Creation of Play Context

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

2009

McInnes, 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. [Journal Article]

> 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. (PsycINFO Database Record (c) 2009 APA, all rights reserved)

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. [Journal Article]

> 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. (PsycINFO Database Record (c) 2009 APA, all rights reserved)

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. [Journal Article]

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. (PsycINFO Database Record (c) 2009 APA, all rights reserved)

Kangas, M. (2009). Creative and playful learning: Learning through game co-creation and games in a playful learning environment. Thinking Skills and Creativity, Nov 27.

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. (PsycINFO Database Record (c) 2009 APA, all rights reserved)

Porter CL. (2009). Predicting preschoolers' social-cognitive play behavior: attachment, peers, temperament, and physiological regulation. Psychol Rep. 104(2), 517-28.

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. [Dissertation]

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. (PsycINFO Database Record (c) 2009 APA, all rights reserved)

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. [Dissertation]

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. (PsycINFO Database Record (c) 2009 APA, all rights reserved)

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. [Journal Article]

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 over-zealous 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. (PsycINFO Database Record (c) 2009 APA, all rights reserved)

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. and the Committee on Communications and the Committee on Psychosocial Aspects of Child and Family Health (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 the cognitive, physical, social, and emotional well-being of children and youth. Play also offers an ideal opportunity for parents to engage fully with the**ir** children. Despite the benefits derived from play for both children and parents, time for free play has been markedly reduced for some children. This report addresses a variety of factors that have reduced play, including a hurried lifestyle, changes in family structure, and increased attention to academics and enrichment activities at the expense of recess or free child-centered play. This report offers guidelines on how pediatricians can advocate for children by helping families, school systems, and communities consider how best to ensure that play is protected as they seek the balance in children's lives to create the optimal developmental milieu.

Peyton JL, Bass WT, Burke BL, & Frank LM. (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, Ing S, & Kong TY.(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). 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, & Coster WJ. (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, Tickle-Degnen L, & Coster WJ. (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 KJ, Deitz JC, White O, & Billingsley F. (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 SM, & McKenna MM. (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 BH. (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.