

ENERGETIC LEARNING: A PATH TO KNOWLEDGE VIA THE ENERGETIC MIND

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Abstract

Although extended research has been made for the different learning profiles and the use of technological means for the improvement of approaching teaching, inclusion has not yet been achieved in classes of multimodal learners, and their school performance varies. The purpose of this paper is to suggest a new model of approaching learning that can reinforce the teaching process, through means that are adapted to each learner's profile, in classes with students grouped according to their learning style. The final assessment aims to prove that the students learn more effectively, and a better inclusion of learners with special learning needs with the rest of the group in the classroom can be achieved.

Introduction

Throughout the years, every teacher's or educator's long-term goal was and still is to provide knowledge to children and adults. Providing knowledge is not an easy task since it requires courage, boldness, strength and love for education as well as love for the students. Taking into consideration that every individual is unique in the way that he or she perceives and assimilates information, the challenging task that is always present in the field of education is how teachers and educators can use effective ways in order to guide their students to gain in-depth, long-term knowledge that will not only bring to them a successful academic and professional career, but also a successful life. Following this path, there are many times when students face difficulties on how to become active and autonomous in the process of learning. Although they might daily participate in an interactive classroom, they still miss information since the amount of retained information declines substantially after a short period of time (Hauck & Thomas, 1972). Students try hard to grasp as much information as possible and yet they slightly discriminate the difference between memorizing and assimilation. Is it a matter of learning difficulties, or a matter of missing specific cues and appropriate strategies for retrieval, that will guide them to effective long-term learning? (McKeachie, Pintrich, Lin, & Smith, 1986)

Since students "do not know how exactly the brain is designed to learn" they cannot easily recognize the process of learning (Jensen, 2005, p. 4). From a very early age, they set as an educational goal to receive good grades, and this is achieved through a battle of memorizing a great deal of information daily. The process of learning becomes a process of duty, and from this term it is made really clear the fact that the room for imagination, creativity, and independence is restricted. Although students are expected to take charge of their learning, in reality they hesitate to be autonomous since in order to

become self-regulated learners, they need to be self-directive, transforming their mental abilities to academic skills (Zimmerman, 1990). Typically, students do not spend much time on recognizing how unique their learning style is. Their attention is stressed on completing tasks. Self-awareness comes only during the time when they are expected to decide about their professional and career paths. It is mostly during this period of time that they are deeply concerned about how successful their academic life is going to be. In order for them to develop their learning, students need to consider the best way to use their brain, to use their intelligence, reaching their outmost potential. They need to familiarize themselves with their “own ways” of learning; they need to learn how their brain functions, in order to become energetic learners.

This paper is going to define the significance of the learning profile as well as the use and the application of learning techniques. Its goal is to scientifically support that energetic learning is achieved through the recognition and acceptance of the personal learning profile by suggesting a new model of teaching approach for every student regardless of any possible special learning needs. By using the skills that match with the way in which the brain is designed to learn, a student is led to metacognition (Jensen, 2005).

Active Learning and Active Brain - Theory of Constructivism and Neuron Doctrine

Students need to recall and add new information daily for different purposes. In order to assimilate and recall this information, they need to strengthen their memory by learning actively. Learning involves actively constructing our own meanings. In scientific terms this means that the brain creates new synapses between neurons, to connect and store new information. These synapses are the new links that join new concepts and ideas with preexisting knowledge. Based on Geoff Petty (2012), as individuals with reasoning, we invent our own concepts and ideas based on what we already know, and this meaning making theory is called *constructivism*: “New information is linked to prior knowledge, thus mental representations are subjective” (Bruner, as cited in Hall, Hindmarch, Hoy, & Machin, 2015, p. 27). In this way, the student understands preexisting conceptions and is now able to connect them with reality. By questioning every new concept, applying existing knowledge and real world experience, he or she becomes an expert learner.

Through the subjective brain, a unique subjective learning profile is developed. This profile depends on the routes that the brain has constructed to create a new path that is accessible from each individual, in order to achieve learning. Even in cases when there is a learning difficulty, the brain has the tremendous capacity for finding a different route to knowledge (Cottrell, 2013). This suggests that the brain has the potential or the ability to modify functionality based on experience. Therefore, when the process of learning a specific concept becomes difficult, there is the likelihood that the brain develops a different way to learn it (Michelon, 2008). The human brain grows new neurons, which become functional, and they are related with memory (Jensen, 2005). In a number of cases, when many students’ performance in class is dysfunctional in terms of how easily they can process and assimilate information due to special learning needs (dyslexia, dys-orthography), or

developmental disorders (ADHD –Attention Deficit Hyperactivity Disorder), it has been claimed that their brain works in a “different way” compared to the average student. Left-Right Hemisphere theory claims that each side of the brain controls different types of thinking (Springer & Deutsch, 1985/1981). A dyslectic brain is the one that functions with the right hemisphere as the dominant one (lateralization of the brain). This means that in order for a dyslectic student to learn he or she actually needs to use images, colors, intuition, emotion and imagination (Cherry, 2016). The role of the right hemisphere is lateral, since it is the one responsible for language numbers and reasoning. However, recent research supports that “no matter how lateralized the brain can get, though, the two sides still work together” (Zimmer, 2016, p. 1). The two hemispheres are linked by over 200 million nerve fibers (corpus callosum); there is a crossover effect since each hemisphere controls the opposite side of the body and that side is related to the mental capacities of the other hemisphere (Cottrell, 2013). Under these terms, a question that arises is whether the brain network can be strengthened through differentiated means of incoming messages of information.

State of the Art – Study Skills and Effective Learning

The most effective way for learners to develop and shape their knowledge is to “learn how to learn” (Smith, 1982). Learning how to learn means that students become autonomous thinkers through their self-awareness for the reasons that they learn, the goals that they set and the steps that they need to follow in order to learn. As autonomous students, being highly motivated, they are capable of recognizing their learning needs by setting goals and choosing the study skills which are suitable to their profile and guide them to significant learning (Gibbs, 1999). Taking into consideration the multiple intelligences of a student, active learning involves significant learning through which “the learner seeks for motives, improves his personal achievements and finally reaches metacognition, the active participation of the individual in his or her thinking process” (Stewart & Landine, 1995, pp. 16-20). Higher order thinking involves active control over the cognitive processes of learning. This active control involves activities such as planning how to approach a learning task, to monitor comprehension and to evaluate the progress towards the completion of this task. In order for the students to determine how successfully they learn, it is important to effectively apply their cognitive resources through metacognitive control (Livingston, 1997).

Personal Profile and Approaches to Learning

The first step that can be taken to shape a personal learning profile and the suitable strategies that can be used to gain knowledge and metacognition is to start an individual conversation among students and teachers for the different ways to learn effectively. Since every individual uses the senses to understand and receive information, a multisensory tool, the VARKS Questionnaire, has been designed and used to recognize which is the best way to manipulate information for different purposes. The VARKS Questionnaire is an inventory that is predicated upon information processing modes and can be used in order to observe how the visual, auditory, verbal and kinesthetic learners receive information (Baykan & Nancar, 2007). Learning preferences are not only difficult to detect, but also difficult to change in a school system. These

preferences once detected, though, can help the learner use the techniques through which he or she can encode new information that must be represented in his or her memory. According to each learner's learning profile, these codes can be visual, auditory, verbal, kinesthetic and multimodal. Encoding information in several ways assists learners' long-term memory and leads them to knowledge (Cottrell, 2013). A relevant study was performed at the Department of Medical Education of Erciyes University in 2006. The Turkish version of the VARKS Questionnaire was administered to students in the first year of their studies. By recognizing the learning styles of the students, "the instructors were able to develop the appropriate learning approaches, in order to make the educational experience more productive" (Baykan & Nacar, 2007, p.158).

Taking into consideration that such a tool is not a test that measures intelligence or gives a diagnosis for any possible special learning differences; its aim is to strengthen the options learners have and the multiple ways they might not have considered that guide them to knowledge (Atkins & Svinicki, 1992). Applying, for example, this tool in the fifth or sixth grades of primary education could result in classes that are shaped with students who can perform better by using kinesthetic ways or tools for learning (likewise classes with visual, auditory, verbal learners). In such a case, the group would not so easily be able to adapt and perform in an environment where they are expected to stay on the desk and passively listen to the teacher covering material on a theoretical basis. Their body movements would distract them from being concentrated, with the result of interrupting the lesson in multiple ways. As a result, their performance in class and at home would be negatively affected, since they would not know how to deal with these distractions and cope with the tasks that need to be completed. A kinesthetic group includes learners who need to involve all their senses, with a strong participation of their body. These learners could be both diagnosed with or without special learning needs. Therefore, the skills that should be used in the process of learning, for these students, do not depend on any possible individual special learning needs, but on the learning profile of a group as a whole. Approaching learning according to the profile of a group would not result in the categorization or discrimination of the group, but in the recognition of the need for recreating ways that improve and enhance the process of assimilation and metacognition.

Learning Skills in Action

In order for the students to manage independent learning successfully, it is required to use the essential means to recall the information they need. Good recall is linked with attention and awareness during the process of encoding. Study skills assist the students to participate in the memory process, through which they are led to integration by:

- Taking in information through noticing, attending and absorbing.
- Encoding the information by joining it with information in the working memory so that the brain can store it in the long-term memory.
- Retaining the information in their long-term memory.

- Recalling the information by retrieving and remembering information, with or without a purpose. (Cottrell, 2013, p. 210)

Under these conditions, the personal learning profile of a student leads the way to specific study skills that are the means to significant learning. Fleming and Mills defined four sensory modalities of learning: visual, auditory, verbal (read-write), and kinesthetic (Fleming & Mills, 1992). Based on these definitions, visual learners assimilate information by connecting information with visual stimuli. Any information in written form should be interrelated with relevant optical tools (colors, images, videos). According to Fleming and Mills, Visual skills involve mind maps, diagrams, charts, color-coding, pictures, videos, posters, slides, and lessons that use picturesque language. In order for them to encode information autonomously, learners can redraw images from memory, replace words with symbols and transfer meanings on images. For aural learners, information is better assimilated by oral speech. They can better encode information by attending classes, discussions, tutorials and recordings; to convert information independently learners can transfer what they listen in the recordings, in notes (since note taking is not a strategy that can be effective for them), to listen to the recordings many times, read the information aloud and explain the information orally. For verbal learners (learners who prefer reading and writing), intake of information can be achieved through lists, dictionaries, definitions, handouts, textbooks, notes, and manuals. They can autonomously take notes and rewrite them with synonym words, turn their notes in charts, diagrams, graphs and flows of words. For Kinesthetic learners, all senses must be activated during the learning process; body movements (walking, dancing, playing with objects), as well as visual and auditory stimuli are necessary in order to fully concentrate on the process. They assimilate information by lessons in laboratories, field trips, lectures with real life examples, exhibits, and hands' on approaches. Encoding for them involves note taking of the real life examples and possible conducted experiments, illustrated ideas supported by pictures that add information in the notes, case studies and applications that support principles and abstract concepts. In cases, of multimodal learners, learners that do not have a strong preference in any single mode, all the strategies can be combined to reach their optimum potential (Fleming, 1995, p. 3-4).

Approaching Learning Through the Application of Learning Skills

Learning in action through the utilization of study skills can be applied to classrooms from primary years to secondary years of education in parallel with the school's curriculum. A new model of approaching learning can be applied for students of the fifth and sixth grade of primary years, as well as students of secondary years. Applied, for example, at the sixth and seventh grade, the students are separated into two groups that include students diagnosed with special learning needs, and students that are not diagnosed with special learning needs. After being informed from their teachers about the significance and importance of the personal learning profile, the students complete the VARKS Questionnaire. Based on the questionnaires' results, all the students (all blended together) are separated into four groups (visual-aural-verbal-kinesthetic). From the first grouping, it is already known who the

students that have special learning needs are; these students are blended with the rest in order for it to be proved that through this approach all the learners can be included in the same class environment. New classes are formed according to the learning profile of every group; new lesson plans and activities through interactive means are applied in the school's curriculum.

For the group of visual learners school subjects such as Languages and History will be taught through a video series in which every chapter will be presented in a virtual reality classroom. Students then participate in interactive activities in which learning strategies are asked to be used. By watching each episode, the visual learners are using mind maps in order to visually assimilate the necessary information; the aural learners will create recordings from the information being heard on the video, and in role play activities, in pairs, they will "perform" that information that needs to be assimilated; the verbal learners will be taking notes in diagrams, bullet points, acronyms, and learn by writing and reading; the kinesthetic learners will be using role plays, by acting out the relevant chapters and use the board in order to write in notes the necessary information; the multimodal learners will choose any of the strategies that are preferable from them according to the subject being taught (mind maps, diagrams, bullet points, Cornell method, acronyms).

For all the groups, activities will be presented in an interactive and written form. Through the written form, learners will be able to self-assess their progress during the completion of their home assignments. Assignments that will be completed at home involve the creation of board games that include:

- For the Visual learners: blind sketches, puzzles, putting sentences in the correct sequence, rebus.
- For the Aural Learners: listening to recordings and songs, made from lectures, and including wrong information that need to be identified.
- For the Verbal Learners: crosswords, cryptlex, anagramism, scrabble.
- For the Kinesthetic Learners: pantomime, singing, role-playing and experiments.

According to this model, students with special learning needs are no longer excluded, since they now recognize which is their learning profile and can autonomously apply the techniques that will help them to learn by participating actively in the classroom. Grouping will strengthen communication and empathy between the students, who will no longer feel any form of discrimination.

At this point, a possible question that may arise is on how this model is going to be assessed in terms of its effectiveness, and if the lesson is student centered, what is the role of the teacher and his/her teaching methods?

In order to document the effectiveness of this model and its learning outcome, the teachers - educators will be using a manual that will assist them in recording the performance of their students during and after the lesson. This manual is going to include:

1. The lesson plan of every chapter presented (information to be assimilated).
2. The chapter's relevant activities in a written form.
3. The evaluation form for the performance of the students (individually and in groups) during the lesson.
4. The self-evaluation form, for the students evaluating their homework activities.
5. The activity booklet that includes the instructions and the relevant learning profile assimilation techniques that will be used from the students.
6. The rubric analysis that includes the grading scale. This scale is going to evaluate each student according to the level of performance in his/her group (visual, aural, verbal, kinesthetic) compared with the performance of the multimodal group.

The model's website includes the subject's video series, tips on how to use the learning skills, extra homework activities, group line in which the students can download and share their work and work online, help line through which the students can ask for advice from their teacher-educator. By the end of every week, the educator is going to measure the average performance of every class and compare the results with the multimodal class.

Learning Skills via Technology in the Classroom

When comparing traditional methods of teaching with modern ones, we realize that a significant difference between them is the use of interactive means, the use of technology. Although many contradictory opinions have arisen for their effectiveness, their influence is major since technology dominates in our modern society. There are many questions that are probed about whether technology can actually support and enhance the learning process. Research has shown that classrooms that are judged as the most innovative are engaged in constructivist, knowledge building practices that integrate ICT into the curriculum and change assessment (Kozma, 2004). Whether an innovation succeeds, though, depends on the extent to which its characteristics fit the school environment. It depends on how clearly it can be implemented within the context and how practical its implementation is within the demands and limitations of the environment (Kozma, 2004). A challenge that is faced by teachers and educators is on how to motivate the students to effectively use the mediums provided in class (Huffman & Huffman, 2012). Modern educational environments include technological means in their curriculum by including interactive activities (projects, portfolios, research papers, power point presentations) during the lessons. New types of chalkboards (with interactive digital screens), online lessons and video chats for students who are not able to be physically present in the class, e-books, and educational games are innovations from the past decade that aim to change the modern classroom's environment (Svokos, 2015). In order to create more direct and significant learning, study skills should be implemented in each new medium, by developing a new school curriculum based on lessons

that will have been designed to include study skills in core subjects through interactive means.

Foreseeing the Future

In a period that in every educational system in the world, teachers and educators are seeking to find the best possible ways to include students from different countries, different socio-economic background, different intelligences and unique brains, in the system, it is not a matter of any special needs or a matter of intelligence on how easily or effectively an individual learns. It is a matter of being involved. Involvement means to be able to hear, understand, process, use and assimilate symbols, words, sentences, meanings and ideas that will guide the learner to knowledge. Technology triggers the minds of every individual in any corner; the skills are the keys that open the doors to each self and mirror the ability of every individual by choosing to know how to learn. Having the means as well as having the tools to reach knowledge is the way through which a person achieves self-awareness and metacognition; this is not a matter of receiving good grades and high degrees but a matter of having a successful life as autonomous and spiritually independent minds.

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