Chapter 11

The Affective Phenomena of Childhood Trauma: Can Experiential Learning, Social Emotional Learning Enhance Healthy Brain Development?

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ABSTRACT

Childhood trauma and stress affects learning. John Dewey’s theories of progressive, experiential education data suggest that experiential education positively correlates not only to comprehension, but also to attitudes towards learning as a whole, and towards student self-esteem and ultimately brain health. However, experiential learning is affected by brain development and childhood stress. Experiential learning, particularly project-based curricula, have demonstrated positive outcomes in students from grades K-12. When assessments are adjusted to reflect content actually covered by a given project, students who learned through the project-based method performed significantly better than students in the comparison group, suggesting that experiential education enhances brain development and brain health in the areas of social emotional learning and improves comprehension and retention of material.

INTRODUCTION

Pedagogy must take into consideration the learning engagement of the entire person. Teaching and learning are complex processes. They include more than cognitive approaches because the learner comes to class with a plethora of childhood experiences that can interfere with the learning process. Specifically, toxic stress that occurred in a person’s childhood can affect brain functioning many years...
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later. If a child’s stress response systems are activated and stay activated for sustained periods of time, toxic stress can result, especially in the absence of a protecting shelter of a caring adult relationship (Blair & Raver, 2012; Evans & Kim, 2013). Research shows that extended exposure to stress and stress hormones affect a child’s immune system, making him/her more vulnerable to both acute and chronic illness, which can have long term effects on the structure and functioning of the child’s developing brain (Gunnar et al., 2009).

Childhood stressors such as abuse, neglect and poverty has been established as sources of toxic stress that has been proven to affect learning even after the child has grown into an adult (Fernald & Gunnar, 2009). Neuroscientist, Pat Levitt calls childhood trauma such as poverty a neurotoxin (2015): the circumstances that accompany poverty—what a National Scientific Council report summarized as “overcrowding, noise, substandard housing, separation from parent(s), exposure to violence, family turmoil,” and other forms of extreme stress—can be toxic to the developing brain, just like drug or alcohol abuse. These conditions provoke the body to release hormones such as cortisol, which is produced in the adrenal cortex. Brief bursts of cortisol can help a person manage difficult situations, but high stress over the long term can be disastrous (Blair & Raver, 2012; Neimann, Stelson & Malecek, 2017). Extended periods of high stress during childhood have been demonstrated to negatively affect a child’s ability to learn with long term effects extending into adulthood (Yoshikawa, Aber & Beardslee, 2012). Experiential learning is a pathway to social emotional learning which can offset childhood stress by providing opportunities for children to connect learning to their interests (Seifert & Sutton, 2009). It has shown to positively enhance healthy brain development.

BACKGROUND

According to John Dewey’s theories of progressive, experiential education, learning occurs best when the student can relate new information to a prior experience, and the information is presented to students in a way that connects to their stated interests and projected futures (Dewey, 1916, 2007; Seifert & Sutton, 2009). “In its simplest form, experiential learning means learning from experience or learning by doing. Experiential learning is a methodology in which educators decisively engage with students in direct experience and focused reflection in order to increase knowledge, develop skills, and clarify values (Association for Experiential Education, para. 2). It is learning through action, learning by doing, learning through experience, and learning through discovery and exploration (Dewey, 1938).

Confucius 450 B.C. noted, I hear and I forget, I see and I remember, I do and I understand. Dewey (2007) noted, there is an intimate and necessary relation between the process of actual experience and education. Wurdinger and Carlson (2010) found that most college faculty teach by lecturing because few have learned how to teach otherwise. Although good lecturing should be part of instructors teaching selection, faculty should also actively involve their students “in the learning process through discussion, group work, hands-on participation, and applying information outside the classroom” (p. 2).

This process defines experiential learning where students are involved in learning content in which they have a personal interest, need, or want (Loretto, 2011). Learning through experience is not a new concept for the college classroom. Notable educational psychologists such as John Dewey (1859-1952), Carl Rogers (1902-1987), and David Kolb (b. 1939) have provided the groundwork of learning theories that focus on “learning through experience or learning by doing (Neill, 2006). Dewey popularized the concept of Experiential Education which focused on problem solving and critical thinking rather than