

Educational Psychology and Student Learning

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Introduction

Historically, psychology has contributed a genuine and convincing capacity to provide a better environment for learning. Since the 19th century, psychology in theory and practice has created a solid foundation for a healthier understanding of human nature. Understanding and implementing human psychology has helped teachers to assist students to grow healthy, discover their untapped talents, and help them to establish better understanding of themselves and improve communication skills.

Educational Psychology in a broader scope, when applied properly, assists schools officials to understand student behavior better. Thus, schools should be provided with psychological services to offer help and guidance by collaborating efforts with faculty, students, and parents to create a better working relationship between schools and the community (Talley, and Short, 1995).

Psychology in the educational setting has helped educators in reforming the educational programs by providing new assessments for planning, exploring, and evaluating educational objectives, and student behavior. It has broadened teachers' perceptions about how students comprehend and how they as teachers might be able to assist students better. It has improved teacher-student relationships; and has helped children improve behavior in environments inside and outside of the school (Short, and Talley, 1995).

Educational psychology can help teachers improve other related variables, such as milieu, policies, and societal aspects, which could impact students' performance. Such knowledge helps teachers to work with and transform students cognitively, emotionally, and academically. It complements the educators' roles in students' growth, particularly, in assisting the disabled students to prosper in life (Kamphaus, 1995).

These cognitive and social improvements are necessary for students to effectively function in school, community, and workplace. (Hartup, 1992). Therefore, it is imperative to offer more psychology courses and integrate them into the teachers preparation program to prepare teachers with a strong foundation of human understanding (Talley, and Short, 1995).

Educational Psychology

Educational psychology as a tool in the teaching and learning process helps teachers to comprehend and foster better understanding about human beings and how humans learn (Woolfolk, 1993). Knowledge of educational psychology prepares teachers to understand students' inner world. It increases teachers' capacity to comprehend the process of student learning. Further, it helps teachers to guide students in managing their social conduct and improving their academic discipline. Teachers who use educational psychology do this by setting goals for students to achieve the intended objectives (Successful Learning Research Team, 2000). Teachers with these skills can explore the causes of events in educational settings. They learn to define how a real or a perceived image affects an individual's feeling, or disposition, and how people and the environment influence each other (Educational Psychology Interactive, 2002). Educational psychology helps teachers to understand and emphasize students' academic "content-image" which is a new image or understanding based on newly learned content. It provides a more lucid method for students to navigate their weaknesses and strengths. (Burka, 2008).

Educational psychology has also shed light on the learning environment outside of classrooms where, traditionally, learning has taken place. It explains the impact of the environmental factors on learning life-lessons, and how these factors form students' behaviors (Disinger, 1987). In the field of educational psychology, the process of assessing students' intelligence is pivotal. This process includes *psychological methods*, *intellectual process*, and a *pedagogical method* using both an educational psychology *knowledge base* and *guidance*. Employing psychological methods enable teachers to understand how students exhibit dissimilarities in their intelligence that influence their behavior and achievement (Woolfolk, 1993, P. 111&113).

The binary approach (you are either stupid or smart) should never be a variable in any classroom to determine students' intellectual status. It alienates and demotivates students from getting actively engaged in classroom activities and may cause them to passively withdraw even from asking simple questions. Thus, teachers' preferred modality should be to remind students that they all have potential to learn and get ahead, but they might have different learning styles. To facilitate this process, it is crucial that teachers provide constant *psycheducational* feedback to students to optimize their way of thinking about their performance (Burka, 2008).

Through educational psychology, teachers become able to analyze students' mental processes in order to understand their behavior and therefore understand why students behave in a certain way and try to correct students' misbehaviors with integrity. To face new challenges, teachers should be able to look at the situation that students are in, and help them to find efficient way to deal with the matters that are important to them. Teachers must also be sensitive toward students' cultural backgrounds and encourage them to value the differences that exist among them (Woolfolk, p.115). They should help students to discover themselves, to see their God-given potential, and to use their untapped talents to enhance their achievements.

An important part of any pedagogical method should be helping students to develop a sense of responsibility. Teachers should let the students know how important they are. To assess student performance, teachers must use a valid, reliable and unbiased measurement to weigh the learning outcomes (Brookhart, 1999).

Such an educational setting greatly contributes to the classroom where students are engaged in active-learning. Students, then, will be able to mentally process new information and conceptualize them into cognitive designs. They will be cognizant of deficiencies when they compile new ideas, and be able to replace misconceptions by a more logical and scientific conceits. Every fresh idea should generate a new concept, and lead to analysis and learning (Colburn, 2007). Even in social context outside the classroom, a teacher's pedagogical skills can extend beyond the textbook. An effective teacher's pedagogy based on educational psychology can encourage students to become responsible citizens and develop creative ability to solve critical social problems, which helps them to become responsible family and community members (Turnley, 2007). In order for students to succeed in all compartments of life, teachers should utilize the following four crucial components (Brookhart, 1999).

Knowledge- teachers should look for,

- *How students express their ideas*
- *What are their facts*
- *How they gathered these facts*
- *How they reason*
- *What are their concept bases*
- *How their thinking process takes place*
- *How they approach problem-solving,*
- *Their ability to describe.*

Skills- teachers should try to see,

- *How students' social actions or reactions are formed*
- *How effectively they utilize and construct projects*
- *How skillful they are in drawing*
- *How they organize and prepare reports,*
- *How they observe phenomena and practice their gained knowledge.*

Feeling-teachers should try to understand,

- *Student's emotional state*
- *Their sense of belonging*
- *The status of their self-esteem*
- *The sense of security in classroom,*
- *How confident they are in exercising their rights.*

Disposition- teachers must try,

- To instill in students the sense of respecting the differences that exist among us
- To appreciate the importance of good citizenry, good manners, courtesy, generosity, humbleness, and willingness to help.

Through the concept of the educational psychology, teachers would be able to comprehend and elucidate how the sensibility and demeanor of people are affected by the perceived or real images that define an individual's place within social settings and his/her ability that would define him-/herself intrapersonally and interpersonally (Educational Psychology Interactive, 2002).

Cognitive Learning

A cognitive style refers to adopting an integral approach which includes every good resource to help students to develop. Cognitive style is normally defined as a common component that sheds light on the traits and propensities of learners and how they recognize, conceptualize, and disseminate new information (Liu; Magjuka; and Lee, 2008). Several models of cognitive learning are discussed below.

“Cognitive” means “knowledge-use involving conscious intellectual reasoning.” Through employing the cognitive approach, humans can apprehend the inherent nature of a fellow human being or the core or essence of an object that might not be easy to comprehend merely through a person's social status or the value some might attach to an object. Research shows that people learn in various ways. Some people learn through hands-on-activities, some people are visual, and others auditory. All this indicates how complex the learning process is, and how closely knowledge is interwoven into human perceptions (McMahon, McMahon, & Romano, 1996, p. 179 & 180). The concept of cognitive learning helps students understand with which intelligence they perform better. (Anita, 1993, p. 238). Teachers also can use this knowledge to teach from a perspective that matches those of their students.

In the cognitive field, there are multiple factors that indicate that, without prior introduction, students can find it challenging to comprehend new ideas or new methods of thinking (Jacobson & Working Group 2 Collaborators, 2003). In one model, research has shown that students differ on four pivotal areas of cognitive learning, “*Introversion-Extraversion, Sensing-Intuition, Thinking-Feeling, and Judging-Perceiving.*” (Johns Hopkins University, Center for Talented Youth, 2003). Studies using a taxonomy similar to the Myers-Briggs personality inventory reveal that the cognitive style of a person scoring higher on introversion displays task-oriented traits and the tendency to work alone. This characteristic usually defines one's academic ability (in that these traits are linked to good study habits which may guarantee greater success in school). Students who may trend more toward extroversion display-people-oriented characteristics and the propensity to get along and work with people (Liu; Magjuka; and Lee, 2008). Such studies suggest that a classroom that offers a combination of group work in which students with higher extroversion may excel along with individual projects and intellectual work may be more effective in engaging both types of students.

Teachers must fully comprehend a student's ability “as the composite of characteristic cognitive, affective and psychological factors that serve as relatively stable indicators of how a learner perceives, interacts with, and responds to the learning environment.” (Griggs, 1991). In another approach as stated by Griggs, “cognitive styles are intrinsic information-processing patterns that represent a person's typical mode of perceiving, thinking, remembering, and problem-solving.” These styles are categorized into four models: 1) *Personality*-which evaluates the impact of basic personality traits on selected methods used by students to obtain and analyze data, 2) *Perceiving and disseminating information*-which is a model that assesses the influences on the student's intellectual ability and determines how information is integrated, 3) *Social behavior*-this model deals with students' social interaction, assesses how they act and interact in the classroom and community, and 4) *Instructional dimension*-assesses the environment and all the related teaching and learning materials to provide a better educational environment to make learning more interesting (Griggs, 1991).

Teachers also can utilize an approach that includes three levels of the cognitive learning categorized as *comprehension, memorization, and application*. These levels facilitate understanding the complexity of

the core content of any subject. One can memorize something for later use, or comprehend to link knowledge and events, or one could learn after receiving training. These levels are defined as follows:

- **Comprehension**-at this level, learning becomes interesting and meaningful. It requires students to connect the newly developed ideas to old knowledge. Here, learners compare and contrast, analyze, derive and rationalize the end results.
- **Memorization**-requires students to encrypt information to form a relationship format between past and present so knowledge is easy to retrieve. For instance, when mentioning September 11, 2001, it easily comes to mind that a group of nineteen terrorists attacked the Twin Towers and Pentagon, or when talking about November 22, 1963, it brings back the brutal scenes of President JFK's assassination.
- **Application**-learners have adopted a general understanding to create new situations by transforming the knowledge learned into a stage of implementing the knowledge. It requires students to diagnose similarities across newly created situations and future applications. For example, students may apply knowledge based on the study of present and past wars, that wars in general will have negative impact on the healthy status of human civilization. (Instructional-Design Theories Site, 2003).

Learning Process of Male vs. Female Students

Studies of Talented Youth by Johns Hopkins University have also indicated that students differ on the basis of "achievement, endurance, and affiliation." It is asserted that these dissimilarities are linked to gender differences. The cognitive learning and personal characteristics are two factors that distinguish talented students on the basis of gender. Students possess different characteristics and learning styles that define how they perceive and learn, and oftentimes talented male and female students choose different paths to pursue their educational careers. Knowing that there are differences in the learning styles between males and females makes it imperative for teachers to learn more about how these two genders learn and disseminate information, and how to reach out to them on the personal and academic levels to help them utilize their potentials appropriately (Johns Hopkins University, Center for Talented Youth, 2003).

Teaching should facilitate the learning process for both genders and, at the onset of presenting materials, teachers should be mindful that every student may not be able to comprehend new information unless their teaching strategies match the different learning styles that have observed to be the dominant modality of each gender (Gavrielle, 2008).

Men and women use different ways to process information, feelings and emotions. Research cited by Wylde has shown that an emotion quickly moves into a woman's *limbic system*, and expeditiously reaches the upper level of the woman's brain, where the thinking process takes place. By contrast, when a man's brain receives emotional information, it is immediately conveyed to the lower part of the *limbic system*, in the area of the brain stem. This indicates that women have tendency to handle *anxiety* better than men merely by discussing the matter with the family members or friends. It validates that most of women's activities move up to the left-brain hemisphere, where the verbal expression occurs. Men, when faced with anxiety, have tendency to emotionally *withdraw*, or become violent and experience aggressive impulses that are governed by the brain stem (Wylde, 2002).

Research indicates that girls generally use the left hemisphere of their brain, while boys typically use the right hemisphere of their brain. Research also shows that different genders have different physical brain features. Using the concept of *brain sex*, research has shown that the physical differences between a man's brain and a woman's brain have proven that, based upon the formation and the chemical and hormone levels in their brains, girls and boys think and perceive things differently. The differences in the amount of chemical presence and physical structure between women and men validate the presumption that girls are generally more adept at *emotional reasoning*, and outshine boys in language and verbal expression, whereas boys generally excel in rationalizing and using *logic*. These differences of learning methods between men and women have been used commonly to promote men's social status. (Case Paper One, 2003).

Theories about human intellectual growth indicate that females tend to link their identity to their social relationship with others. They promote cooperation over conflict and competition, and show more concern for the welfare of others. Females rank higher in caring and loving. They like to share information and work actively and interactively, while males prefer leadership, and tend to work independently, and love competition (Kerka, 1993). Generally, males maintain a capacity to carve out time and space of their own, whereas females dedicate more time and space to the family and other needs (Kerka, 1999). However, it is important to realize that although the thinking process is common to both genders, the way they obtain and utilize information to find solutions to their daily challenges may be different (Woolfolk, 1993, P. 111&113). Therefore, educational settings cannot choose *gender-neutral* approaches and use the same tools and materials in order to educate both sexes (Freer, 2007). *See figure I in appendix I.*

Studies also have defined the differences between women and men in *spatial ability*. Although, men's upper hand in the *spatial ability* has been validated by scoring higher on tests, nevertheless, there are various differences between the two sexes that might affect their learning abilities. Men are known to be not easy to persuade. Women are known to blame themselves for their failure. Men enjoy their right hemisphere brain ability in dealing with the visual and linear matters, while women relish their ability in verbal and organization (Hardman, 1996).

Clearly then, female and male students have different characteristics. It is important for teachers to realize that:

- Girls are known to diverge (inductive learners). They have higher imaginative thinking ability. They are better listeners and share their beliefs and thoughts, and look at every new bit of information from different angles with different perspectives using inductive reasoning to come to a conclusion.
- Boys are convergers (deductive learners). They think abstractly and are good experimenters. They strategize and engender models, explore problems, define steps, develop, expound theories, analyze phenomena, and use their deductive reasoning to study new information before rushing into making decisions.

Teachers must try to understand the quality, behavior, and characteristics of male and female students in order to be able to transmit their academic ability to a higher level to promote their social values and harmony between the two sexes (Claxton and Murrell, 1988).

Developing Classroom Environment Conducive to Learning

A good learning environment should consist of teacher professionalism, various teaching and learning materials and methods in order to meet the needs of visual and auditory students. It is pivotal for teachers to be cognizant that they can no longer teach effectively without considering different learning styles (Wilmes; Harrington; Kohler-Evans; and Sumpter, 2008).

The most compelling factor in a good learning classroom is that the teachers must organize and enhance activities and teaching materials suitable to both gender differences and differences in learning styles. Teachers should apply a curriculum that goes beyond academic content but rather is holistic in its approach to encourage students to rise above expectations, and to become creative and critical thinkers (Jenkins-Friedman, 1984).

As evidenced by the various models of cognitive learning styles, students come to school with multiple abilities and talents already instilled in them. Teachers should extract student's abilities and talents and engage these talents in order to teach them new materials. (Berger, 1991).

The learning environment must be healthy and conducive to the students' engagement in the learning process where they can connect their intellectual thinking to pragmatic activities where their self-esteem and social skills are promoted (Kellogg, 1999). In the practical sense, the classroom environment should bring about the intellectual challenges to make students think about their knowledge base. The classroom setting should encourage students to challenge and engage with each other. If appropriately programmed and arranged, a classroom environment would promote a higher order of thinking, and lay the groundwork for positive relationships among students and teachers (Johnson, 1997). *See figure II in appendix I.*

Teachers should make the learning process as experimental as possible by encouraging students to participate in learning by doing activities cooperatively. They need to provide more opportunities for students to not only learn new information, but also to work responsibly at their own rate. For instance, teachers can use text, pictorial shapes, charts, videotapes, and computers to facilitate the learning process. Teachers must elucidate information to its simplest form and comprehensible steps. They should motivate students set their own goals, and evaluate their own progress. Teachers should motivate students to challenge their own knowledge base and take up new projects to improve areas of weaknesses (Brown, 1997), and allow them to freely express themselves without being misunderstood, or mistreated. Thus, the primary goal of education should also focus on assisting students to grow into ethical responsibility in order to contribute to the healthy growth of the society in which they live (Turnley, 2007).

Although, teaching technical skills is embedded in our educational system, there is an all too-important need to teach students to become individuals and develop the same sense of caring for self, family, friends and others, animals, plants, earth, ecosystem, and our common humanity. Educational goals in the 21st century should strive to move the “caring” beyond the walls of the classroom to raise responsible citizens (Wolk, 2007).

Conclusion

There are many reasons to believe why it is so compelling to focus on understanding human psychology in the context of education. Because, it is a knowledge which provides broader perceptions about humans and how they behave, attain, retain, revise and rationalize new ideas.

Therefore, it is imperative that teachers are equipped with the psychological perspectives in order to understand and facilitate learning process. Through human psychology, instructors can easily design a cognitive learning roadmap to prepare students to become life-long-learners. By applying human psychology, teachers would be able to create a better classroom environment, and maximize students’ interest to enjoy their social and academic activities while excelling in critical thinking.

There are various ways to analyze cognitive abilities of students and this article has suggested some of the ways teachers may incorporate them into their teaching strategies to create a curriculum that touches all aspects that students need to learn to become successful in their professional and social lives. Such a curriculum would empower them to compare and contrast critical issues, concentrate and perform better, use appropriate knowledge for proper situations to minimize the effect of the factors that cause depression and other emotional instabilities (Goldsmith, 2003). They would be able to communicate more effectively to understand, explore, and resolve difficult problems. Students should be encouraged to express their opinions about related instructional strategies to establish a better learning environment.

In a good classroom environment, teachers continue to refurbish their knowledge, skills, and methods of teaching. To make teaching interesting, teachers should enter into the realm of students, where they can teach the way students learn. While it is the students who must be engaged in the learning process, the learning methods and teaching materials must be meaningful and individually designed. Research indicates that learning occurs only when learners begin to process, disseminate, and evaluate new knowledge. Thus, students must make an in-depth mental connection in order to internalize the context of the new information instead of engaging only to memorize it (Brown, 1997).

Appendix I - Figure I

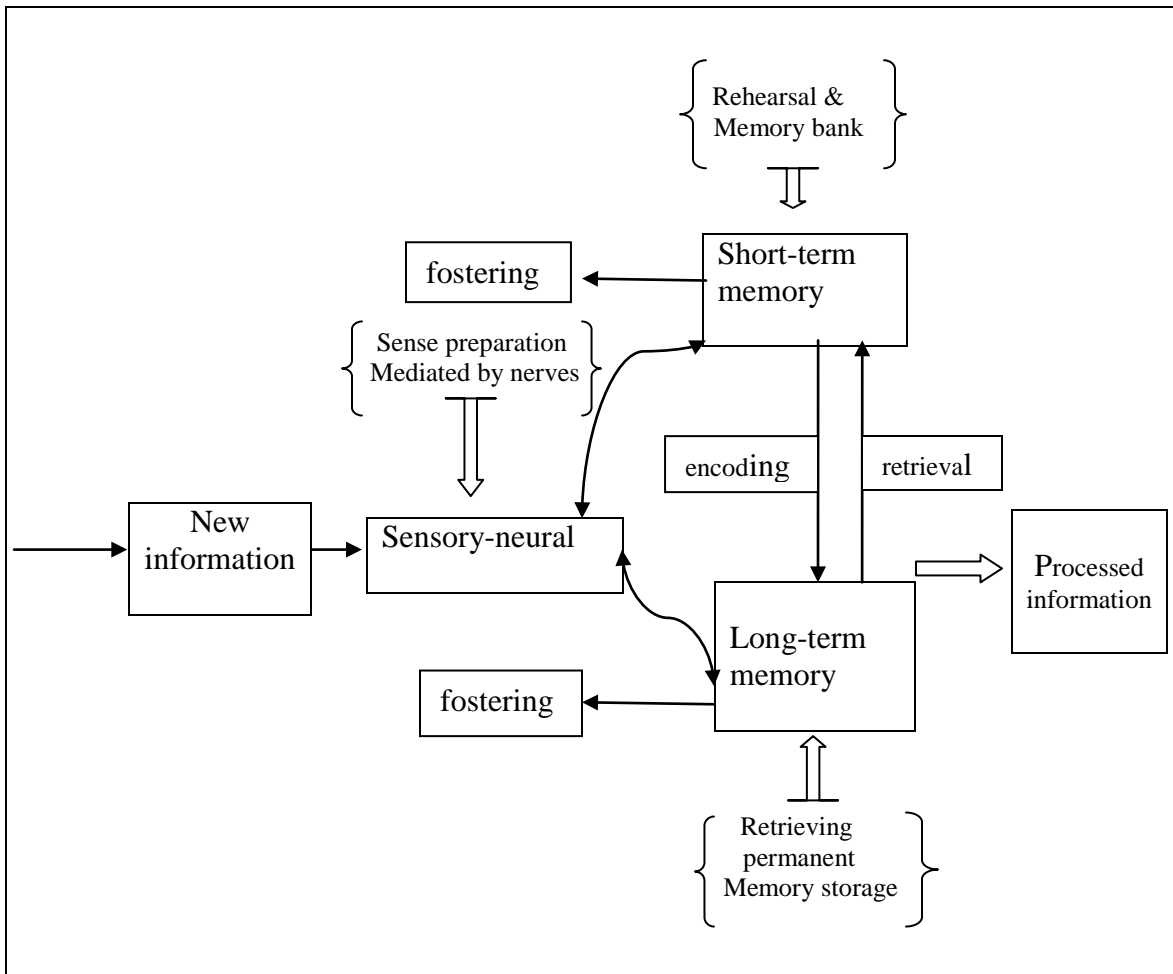


Figure 1- shows human thinking process.

Appendix I - Figure II

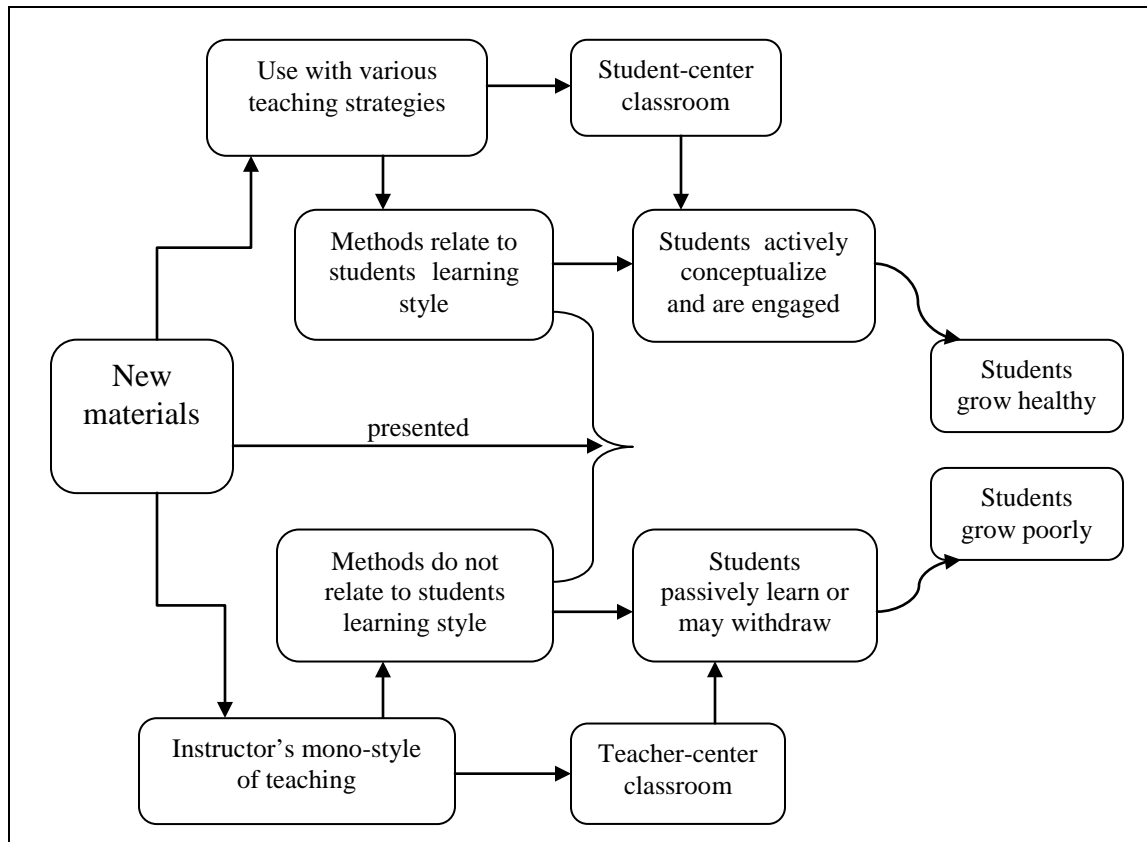


Figure 2- indicates outcomes of two different teaching strategies.

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