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Self-regulated and Social Emotional Learning in the Multitasking Generation

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### *Self-regulated and Social Emotional Learning in the Multitasking Generation*

In an era where children grow up with media multi-tasking, that is, simultaneous media use of audio and visual gadgets as well as Web-enabled computers and mobile devices, the importance of self-regulatory abilities for learning and achievement (e.g., abilities to remain attentive, motivated, and engaged) becomes very apparent. While humans have always had a capacity to attend to multiple things at a time and every generation experiences new technology, children in the twenty-first century are living with the highest level of multiprocessing and digital-interpersonal connectivity known to date (Lenhart, Ling, Campbell, & Purcell, 2010). Researchers have raised concerns about the impact that habitual multitasking has on conditioning children's brains to be at an overly aroused state and making it difficult for them to focus their attention or persist on any one thing at a time if they had to do so (Hoffman, 2010; Meyer & Kieras, 1997). In addition, research indicates that, compared to completing tasks individually, multitasking (e.g., dual tasking or task switching) is associated with retaining less information learned and taking more time to complete tasks (Just et al., 2001; Lang, 2000; Meyer & Kieras, 1997; Pashler, 2000). In the context of learning for the twenty-first century where multitasking is an essential skill, it is more critical than in prior generations to foster children's social emotional learning and self-regulatory skills.

### *Digital Natives in the Age of Media Multi-tasking*

The developmental landscape of children in the twenty-first century is drastically different from that of the pre-digital age, partly or largely due to advances in technology. In 2001, Prensky identified kindergarten to college-age students as the first digital generation, or "Digital Natives." Given a highly technology- and media-drive environment, Digital Natives are comfortable with, or may prefer, parallel processing and multi-tasking. Digital Natives are

conditioned to absorb and process information at twitch-speed (Prensky, 2001). For example, a study using eye-tracking data indicates that Digital Natives and experienced Internet users are able to read faster and comprehend more text than pre-digital and inexperienced Internet users (Dylak & Cifuentes, 2010). Digital Natives are often conditioned to be highly visual learners, preferring graphic before or in place of textual information. In addition, learning through games or “edutainment” (see Okan, 2003) is preferred by the Digital Natives over the traditional learning activities and pedagogical practices. Digital Natives often prefer and function best when networked via technologies (e.g., instant or text messaging and online social networks such as Facebook and Twitter) that do not require direct or personal face-to-face interactions. In general, Digital Natives, in other words, the media multi-tasking generation, can be characterized as people who “thrive on instant gratification and frequent rewards” (Prensky, 2001, p. 2). If Digital Natives are used to instant gratification, multi-tasking, and networking (but not necessarily with direct or personal face-to-face interactions), children growing up in the twenty-first century may benefit socially and academically from self-regulated learning and social and emotional learning approaches.

### *Self-regulated Learning*

Technology-assisted learning has been a common practice in education. Although self-directed or self-regulated learning has always been important in both traditional and modern learning environments, it is sine qua none where technology is the primary medium of learning and instruction (e.g., E-learning). Self-regulated learning is defined as “an active, constructive process whereby learners set goals for their learning and then attempt to monitor, regulate, and control their cognition, motivation, and behavior” (Pintrich, 2000, p. 453). Self-regulated learners are often able to take charge of their learning. Any learner inevitably experiences

obstacles or challenges as she performs the learning task. Self-regulated learners are those who demonstrate persistence and are able to adapt or modify their learning strategies or their environment in order to achieve their learning goals. While self-regulated learners are often life-long learners, self-regulated learning is not a trait (Zimmerman, 2002). Indeed, self-regulated learning “involves the selective use of specific processes that must be personally adapted to each learning task” (Zimmerman, 2002, p. 66) before, during, and after each learning effort. Before engaging in a learning task, self-regulated learners are able to plan and set specific proximal goals for themselves and also motivate themselves. During the learning task, self-regulated learners exhibit self-control and self-observation, or self-monitoring. After the learning task, self-regulated learners are able to self-reflect and evaluate their own performance. Such self-reflection and self-evaluation would then inform planning and goal setting of subsequent learning tasks (see Zimmerman & Campillo, 2003). Digital Natives, who are used to multi-tasking and task-switching as well as instant gratification, might be afforded with fewer naturally occurring opportunities relative to the children from the pre-digital era in practicing and learning planning, self-control, and self-monitoring skills. These skills are essential to achieve long-term goals as well as solving ambiguous and novel problems.

### *What Is Social Emotional Learning?*

In addition to a lack of opportunities to adequately develop planning and self-management skills, Digital Natives might lack opportunities to develop their social and emotional skills if they rely on technology as their primary source of social networking. While Digital Natives might be competent in conducting a rich and active “virtual life” (e.g., Second Life), the skills honed in the virtual or digital world may not necessarily translate well into social and emotional skills that required for successfully navigating through their “actual life.” Social

and Emotional Learning (SEL) is a process for helping individuals develop fundamental skills for successfully dealing with daily living in an effective and ethical manner (Collaborative for Academic, Social, and Emotional Learning, 2003). Grounded in the frameworks of competence-promotion and youth-development with the goals of building protective mechanisms and reducing risk factors, the core skills that SEL curricula and programs aim to develop include self-awareness, self-management, social awareness, relationship skills, and responsible decision making (Liew & McTigue, in press; Zins, Bloodworth, Weissberg, & Walberg, 2004). For each of the core SEL competencies, developmentally appropriate programs and curricula have been designed (see Table 1). Durlak and colleagues conducted the first large-scale meta-analysis of universal school-based social-emotional development programs to evaluate their impact on social behavior, problem behaviors, and academic performance. Results show that SEL programs had a positive impact on students in the areas of core SEL competencies (outlined in Table 1). Of interest from the meta-analysis is that students in SEL programs showed increased prosocial behaviors, decreased conduct and internalizing problems, and improved academic performance on achievement tests and school grades (Durlak, Weissberg, Dymnicki, Taylor, & Schellinger, in press).

### *Digital Natives as Self-regulated and Socially Competent Learners*

If we want to foster self-regulatory and social-emotional competencies in children, it is important to understand the factors that promote such skills. In the following sections, we briefly discuss the roles that the child, the parents, and the teachers could play in the promotion of self-regulatory and social-emotional competencies.

## *Child Temperament*

Although self-regulated and social emotional learning are not traits, a child's traits or temperament may have an indirect influence on their development of self-regulated learning strategies and behavior. Particularly with infants and young children whose cognitive skills are relatively limited and developing, the framework of temperament has laid a foundation for research on self-regulation in early childhood (Rothbart, Ahadi, & Hershey, 1994). Early individual differences in self-regulation are rooted in temperament (Kagan, 1994; Rothbart & Derryberry, 1981). Regardless of whether a child was born before or after the "Digital Revolution," every child is born with her or his temperament. Temperament refers to "constitutionally based individual differences in reactivity and self-regulation, in the domains of affect, activity, and attention" (Rothbart & Bates, 2006, p. 100). Young children demonstrate self-regulation when they comply with requests or rules, detect errors, start or stop activities, modulate the intensity, frequency, and duration of verbal and motor behaviors, delay gratification, and behave in socially appropriate ways without external monitors (Rothbart et al., 1994; Kopp, 1982). Under the framework of temperament, the term effortful control has been used to characterize the voluntary or volitional aspects of self-regulation (Rothbart & Bates, 2006). In other words, effortful control is the ability to do something even when you really do not want to and/or the ability to stop yourself from doing something that you really want to do.

*Importance of effortful control for Digital Natives.* For Digital Natives, being able to do something even when they really do not want to may be challenging if they have been conditioned to expect an immediate response to their each and every action (Prensky, 2001). Although some people have argued that the attention span of Digital Natives are short, the fact that youth can spend hours playing games such as online interactive role-playing games suggests

that they can focus on things that interests them. Rather than a problem with attention, Digital Natives may have difficulties inhibiting their impulses and delaying their gratification (i.e., exhibit poor effortful control). For example, a child who wants to watch a podcast of her favorite shows, but upon her parent's request, waits until she finishes her math tutorial game on the computer is demonstrating effortful control. There is a growing body of research that supports the view that effortful control is associated with academic learning or achievement for children from diverse socioeconomic and ethnic backgrounds (e.g., Blair & Razza, 2007; Liew, McTigue, Barrois, & Hughes, 2008; McClelland et al., 2007). For example, preschoolers' abilities for effortful control have been found to contribute to their early mathematics and reading skills (Blair & Razza, 2007; McClelland et al. 2007). Further, in a longitudinal study that followed children from first through third grades, effortful control predicted literacy achievement of two years later (Liew et al., 2008). Importantly, many of the students in this longitudinal study were from low-income and ethnic minority families and assessed as academically at-risk when they entered first grade. Research also indicates that effortful control predicted grade point averages in students aged 7 to 12 years (Valiente, Lemery-Chalfant, Swanson, & Reiser, 2008). Thus, many researchers view effortful control (including the ability for emotion regulation, inhibit impulses, and delay gratification) as a promotive or protective factor to learning and achievement (Raver, Garner, & Smith-Donald, 2007).

### *Parenting Practices*

Although children are born with certain temperaments and effortful control is considered to have a temperamental basis (Rothbart & Bates, 2006), that does not mean that there is little room for change or growth. In fact, parenting plays a role in children's development of effortful control (Eisenberg, Cumberland, & Spinrad, 1998; Karreman, van Tuijl, van Aken, & Dekovic,

2006). Parenting behaviors such as positive control, negative control, and responsiveness are found to be related to children self-regulation and effortful control. Parents who demonstrate positive control guide their child's behavior by, for instance, setting limits, teaching, and providing structure. Negative control, on the other hand, consists of power-assertive techniques to control the child's behavior, such as verbal and physical punishment and intrusiveness. Parents with responsiveness parenting styles are affective, accepting, and responsive toward their child. In a meta-analysis conducted by Karreman et al. (2006), parents' positive and negative controls were found to be strongly associated with child effortful control. Karreman et al. (2008) further verified that maternal positive control and responsiveness promoted children's effortful control (also see Kochanska, Murray, & Harlan, 2000). Furthermore, negative control from the father is related to low levels of observed effortful control. Importantly, relative to parenting behavior from either of the parents, coordination between the mother and father (co-parenting of young children) was most strongly related to effortful control (Karreman et al., 2008). Specifically, observed hostility and competitiveness between parents which undermined co-parenting was associated with children's self-regulatory problems of their emotions and behaviors.

Overall, the research shows that supportive and responsive parenting is linked with children's effortful control which allows them to remain attentive and calm even in the face of challenge or stress (Carson & Parke, 1996; Carson, Burks, & Parke, 1993; Eisenberg et al., 2001; Liew, Youngman, Smith, & Thoemmes, in press; Parke & Buriel, 2006).

*Teacher practices and child effortful control.* Teachers play a major role in establishing self-regulated learning and effortful control in children (Dignath, Buettner, & Langfeldt, 2008; Liew & McTigue, in press). Specifically, teachers embody the role as caregiver, to actively



become a child's social support for learning. "Learners are seen as products and producers of their environment and are therefore considered active participants in the learning process in need of social support" (Dignath, et al., 2008, p. 119). Research suggests that teacher's must create an active learning environment that allows children to self regulate (Boekaerts, 1997). Components in the learning environment to facilitate such learning include teacher-student relationship quality, goal structure, and teacher instruction methods. By showing support, responsiveness, and warmth to their students, teachers are able to create positive learning environments that promote academic achievement, even for children who exhibit low effortful control (Liew & McTigue, in press; Perry, Phillips & Hutchinson, 2006). Additionally, effortful control may serve as a buffer for children in an environment with little teacher support. For example, Liew, Chen, & Hughes (2010) found that students, who struggle on tasks that require fine motor skills and paying attention to details, benefit from positive teacher-student relationships in traditional learning environments.

Teachers, who employ instructional methods that allow students to be leaders of their own learning, promote self regulation and social- emotional skills. Specifically, teachers can construct successful learning environments through scaffolding, providing opportunities for exploration and giving students immediate performance feedback (Thomas, Strage, & Curley, 1988). For Digital Natives, an active learning environment is one that incorporates the need for instant gratification, multi-tasking and technology. Therefore, teachers working with Digital Natives may use the opportunity presented by educational technology as a context to promote effortful control and self-regulated learning through scaffolding techniques along with fostering positive teacher-student relationships. Unlike traditional learning environments, virtual learning environments allow students to move freely and access additional resources to enhance their own

learning (Adams, DeVaney, & Sawyer, 2009). For example, Barnes, Marateo, & Ferris (2007) discussed teachers' use of blogging, wiki's and You Tube to engage Digital Natives in collaborative learning and higher order thinking. Thus, teachers must embrace technological advances and adjust their instructional practices accordingly in order to educate Digital Natives, academically, socially, and emotionally.

#### *Future Directions and Conclusion*

We believe that it is difficult for parents and teachers to dismiss the use of technology in children's learning in the home and school environments. Undoubtedly, the twenty-first century is open to new technological developments with additional multi-tasking gadgets underway. For that very reason, there is a great need to support children's self-regulatory and SEL skills. Self-regulated learning is, thereby, one important learning goal that students must master. In regards to social and emotional development, the frequency of use of text messaging amongst adolescents has overtaken every other common form of interaction with their friends (Lenhart et al., 2010). Thus, SEL may be particularly important to provide children the requisite social skills to initiate and sustain interpersonal relationships. Although evidence-based SEL curricula and programs for academic and social success exist (Durlak et al., in press), we call for future research to examine the efficacy, as well as appropriate modifications, of such programs for learners' success in digital or online learning environments. Furthermore, there needs to be educational and developmental research that focuses on children's and adolescents' use of technological gadgets and the communication tools (including text or instant messaging and online social networks such as Facebook, Twitter, Second Life as well as blogs and wiki sites) as informal or formal teaching and learning practices (Shields & Behrman, 2000). In conclusion, we believe that children who have opportunities to develop their self-regulatory and social-

emotional competencies are best able to harness the power of technology by effectively managing its use (e.g., holistic technology education; see Seeman, 2003) as to maximize their learning and accomplish their goals. Instead of having technology drive and direct information and learning, empowering learners with self-regulatory and social and emotional skills may ultimately free them to reflectively and intelligently use technology as educational and life-enhancing tools.

Table 1. Core Social and Emotional Competencies with Developmentally Appropriate Goals

Core SEL competencies	Goals for the primary school years	Goals for the middle school years	Goals for the high school years
Self-awareness	Recognize and label simple emotions	Analyze antecedents or causes of experienced emotions	Analyze consequences of expressed emotions on others
Self-management	Describe how to set and work toward goals	Set and make a plan to achieve a short-term goal	Identify strategies, recruit and use resources, persist, and overcome obstacles to achieve a long-term goal
Social awareness	Identify verbal, physical, and situational cues that signal how others feel	Predict how others might feel or think in various situations	Evaluate how well one empathizes with others
Relationship skills	Describe ways to make and keep friends	Show cooperation and teamwork skills that contribute to group goals	Evaluate ways of communicating with peers, teachers, and family members
Responsible decision-making	Identify types of decisions one would have to make in a school setting	Evaluate strategies for resisting peer pressure and avoid unsafe or unethical activities	Analyze how decisions made now may affect one's future (e.g., college or career)

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