

Cross Cultural Pillars of Social and Emotional Learning (SEL): The Brain and Development

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Social and emotional learning (SEL) as a defined and understood body of knowledge, and as clearly defined sets of practices, continues to inform educational approaches around the world. The universality of SEL rests on two very important pillars: (1) SEL's Brain Basis (2) SEL's Developmental Basis.

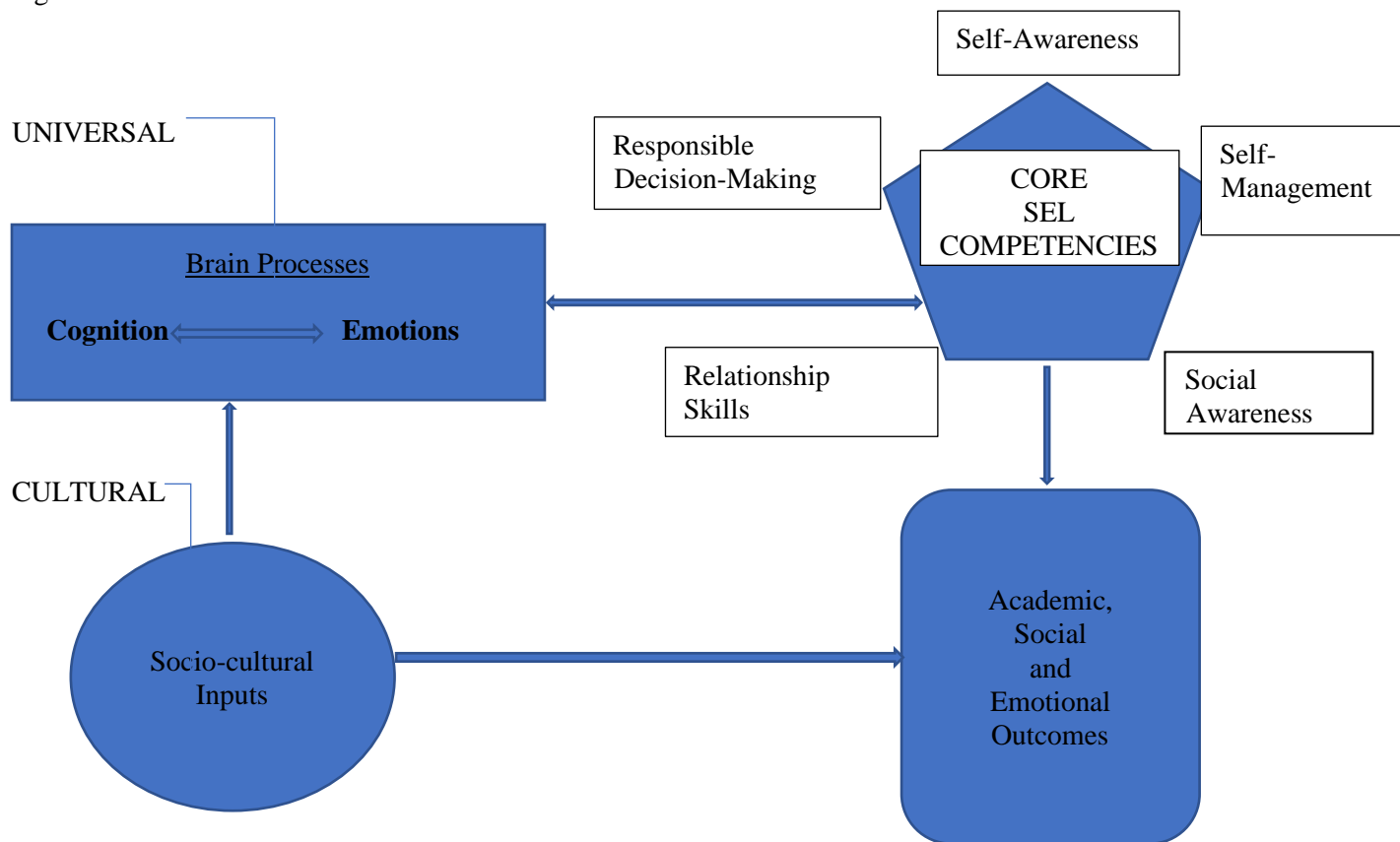
The Brain

Universally, normal brain development occurs in predictable ways. Advancement in brain imaging techniques has enhanced our understanding of the structural and chemical relationship between emotions and cognitions. The work of the Collaborative for Academic, Social and Emotional Learning (CASEL, 2003) has taken what has been learned from neuroscience about the relationship between emotions and cognitions and advanced the practical applications of this knowledge by identifying critical social and emotional learning competencies that are tied to successful academic and social performance indicators.

The human brain is universal. In every country, and in every culture, the normal human brain functions basically the same. The limbic system, also considered to be the emotional center of the brain, interacts and interfaces with the cognitive centers, thereby influencing how we think and learns. Emotional processes influence and are influenced by memory and metacognitive processes that are involved in the five core competencies of SE: Self-Awareness, Self-Management, Social Awareness, Relationship Skills and Responsible Decision-making. These internal brain functions are not culture specific or culture bound. They are universal. In a paper I wrote that is to be published in the March issue of the Journal of Social and Emotional Learning, I offer an SEL information processing framework that depicts and explains how information enters and is processed emotionally and cognitively in the brain. The information may be culturally contextualized and sensitive but there is no evidence that basic brain processes are. Suffice it to say here, that given our understanding of how the brain works, regardless to

culture or context, information is processed in the brain emotionally and cognitively in a universally biochemical way. Regardless of country or culture, how we feel influences how we think; and how we think influences how we feel. Feeling and thinking, together, produce behavior that then gets expressed in culturally relevant ways. SEL recognizes the socio-cultural mediation of input into the brain processing cycle and of the outputs in terms of our academic, social, and emotional lives. This is demonstrated in figure 1

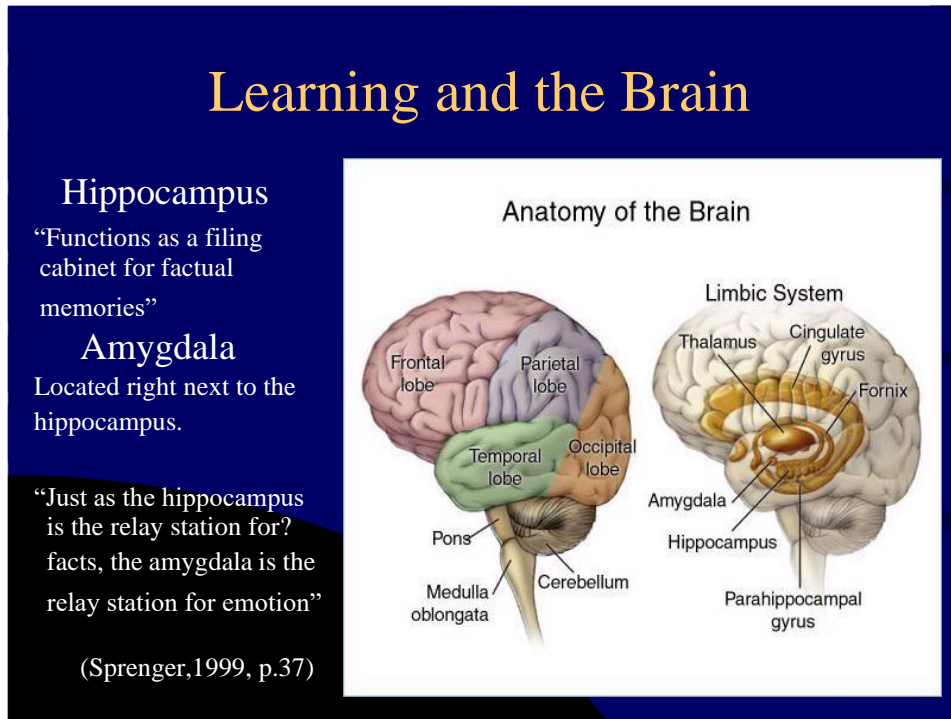
Figure 1 Brain and Socio-Cultural Influences on SEL



Brain imaging studies provide scientific confirmation of and underscore the role that emotions play in cognition. Phelps (2006) in reporting on some brain studies noted “traditional approaches to the study of cognition emphasize an information-processing view that has generally excluded emotion. In contrast, the recent emergence of cognitive neuroscience as an inspiration for understanding human cognition has highlighted its interaction with emotion.” (P i). She concluded from her review of neuroscience evidence that emotions and cognitions are intertwined from perception to reasoning, and an understanding of human cognition requires that emotions be considered. Bush, Luu and Posner (2000) noted that neural-imaging studies indicate that areas of the anterior cingulate cortex (ACC), part of the brain’s limbic or emotional system are involved in cognition. Gray, Braver and Rachel (2001) used functional MRI to test the hypothesis that “emotional states can actively influence cognition-related neural activity in lateral prefrontal cortex (PFC), as evidence for an integration of emotion and cognition.”

They concluded that “emotion and higher cognition can be truly integrated, i.e., at some point of processing, functional specialization is lost, and emotion and cognition conjointly and equally contribute to the control of thought and behavior.”

Figure 2 shows cross sections of the brain depicting the association between the limbic system and the cortical areas of the brain.



Development

Child development is universal. Regardless of culture or context individuals experience development along a trajectory from childhood to adulthood. Stage theories of development suggest that across cultures, individual development progresses in stages, with critical developmental tasks and conflicts addressed and resolved at each stage leading to higher levels of developmental competence. So, the basics of life-span development occur in every culture and are mediated by aspects of each socio-cultural context.

When considering existing approaches to the implementation of SEL interventions, there seems to be a missing framework that helps to take what is known about how emotions and cognition interact and explain the varying expressions of this interaction among individuals in a developmental framework. The developmental framework that I am proposing considers the underlying neuroscience in designing

and formulating social and emotional learning (SEL) curricula and ties SEL to performance outcomes. The framework also offers an explanatory formulation for considering how connections between emotions and cognitions become expressed in observable and measurable behaviors across the lifespan and in various social contexts; and how SEL competencies may help to mediate and moderate these behaviors. The developmental framework could help to promote understanding of how the expression of children's development may be supported through SEL-related curricula, instruction, and assessment. It could also help to contextualize and place in a developmental frame, the differential impact of SEL on student behavior, learning and academic performance while also providing a basis for a comprehensive approach to assessing students' educational progress in developmentally and contextually sensitive way.

The relationship between emotions and cognition occurs in context, influences, and is influenced by the dynamic relationship between the individual child and the environment in which that individual child grows and lives. It is this dialectic and dynamic interchange involving emotional and cognitive development and contextual-cultural experiences that must be recognized, that informs the proposed framework and that so far existing assessment efforts have failed to consider. The framework being proposed is informed by a holistic developmental perspective and incorporates elements of James Comer's developmental pathways theory (Comer, 1996).

Comer noted (1996) that for children to realize their full potential (represented by the internal brain structural and chemical processes) and to succeed academically and in life generally they must be supported in their development along six developmental pathways: physical/physiological; psychological; social; ethical; language; cognitive (represented by external dynamic relationships between child and the environment). These pathways are in fact areas of development that require Vygotsky-like nurturing and support from significant and meaningful adults in children's lives. These pathways are presented in Table 1 below. While SEL competencies may often be taught without conscious regard to, and acknowledgement of a developmental ecological framework that includes Comer's developmental pathways, and some positive results are obtained, the framework and intentional attention to Comer's developmental pathways provide a viable theoretical explanation for why sound SEL interventions work

to produce positive academic results in a wider cross-section of students from across the socio-economic and socio-cultural spectrums .

Table 1. Comer's Developmental Pathways (CDPs)

Pathways	Operational Definitions
Cognitive	<ul style="list-style-type: none"> • Do Well in School Work • Master Basic Reading, Writing, Language and Math Skills. • Learn To Think Well • To Solve Problems Well
Language	<ul style="list-style-type: none"> • Hold A Good Conversation • Read Regularly and Well • Listen Well • Speak Well • Write Well
Ethical	<ul style="list-style-type: none"> • Make Good and Healthy Choices • Make Good Healthy Decisions • Demonstrate Knowledge and Understanding of Consequences of Behavior
Social	<ul style="list-style-type: none"> • Interact and Deal Effectively with Other Children • Interact and Deal Effectively with Adults • Solve Problems in A Socially Acceptable Way
Psychological	<ul style="list-style-type: none"> • Control and Manage Anger • Maintain A Positive Self-Esteem • Deal Effectively with Disappointment, Hurt and Pain • Have A Positive Outlook on Life? • Hope For a Bright Future
Physical/Physiological (This is foundational to the other pathways)	<ul style="list-style-type: none"> • Have Balanced & Efficient Brain Functioning. • Follow Healthy Nutrition • Maintain Good Physical Health

Alignment between SEL Competencies and Comer Developmental Pathways

As mentioned previously, the importance and relevance of a developmental ecological framework that is informed by and includes consideration of the Comer developmental framework, lies in its explanatory usefulness in establishing a contextual and developmental link between expected emotional and cognitive developmental milestones, and the practical concrete shaping of these milestones into teachable and learnable social and emotional (SEL) competencies. It could be helpful to show how the SEL competencies are aligned with the Comer developmental pathways. Comer posits that meaningful, durable, sustained academic growth can only be achieved through attention to children's development along six inter-related and interconnected pathways. Embedded within or aligned with these pathways are the CASEL competencies. Comer does not deny that teaching test-taking skills or teaching to the test may raise test scores. He argues that meaningful learning in which students are socially and emotionally engaged occurs only in a context in which embedded SEL competencies are adequately addressed in developmentally appropriate ways, in a climate of caring and support. Evidence provided in a book edited by Haynes, Ben-Avie and Ensign (2003) provide support for Comer's position. Presented in table two are the ASEL competencies aligned with or embedded in the Comer developmental pathways, and their relationship to specific achievement attitudes and behaviors. Supporting research citations that offer evidence for academic achievement outcomes related to the embedded ASEL competencies are provided.

Table 2 Alignment between SEL Competencies and Comer Developmental Pathways.

Comer Developmental Pathways Addressed	ASEL Competencies	Achievement Attitudes & Behaviors	Relevant Research Citations	Summary of SEL Effects
Cognitive/Academic	Responsible Decision making	Acquire knowledge, Think Analytically	Brackett (2010). DeAngelis, (2010). RULER, (2010). Taylor & Dymnicki, (2007); Payton et al (2008); Zins et al. (2004)	Achievement growth: Significant increases in percentile point gains on standardized tests
Psychological/Emotional	Self-Awareness	Use Metacognitive Skills	DeAngelis, (2010);	Increase in student achievement Decrease in antisocial behavior
Psychological/Emotional	Self-management	Practice Discipline, Control & Academic Engagement	Caldarella et al. (2009) Elias, (2008). Rebora, (2010). Taylor & Dymnicki, (2007); Wilson et al. (2001);	Increase in school attendance, homework completion and participation. Decrease in high-risk behaviors and in-school problem behaviors that interfere with learning
Social	Social Awareness/Relationship Skills	Communicate Sensitively and Empathically / Interact Effectively with Others	Elias, (2008); Caldarella et al. (2009); Wilson et al. (2001);	Increase in friendships and positive social and peer relationships. Decrease in fights and negative distracting interactions that affect learning negatively
Ethical	Responsible Decision making	Use Good Judgment	Caldarella et al. (2009) (Elias, 2008); Wilson et al. (2001);	Decrease in negative behaviors. Increase in positive pro-social behaviors that support learning and increase achievement
Physical/Physiological This Pathway is Foundational. Involves Brain Function & Overall Health Status	ALL Above Elements Affected	All Above Behaviors Affected	Goleman (1995), Goleman,2010;	Attention drives achievement and emotion drives attention.

Conceptual Framework

In the proposed conceptual framework presented graphically in Figure 3 below there are six overarching factors. Nested within each factor are specific operational elements that impact academic and social outcomes. The factors are described below:

Potential

Each student brings to the learning situation in school, in the classroom, and in other settings, a brain in which emotional and cognitive centers are in dynamic interplay shaping the child's potential or promise. This ongoing structural and biochemical brain development with the dynamic interplay between emotional and cognitive electrical circuits is influenced and to some degree shaped by the social context factors described below:

Social and School Context

Students are influenced by their home environments and the parenting practices to which they are exposed. They are also influenced by their social networks and community values and practices. Their learning is most directly affected by the school climate and school practices in their schools

Supported Development along the Comer Pathways

Students' development along the six pathways is influenced by the social and school context in which they grow, are nurtured and in which they learn. The pathways of development are interdependent and intertwined and successful development along one pathway influences development along others. Comer argues that sustainable high levels of academic achievement and a success trajectory in life

beyond school are more probable if adults in school and out of school help to ensure that the adequate continuous development of students along each pathway is achieved. Indeed, the chronic and vexing problem of the achievement gap may be explained by the “underdevelopment” of many students along one or more of the pathways. Quick fixes such as teaching to the test, curriculum alignment and smaller student to teacher ratios, may offer temporary relief but to achieve meaningful durable life changes, the emphasis must be on adequate development along each pathway with sufficient attention given to the ASEL competencies.

SEL Competencies

The SEL competencies are aligned with or nested within the developmental pathways and are influenced by how well students develop along the connected pathways. SEL competencies are to be part of a sustained effort to help students develop well and adequately in various aspects of their lives, including academically. The evidence suggests that ASEL competencies do in fact contribute significantly to students’ academic growth.

Performance Indicators that Lead to Academic Growth

The performance indicators include specific learning and achievement-related attitudes and behaviors that can lead to high academic achievement and positive life outcomes.

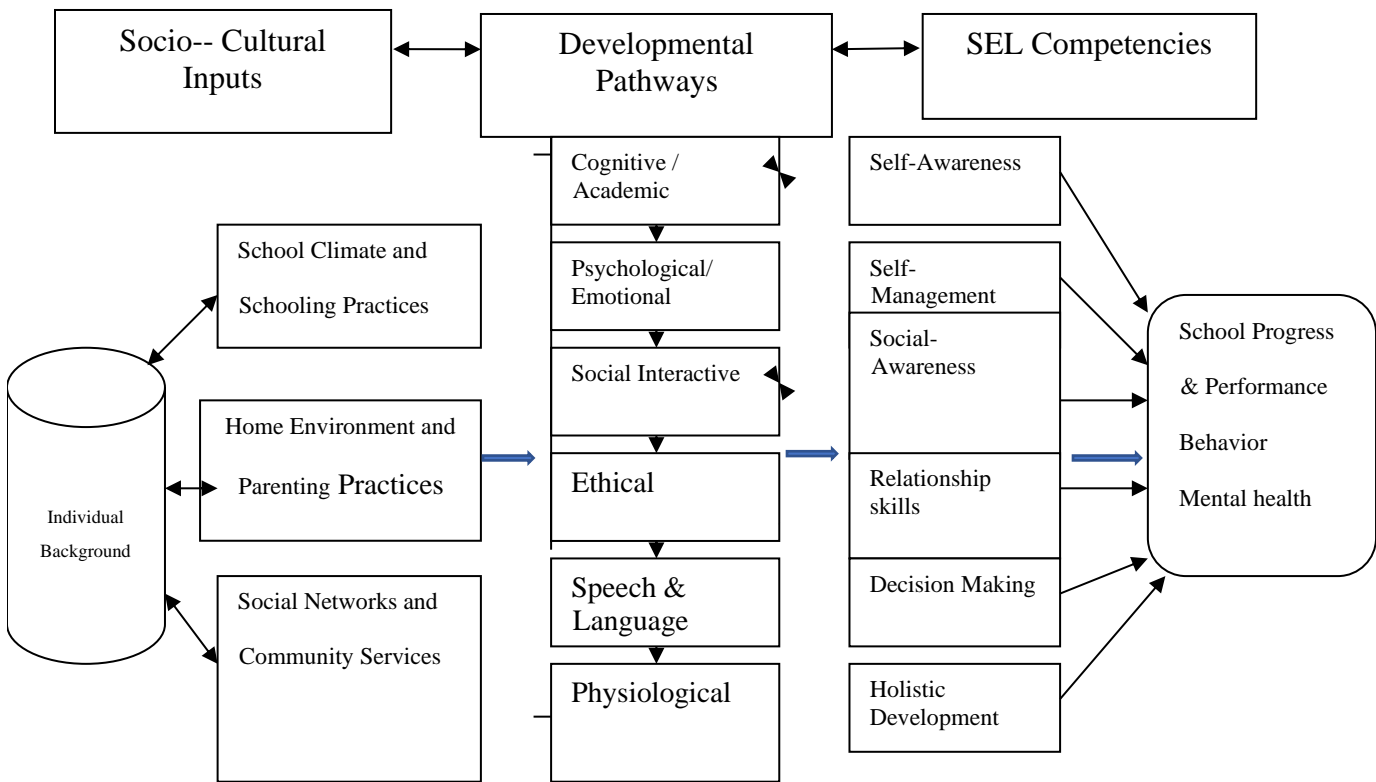
Outcomes

When each student’s potential is recognized, supported in a developmentally appropriate way and the SEL competencies are adequately addressed, students are more likely than not to adopt positive

attitudes towards learning and engage in success-related behaviors. The result is likely to be positive academic and social outcomes.

Figure 3 SEL Developmental and Socio-Cultural

Conceptual Framework



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Summary

The universal nature of SEL is one of its strongest features. Its two core pillars: brain structure and processes, and human development, are universal across cultures. Socio-cultural influences do inform and shape what goes into the brain to be processed and how the outcomes of the processed information gets expressed. Culture also influences how SEL is presented and taught. The constants of SEL though are transferable from culture to culture and give SEL its universality. These are:

1. SEL is rooted in neuroscience, brain processes that underscore the relationship between human emotions and human cognition, between, feeling and learning.
2. SEL is developmental and development occurs in every individual in every culture. Some individuals may experience development differently than others within and across cultures, but development does occur at some level.

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