Final Essay

To what extent, and in what ways, does children's playfulness make a key contribution to their development as self-regulated learners?

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Self-regulation, one of the most powerful predictors of children's academic achievement and emotional well-being, is directly and ideally supported through playful activities. (Whitebread & Coltman, 2011) According to current research by Pino Paternack (as cited in Whitebread, 2012) self-regulated learning can be divided into three categories: emotional and motivational regulation, metacognitive knowledge, and metacognitive regulation. The first category, emotional and motivational regulation, provides the 'will' or the drive that propels one to learn, while all three categories provide the 'skills' that are required to self-regulate and learn (Paris & Paris as cited in Whitebread, 2012). Other theories from neuroscience, such as that proposed by Barkley (as cited in Whitebread, 2012), have identified five components which are necessary to both the 'will' and the skill of self-regulation. The five components are motivational appraisal, reorganizing of behaviour, inhibitory control, working memory, and internalized speech. Theories of learning and research into the field of play provide strong evidence that these five elements of self-regulation are evident in play and vital to learning.

Intentional effortful learning and remembering requires emotional and motivational regulation or 'will', and a great range of metacognitive activity as Whitebread, Coltman, Jameson, and Lander (2009) point out. A study by Blair and Razza (2004) demonstrated how important effortful control is to interpersonal competence, and also to measures of literacy and math ability in Kindergarten. Theories about what drives this effort and how motivation is intrinsically embedded in playful activities include the self-determination theory, Maslow's needs theory, Vygotsky's theories, and evolutionary theories.

The self-determination theory, as discussed by Reeve, Ryan, Deci, and Jang (2009), includes the mini-theory that children have basic psychological needs. The assertion that children have needs which are met through playful activities and are therefore motivated to employ

aspects of self-regulation begins with looking at the question: What are children's needs? Children's psychological needs identified in Maslow's (1943) hierarchy include self-actualization and self-esteem. Other needs required by happy, healthy, and academically successful children identified by Whitebread (2012) are feelings of self-worth, relatedness, and competence (or self-efficacy). Conditions identified by research carried out by Reeve (as cited in Reeve et al., 2009) which have been shown to meet these needs are: setting your own goals and challenges, and planning and meeting these goals. Research by Ryan and Deci (as cited in Reeve et al., 2009) also suggests that when students are intrinsically motivated to do an activity, they experience higher levels of interest and enjoyment.

Vygotsky's theory (as cited in Whitebread 2012) - another influential theory in the field of child development - supports the assertion that play allows children to work on planning and achieving goals at an appropriate level of challenge. Vygotsky called this ideal level of challenge the "Zone of Proximal Development", or ZPD. Vygotsky theorized that during play, children create their own ZPD which allows them to build competence by meeting the challenges encountered in play. A study by Fernyhough and Fradley (2004) supports the notion of an ideal level of challenge. Children who were engaged in tasks that were neither too easy nor too hard were recorded as having more incidents of private speech demonstrating self-regulation.

Another need identified by Whitebread (2012a) is control. Research by Sylva et al. (as cited in Whitebread et al., 2009) supports the notion that when children feel in control of their learning during play, they will play longer and attempt more creative solutions to problems than when adults set the learning task. Children's perceptions of activities as play also factor into self-efficacy and effortful learning. When children perceive a task as play they are motivated to persevere with the task for a longer period of time. (Howard & McInnes, 2012) An article by

Reeve et al. (2009) discusses the relationship between self-efficacy and intrinsic motivation. In classrooms where students were allowed choice in setting their own goals, allowed to pursue their own interests, and to solve problems in their own manner, they experienced more positive feelings about themselves and their learning. They were also more likely to display deeper learning, better performance, and greater persistence. Other needs that Whitebread (2012) identified as being met through play are the feelings of self-worth and relatedness children get when they are valued by others.

The idea that motivation or 'will' to self-regulate and learn is inherent in play is also supported by evolutionary theories in the field of learning (Whitebread, Basilio, Kuvalja, & Verma, 2012). Bruner, as cited in Whitebread (2012), theorized that man has evolved to be a problem-solving species, and that solving problems during play is motivating. Research by Nielsen and Christie (2008), supports this argument by demonstrating that children sustain problem-solving activities longer and are more likely to create a variety of solutions when they choose the play activity on their own. Research provided by the field of neuroscience also supports the motivational impact solving problems through play has by demonstrating that the brain rewards you when you achieve a goal you have set for yourself. Therefore, self-efficacy, control, intrinsic rewards, and a brain that is evolved to solve problems in a creative playful way all work together to positively shape the attitudes or 'will' of children to apply self-regulation strategies while they learn through play.

Having the 'will' to apply self-regulation strategies is just one aspect of self-regulation. Equally important to being motivated to learn is the ability to gain and employ metacognitive knowledge and metacognitive regulation. These are considered the 'skills' children need to employ in order to self-regulate their learning, and generally refer to children's knowledge about

and understanding of their own mental processing (Whitebread,& Pasternak, 2010). These skills are inherent in play as children plan, practice, develop and employ learning and remembering techniques.

Play is considered a critical element in developing the 'skills' necessary for self-regulation and begins at a very young age. According to Vygotsky (as cited in Whitebread et al., 2012) one of the skills necessary for self-regulation is the ability to use abstract thinking. Abstract thinking in this sense is being able to carry on a task at the 'object' level while holding in the mind the goal of the task and monitoring and adjusting what we are doing at the 'object' level (Nelson and Narens as cited in Whitebread 2012). It was Vygotsky's contention that through play, children explore the use of symbolic representation, and that this type of pretend play results in our ability as humans to think abstractly or to learn and apply metacognitive strategies (Whitebread, 2012). Symbolic play as referred to by Vygotsky consists of children's abilities to pretend that an object represents something else. Research has demonstrated that there is a huge value in being able to use the metacognitive strategies encountered in symbolic play for learning, and is even a predictor of academic success (Wang et al., as cited in Whitebread, 2012).

Hand in hand with the "skill" of learning and applying metacognitive strategies is the skill of using language. Vygotsky (as cited in Whitebread et al., 2009) theorized that children use language to monitor and regulate other children while playing. Among studies supporting this theory is research by Whitebread, Bingham, Grav, Pino Pasternak, and Sangster (2007). In this study, children's speech while playing or completing activities, either alone or with peers, was recorded and categorized according to the quantity of metacognitive talk. Among the findings of this study was evidence indicating that children produced more language that regulated others when they were in groups. This evidence of 'other regulation' is consistent with Vygotsky's (as

cited in Whitebread et al., 2007) view that regulation occurs in two realms, progressing from other regulated to self-regulated. It was also Vygotsky's contention that just as children develop their language through social interactions during play, their speech moves from external to internal speech, and children's use of metacognitive strategies also becomes internalized. An interesting asserion by Goshwami (2008) is that the benefits of shared regulation among children may include a reduction in their individual cognitive processing load, which could in turn facilitate enhanced metacognitive activity. Again, studies by Bivens and Berk (as cited in Schaffer, 2004) provide evidence that children's speech progressed from private speech to internal speech.

Another study supporting Vygotsky's theory that play is essential to developing self-regulation through speech was performed by Kraft & Berk (1998). They counted the number of times children used private speech in free play and in teacher-directed play, and found that children used more incidents of private speech during free play. This private speech was coded, and also contained more incidents of self-regulating talk during free play. An article by Goshwami (2008) also supports Vygotsky's theories by noting that that language and pretend play share two core developmental functions: Firstly, that they enable children to reflect on and regulate their cognitive behaviour, and secondly that as children gain understanding of their own learning they are more able and more willing to monitor and self-regulate their own cognitive functioning, which in turn leads to cognitive development.

As well as providing the motivation to learn, and the language and metacognitive skills to plan, monitor and change one's tactics as one moves towards a goal, literature regarding the importance of play also highlights the types of opportunities that play provides for children to practice self-regulation. Play can be categorized into physical play, play with objects, symbolic

play, pretence / socio-dramatic play, and games with rules, each of which provides unique regulatory learning experiences (Whitebread, 2012).

According to research, physical play which includes exercise, rough and tumble play, and fine motor practice provides a medium through which children can learn important lessons about emotional regulation. Studies by Jarvis (as cited in Whitebread et al., 2012) indicated that rough and tumble play enhances children's abilities to understand emotional expression, and allows children to practice self-regulation through inhibitory control. In a study by Mellen (as cited in Whitebread et al., 2012) this type of play was also positively related to the social competence of preschoolers. Fine motor control play, such as working with puzzles or beads, has been associated with helping children increase their concentration and perseverance skills (Howard & McInnes, 2012). As children's perseverance grows, they are able to lengthen the amount of time they are spending on playful activities that improve their hand and finger coordination.

Playing with objects is another type of play that begins with sensory motor play, moves into sorting and categorizing play, and turns into constructing play. Research into private speech during constructing play has uncovered that children are engaged in the self-regulatory skills of maintaining their attention, monitoring their progress and developing positive attitudes towards challenge (Sylva,Bruner& Genova, as cited in Whitebread et al., 2012). Problem solving and error correction which involves aspects of self-regulation such as working memory and reorganizing behaviour (Deloache, Sugarman and Brown, 1985; Barkley, as cited in Whitebread, 2012) is also strongly associated with playing with objects. Studies by Bruner (as cited by Sylva, Bruner & Genova, as cited in Whitebread et al., 2012) indicated that children who were able to play with the objects involved in solving a problem, as opposed to children who were taught how to solve the problem, came up with more inventive strategies for problem solving and

demonstrated more perseverance. Playing with objects therefore is likely to contribute to the development of cognitive self-regulation milestones of learning such as using problem solving strategies and carrying out multistep activities. (Bronson, 2000)

Another type of play that provides opportunities to learn and practice self-regulatory skills is symbolic play. Playing with symbols includes language, music, visual media such as drawing and numbers. While the relationship between this type of play and learning in school seems fairly obvious, aspects of self- regulation such as working memory, creativity, emotional understanding and communication are also present (Pound, as cited in Whitebread et al., 2012). Also, similar to play involving fine motor skills, as a result of their motivation to do this type of play and employ self-regulatory skills to attend and persevere, children spend more time becoming familiar with manipulating the symbols, which in turn can lead to benefits in academic subjects such as math or literacy (Christie and Roskos; Whitebread, as cited in Whitebread, 2012).

A large field of research has been carried out on the category of play called Pretence/socio-dramatic play. During socio-dramatic play, self-regulatory skills such as inhibitory control are important to maintaining the social rules of the games children play, and for monitoring emotional control through emotional appraisal (Whitebread, 2012). This is also a type of play where Vygotsky's 'other' regulation has been observed, as children urge others to follow the rules of their characters. Group play where players are monitoring their own and other's behaviour in order to maintain a pretend situation has been described by Goncu (as cited in Whitebread & Sullivan, 2012) as inter-subjectivity. This inter-subjectivity has been shown to be closely associated with developing 'theory of mind', which in turn is strongly associated with developing social skills (Whitebread 2012). Lending support to Vygotsky's theory of other

regulation is the study of Mayan children by Gaskins (2000) which observed older children organizing and assigning younger children roles in extended pretend scenarios based on the activities of adults. According to Broadhead (as cited in Whitebread & Sullivan, 2012), pretend play is characterized by sustained reciprocal dialogue and action between children. Pretend play, therefore, could support such self-regulation milestones as using language to influence others, cooperating with peers, and applying effective interactive strategies or social skills (Bronson, 2000).

The last category of play which encourages and supports self-regulated learning involves games with rules. According to Vygotsky (as cited in Goshwami, 2008), games with rules such as hide-and-seek or board games, require children to exert self-regulation skills such as inhibitory control over their impulses. The child's motivation to play curbs his or her impulse to act. As well as learning to respond to rules, children also learn self-regulation skills through the social aspects of games. These skills include sharing, taking turns, and perspective taking (DeVries, as cited in Whitebread et al., 2012). These self-regulatory skills are described by Bronson (2000) as prosocial skills.

The assertion that children's playfulness makes key contributions to their development as self-regulated learners has important implications for the field of education. First, effortful intentional learning of many skills necessary for learning and self-regulation can be supported by providing opportunities for students to experience all five types of play. Second, interest, choice, and control are important motivators for children to use self-regulation and therefore should be purposefully built into activities by including options for individual, partner, and group play, and by including children in designing class rules and routines. Third, children demonstrate metacognition during private speech and other-regulation while playing, and therefore teachers

can support and extend their learning through careful scaffolding. Fourth, the level of challenge that children set for themselves during play (ZPD) is often at their optimum learning level and therefore can be observed as a method of assessment, and by using the CHILD instrument (Whitebread, 2012) can indicate children's current levels of self-regulation. Last, considering the importance that internal motivation plays in the role of self-regulation, it would be wise to be judicious with external rewards such as stickers, and instead try to provide choice activities and group play experiences where children are able to achieve goals at their level of development that will foster competence and ultimately lead to internal motivation.

References

Bronson, M.B. (2000). ‘Supporting self-regulation in preschool and kindergarten children’. Ch. 8 in *Self-regulation in Early Childhood* (pp.1980220. New York: Guildford Press. ISBN 1-57230-532-0

DeLoache, J.S., Sugarman, S., & Brown, A.L. (1985). The Development of Error Correction Strategies in Young Children’s Manipulative Play. Child Development, 56(4), 928-939. Doi:10.2307/1130105

Fernyhough, C., & Fradley, E. (2004). Private speech on an executive task: relations with task difficulty and task performance. Cognitive Development, 20(2005), 103-120.

Gaskins, S. (2000). Children’s daily activities in a Mayan village: a culturally grounded description. Journal of Cross-Cultural Research, 34, 375-89.

Goswami, U. (2008). ‘Theories of Cognitive Development’. Ch. 11 in Cognitive Development: the Learning Brain (pp.372-417). Hove, E.Sussex: Psychology Press. ISBN 978-1-84169-531-0

Howard, J., & McInnes, K. (2012). The impact of children’s perception of an activity as play rather than not play on emotional well-being. Child: Care, Health and Development. DOI: 10.1111/j.1365-2214.2012.01405.x

Kraft, K.C., & Berk, L.E. (1998). Private speech in two preschools: Significance of open-ended activities and make-believe play for verbal self-regulation. Early Childhood Research Quarterly, 13(4), 637-658.

References

Nielsen, N., & Christie, T. (2008). Adult Modelling Facilitates Young Children's Generation of Novel Pretend Acts. Infant and Child Development. 17: 151–162 (2008) pub. Online: (www.interscience.wiley.com) DOI: 10.1002/icd.538

Reev, J., Ryan,R., Deci, E.L. & Jang, H. (2009). 'Understanding and promoting autonomous self-regulation: A self-determination theory perspective'. Ch. 9 in D.H. Schunk & B.J. Zimmerman (Eds.) Motivation and self-regulated learning: theory, research and applications (pp.223-244). New York: Routledge. ISBN 0-8058-5898-9

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

Whitebread, D. & Pino Pasternak, D. (2010). Metacognition, Self-Regulation & Meta-Knowing'. Ch.19 in K.Littleton, C. Wood & J. Kleine Staarman (Eds.) International Handbook of Psychology in Education. (pp.673-712). Bingley, UK: Emerald. ISBN 978-1-84855-232-6

Whitebread, D. & Coltman, P. (2011) Developing young children as self-regulated learners. Ch. 10 in J. Moyles, J. Georgeson & J. Payler (Eds.) Beginning Teac Ing: Beginning Learning: In Early Years and Primary Education (pp.121-138). Maidenhead: Open University Press. ISBN 978-0-33-524412-6

References

Whitebread, D., Basilio, M., Kuvalja, M. & Verma, M. (2012). The importance of play: a report on the value of children's play with a series of policy recommendations. Brussels, Belgium: Toys Industries for Europe.

Whitebread, D. (2012). Developmental Psychology and Early Childhood Education. London: Sage