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Using Educational Psychology to Support Teaching and Classroom management in Secondary Schools of Botswana

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Introduction: Purpose of the topic

Learning is a process that involves change; it endures over time, and takes place through experience. Learning is therefore a process of gaining knowledge, acquisition of skills resulting in a permanent change in behavior and attitudes. It happens through early socialization at home, and later through experiences gained in school interactions with peers and learning materials. The process of learning therefore involves cognition, and is exhibited through behaviors that encompass knowledge, and skills. Knowledge of educational psychology is very important for educators and teachers. According to EPS 227 Lecture Notes – Session 1, educational psychology is the branch of psychology that deals with the scientific study of human learning. Teachers are involved in teaching and learning every day, therefore use of educational psychology will enhance their classroom management skills.

Early Greek philosophers Aristotle and Socrates established the field of Psychology – a word derived from the Greek word **psyche** which means “life” or “breath”. Psychology is a branch of science that seeks to understand, and explain the human mind, thought processes, emotions, and behavior. According to the ESP 227 Lecture Notes session 2, the four goals of psychology are to:

- i. **Describe** – for example describe certain kind of behavior.
- ii. **Explain** - why do people do the things they do?
- iii. **Predict** - how we think and act.
- iv. **Change** - psychology aims to change, influence, or control behavior in order to make positive and lasting changes in people's lives.

As stated earlier on, teaching and classroom management is all about facilitating sustained change in young people through lived experiences. Educational Psychology is important for teachers as it equips them with knowledge of learning processes (cognitive and behavioral), including understanding of individual learning styles or preferences, and human developmental stages. There has been a paradigm shift on the knowledge of how people learn over the past few decades. There is a slow but steady shift from traditional philosophies of viewing learners as “blank slates” that wait to be filled with a body of knowledge from “expert” teachers and textbooks. Modern schools acknowledge individual differences among learners and are slowly moving away from the “telling” or lecturing approaches to instruction. Teachers therefore need to understand individual learners and be able to differentiate instruction in order to meet the needs of each unique learner in today’s child-centered learning environments.

The modern school’s view of learning is a combination of the cognitive and social constructivism theorists’ view on learning. Schools now view learning as an active assimilation and accommodation of new information to existing cognitive structures. Modern schools are becoming more child-centered, focusing more on diversity issues and different learning styles and cultural backgrounds on individual children. They believe that collaboration between peers can promote assimilation and accommodation of new information better as students work in small groups to discover new information. Educational Psychology is therefore very important for today’s educators as it helps them understand different sub-topics within psychology including personality, social behavior and human development. Knowledge of these can enhance teachers’ capacity to create safe and positive learning environments for all children.

Educators should at least be familiar with such branches of Psychology as cognitive, biological, comparative, developmental, personality, school, and social psychology. It is not the focus of this paper to go into details of these branches of psychology; however, it is recommended that classroom practitioners understand the basics of these sub-branches.

Description

In this paper, educational psychology is viewed as the study of how people learn, and how this can be used to inform teaching methods, and instructional strategies that cater for individual learning styles and diverse cultural backgrounds. This view aligns well with Cherry, (2022) who defines educational psychology as a branch of psychology that focuses on the learning process of early childhood, and adolescence through exploring the cognitive, behavioral, emotional, and social influences on the learning process. As stated earlier on in the introduction, educational psychology incorporates a number of other sub-branched, including developmental psychology, behavioral psychology, and cognitive psychology, to name just but a few.

Educational psychology helps us understand how children in our secondary schools acquire, and retain knowledge in our classroom settings. The writer agrees with EPS 227 Lecture Notes when they state that educational psychology in turn informs a wide range of specialties within educational studies, including instructional design, educational technology, curriculum development, organizational learning, special education and classroom management. For teachers to design lessons that have a positive appeal to learners, they need to understand how these children learn. Educators equipped with knowledge of how people learn are able to incorporate the right technology into the curriculum and are able to attend to classroom diversity issues including children with IEPs. Such educators know how people learn in different settings. A good example is that of educators that can

study and design the most effective methods for teaching children with specific learning challenges like attention deficit hyperactivity disorder (ADHD), autism, dyscalculia, or dyslexia.

Equipped with knowledge of educational psychology, teachers can understand their learners' individual needs better, they will know their strengths, weaknesses and challenges. When teachers know their learners to such levels, they are better placed to create learning environments that are attractive, safe and conducive to learning. According to EPS 227 Lecture Notes session 4, the goals of classroom management are to create an environment conducive to learning and to develop students' self-management skills. The lecture notes go on to argue that, classroom management strives to create positive teacher–student and peer relationships, manage student groups to sustain on-task behavior, and use counseling and other psychological methods to aid students who present persistent psychosocial problems.

Educational psychology is also informed by neuroscience – the study of the brain which is mainly regarded as cognitive psychology. This field of educational psychology involves the study of memory, conceptual processes, and individual differences in conceptualizing new strategies for learning processes in humans. Knowledge of how the brain is structured, how information is captured, retained and processed is vital for the teacher as it enables them to package the information in a way that it can better benefit the student. Educators can better apply their knowledge of educational psychology to improve the learning process and promote educational success for all students.

General analysis

It must be noted that researchers in educational psychology do take different perspectives when explaining behavior change, and how learning takes place. Some perspectives from educational psychology include behaviorism – operant conditioning, cognitivism - information processing, social constructivism, and developmental psychology approach. Although we have more perspectives to educational psychology than mentioned here, this paper shall focus on these and how they impact teaching and classroom management in secondary schools of Botswana.

The first perspective of educational psychology that explains how people learn through influencing behavior change is what is popularly known as behaviorism. This perspective suggests that all behaviors are learned through conditioning. Psychologists who take this perspective rely firmly on the principles of operant conditioning to explain how learning happens. EPS 227 Lecture Notes refer to this perspective as applied behavior analysis, a research-based science utilizing behavioral principles of operant conditioning. This perspective believes that teachers can change students' behavior through an organized system of “*rewards*” and/or “*punishers*”. For example, teachers might reward learning by giving students tokens that can be exchanged for desirable items such as extended breaks or participation in a favorite sporting activity or game. The behavioral perspective operates on the theory that students will learn when rewarded for "good" behavior and punished for "bad" behavior.

This perspective though successful in contributing to learning and behavior change in general, it has its own shortcomings and criticisms. According to EPS lecture notes, there is evidence that the reward system in behaviorism may reduce intrinsic motivation in specific situations. Besides, it has been proven that in the absence of the “punisher” old bad behavior is likely to re-emerge.

The second educational psychology perspective is developmental psychology. This perspective focuses on how children acquire new knowledge and skills as they grow. Jean Piaget is considered the father of development psychology with the theory of stages of cognitive development which looks at how children develop intellectually. Cherry, (2022) argues that by understanding how children think at different stages of development, educational psychologists can better understand what children are capable of at each point of their growth. This can help educators create instructional methods and materials aimed at certain age groups. A typical example of Piaget's theory on stages of cognitive development is presented in EPS 227 lecture notes. Piaget hypothesized that children are not capable of abstract logical thought until they are older than about 11 years, and therefore younger children need to be taught using concrete objects and examples. At ages older than 11, children transform from concrete learning to abstract logical thought. This has solid applications on transforming teaching methods as children transition from primary to secondary school.

According to EPS 227 Lecture notes session 4, it is important to understand mental capacities of people at different stages of development from childhood, adolescence, adulthood and old age. They argue further that knowing the students' level on a developmental sequence provides information on the kind and level of knowledge they can assimilate, which, in turn, can be used as a frame for organizing the subject matter to be taught at different school grades. Knowledge of the child's developmental stage helps teachers package information and plan activities that align with the child's mental abilities.

The third educational psychology perspective is cognitivism. The cognitive perspective argues that the mind or brain is involved in learning and they seek to understand how people think, learn, remember, and process information. Educational psychologists who take a cognitive perspective are interested in understanding how kids acquire, process and utilize knowledge. They are also interested in knowing how kids become motivated to learn, how they remember the things that they learn, and how they solve

problems, among other topics. Bloom’s taxonomy of educational objectives identifies three domains of learning namely; 1) the cognitive domain (intellectual thoughts), 2) the affective domain (feelings and emotions) and 3) the psychomotor domain (physical skills). According to Kasilingam, G. Ramalingam, M. & Chinnavan, E. (2014) within each domain, are multiple levels of learning that progress from the basic, surface level of learning to more complex, deeper-level of learning. Bloom’s taxonomy is a hierarchical classification of learning objectives and thinking according to six cognitive levels of complexity namely; knowledge, comprehension, application, analysis, synthesis and evaluation (Seifert, K. & Sutton, R., 2009).

Categories	Description	Instructional Activities
Knowledge / Remember	Remembering information taught earlier without necessarily understanding or being able to use the knowledge.	State, define, list, name, label
Comprehension	Understanding or making sense of information without connecting it to prior knowledge	Explain, describe, summarize
Application	Selecting or using information to solve a problem	Demonstrate, compute, solve
Analysis	Breaking information into parts: making connections between those parts	Compare, contrast, classify
Evaluation	Making judgements about the value of information for a particular situation	Justify, critique, recommend
Synthesis	Creating or generating new ideas by combining information.	Produce, develop, invent design

Table 1.1 levels of Bloom’s Taxonomy

Constructivism, the fourth perspective to be discussed in this paper, focuses on how people actively construct knowledge linking prior knowledge to new experiences. It also places emphasis on

social and cultural influences that affect how people learn. Those who take the constructivist approach believe that what a person already knows is the biggest influence on how they learn new information. This means that new knowledge can only be added on to and understood in terms of existing knowledge. EPS 227 lecture notes distinguish between individual constructivism, identified by Piaget's theory of cognitive development and social constructivism by Lev Vygotsky.

Vygotsky, cited in Shabani, (2010) defines the Zone of Proximal Development (ZPD) as *“the distance between the actual development level as determined by independent problem solving and the level of potential development as determined through problem solving under adult guidance or in collaboration with more capable peer”* (p.86). In teaching language, educators should identify what the learner already knows about the topic to be taught. By so doing, they establish the current or actual level of development of the learner which they then align with the next attainable level through collaborative mediation and coaching. If a learner collaboratively completes a task together with a capable adult or peer facilitator, thereafter, the learner is most likely to complete the same task independently next time. Scaffolding will enhance movement of the adolescent learner from their current level of expertise to a new and raised ZPD.

Closely aligned to Vygotsky's ZPD theory is the sociocultural approach to learning and development which was also first proposed by Vygotsky and developed by other scholars later. According to John-Steiner & Mahn (2012), the sociocultural approaches to learning and development focus on the dynamic interdependence of social and individual processes in the construction of knowledge. Development is conceptualized as the transformation of socially shared activities into internalized processes (Vygotsky in Steiner & Mahn, 2012). This theory identifies parents and caregivers as sources of development and knowledge as they transmit a vast pool of experience to the

developing child. Sociocultural approaches emphasize development through social interaction. In school, social interaction can be maximized through flexible grouping of students for certain tasks and projects.

The sociocultural approach to learning and development aligns closely with the ZPD in that learners collaborate and depend on other experienced adults or peers and they gradually take on more responsibility for their own learning and participation in joint activity (Lave & Wenger, 1991 in Steiner & Mahn, 2012). This approach is also referred to as guided participation which includes nonverbal guidance by adults as they learn household chores and farming. A typical example of how development is socio-culturally transmitted to developing children is language acquisition.

Actualization

Knowledge of educational psychology helps teachers in a number of ways from lesson planning to delivery and evaluation of student progress in learning. Teachers make maximum use of behaviorism, cognitivism, constructivist theories, sound questioning techniques, experiential learning, Bloom's taxonomy and Vygotsky's ZPD theories to enrich their lessons. When designing instruction, educators can borrow from several research-based principles that draw heavily from some of the above-mentioned theories to make their instruction effective.

Child-centered learning environments recognize the fact that learners bring something to the learning environment in form of prior knowledge, interests and beliefs. All lessons should therefore begin with recapturing students' prior knowledge of what is to be taught. Every lesson begins with at least 5 to 8 minutes of review of the previous lesson or at least capturing students' prior knowledge of the topic to be taught on that particular day. According to Rosenshine, (2012) daily review of previous learning helps students recall key vocabulary, concepts, events and procedures. This recall is critical

for the students in problem-solving and comprehension of new material to learned. Scaffolding is an instructional tool that supports students as they gain new knowledge and skills, as they move from what they already know to the new – in other words as they cross the Zone of Proximal Development (ZPD).

One of Rosenshine’s 17 principles of effective instruction is about teachers asking questions – ***ask a large number of questions and check for understanding*** (Rosenshine, 2012). In teaching language, we rely on asking questions or asking students to solve problems by showing all working or the process they used to solve the problem. Questions allow a teacher to determine how well material has been learned and whether there is need for additional instruction. Teachers need to plan for a variety of questions that are either asked orally that are given as written work. Through asking effective questions, a teacher can help students to process and rehearse what they have learned. The use of many questions aligns with yet another principle of instruction – ***checking the responses of students***. Using effective questioning techniques helps to check for students’ understanding which helps the learners to learn the material with fewer errors. Rosenshine, (2012) insists that effective teachers check for understanding by asking questions.

Educators should also be aware of the diversity that now exist in today’s classroom. Different learners have different modes of learning, and their learning can be enhanced by matching one’s instructional design to their preferred mode of learning. Our learners have different learning and thinking styles hence different needs. Two distinctive learning styles distinguish our learners and these are namely the sensory preferences (namely the visual, the auditory learners, tactile kinesthetic / learning by doing learner) and the global analytic continuum (analytic thinkers – tree seers and global

learners – the forest seers). Different learning styles call for different approaches to instruction by teachers.

Unlike in behaviorism where learning is believed to be derived from one's interaction with the external environment and conditioning, social cognitive theorists argue that not all learning is a result of direct reinforcement from the environment. Schunk, (2013) explains the observational learning theory. The social learning theory involves observing other people – Bandura in Schunk (2013) emphasizes the importance of the environment in acquiring new knowledge.

Educators should be aware of the differences that result from personal, social and cultural factors, that in turn affect learning. These attributes align more with the social learning theory on modeling and imitation. Modeling processes refer to behavioral, cognitive and affective changes that come up as a result of observing one or more models (Rosenthal & Bandura 1978 in Schunk, 2012). Learners observe and learn from what they see in the environment around them. Even before they practice, they already have a body of knowledge constructed from observation. The role of the teacher becomes that of facilitation; that the different personal, social and cultural constructs of knowledge are linked with new information to form a new body of knowledge.

This concept of the social learning theory aligns or agrees to some extent to the constructivist theory. In constructivism, learners are also assumed to have prior conceptions related to any new concept about to be taught. Different learners come up to the classroom with different perceptions about a concept basing on their own personal, social and cultural backgrounds. The role of the teachers becomes that of gathering the different perspectives of different learners, enquire and evaluate them and confirm the correct position about the new concept. This is called the Zone of Proximal Difference

(ZPD by Vygotsky in Schunk, 2012), the gap between what learners can do on their own and what they can do with the help of the teacher.

Educators should also be good at manipulating student motivation which also determines learning success or failure. According to EPS 227 Lecture notes, motivation is an internal state that activates, guides and sustains behavior. Motivation can either be intrinsic (coming from inside) or extrinsic (from outside). Whilst behaviorists emphasize rewards and punishers as forms of motivation, it is more important to cultivate intrinsic motivation – the volition or will that students bring to a task.

Discussion

Gholam, (2019) defines Inquiry-based learning (IBL) as a student-centered approach that is driven by students' questions and their innate curiosity. It can be regarded as a form of active learning that starts seeking information by posing open-ended questions, problems or scenarios. Caswell & Labrie, (2017), cited in Gholam, (2019), add that IBL is an instructional practice where students are placed at the center of all learning experiences thereby taking ownership of their own learning through posing, investigating, and answering questions. IBL is regarded as an “active learning process” because of the way students engage in the inquiry process, through gathering data, and analyzing it to answer a research question. Since IBL involves data analysis, and evaluation, it has an element of problem solving, discovery, creative thinking, problem-solving, communication and critical thinking skills, all of which are demanded in the 21st century economy / workforce.

We are faced with a rapidly changing world where all nations are faced with new global trends in their economies, culture, technology and environment. According to (Boix Mansilla & Jackson, 2011), these new global trends that are coupled with increasing connectedness and interdependence calls for a generation of individuals who can engage in effective global problem solving and participate

simultaneously in local, national, and global civic life. We need to develop and nurture our students' global competence and IBL is the best instructional tool to achieve this. Globally competent individuals are aware, curious, and interested in learning about the world and how it works. Globally competent individuals develop this expertise as they investigate the world; recognize multiple perspectives, communication, and taking action.

Guido, (2017) lists benefits of IBL which include; 1) reinforcing curriculum content, 2) warming up brain for learning, 3) promoting deeper understanding of content, 4) building self-initiation and self-direction, 5) helping make learning rewarding, 6) applicable to any classroom, and 7) offering differentiated instruction. IBL is indeed critical for learning since curiosity increases brain activity and therefore can enhance life-long retention of acquired knowledge and skills. As stated earlier on, IBL promotes such skills as critical thinking, problem solving, collaboration, communication, creativity, and entrepreneurship, all of which give an individual a comparative advantage in a global economy.

General recommendations

According to Schunk (2013), Instruction is defined as a set of external events designed to facilitate internal learning processes. This definition alone alludes to external stimuli (behaviorism) facilitating internal learning (cognition) process. Robert Gagne's nine events of instruction, (n.d.) listed the following nine events as important in successful lesson delivery. 1) get attention; 2) state the objectives; 3) stimulate recall, 4) present material; 5) provide guidance; 6) elicit performance (practice); 7) provide feedback; 8) assess performance and 9) enhance transfer.

To gain attention the teacher needs to give a stimulus to begin instruction. Teacher needs to come up with thought-provoking activities that answer students' curiosity and such questions as “what

is in it for me?” “Why is this relevant to me?” To do this, the teacher’s provocation acts as an external stimulus, hence this fits well with the behaviorist theory on learning. Behaviorism views knowledge as a repertoire of behavioral responses to external stimuli (Graduate Student Instructor Teaching & Resource Center (2016).

After gaining learners’ attention, the teacher must inform the learners of the lesson objectives and type and quantity of performance to be expected (Schunk, 2013). Teacher describes what learners are expected to learn and skills they are expected to gain and what learners will be able to do because of the instruction. These objectives should be guided by Bloom’s taxonomy discussed earlier in this paper. Expected performance and criteria for standard performance is also shared. This phase ascribes more to behaviorism since teacher sets up the motivation to learn. By describing learning objectives and linking these to real life situations, the teacher acts more as a source of motivation to learn (extrinsic motivation).

The next step is to simulate recall of prior knowledge. It is believed that it is easier for learners to learn new skills if they are able to connect them to what they already know. This is the retrieval phase of learning and involves internal processes hence very cognitive. This aligns well with Piaget’s theory of cognitive development. Piaget (1952) came up with the concept of “schema” which is a way of organizing “units” of knowledge. In adaptation, three process occur in the brain; assimilation, accommodation and equilibrium. At this retrieval stage of learning, students assimilate new information by attaching it to existing schema.

The next learning phase and instructional event is to present the material / content or examples of new concepts or rule. This fits well under both behaviorism and cognitive approaches since it involves external stimuli in form of teacher presenting new concepts and internal processes as learners

attach these to pre-existing perceptions. The next two phases of instruction, providing guidance and eliciting performance (practice) also illustrate both behaviorism and cognitive approaches. This is so because during these phases of learning, the teacher transmits correct behavioral responses (behaviorism) whilst at the same time creating an environment that promotes discovery and assimilation / accommodation (cognitive).

Conclusion

In conclusion, we remind the reader that educational psychology is that branch of science that explains how people learn. It attempts to explain how people acquire information, process it and retain knowledge and skills. Teachers are involved in teaching and learning every day, therefore use of educational psychology will enhance their classroom management skills. Educators should be able to describe certain behaviors, explain why children do what they do, predict future behaviors under given circumstances. Above all, educators are change agents; they should be able to influence behavior as they make positive and everlasting impacts on people's lives. Educational psychology therefore lies at the center of all instruction, learning and classroom management.

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