK and the USA. Evolutionary and anthropological theorists have begun to build a theory linking this situation to decreasing opportunities to engage in free play. This paper will explore typical contexts for children in these nations, concluding that a range of recently emerging environments have decreased opportunities for collaborative peer free play and ‘discovery’ activities for the current generation. We will draw the theoretical analysis from a broad area of research encompassing psychology, anthropology, education, sociology, marketing, and philosophy to offer a new blend of practical and theoretical perspectives that may shed further light upon this topic.

# **Scheu, I. & Xu, Y. (2014). Expanding Fröebel's garden: the effect of play on adolescents’ cognitive development*. International Journal of Adolescence and Youth, 19*(2), 245-261. doi: 10.1080/02673843.2012.741048.**

This study explored the relationship of play and cognitive development in adolescents. The research design was a quantitative study that consisted of two groups of participants who engaged in either a computer program (work condition) to test cognitive skills or a computer game (play condition) that contains the same tests. The participants were 167 adolescent male students aged 14–19 from urban mid-Atlantic Catholic high schools. The results indicated that adolescent males performed the cognitive tasks of memory and reading better in the play condition than they did in the work condition and performed the cognitive tasks of logic and mathematics better in the work condition than in the play condition. Differences in performance related to age were not present. The findings suggest that play may have a significant effect on adolescents’ cognitive development.

**Allen, K. B., & Barber, C. R. (2015). Examining the use of play activities to increase appropriate classroom behaviors. *International Journal of Play Therapy,24*(1), 1-12. doi:10.1037/a0038466**

This 1-group pretest–posttest quasi-experimental study investigated the importance of addressing a child’s social needs at school to increase the occurrence of socially appropriate classroom behaviors. This study involved observation of 5 groups of Kindergarten boys and their interactions with each other during small group play activities and guidance lessons within the classroom. Over 8 weeks of intervention, the boys received 10 mini social-skills lessons to help them practice appropriate behaviors during the play activities. The interventionist observed the boys during 3 time periods, baseline, midpoint, and posttest, within their classroom to document the occurrence of the noted behaviors. Results indicated that the participants’ verbal, motor, and passive off-task behaviors significantly decreased from baseline to posttest observations. Strengths, limitations, and implications of the results are discussed, and future research is also recommended.

## Ewing, D.L., Monsen, J.J., & Kwoka, M. (2014). Behavioural and emotional well-being of children following non-directive play with school staff. Educational Psychology in Practice, 30(2), 192-203. doi: 10.1080/02667363.2014.907128.

This action research project considered whether significant improvements in child and young person behavioural and emotional mental health could be achieved using school-based play workers as opposed to qualified therapists. This was seen as being an important practice question as access to qualified play therapists was severely restricted with long waiting lists. The Strengths and Difficulties Questionnaire (SDQ) was used as a pre- and post-intervention measure to identify any changes following non-directive play sessions with school staff. Significant improvements were found across all SDQ scales, with the most marked improvement observable in children and young people identified as having a high need for intervention. Number of play sessions attended and age group did not significantly affect SDQ scores according to teacher and child/young person ratings. Parent SDQ ratings indicated greater success of the play intervention for children aged between three and eight years compared with children aged between 11 and 15 years.

**2011**

**Garaigordobil, M., & Berrueco, L. (2011). Effects of a play program on creative thinking of preschool children. *The Spanish Journal of Psychology,14*(02), 608-618. doi:10.5209/rev\_sjop.2011.v14.n2.9**

The purpose of this study was to evaluate the effects of a play program in the creative thinking of preschool children. The study used a repeated measures experimental pretest-posttest design with control groups. The sample included 86 participants aged 5 to 6 years (53 experimental and 33 control participants). Before and after administering the program, two evaluation instruments were applied: The Torrance Test of Creative Thinking (Torrance, 1990) and Behaviors and Traits of Creative Personality Scale (Garaigordobil & Berrueco, 2007). The program consisted of a weekly 75-minute play session throughout the school year. ANOVA results showed that the program significantly increased the verbal creativity (fluency, flexibility, originality), graphic creativity (elaboration, fluency, originality), and behaviors and traits of creative personality. In the pretest phase, there were no differences in the creativity of boys and girls, and the program stimulated a similar level of change in both sexes. The discussion focuses on the importance of implementing creative programs with preschool children.

**Mizokawa, A. (2011). Young children's understanding of pretend crying: The effect of context. *British Journal of Developmental Psychology,29*(3), 489-503. doi:10.1348/026151010x519964**

Reasoning about another's pretend and real crying is related to many important social cognitive abilities (e.g., emotional understanding, appearance-reality, and theory of mind). This study investigated whether children aged 6 years and younger could distinguish between instances of pretend crying and real crying as presented in stories. Sixty-five Japanese children aged 4-6 years were given stories within two contexts (Play and Non-play). In the Play context, the protagonist of the story was pretending to cry or really crying during a pretend play activity. In the Non-play context, the protagonist was also pretending to cry or really crying after his/her toy had been hidden by another child. The children answered questions about these crying events. The results showed that the 4- and 5-year-olds showed significantly better understanding of pretend crying in the Play context compared to the Non-play context. In the Non-play context, they were significantly less likely to understand the cause of pretend crying compared to the 6-year-olds. The results suggest that the context of pretend play facilitates the children's understanding of pretend crying.

**Brockman, R., Jago, R., & Fox, K. R. (2011). Children’s active play: Self-reported motivators, barriers and facilitators. *BMC Public Health,11*(1). doi:10.1186/1471-2458-11-461**

**Background:** Physical activity has important benefits for children's physical health and mental wellbeing, but many children do not meet recommended levels. Research suggests that active play has the potential to make a valuable contribution to children's overall physical activity, whilst providing additional cognitive, social and emotional benefits. However, relatively little is known about the determinants of UK children's active play. Understanding these factors provides the critical first step in developing interventions to increase children's active play, and therefore overall physical activity.

**Methods**: Eleven focus groups were conducted with 77, 10-11 year old children from four primary schools in Bristol, UK. Focus groups examined: (i) factors which motivate children to take part in active play; (ii) factors which limit children's active play and (iii) factors which facilitate children's active play. All focus groups were audio-taped and transcribed verbatim. Data were analysed using a thematic approach.

**Results**: Children were motivated to engage in active play because they perceived it to be enjoyable, to prevent boredom, to have physical and mental health benefits and to provide freedom from adult control, rules and structure. However, children's active play was constrained by a number of factors, including rainy weather and fear of groups of teenagers in their play spaces. Some features of the physical environment facilitated children's active play, including the presence of green spaces and cul-de-sacs in the neighbourhood. Additionally, children's use of mobile phones when playing away from home was reported to help to alleviate parents' safety fears, and therefore assist children's active play. **Conclusions**: Children express a range of motivational and environmental factors that constrain and facilitate their active play. Consideration of these factors should improve effectiveness of interventions designed to increase active play.

**Cook, C., Goodman, N. D., & Schulz, L. E. (2011). Where science starts: Spontaneous experiments in preschoolers’ exploratory play. *Cognition,120*(3), 341-349. doi:10.1016/j.cognition.2011.03.003**

Probabilistic models of expected information gain require integrating prior knowledge about causal hypotheses with knowledge about possible actions that might generate data relevant to those hypotheses. Here we looked at whether preschoolers (mean: 54 months) recognize "action possibilities" (affordances) in the environment that allow them to isolate variables when there is information to be gained. By manipulating the physical properties of the stimuli, we were able to affect the degree to which candidate variables could be isolated; by manipulating the base rate of candidate causes, we were able to affect the potential for information gain. Children's exploratory play was sensitive to both manipulations: given unambiguous evidence children played indiscriminately and rarely tried to isolate candidate causes; given ambiguous evidence, children both selected (Experiment 1) and designed (Experiment 2) informative interventions.

**2010**

**Greco, P., Memmert, D., & Morales, J. C. (2010). The effect of deliberate play on tactical performance in basketball. *Perceptual and Motor Skills,110*(3), 849-856. doi:10.2466/pms**

This field-based study analyzed effects of a deliberate-play training program in basketball on tactical game intelligence and tactical creativity. 22 youth basketball players, ages 10 to 12 years, completed basketball training in one of two equal-sized groups. The deliberate-play training program contained unstructured game forms in basketball. The placebo group played in traditional structured basketball game forms. Tactical intelligence and creativity was assessed before and after an 18-lesson intervention. Analysis showed significant training improvement only for the deliberate-play group. In addition, this outperformance of the placebo group was not only observed for tactical creativity but also for tactical intelligence.

**Aarts, M., Wendel-Vos, W., Oers, H. A., Goor, I. A., & Schuit, A. J. (2010). Environmental determinants of outdoor play in children. *American Journal of Preventive Medicine,39*(3), 212-219. doi:10.1016/j.amepre.2010.05.008**

**Background**: Outdoor play is a cheap and natural way for children to be physically active.

**Purpose**: This study aims to identify physical as well as social correlates of outdoor play in the home and neighborhood environment among children of different age groups.

**Methods**: Cross-sectional data were derived from 6470 parents of children from 42 primary schools in four Dutch cities by means of questionnaires (2007-2008). Multivariate sequential Poisson GEE analyses were conducted (2010) to quantify the correlation between physical and social home and neighborhood characteristics and outdoor play among boys and girls aged 4-6 years, 7-9 years, and 10-12 years.

**Results**: This study showed that next to proximal (home) environmental characteristics such as parental education (RR=0.93-0.97); the importance parents pay to outdoor play (RR=1.32-1.75); and the presence of electronic devices in the child's own room (RR=1.04-1.15), several neighborhood characteristics were significantly associated with children's outdoor play. Neighborhood social cohesion was related to outdoor play in five of six subgroups (RR=1.01-1.02), whereas physical neighborhood characteristics (e.g., green neighborhood type, presence of water, diversity of routes) were associated with outdoor play in specific subgroups only.

**Conclusions**: Neighborhood social cohesion was related to outdoor play among children of different age and gender, which makes it a promising point of action for policy development. Policies aimed at improving physical neighborhood characteristics in relation to outdoor play should take into account age and gender of the target population.

**Nielsen, G., Taylor, R., Williams, S., & Mann, J. (2010). Permanent play facilities in school playgrounds as a determinant of children’s activity. *Journal of Physical Activity and Health,7*(4), 490-496. doi:10.1123/jpah.7.4.490**

**Background:** To investigate whether the number of permanent playground facilities in schools influences objectively measured physical activity.

**Methods:** Physical activity was measured using Actical accelerometers over 2 to 5 days in 417 children (5-12 years) from 7 schools. The number of permanent play facilities likely to encourage physical activity in individuals or groups of children (eg, adventure playgrounds, swings, trees, playground markings, courts, sandpits) were counted on 2 occasions in each school. The surface area of each playground (m(2)) was also measured.

**Results:** The number of permanent play facilities in schools ranged from 14 to 35 and was positively associated with all measures of activity. For each additional play facility, average accelerometry counts were 3.8% (P < .001) higher at school and 2.7% (P < .001) higher overall. Each additional play facility was also associated with 2.3% (P = .001) or 4 minutes more moderate/vigorous activity during school hours and 3.4% (P < .001) more (9 minutes) over the course of the day. School playground area did not affect activity independent of the number of permanent play facilities. Findings were consistent across age and sex groups.

**Conclusion:** Increasing the number of permanent play facilities at schools may offer a cost-effective and sustainable option for increasing physical activity in young children.

**Frahsek, S., Mack, W., Mack, C., Pfalz-Blezinger, C., & Knopf, M. (2010). Assessing different aspects of pretend play within a play setting: Towards a standardized assessment of pretend play in young children. *British Journal of Developmental Psychology,28*(2), 331-345. doi:10.1348/026151009x413666**

The present study suggests a method with which to assess the interrelations between different types of pretend play. In contrast to standard methods in this area, the various types of pretend play were measured within an interactive play scenario. The pretend play tasks were included in a semi-structured play sequence and presented to young children between 24 and 30 months of age (N = 30). Self- and doll-directed pretence, object substitution, pretence with realistic objects, and self-initiated pretend play, as well as the understanding that an object had been given two identities was tested. The capacity for dual representation was assessed by asking for the real and pretend identity of an object. Age differences were found in the overall score for elicited pretence but not for all items separately. Individual items also differed in difficulty and thus are of potential use for assessing intraindividual differences in pretend play. Findings are discussed in the context of current theories and methods concerning the development and assessment of pretend play.

**Shutts, K., Banaji, M. R., & Spelke, E. S. (2009). Social categories guide young children’s preferences for novel objects. *Developmental Science,13*(4), 599-610. doi:10.1111/j.1467-7687.2009.00913.x**

To whom do children look when deciding on their own preferences? To address this question, 3-year-old children were asked to choose between objects or activities that were endorsed by unfamiliar people who differed in gender, race (White, Black), or age (child, adult). In Experiment 1, children demonstrated robust preferences for objects and activities endorsed by children of their own gender, but less consistent preferences for objects and activities endorsed by children of their own race. In Experiment 2, children selected objects and activities favored by people of their own gender and age. In neither study did most children acknowledge the influence of these social categories. These findings suggest that gender and age categories are encoded spontaneously and influence children's preferences and choices. For young children, gender and age may be more powerful guides to preferences than race.

## Shuang, L.; & Zhang, X.K. (2010). The effect of behavior evaluation on mastery motivation in 3-year-old children.Psychological Development and Education, (02).

## To examine the general characteristics of mastery motivation and the effect of behavior evaluation on it,71 children were tested in situational experiments. The results are as follows:for 3-year-old children:(1) mastery motivation for newfangled toy was strong; (2) various visual and auditory feedback could motivate their more exploration and manipulation; (3) they showed more pleasure when evaluated positively on their exploration; (4) the emotional experience from success and failure was significantly different; (5) positive evaluation could increase their interest when succeeding,and decrease their negative emotion when failing; (6) most of the children (94.42%) wanted to try challenge and persist long time for completion,while individual differences existed.

**2009**

**Mclnnes, K., Howard, J., Miles, G. & Crowley, K. (2009). Behavioural differences exhibited by children when practising a task under formal and playful conditions. *Educational and Child Psychology, 26(*2), 31-39.**

Play is viewed as central to learning in the early years despite a lack of empirical evidence to support this. Most research has concentrated on adult definitions of play which fail to capture the intrinsic quality of playfulness. To achieve this it is necessary to elicit children's definitions of play. The research discussed in this paper utilises children's definitions of play to create formal and playful practice conditions to demonstrate the links between playfulness and learning. In addition, analysis of videotaped observations indicates behavioural differences according to whether children participate in playful or formal practice conditions. These findings support a behavioural threshold and fluency theory of play. Children in the playful condition exhibited more fluent and purposeful problem solving behaviours than children in the formal condition. Implications for practitioners in educational settings are outlined.

**Whitebread,D., Coltman,P., Jameson, H., & Lander, R. (2009). Play, cognition and self-regulation: What exactly are children learning when they learn through play? *Educational and Child Psychology, 26*(2), 40-52.**

This paper explores the particular aspects of learning which might be supported through playful activity and reviews research and theory which link children's play, and particularly pretence or symbolic play, to the development of metacognitive and self-regulatory skills. Three studies are reported, one observational and two experimental, which have explored this relationship. The observational study involved the video-recording of 582 metacognitive or self-regulatory 'events' within Foundation Stage settings. The two experimental studies replicated in different learning domains the classic study of Sylva, Bruner and Genova (1976), which contrasted the problem-solving performance of 3- to 5-year-old children who had experienced a 'taught' and 'play' condition. Evidence from the present studies reported and other studies supports the view that play, and particularly pretence or symbolic play, which might be with objects or other children, is particularly significant in its contribution to the development of children as metacognitively skilful, self-regulated learners. Evidence from the observational study indicated that child-initiated playful activities, in small groups without adult supervision, supported the greatest proportion of self-regulatory behaviours. The experimental studies suggested that the experience of the 'play' condition was particularly effective in preparing the children for effortful, problem-solving or creative tasks which require a high level of metacognitive and self-regulatory skill. Metacognitive and self-regulatory development is crucially important in the development of academic skills which involve intentional learning, problem-solving and creativity. An understanding of the relationship between pretend or symbolic play and self-regulation is also helpful in providing clear guidelines for adults working with young children as regards their role in supporting and encouraging play in educational contexts.

**Siraj-Blatchford, I. (2009). Conceptualising progression in the pedagogy of play and sustained shared thinking in early childhood education: A Vygotskian perspective. *Educational and Child Psychology*, *26*(2), 77-89.**

This paper is concerned specifically with the pedagogies applied in supporting learning through children's play, and it is framed outside mainstream discourses on the nature of play. The development of the paper also represents one stage in a continuing effort to develop a better understanding of sustained shared thinking in early childhood education. The paper focuses on the educational potential of shared playful learning activities. However, given the overwhelming consensus regarding the importance of play in early childhood development, even a diehard educational pragmatist must begin by addressing subjects that are most commonly considered by psychologists. The paper begins with an account of 'sustained shared thinking', a pedagogical concept that was first identified in a mixed method, but essentially educational effectiveness study. Then a consideration of the nature and processes of 'learning' and 'development' is offered. It is argued that popular accounts of a fundamental difference in the perspectives of Piaget and Vygotsky have distracted educational attention from the most important legacy that they have left to early childhood education; the notion of 'emergent development'. Pedagogic progression in the early years is then identified as an educational response to, and an engagement with, the most commonly observed, evidence based developmental trajectories of young children as they learn through play.

**Kangas, M. (2009). Creative and playful learning: Learning through game co-creation and games in a playful learning environment. *Thinking Skills and Creativity,5*(1), 1-15. doi:10.1016/j.tsc.2009.11.001**

This paper reports on a pilot study in which children aged 7–12 (N=68) had an opportunity to study in a novel formal and informal learning setting. The learning activities were extended from the classroom to the playful learning environment (PLE), an innovative playground enriched by technological tools. Curriculum-based learning was intertwined with game co-creation, play, and computer games in the PLE. The results indicate that the children considered learning in groups, through co-creation and turning fact into fiction, to be a rewarding way to learn, practice group work and use their imagination for a common goal. Teachers felt their role was important and challenging, especially in terms of the amount of tutoring and lesson planning. The study shows that one way to foster activity, creativity, imagination, and group work skills-along with academic achievement-is to integrate fact and fiction and a playful learning environment in teaching, studying and learning.

**Porter, C. L. (2009). Predicting preschoolers social-cognitive play behavior: Attachment, peers, temperament, and physiological regulation. *Psychological Reports,104*(2), 517-528. doi:10.2466/pr0.104.2.517-528**

Research on children's social-cognitive play typologies (i.e., active and passive forms of solitary and social play) suggests links of early play behaviors and later social development and risk status. To date, few studies have examined simultaneously suspected links between children's social-cognitive play types and factors believed to shape these early social-play behaviors. This study examined a simultaneous model of individual (temperament, physiology) and relational variables (attachment, peer networks) believed to influence children's social-cognitive play types, including individual characteristics drawn from the Child Behavior Questionnaire which measures dimensions of shyness and impulsivity, a lab-based assessment of social withdrawal, and physiological markers linked to social regulation (cardiac vagal tone and vagal regulation). Children's attachment status to parents was gathered using Q-Sort methodology, and a measure of previous peer network size was obtained from parents' reports to examine potential links between relational history and social-cognitive play types. Predictive discriminant function analysis showed that children's (N = 54, age range 35 to 58 months) social-cognitive play was better predicted on the basis of multiple independent variables than individual, zero-order relations. When predicting children's social-cognitive play typologies, a multidimensional view which encompasses both individual characteristics and social-relational variables may best predict social -cognitive play types and help understanding of children's social trajectories.

**Sevier-Laws, J. (2009). An investigation of inclusive early childhood education teachers' perspectives and use of constructivism and play in classrooms to enhance children's ability to construct knowledge. *Dissertation Abstracts International Section A: Humanities and Social Sciences,* *69*(9-A), 3448.**

Research indicates that play is important for all young children with and without disabilities. Because many Early Childhood Education (ECE) classrooms include children with disabilities, it is important to examine if ECE teachers in inclusive classroom settings know how to effectively integrate play into their teaching in order to enhance children's learning. The purpose of this research study was to acquire information from ECE teachers in inclusive classrooms concerning their perspectives on constructivism and play and how they integrate them into their teaching to enhance children's ability to construct knowledge. The study also examined whether the perspectives of inclusive ECE teachers concerning constructivism and play influence how they integrate constructivism and play into their teaching. Surveys were used to collect quantitative data concerning the participants' perspectives on constructivism and play. In addition, classroom observations were conducted and summarized using a classroom observation measure, in order to examine how play and constructivism were integrated into the teaching of the participants. Outcomes of the survey indicated that the inclusive ECE teachers had positive perspectives concerning constructivism and play. In addition, outcomes of the classroom observation indicated that play and constructivism were used extensively in the teaching of the inclusive ECE teachers through circle-time and center-time lessons and activities in order to enhance children's abilities to construct knowledge. Furthermore, through comparison of the survey and the classroom observations, it was revealed that the perspectives of the inclusive ECE teachers regarding constructivism and play positively influenced how they integrated play and constructivism into their teaching.

**Sackett, Anna L. (2009). Promoting flow: An investigation of the effects of various task conditions on flow. *Dissertation Abstracts International: Section B: The Sciences and Engineering, 69*(10-B), 6462.**

Previous flow research has focused primarily on the components of the flow experience and the activities in which flow can be experienced. However, little research has examined aspects of flow theory in an empirical setting, nor has it developed strategies for increasing the likelihood of experiencing flow. This study examined the effects of two theoretical conditions of flow: challenge and goals on the ability to experience flow, increase performance, and enhance satisfaction. There were two levels of challenge, low and high, and three types of goals. There was an instructions-only goal that was used as a control, a performance goal that focused participants on attaining a certain number of points, and an experiential goal that focused participants on intrinsic aspects of the game, such as enjoyment and fun. The results of this empirical study found that participants in the low challenge condition were more likely to experience flow than participants in the high challenge condition. This may be due to the reduction in anxiety for participants in the low challenge condition, which led to an increase in the ability to experience flow. The results also showed no differences in the effects of the three different types of goals on flow, yet the different types of goals also did not inhibit flow. Evidence of positive relationships between flow and performance, and flow and satisfaction were also found. These results have implications in the field of I/O psychology in that flow appears to be a positive experience that may be useful to try to enhance satisfaction and performance in the workplace.

**Bundy, A C., Luckett, T., Tranter, P., Naughton,G.A., Wyver, S. R., Ragen, J., & Spies, G. (2009). The risk is that there is 'no risk': A simple, innovative intervention to increase children's activity levels. *International Journal of Early Years Education, 17*(1), 33-45.**

School playgrounds offer everyday opportunities for physically active and social play that combats obesity, develops skills, and promotes well-being. However, teachers’ fear of the legal consequences of injury can elicit overzealous risk reduction with the result that playgrounds lack challenge, and the potential benefits of play become limited. In this research, we trialled a simple, cost-effective strategy to encourage children to be more active and social on a school playground. Over 11 weeks, we made available materials with no fixed purpose (e.g. car tires, boxes) to a playground of children aged five to seven. Accelerometers showed children became significantly more active. Interviews with teachers suggested children also became more social, creative, and resilient. However, despite no incidence of injuries, teachers perceived an increased risk and encountered dilemmas regarding duty of care. We conclude that future interventions should address issues of ‘surplus safety’ at individual, school, system, and policy levels.

**Prior to 2009**

**Heal, N.A. & Hanley, G.P. (2007). Evaluating preschool children's preferences for motivational systems during instruction. *Journal of Applied Behavioral Analysis, 40*, 249–261.**

Preschool teachers rely on several strategies for motivating children to participate in learning activities. In the current study, we evaluated the effectiveness of and preference for three teaching contexts in which embedded, sequential, or no programmed reinforcement was arranged. The embedded context included highly preferred teaching materials, the sequential context included highly preferred edible items for correct responding, and a control context included neither. In addition, an exclusively play-oriented activity was included as a fourth option to determine if one of the direct teaching contexts could compete with a relatively unstructured and exclusively child-led activity. All participants preferred the sequential context (use of high-quality consequences) over the embedded context (use of high-quality teaching materials), 2 of the 4 participants preferred some motivational system to none at all, and the play area was selected over all variants of the instructional contexts during the majority of trials. We found either no or small differences in correct responding in the different instructional contexts; however, rates of undesirable behavior were highest in the least preferred interaction area for 3 of the 4 participants. Implications for the design of effective and preferred teaching

**Ginsburg, K.R. (2007). The importance of play in promoting healthy child development and maintaining strong parent-child bonds. *PEDIATRICS. 119,* 182-191.**

Play is essential to development because it contributes to thecognitive, physical, social, and emotional well-being of childrenand youth. Play also offers an ideal opportunity for parentsto engage fully with the**ir** children. Despite the benefits derivedfrom playfor both children and parents, time for free playhas been markedly reduced for some children. This report addressesa variety of factors that have reduced play, including a hurriedlifestyle, changes in family structure, and increased attentionto academics and enrichment activities at the expense of recessor free child-centered play. This report offers guidelines onhow pediatricians can advocate for children by helping families,school systems, and communities consider how best to ensurethat play is protected as they seek the balance in children’slives to create the optimal developmental milieu.

**Peyton, J.L.,** [**Bass, W.T**](http://www.ncbi.nlm.nih.gov/sites/entrez?Db=pubmed&Cmd=Search&Term=%22Bass%20WT%22%5BAuthor%5D&itool=EntrezSystem2.PEntrez.Pubmed.Pubmed_ResultsPanel.Pubmed_RVAbstractPlus)**.,** [**Burke, B.L**](http://www.ncbi.nlm.nih.gov/sites/entrez?Db=pubmed&Cmd=Search&Term=%22Burke%20BL%22%5BAuthor%5D&itool=EntrezSystem2.PEntrez.Pubmed.Pubmed_ResultsPanel.Pubmed_RVAbstractPlus)**., &** [**Frank, L.M**](http://www.ncbi.nlm.nih.gov/sites/entrez?Db=pubmed&Cmd=Search&Term=%22Frank%20LM%22%5BAuthor%5D&itool=EntrezSystem2.PEntrez.Pubmed.Pubmed_ResultsPanel.Pubmed_RVAbstractPlus)**. (2005). Novel motor and somatosensory activity is associated with increased cerebral cortical blood volume measured by near-infrared optical topography. *Journal of Child Neurology, 20*, 817-21.**

Recent reports suggest that learning is enhanced by emotion, spontaneity, and play. The mechanisms of this enhancement are unclear and might involve increased cortical stimulation by the limbic system. Since neuronal activity is tightly coupled to changes in cerebral blood flow and volume, the demonstration of increased cortical blood volume during playful versus routine motor and somatosensory activity would imply enhanced neuronal activity and provide insight into the complex interaction between play and learning. Near-infrared spectroscopy was used to detect changes in cortical blood volume during performance of (1) rudimentary visual, motor, and speech tasks; (2) integration of the tasks in a familiar routine manner; and (3) integration of the tasks in a novel, spontaneous, playful manner. No significant differences in cortical blood volume were found during the performance of the individual rudimentary tasks and their routine integration. However, the novel integration activity was associated with a significantly greater increase in frontal lobe oxyhemoglobin, deoxyhemoglobin, and total hemoglobin, as well as parietal lobe total hemoglobin. This small pilot study provides a limited measure of physiologic support for a relationship between play and learning.

[**Bernard-Opitz, V**](http://www.ncbi.nlm.nih.gov/sites/entrez?Db=pubmed&Cmd=Search&Term=%22Bernard-Opitz%20V%22%5BAuthor%5D&itool=EntrezSystem2.PEntrez.Pubmed.Pubmed_ResultsPanel.Pubmed_RVAbstract)**.,** [**Ing, S**](http://www.ncbi.nlm.nih.gov/sites/entrez?Db=pubmed&Cmd=Search&Term=%22Ing%20S%22%5BAuthor%5D&itool=EntrezSystem2.PEntrez.Pubmed.Pubmed_ResultsPanel.Pubmed_RVAbstract)**., &** [**Kong, T.Y**](http://www.ncbi.nlm.nih.gov/sites/entrez?Db=pubmed&Cmd=Search&Term=%22Kong%20TY%22%5BAuthor%5D&itool=EntrezSystem2.PEntrez.Pubmed.Pubmed_ResultsPanel.Pubmed_RVAbstract)**.(2004). Comparison of behavioural and natural play interventions for young children with autism. *Autism, 8*, 319-33.**

The article reports the results of a pilot study comparing traditional behavioural approaches and natural play interventions for young children with autism over a 10 week period. Two matched groups of eight young children with autism participated. Using a crossover design, children in both groups showed positive gains in compliance, attending, play and communication with their therapists and parents. Improvements in attending and compliance were higher following the behavioural condition compared with the natural play condition. Seven participants had reduced autism scores after the intervention. The findings suggest that behavioural and play approaches affect behaviour in different ways and that autistic symptomatology of young children may be amenable to treatment. The discussion focuses on the active ingredients of treatments and the need to base efficacy research on well-planned treatment comparisons.

**Panksepp, J. Burgdorf, J., Turner, C. & Gordon, N. (2003). Modeling ADHD-type arousal with unilateral frontal cortex damage in rats and beneficial effects of play therapy. *Brain and Cognition, 52,* 97-105.**

It has been recently shown that human adolescents with Attention Deficit/Hyperactivity Disorder (ADHD) have frontal lobe deficits, especially on the right sides of their brains ([Castellanos et al., 1996](http://www.sciencedirect.com/science?_ob=ArticleURL&_udi=B6WBY-48J43DR-2&_user=10&_coverDate=06%2F30%2F2003&_rdoc=1&_fmt=full&_orig=search&_cdi=6723&_sort=d&_docanchor=&view=c&_acct=C000050221&_version=1&_urlVersion=0&_userid=10&md5=dc359e61e2edd75f2a311dc4b33d1547#bib6)). ADHD is commonly treated with psychostimulants which may have adverse consequences. Hence, less invasive therapies need to be developed. In the present work, we tested the ability of right frontal lesions to induce hyperactivity in rats. We also evaluated the effects of chronic play therapy during early adolescence to reduce both hyperactivity and the elevated playfulness later in development. Play therapy was able to reduce both hyperactivity and excessive playfulness. In additional work, we found that access to rough-and-tumble play in normal animals could enhance subsequent behavioral indices of behavioral inhibition (i.e., freezing in response to a startle stimulus) that appeared to be independent of increased fearfulness and fatigue. Overall, these results suggest that (1) neonatal frontal lobe lesions can be used as an animal model of the overactivity in ADHD and (2) rough-and-tumble play therapy may be a new useful treatment for ADHD.

**Panksepp, J. & Burgdorf, J. (2003). ‘‘Laughing’’ rats and the evolutionary antecedents of human joy? *Physiology & Behavior, 79*, 533– 547.**

Paul MacLean’s concept of epistemics—the neuroscientific study of subjective experience—requires animal brain research that can be related to predictions concerning the internal experiences of humans. Especially robust relationships come from studies of the emotional/affective processes that arise from subcortical brain systems shared by all mammals. Recent affective neuroscience research has yielded the discovery of play- and tickle-induced ultrasonic vocalization patterns (!50-kHz chirps) in rats may have more than a passing resemblance to primitive human laughter. In this paper, we summarize a dozen reasons for the working hypothesis that such rat vocalizations reflect a type of positive affect that may have evolutionary relations to the joyfulness of human childhood laughter commonly accompanying social play. The neurobiological nature of human laughter is discussed, and the relevance of such ludic processes for understanding clinical disorders such as attention deficit hyperactivity disorders (ADHD), addictive urges and mood imbalances are discussed. **Note**: This study also discusses the importance of the tactile system in relation to laughter and joy.

[**Cross LA**](http://www.ncbi.nlm.nih.gov/sites/entrez?Db=pubmed&Cmd=Search&Term=%22Cross%20LA%22%5BAuthor%5D&itool=EntrezSystem2.PEntrez.Pubmed.Pubmed_ResultsPanel.Pubmed_RVAbstract)**, &** [**Coster WJ**](http://www.ncbi.nlm.nih.gov/sites/entrez?Db=pubmed&Cmd=Search&Term=%22Coster%20WJ%22%5BAuthor%5D&itool=EntrezSystem2.PEntrez.Pubmed.Pubmed_ResultsPanel.Pubmed_RVAbstract)**. (1997). Symbolic play language during sensory integration treatment. *AJOT, 51*, 808-14.**

**Objective**: Clinical writings on sensory integration treatment and theory have long professed that play serves as an important means of implementing treatment goals. However, to date, there has been little research that examines this aspect of the intervention. With the use of play language as an indicator for the occurrence of play, this study examined the frequency and characteristics associated with symbolic play language that therapists and children use during sensory integration therapy. This study is part of an ongoing research program designed to examine therapist-child interactions.

**Method**: The frequency of symbolic play language observed in 41 videotaped treatment sessions of therapist-child dyads (21 children, 12 therapists) was recorded with the Challenge Coding System. The presence of symbolic play language was recorded if the child or therapist used language that incorporated the child, therapist, equipment, or activity into a symbolic or pretend play theme. The frequency of symbolic play language and percentage of time spent using play language were calculated. Associations among frequency of play language, child age, and behavior during the session (e.g., seeking assistance, cooperation) were also examined.

**Results**: Symbolic play language proved to be a major feature of sensory integration treatment sessions. It also correlated with child age and with some features associated with therapeutic interactions (i.e., child tries hard, child seeks assistance, therapist assists child, therapist modifies activity, therapist structures activity). CONCLUSION: The results suggest that these therapists used play language frequently and that this usage may support children in sensory integrative therapy to successfully accomplish activities.

[**Dunkerley, E**](http://www.ncbi.nlm.nih.gov/sites/entrez?Db=pubmed&Cmd=Search&Term=%22Dunkerley%20E%22%5BAuthor%5D&itool=EntrezSystem2.PEntrez.Pubmed.Pubmed_ResultsPanel.Pubmed_RVAbstract)**.,** [**Tickle-Degnen, L**](http://www.ncbi.nlm.nih.gov/sites/entrez?Db=pubmed&Cmd=Search&Term=%22Tickle-Degnen%20L%22%5BAuthor%5D&itool=EntrezSystem2.PEntrez.Pubmed.Pubmed_ResultsPanel.Pubmed_RVAbstract)**., &** [**Coster, W.J**](http://www.ncbi.nlm.nih.gov/sites/entrez?Db=pubmed&Cmd=Search&Term=%22Coster%20WJ%22%5BAuthor%5D&itool=EntrezSystem2.PEntrez.Pubmed.Pubmed_ResultsPanel.Pubmed_RVAbstract)**. (1997). Therapist-child interaction in the middle minutes of sensory integration treatment. *AJOT, 51*, 799-805.**

The purpose of this study was to describe the management of challenge

during therapist-child interaction in sensory integration treatment. This descriptive and relational study of the middle minutes of treatment sessions partially replicated an earlier study of the beginning minutes. One-minute videotape clips taken from the middle minutes of 38 treatment sessions were shown to therapist judges who rated qualities of therapist and child behavior. Two patterns emerged from the correlations of ratings: work and playfulness. Work for the child involved trying hard, cooperating and seeking assistance, whereas work for the therapist involved assisting and guiding the child. Play for the child included enjoying the activity, being successful and confident, and trying hard. For the therapist, play involved being creative and behaving playfully. Patterns of work and play were different across different levels of challenge to the child.

[**Tanta, K.J**](http://www.ncbi.nlm.nih.gov/sites/entrez?Db=pubmed&Cmd=Search&Term=%22Tanta%20KJ%22%5BAuthor%5D&itool=EntrezSystem2.PEntrez.Pubmed.Pubmed_ResultsPanel.Pubmed_RVAbstract)**.,** [**Deitz, J.C**](http://www.ncbi.nlm.nih.gov/sites/entrez?Db=pubmed&Cmd=Search&Term=%22Deitz%20JC%22%5BAuthor%5D&itool=EntrezSystem2.PEntrez.Pubmed.Pubmed_ResultsPanel.Pubmed_RVAbstract)**.,** [**White, O**](http://www.ncbi.nlm.nih.gov/sites/entrez?Db=pubmed&Cmd=Search&Term=%22White%20O%22%5BAuthor%5D&itool=EntrezSystem2.PEntrez.Pubmed.Pubmed_ResultsPanel.Pubmed_RVAbstract)**., &** [**Billingsley, F**](http://www.ncbi.nlm.nih.gov/sites/entrez?Db=pubmed&Cmd=Search&Term=%22Billingsley%20F%22%5BAuthor%5D&itool=EntrezSystem2.PEntrez.Pubmed.Pubmed_ResultsPanel.Pubmed_RVAbstract)**. (2005). The effects of peer-play level on initiations and responses of preschool children with delayed play skills. *AJOT, 59*, 437-45.**

The potential impact of peer-play opportunities on the overall development of young children has been well-documented in the social development, occupational therapy, and special education literature. However, the effect of peer characteristics on the manifestation and facilitation of specific types of play roles and behaviors has received little attention. This topic is of key importance to occupational therapists who are striving to develop interventions that enhance the development of social participation and play in preschool children. The purpose of this study was to examine the differences in initiation and response exhibited by preschool-aged children with social-play delays when participating in free-play dyads with peers of differing developmental levels. A single-subject alternating treatments design was replicated across five preschool-aged children with developmental play delays. Each child was paired with one peer who had lower developmental play skills and one peer who had higher developmental play skills. The arranged dyads were given the opportunity to play together in a specially designed playroom at their school. Their interactions were videotaped and later coded. All five children generally showed more initiation and response to initiation during play with higher-level peers, although one participant showed less differentiation for initiation than the other four children. An occupational therapist working with a preschool child with play delays and wanting to facilitate the child's initiation and response in play situations should consider pairing the child with play delays with a child who has higher play skills.

[**Pellis, S.M**](http://www.ncbi.nlm.nih.gov/sites/entrez?Db=pubmed&Cmd=Search&Term=%22Pellis%20SM%22%5BAuthor%5D&itool=EntrezSystem2.PEntrez.Pubmed.Pubmed_ResultsPanel.Pubmed_RVAbstractPlus)**., &** [**McKenna, M.M**](http://www.ncbi.nlm.nih.gov/sites/entrez?Db=pubmed&Cmd=Search&Term=%22McKenna%20MM%22%5BAuthor%5D&itool=EntrezSystem2.PEntrez.Pubmed.Pubmed_ResultsPanel.Pubmed_RVAbstractPlus)**. (1992). Intrinsic and extrinsic influences on play fighting in rats: effects of dominance, partner's playfulness, temperament and neonatal exposure to testosterone propionate.** ***Behavioral Brain Research,*** ***28*, 135-45.**

Play fighting is a frequent activity of juvenile rats and appears to show marked variability amongst individuals in that some rats play a great deal and others very little. This study attempted to identify some of the factors involved in producing this individual variability. The major influence over an individual's frequency of play as a juvenile was found to be the frequency of play by the partner. That is, play appears to be contagious, in that a high playing animal stimulates its partner to play frequently as well. In male juveniles, but seemingly not in female juveniles, the subsequent adult status of one partner as dominant influences the subordinate-to-be to initiate more playful contacts. In addition to these extrinsic influences, however, there appear to be intrinsic factors that influence whether an individual is a high or low playing animal. One intrinsic factor appears to be 'boldness', so that bolder animals tend to initiate more playful contacts. Higher players tend to be more susceptible to the stereotypy-inducing effects of the dopamine agonist, apomorphine, and tend to be more dependent upon the playful activity of the partner to maintain their own high levels of play. Both of these characteristics are consistent with other studies comparing bold and timid rats. Boldness, however, only seems to influence how much play a rat will exhibit, not how much play it is capable of exhibiting. Neonatal testosterone augmentation increases juvenile play fighting but not apomorphine susceptibility, suggesting that a high player need not be a bold animal. The total frequency of play an individual is capable of initiating appears to depend upon perinatal exposure to androgens. Boldness and the playfulness of the partner appear to modulate the expression of this hormonally set value.

[**Fiese, B.H**](http://www.ncbi.nlm.nih.gov/sites/entrez?Db=pubmed&Cmd=Search&Term=%22Fiese%20BH%22%5BAuthor%5D&itool=EntrezSystem2.PEntrez.Pubmed.Pubmed_ResultsPanel.Pubmed_RVAbstractPlus)**. (1990). Playful relationships: a contextual analysis of mother-toddler interaction and symbolic play.** ***Child Development,*** ***61*, 1648-56.**

The relation between social interaction and complexity of toddler's symbolic play was investigated. 57 toddlers between 15 and 24 months of age were observed under 4 conditions: (1) child play alone, (2) child play with mother, (3) child modeling mother, and (4) child play with mother following the modeling condition. Each subject was rated on complexity of play, maternal attention directing, reciprocity, and maternal intrusiveness. Significant condition effects were found in which more complex forms of play were observed when the children were playing with their mothers than when playing by themselves. Maternal intrusions and questioning were negatively related to symbolic play. Turn-taking was negatively related to simple exploratory play. Results of a sequential analysis demonstrated that turn-taking was more likely to precede symbolic play, and maternal intrusiveness was more likely to precede simple exploratory play. The role of active partnership in symbolic play development is discussed.