Chapter 12
The Paradigm Shift for Adult Education:
From Educational Slavery to Learning Freedom of Human Brain with Synaptic Learning

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ABSTRACT

This chapter starts with the metaphor of educational slavery to indicate conventional mode of teaching practiced in the classroom with a teacher-centric approach and proposes a brain-based synaptic learning approach for student-centric that leads to learning freedom. The chapter describes the basic functions connected with the anatomy of human brain and then crystallizes it to three main functions, namely, perception, cognition and interaction. The tree functions are then related to three sides of the pedagogical framework of learning cube. With the learning cube pedagogical framework author proposes an adaptive learning approach that enhances the synaptic activity in the human brain leading to long term retention for adult learners. A proposal is made to create a five-factored cognitive ability chart based on diagnostics of perception, cognition, interaction, memorization and assimilation. The cognitive ability chart is then used to create individualized prescription for enhancement of adult learning using synaptic learning environment. The chapter concludes by providing a road map for achieving learning freedom for human brain with synaptic learning.

INTRODUCTION

Educational slavery has been prevalent in the human society for hundreds of years. The current systems where the “sage on the stage” makes all subjective decisions on the fate of slave students, has perpetuated the myth that learning happens by mere recitation of the content and facts in a lecture recited in a passive learning environment. Learners are required to follow and adhere to instructors teaching method and survive through the course without any freedom for their individual preferences of learning process.

This authoritarian approach by instructors leads to “educational slavery” not conducive to the freedom of individual learning preferences. The
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current model does not encourage challenging the authority of the instructor, open discourse and exploration of knowledge.

Regurgitation of the facts and information with no connection to the real world situations has made educational experience a dull, boring, and somewhat irrelevant exercise just to get a degree which validates, nothing, but your ability to memorize and reproduced theoretical facts in the world of academe. The intellectual superiority even in the world’s top institutions is measured by your mathematical ability to solve esoteric problems which may never be used after a student graduates from the University/College (Dewey, 1933)

It is indeed high time that we make the paradigm shift to individually free form of education that is conducive to the learning, and provides ample nourishment to the curious minds at all ages. It is time for “sage on the stage” to become “guide on the side”. It is time for educational technology to fulfill its promise. It is time for learning to be “free” from the undesirable artifacts created by the defunct educational organization that kills the curiosity and makes each potential student a fatality of “bell shaped curve” where only few conformists succeed.

This state of the affairs has made schools a dreaded place for adults learners who hate to even participate in the educational process. We must work towards a better, adaptive and individualized educational paradigm that brings an effective organizational structure for the stimulating educational inquiry where learning is at the center and is free from all artificial barriers (Cremin, 1961; Gardner, 1991)

The shift to a brain based synaptic learning paradigm will accommodate the learning preferences of each individual learner by providing them a personal experience, as compared to, inefficiency of “one size fits all” approach (Brusilovsky, 2001; Kinshok and Lin, 2003; Sonwalkar, 2005, 2007, 2008).

a. State-of-the-Art

The current educational system that dates back to several hundred years depends primarily on the skills of the instructor (Dewey, 1933, Cremin, 1961). There are instructor/teacher who have facility with the words and good black board writing skill and can articulate concepts well, and, as we all have suffered through, many more instructor who are at loss of words, confusing, with poor black-board techniques, and regurgitate the content already given in the prescribed textbook.

The good instructors, who can motivate the class-room learning, are few and majorities are those who merely meet the minimum standards of learning and teaching. The wisdom of having small class size to teacher ratio goes only so far to remedy the situation where the instructor’s style of teaching does not match with the style of learners. In most cases, students who are not able to relate to the instructors style of teaching have no alternative, but to depend on their own resources (Schank and Cleary, 1995).

The subjects who are abstract in nature, such as, mathematics and science suffer even more when the instructors are not able to motivate and explain the necessary concepts in the limited time given during the lecture sessions of 60 to 90 minutes.

As we all know, the class-room experience is mostly passive listening experience, with few picture drawn on the board and almost 10% or less time of the class spent on the real discussions. Except the classes those are completely case-study based and encourage role playing. Majority of learning process in the class-room is one-way and delivered by – “sage on the stage”.

Let us look further, the instructor is given a set-of curriculum standards and requirements that he/she needs to meet in a given semester or year. The lectures, home assignment, and recitation session are organized in fast paced environment where student is subjected to five to seven subject matters.