Exploring the determinants of mental and educational Psychology of Teachers: Empirical Lessons from Uganda in the Great Lakes Region

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Abstract*: Over decades there has been a growing concern of mental and education psychology of teacher plus how they great influence in the teaching and learning process at the high school levels, in the central region in Uganda. The study was guided by three objectives: to find out how education psychology science improve students' and staffs performance. It examines teachers' psychology competence and transformative teaching and learning process of students'. To analyses the how hands on influence students' effectiveness of the education psychology and theories program. The study adopted mixed methods and a case study designed. The study used a case research design and single methods of data collection qualitative program evaluation using the research questions. The study findings indicate: There was significant positive influence of teachers' competence in stem program. The transformative and active hand on approaches greatly contributed to effective service delivery and it further concluded that inexperienced teachers affected the students' interest and lowed students enrollment for science and mathematics. The study recommends efforts to make Pedagogy Development approaches necessary learning as an integral component. Social change is promoted by helping teachers to use proper kinesthetic learning skills. It also recommended to adopt a translate concepts into reality to increase student's performance. The study recommends for Hands-on Pedagogy in Education to enhance effectiveness and better performance in Mathematics in central sub-region of Uganda.*

KEY WORDS: *Education, Psychology, Theories, Organization, pedagogy, mental ability.*

Introduction

This paper presents an analysis of education psychology and the metal application of theories of learning process in education organizations. It explains the understating of education psychology, how people learn and retain the learnt knowledge. It also gives benefits in context of psychological science and applied theories. Over decades education psychology is a science of the core course unit that provides the concept of cognitive domain development and its functionality. Education system is so complex that, it entails the acquisition of knowledge, skills and values. There in no single approach that works for everybody. Education cannot only take root in the school environment, but also anywhere in the society (Salas et al., 2020). That is why Psychologists and administrators working in the education field focus on the methodology of learning, how people absorb and retain new acquired knowledge, skills and values.

Ralls & Riggs, (2021) refers to educational psychology as a science of influencing the teaching, learning process and procedure on how learners can effectively get the knowledge or facts and best rotation of the acquired facts, values and skills. It entails the artistic way of getting learning activities accomplished in an educational organization. It also employs getting things move on appropriately and contributing towards realizing the organizational goals and objectives.

Singh, (2021) contends that educational psychologists apply theories of human development to understand individual learning process and inform the instructional process. While interacting with teachers and students in school settings is an important part of their work, it isn't the only facet of the teaching and learning activities or tasks. Learning is a lifelong endeavor that takes place in experiential environment. Traille, (2020) states that People don't only learn at school, they learn at work, in social situations and even doing simple tasks assigned to them like household errands. Psychologists working in this subfield of education examine how people learn in a variety of settings to identify approaches and strategies that makes learning more effective and efficient.

Psychologists working in education study the social experiential environment; emotions and cognitive processes involved in learning and apply their findings to improve the learning process. Some specialize in the educational development and borrow theories of a specific group of people such as children, adolescents or adults, while others focus on specific learning challenges.

Methodology

The article adopted a parallel descriptive mixed methodology the enabled the collection of both qualitative and quantitative data. The study also opted for a case research design and approach together with a singular case research design for the purpose of clarity and simplifying the unit of analysis (Creswell & Creswell, 2017). The choice of method was informed by the belief of the narrow world view characterized by positivist orientation and approach of the researcher's inquiry. The positivists believe that using more than one method in undertaking social science research may have particular strengths with respect to the subject matter of inquiry and will provide a clear picture to the variables under study (Bouley & Reinking, 2021). The positivists also contend that, the combination of methods avoids basis and enhances the validity of empirical materials, researcher can overcome the weakness of intrinsic and problems that come from the single method. The article further utilized a survey and interviews that were used predominantly the key informants who comprised of headteachers, teachers and students and focused group discussion which combined all stakeholders in Central region of Uganda. The focused group discussion comprised six to eight members selected from all categories of the targeted unit of inquiry in the study and the members were selected using Stratified simple random and by purposive approaches (DePoy & Gitlin, 2019). These methods forested and consolidated triangulations of inferences about the levels of population's participations of educational psychology. The study sampled 70 research representative using simple random, stratified and purposive approaches. The article further it was driven by philosophy of positivism and epistemological stance which successful enabled the study come up with truth from unit of inquiry and ultimate reality. The researcher's interest in the study was to provide accurate and reliable information obtained from reliable underground water sources users a reasonable unit of analysis as well as sizable unit of inquiry.

A cross-sectional design choice was envisaged suitable because it could allow accurate investigation in order to get deeper understanding of the concepts under study and the design enabled collection of accurate data to describe, compare, or explain desired aspects (Pietsch, 2020). Quantitative and qualitative data were triangulated using mixed methodology to ensure that the weaknesses of single method do not spill over in the study to constrain the strengths of the other variables and vice versa (Paulsen, 2016). However, the data presented in the articles largely reflect quantitative data and a few concepts of qualitative is captured in the discussion. The article was carried out in central region of Uganda, in the great lakes region of Uganda. The purposive and stratified sampling approaches were used to underpin the bias tendency. A sample of participants who were engaged in the study appropriately derived from Uganda population due to the fact that, the populace had a number of cases exposed and experiencing the problem under study. The targeted area of interest is located in Uganda which boarders with the great Lake region.

Results of the findings

The results from the article study were based on the specific objectives and hypothesis of educational psychology. It includes level of high education psychology and mental application theories in central region of Uganda. The thematic data analysis was used to assessing outcomes. Thematic coding, peer debriefing and the content data analysis was used to draw meaningful sense from the data collected of educational psychology and theories.

Educational psychology theories

Educational psychology is one of the oldest branches in the field, with roots dating back at least to Plato. Plato believed that learning is based on the mind's innate capacity to receive information, retain and judge its intellectual moral value. Plato was a student of Socrates who is the father of philosophy and love of wisdom (Morris, 2017).

Valsiner (2017) affirms that, Plato as an educationalist his foremost student, was Aristotle, who emphasized how learning that involves building associations such as succession in time, contiguity in space, and similarities such as construction of views makes learning practical.

. Plato applied theories that fueled learning to his learner. Later thinkers would devote considerable attention to learning and memory processes, as various teaching methods and how learning can be optimized. These early educationalists were more practical in a sense that they applied education psychology and developed a critical thinker's world (Chan, 2020). The psychology of education has formed the growing concern in diverse body of learning theory and practice.

Education Psychology and its Importance

Educational psychology is dedicated to the studies and improvement of human learning, across the lifespan, in whatever setting it occurs (Breakwell et al., 2020). Such settings include not only schools environment, but also workplaces, organized sports, government agencies, and retirement communities anywhere humans are engaged in instruction and learning.

Curaj et al (2015) contend that, educational psychology is important because of its focus on understanding science and improving the crucial human capacity to learn. In this mission of enhancing learning, educational psychologists seek to assist students and teachers alike.

However, it was not until later in history that educational psychology emerged as a field in its own right and distinct from philosophy. John Locke the influential British philosopher and "father of psychology," famously described the human mind as a *tabula rasa* that had no innate or inborn knowledge, but could only learn through the accumulation of experiences (Tebes, 2017) . Johann Herbart is considered the founder of educational psychology as a distinct field from others (Daft, 2015). He also proposed five formal steps of teaching and learning:

1. Reviewing what is already known

2. Previewing new material to be learned

3. Presenting new material

4. Relating new material to what is already known

5. Showing how new knowledge can be usefully applied

Maria Montessori was an Italian physician and educator who started by teaching learners with learning impairments and underprivileged children. She contends that education psychology is very pertinent in the learning process. She then founded a network of schools that taught children of all culture backgrounds using a hands-on, multi-sensory and often student-directed approach to learning (Chauffour, 2017).

Ralls & Riggs (2021) affirm that influential learning is vital as backed by educational psychologist who pioneered research on teaching and learning paradigm. He served in the US and developed aptitude tests for selecting airplane navigators and radar operators.

Gage went on to develop a research program that did much to advance the scientific study of teaching and learning process. He believed that progress in learning highly depends on effective teaching and that a robust theory of effective teaching.

(i)   The process of teaching,

(ii)   Content to be taught,

(iii)   Student abilities and motivation level and

(iv)   Classroom management.

These samples of the influential thinkers who have contributed over time to the field of educational psychology are so useful in the sense of teaching and learning. For example an excellent and concise of educational psychologist is that of Plato and Aristotle through behaviorism.

Roles of an educational Psychologist

Educational psychologists have typically earned a credit in supporting the teaching and learning process. They work in a variety of learning environment, research, and applied settings of military and educational industries (Valsiner, 2017).

An educational psychologist does well in more advanced seminars or professional institutes. They equip learners with *Professional Ethics and code of conduct in their field of work. For example, in Uganda teacher training colleges and institute such as Kyambogo, Busubizi among others us education psychology to shape the behavior and conduct of trainees.*

An educational psychologists furthermore works in various applied roles, such as consulting on curriculum design; evaluating educational programs at schools or Universities (Singh, 2021). They employ educational psychology of learning and ensure the learners the skills and values learnt at various occasion in education settings.

The educational Psychology values accumulated overtime offers teachers the best choice of instructional methods for a subject area and mainstream students especially those with special learning impairments.

Therefore educational psychology has ancient roots and remains vibrant today, there are many programs across the world providing quality training in educational psychology at the master's, doctoral, and postdoctoral levels using the concepts and knowledge of psychology.

Real-Life Examples

Howard Gardner, professor at the Harvard Graduate School of Education, is known for having developed the theory of multiple intelligence (Chan, 2020). It clearly explains the intellectual capacity in learning process and retention of the concepts learnt.

This theory states that besides the traditionally measured verbal and visual spatial forms of intelligence, there are also forms that include kinesthetic or athletic intelligence, interpersonal or social emotional intelligence, musical or artistic intelligence, and perhaps other forms we have not yet learned (Morris, 2017).

The above examples clearly show that, it is not just some contributions that educational psychologists have done, but they have made a significant and variable change in how one can make relevant research, effective teaching and advocating for creation of appropriate learning environment.

The popular Theories

There are various popular theories that have been developed to account for how humans learn at different levels in their lifestyle. Some of the most recent enduring and representative model theories are:

1. Behaviorism

Behaviorism equates learning with observable changes in activity (Chan, 2020). For example, in behaviorism, there is a focus on stimuli or a prompt to action is followed by a behavior change.

Behaviorism holds that the behavioral responses positively and when they are reinforced are more likely to reoccur in the future. We should note that behaviorists believe in a pre-set, external reality that is progressively discovered by learning.

Some scholars have also held that from a behaviorist perspective, learners are more reactive to environmental stimuli than active or proactive in the learning process (Ertmer & Newby, 2013).

However, one of the most robust developments in the later behaviorist tradition is that of positive behavioral intervention and supports proactive techniques play a prominent role in enhancing learning within schools.

Such proactive behavioral supports include maximizing structure in classrooms, teaching clear behavioral expectations in advance, regularly using prompts with students, and actively supervising students' learning (Simonsen & Myers, 2015).

2. Cognitivism

The Cognitivism is partly inspired by the development of computers and an information-processing model believed to be applicable to human learning (Tukumbi, 2017)

It also developed partly as a reaction to the perceived limits of the behaviorist model of learning, which was thought not to account for mental processes. In cognitivist, learning occurs when information is received, arranged, held in memory, and retrieved for use.

Cognitivists are keenly interested in a neuronal or a brain-to-behavior perspective on learning and memory retention. Their lines of research often include studies involving functional brain imaging to see which brain circuits are activated during specific learning tasks (Salas et al., 2020).

Cognitivists are also keenly interested in how learning causes new connections to be made between individual brain cells and their broader neuronal networks.

Singh, (2021) affirms that, from the cognitivist perspective, individuals are viewed as very active in the learning process, including how they organize information to make it personally meaningful and memorable. Cognitivists, like behaviorists, believe that learning reflects an external reality, rather than shaping or constructing reality.

3. Constructivism

Constructivism holds, that from childhood onwards humans learn in successive stages (Rose, 2019). In these stages, we match our basic concepts, or "schemas," of reality with experiences in the world and adjust our schemas accordingly. For example, based on certain experiences as a child, you might form the schematic concept that all objects drop when you let them go.

But let's say you get a helium balloon that rises when you let go of it. You must then adjust your schema to capture this new reality that "most things drop when I let go of them, but at least one thing rises when I let go of it." (Albers, 2017)

For constructivists, there is always a subjective component to how ultimate reality is organized. From this perspective, learning cannot be said to reflect a pre-set external reality (Singh, 2021). Rather, reality is always interplay between one's active construction of the world and the world itself.

Educational Psychology

Educational psychology overlaps in their training and functions to some extent, but also differs in important ways. Educational psychologists are more involved in teaching and learning process than in research innovation at the college or university level (Singh, 2021).

The Educational Psychologists also focus on larger and more diverse groups in their research and consulting activities. As consultants, educational psychologists work with organizations such as school districts, militaries and corporations in developing the best methods for instructional needs.

Ralls & Riggs (2021) affirms that, some school psychologists are involved in teaching, and consulting with large groups such as a school district. However, most of them are more focused on working within a particular school and with individual students and their families.

School psychologists work in settings and do direct interventions with individuals or small groups. They help with testing and supporting students with special needs, helping teachers develop classroom management strategies and engaging in individual counseling.

The Vygotsky's Ideas

TRYPHON & Vonèche, (2013) affirm that Lev Vygotsky ideas of constructivist aids learning at a broader spectrum. Vygotsky was a Russian psychologist who developed the ideas that was fundamental to the constructivist movement in the learning process. One idea central to Vygotsky's learning theory is that of the zone of proximal development (Gredler & Shields, 2008). The zone of proximal development is the area between what a learner learns and can already do on their own. It also looks at application of knowledge and what the learner can readily accomplish with the help of teachers or more advanced peers in the society.

For example, a five-year-old might already know how to perform a given three-step manual task, but can they be taught to complete a four- or five-step task? The zone of proximity development is a zone of emerging skills, which calls for its own kind of exploration and measurement, in order to better understand a learner's potential (Li et al., 2016)

Vygotsky was also interested in the relationship between thought and language. He theorized that much of thought comprised internalized language or "inner speech." Like Piaget, whose work he read with interest, Vygotsky came to see language as having social origins, which would then become internalized as inner speech.

Kang & Shen, (2017) contend in that sense, Vygotsky is often considered a social constructivist, where learning depends on social communication and norms. They also went further that effective teaching and learning begins from known to unknown. Learning thus reflects our connection and agreement with others, more than a connection with a purely external or objective reality.

Positive Psychology and its relevance

As mentioned in the discussion of Nathaniel Gage's theory of effective teaching of students greatly lies on the competence of the teacher, it leads to acquisition of knowledge, skills and values retention. Effective teaching motivates learners and it is a very vital component in learning and it encourages learners at a broader spectrum (Al-Masri & Curran, 2019). Jonas & Mühlberger (2018) state that, motivation is classified in two categories where we have intrinsic and extrinsic factors that aid learning. In the education psychology internalized motivation in the classroom form a ground fundamental theory that helps students and teachers to become more effective in the teaching and learning process. This knowledge can help both teachers and students to find ways to enhance learning in specific cases of education.

Chan, (2020) noted that, the cognitivist approach to educational psychology includes understanding how the brain learns by forming new connections between neurons. This teaching mechanism of activity inspires adults to learn by referencing their inherent neuroplasticity. The idea is that with enough effort and repetition, we can form new and durable connections within our brains of a positive and adaptive nature.

For parents and teachers, recommend effective teaching environment coupled with motivation theories to forester learning and retention of the learnt concepts. This assignment therefore offers basic synergy of education psychology application and effective strategies in the teaching and learning process that creates a positive behavioral climate at home and schools that is pro-social and pro-learning (Banana et al., 2014).

The art of positive Psychology Exercises focuses more science-based ways to help learners to learn and lead to retention of concepts and their wellbeing. The use of education psychology and behavioral theories help others to learn, flourish and thrive in this contemporary world.

Conclusion

Educational psychology has a potential of influencing learning and broad impact on learners' retention of the learnt concepts. The teachers often teach at all levels using this education psychology values and ideas during their teaching process. It also concludes that, educational psychology has made important contributions to learning in contemporary education paradigms. The article further

contends that evidence on methods in the study thematic enhance the teaching of categories and is well established in the cognitive-psychology laboratory. Future research is needed to more fully document that the methods will translate well to authentic educational settings and the science classroom. Nevertheless, although continued refinement will likely take place, it is almost certain that many of the core principles and popular theories including the use of multiple variables training samples. The intermingled presentation orders and active testing would lead to significantly enhanced category-learning outcomes in the authentic classroom settings in the central region of Uganda.

The basing of the findings the article recommends that should be practical applications and approaches implemented by science teachers in educational and professional settings with little or no cost and high potential benefits of educational psychology.
The articles also recommends that, there are many of the educational practical techniques should applied and implemented in the form of easily transportable account based on advanced computer-based training programs that could provide useful supplements to forms effective instruction service delivered in the classroom and the education field.
The article there recommends the hand orientations that contribute to the goal of enhancing education psychology for the diverse set of students in this central region of Uganda.
Lastly the study recommends for scientific education psychology application of theory of multiple intelligence and proactive practices supports behavioral change as common thread in education field of Uganda and entire Great Lakes Region.

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