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Importance of Cognitive Development Theories and Motivation in Enhancing Pedagogical Perspective

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Abstract

Developmental psychology takes into consideration the sequence of biological, cognitive and emotional variations of a child in his growing years. Teachers are expected to be familiar with the theories related to the process of learning and ways to think in a creative manner. Development of the personality in this case is also one of the key factors. This research paper explains how and what makes people think and the way they reciprocate to external stimuli. Jean Piaget, Lev Vygotsky, and Bruner theories are very well explained to promote student learning in current educational settings. Memory is also an integral part of processing as it helps in connecting to our past, present, and future references. Motivation is one prime aspect which we all need and in the absence of this quotient we sometimes go astray, and this is where the need of intrinsic motivation comes into the picture. Reading and understanding these theories make the teachers more familiar with the process of how students process, learn and remember information and at the very same time how they can improve their teaching and make their lessons more effective and advantageous for students. These theories as suggested help in increasing the students' scoring pattern and understanding.

Keywords: *Cognitive, memory, motivation, processing, learning, variations and understanding.*

Cognitive Development is the branch of psychology that focuses on a child's development and addresses his learning through information, processing reasoning and memory. "Cognitive development is how humans acquire, organize, and learn to use knowledge (Gauvain & Richert)." These cognitive development theories play a major role in classroom teaching. As language teachers, if we know the cognitive development theories of Piaget, Vygotsky, and Bruner we can incorporate them into our teaching strategies which will enable us to increase student performance. It's a pragmatic proposition that teachers make themselves well conversant with the theories proposed by these thinkers. These theories help academicians, plan their lessons better and come up with better pedagogic strategies. Faculty members will be in a strong position to formulate more effective learning experiences for the learners.

Understanding Piagetian concepts such as schema and adaptation (assimilation and accommodation) will be useful in interpreting intelligence in terms of the developmental stages and age of a learner. According to Piaget, intellectual development takes place through different stages which occur in a fixed order, and which are universal regardless of social or cultural background. "Development can only occur when the brain has matured to a point of "readiness (Piaget)." By using Piaget's theory in the classroom teachers can benefit in several ways. They can understand the learner's level of cognitive development, and align their teaching strategies, material, and curriculum with the student's cognitive level. Again, it should be noted that all learners do not possess the same abilities at the same stage. Therefore, the teacher should develop the materials and activities which cater to the needs of individual differences. As teachers, we are aware that children are capable of being active learners, so we should not limit our classes to boring lectures, or written works but include materials and

activities that have concrete objects to aid understanding, arouse interests and enhance learning. Cognitive challenges and new concepts can be introduced keeping in mind the previous knowledge of the students. The teacher, with this knowledge, can better plan the vocabulary items that can be taught in a particular sequence to the learners. Equipped with a better understanding of the stages of development (sensorimotor, pre-operational, concrete operational and formal operational stages), one can plan more effective content to be taught at different stages for children from different age groups. To cite an example, for children in the pre-operational stage, the focus should be on teaching concrete concepts through Realia and models. So, a word like faucet will be more easily assimilated by the learners rather than an abstract word like solitude. This can be directly linked with a penchant of children in the age group 2 to 7 years to learn by actually doing a task and by looking at real objects or directly experiencing things. Names of animals, birds, flowers, foodstuff and fruits for beginners can be taught by centring on concrete experience for the learners. The curriculum can be developed accordingly. Teachers with a sound understanding of cognitivism propounded by Piaget will be better able to comprehend the changes that occur in the learners' cognitive structures. Hypothetical and abstract speaking situations or topics can be assigned for building fluency to adolescent learners who are in the formal operational stage. Other tools such as the representation of knowledge through symbols and images can also be incorporated in classes commensurate with the preposition of Piaget that communication should not be limited only to verbal form.

Jerome Bruner emphasized discovery learning and the predisposition of learners towards learning. "The outcome of cognitive development is thinking. The intelligent mind creates from experience "generic coding systems that permit one to go beyond the data to new and

possibly fruitful predictions (Bruner 234).” Aligned with these principles, the teachers should provide enough opportunities to participate in different activities which stimulate the interest and curiosity of the students. As a teacher, we should implement these learning theories in classrooms to plan and prepare appropriate materials for instructions which match the learning modes of different learners. Teachers should include audio-visual aids and interactive activities in sync with the learning objectives. Bruner stressed the right selection of pedagogic content that matches learners’ interests, preferences and aspirations. The language teachers should judiciously decide the sequencing of concepts to be introduced and reinforced. To achieve this objective, the teachers should be well aware of the cognitive development, previous knowledge and proficiency level of the learners. Like while teaching Shakespeare’s *Merchant of Venice* and *As You Like It*, teachers should give a background of both the plays and then introduce the characters by showing them video clippings. Then all the students should be made to read aloud each play part by part. After that students should enact the plays with proper costumes and props. Finally, brainstorming about the plots, characters, themes, and use of literary devices in both plays should be done. This, way the entire teaching mode will cover all the above-mentioned concepts of the three skills. Also, following Bruner’s principle of readiness for learning and spiral binding teachers should base their lesson on the learner’s prior knowledge of Shakespeare’s other comedies which they have already learnt in their previous classes and must present to the students some other additional information in a structural and sequential manner. This way results would be overwhelming, and the students will not only enjoy the plays immensely but will also score exceptionally well in their assessment. The order to be followed should be enactive (representation of knowledge through action), iconic (visual summarization of images) and finally symbolic (through symbols and words). To illustrate, action verbs such as dancing, swimming and listening can be explained by imitating these

actions in the classroom. The flash card method that is to show the picture along with the concept can be useful (for example, pictures of kitchen tools and equipment). Furthermore, symbolic representation is the best for abstract concepts that advanced learners can visualize in their own schema. Bruner also stressed reinforcement that should be used to prompt and positively motivate learners.

The main aspects that revolve around the theories propounded by Lev Vygotsky are More Knowledgeable Other (MKO), ZPD (Zone of Proximal Development,) scaffolding and social interaction. MKO can be computer software, a peer, a senior or a trainer himself that can assist the learner in discovery learning. According to him, social interaction plays an important role in learning. Therefore, it is through social interaction and dialogues with more knowledgeable people such as teachers, adults, and peers that children develop their thinking and become capable of learning. His most important topic is the Zone of Proximal Development which defines how much a student can do alone and what he can do with the assistance provided by a more capable person such as a teacher. "The zone of proximal development is described as the distance between the actual development level and the level of potential. This is determined by independent problem solving when children are collaborating with more able peers or under the guidance of an adult (Vygotsky)." This temporary support provided by the teacher is called scaffolding and it must be related to the learner's need. This concept has several implications for teaching in the classroom. It allows the teacher to know what a student can achieve using a mediator and thus enables the teacher to help the child attain that level by themselves. For instance, in the language classroom, the incorporation of video clips or small audio conversations can be helpful to reinforce grammar concepts (such as modals or tag words) and functions. A thorough knowledge of ZPD which is the gap between the present level of

learning and the level that can be achieved gradually without any assistance from anyone will be helpful to prepare the curricular content. Areas such as conditional and transitive verbs are more suitable for intermediate-level and action verbs while concepts of verb/object are for beginners. Similarly, the teachers can also think in terms of scaffolding needed in guided writing activities and controlled speaking. To illustrate, if the teacher gives an exercise to the students in which the latter are to speak about their city it would be better to introduce them to words such as modern, ancient, cosmopolitan, historical etc. After a few weeks, they can be transitioned to activities based on free speech in which they are expected to speak without scaffolding. All the activities and lessons should be planned to keep in mind ZPD of learners to ensure that the efforts of both trainers and learners do not go in vain. Thus, understanding the concepts of cognitive development will enable teachers to make their teaching more fruitful and centered on the desired objectives/aims.

In addition to this, theories of motivation and memory are also pivotal to optimising learning in general and language learning in particular. Motivation can be termed as a combination of effort and desire to behave or act in a certain way to satisfy certain conditions such as wish, desire, goal etc. It is a complex phenomenon which includes many components like the individual's drive, expectancy, value, need for achievement, attribution etc. In animals, drives are always basic physical needs like, thirst, hunger, sleep etc. all of which need immediate gratification. Human beings, in contrast, are driven to the fulfilment of higher-order needs like obtaining a degree, cracking a business deal, getting a promotion etc. Unlike animals, who don't continue with the action, once the drive is satisfied, human beings strive to achieve more. Next, we have expectancy and value. A learner's expectation of himself as well as other's expectations of him is a crucial part of learning. Also, the task chosen by an individual depends upon his prior experience with it. For example, if a person has successfully learnt classical

dance, he will be motivated to learn other forms of dance as well. Apart from these factors, attribution too, plays a major role in learning. This includes the learner's own effort, intention, ability, influence, individual differences and how they perceive their own performance.

Other than aspects such as drive, need and incentives motivation also depends on the teachers who can act as a guide, facilitators and a role model that can motivate the students to explore new fields of knowledge and put their best foot forward in their endeavors. The teacher must clarify to students the objectives of learning which must not be through the rote method. Clarity about the objectives will help the students to maintain their interests and attention throughout the session. The teachers should also guide the learners to develop their own realistic goals based on their previous accomplishments. It is the onus of the trainers to create a classroom environment characterized by congeniality, a shared sense of responsibility, the spirit of camaraderie and mutual respect. A sequential and logical presentation of contents favors learning.

The incentives of the learners can be both intrinsic and extrinsic, the former pushes them to inner satisfaction while latter drives them to excel in academics, stand first in the class or for a reward, appreciation etc. However, teachers should motivate them intrinsically. Positive reinforcement gestures such as smile, praise and pat on the back also go a long way to motivate the learners. Furthermore, creating a cooperative learning environment, for participants of a team engaged on a project together will be a useful way to boost their learning. The encouragement of the teachers to nurture the ingenuity of learners also acts as a strong motivating factor for the latter. A practical illustration of the theory of hierarchal needs is the Midday meal scheme in primary schools, which runs on the principle that the basic philosophical needs of children should be met first and then only higher needs can be satisfied.

McDonnough quotes Stevic (1971) who proposed that there are basically 5 types of rewards available for a facilitator in language teaching. The facilitator classes and clubs them together under strength and majorly focuses on the possibility of fostering available intrinsic awards. The five types of rewards are:

1. Relevance- of the content to the student's own language needs.
2. Completeness- the inclusion of all the language necessary for the stated aims of the course.
3. Authenticity- the material should be both linguistically and culturally authentic.
4. Satisfaction-the student should leave each lesson feeling he has benefitted more than simply progress.
5. Immediacy – the student can use the material in a lesson straightaway." (McDonnough 156)

In language classrooms, it becomes even more essential for the teachers to motivate the learners, especially in a class of students with mixed abilities. Individual differences should be taken care of as it will cater to the learning style of every student. Many speaking activities are based on pair or group work and trainers ensure that the students never lose their curiosity, motivation and interest. Rewards and praise work the best as strong motivators, especially for young, average and weak learners. In classes for young learners, teachers should always make it a point to carry chocolates or gifts because they augment their enthusiasm and excitement manifolds. Advanced learners should be motivated to persevere, excel and be lifelong learners by considering language as a crucial part of their lives.

Motivation plays an important factor in learning L2 as it inspires the language learner's goal-directed behaviour. It also plays a crucial role in determining how much energy a learner devotes to learning the L2 and how long he preserves it.

Expectancy and value- Second language learning also depends upon how much the learner values the language and his individual perception of his chances of learning it successfully. Thus, a teacher in a language classroom must encourage the learners to select tasks of varied difficulty levels, as they always need some elements of challenge to prove themselves. Also, he should make his materials of instruction interesting, satisfactory, relevant, and linguistically and culturally authentic.

Past success- Those who have done well in language in the past will be motivated to learn more and those who have not done will lose interest.

Positive attitude towards the L2 Community- According to Gardner and Lambert, motivation to learn L2 depends upon a positive attitude towards the l2 community and the desire to become a member of that community.

External pressure- Several external pressures like pleasing family, earning a degree, finding a job etc. motivate learners to learn an L2.

Intrinsic motivation- Many learners feel intrinsically motivated to learn an L2 and simply learn it just for the pleasure of learning it. They enjoy learning the l2 and the culture of that community and may continue to study L2.

Another motivation, the other important factor, which is essential for all forms of learning, is memory. In fact, memory and learning are interrelated and closely connected. For instance, we learn a new language by studying it. Then we speak it by using our memory to recall what we have learnt as it is memory which helps us remember the correct grammatical structure and use the right combination of nouns, verbs, adjectives etc. Following are the different types of memory to give a better understanding of this aspect:

"Explicit memory, which refers to remembering events and facts of everyday life, develops in the first two years (Stark, Yassa, & Stark). "

"Working memory and its increase in performance can be seen from three to four years through adolescence (Ward, Berry, & Shanks). This is demonstrated through increased attention, the acquisition of language, and increased knowledge."

"Implicit memory, which is unconscious and unintentional, is an early developing memory system in infants and develops as the brain matures (Ward et al., 2013)."

There are three main processes involved in human memory which are encoding, storing, and retrieving. The efficiency of learning a language or learning anything, in general, depends upon the efficiency of the encoding process. It is the first process which is put into operation, which includes collecting information from outside and transforming it into a form that can be stored in memory. For instance, if we want to remember the dance steps which we have learned recently, we remember or recollect the visual image of the trainer performing the steps one by one in the correct sequence as it had been taught. Similarly, in language learning also, the learner hears a chunk of words uttered by the teacher or the native speaker. The learner selects the words or phrases he wishes to remember by registering those words, phrases or sentences with associated visual meaning, sound, spelling, phonetic forms and uses. Then the learner forms a connection in his brain with another language, often L1.

Next comes the second stage, which is retention or storage. Once the information is encoded, it is stored for later use either in the Short-Term Memory (SMT) or the Long-Term Memory (SMT). For instance, we need to remember the phone number of a particular grocery shop to order something. Now this information is of temporary significance hence we are not storing

it in LMT. As soon as the order is placed, we forget the number used. Unlike STM, LMT stores a larger quantity of information for an unlimited duration. For instance, we can remember the telephone numbers of our close friends, family members etc. for many years through repeated use, as they are stored in LMT. Similarly, while learning a new language, a learner learns the new language structure, grammar, vocabulary, spellings, and uses which get stored in SMT. Then it is transferred to LMT by simple repetition, rehearsal, revision, rewriting etc. Once they are stored in L.T.M., the learner's vocabulary increases.

The third stage of memory is retrieval or recall, which means using the information stored in the memory. Organizing this information can help aid its retrieval. For instance, let us imagine that a patient is discharged from the hospital. The doctor gives a set of instructions which the patient needs to follow. The patient remembers the instructions in the sequence of time, like exercise at 7 AM, first medicine of the day at 8 AM, breakfast by 9 AM, lunch by 12:30 PM etc.

Retention of the content in the long-term memory can be linked directly to the interest and attention of the learners. Any concepts learned with full attention and interest are likely to be retained longer and permanently in the memory. So, the teachers should ensure that lessons amply kindle learners' interest and curiosity. This principle holds for both language and other subject areas. In every subject, teachers should link new concepts with previous knowledge, for example in language, Pronouns are taught after teaching the concept of Nouns. New techniques, visuals, devices and associations with ideas can be employed for better retention, to quote an example, VIBGYOR remembers the name of colors in a rainbow. Teaching concepts of science such as germination, natural disasters, ecosystems, food chain and

photosynthesis would be easier through videos as it will facilitate better assimilation, retention and recall.

In language, real objects, situations, pictures, and videos can be used to introduce learners to concrete concepts. Grouping (chunking) can be used to learn numbers. Dates like the birth of an eminent person can be learned by linking them with a momentous event such as World War First, World Second etc. by using flashlight memory. Rhyme on months can be useful for beginners. New words can be taught by associating them with something that students already know. For example, the word hyperbole can be memorized by associating bole with the Hindi word for speaking and hyper with excess so hyperbole is to speak in an exaggerated fashion. The use of audio-visual aids in all subjects including language facilitates learning because the presentation of knowledge using such aids is done through more than one sense. In language sessions, teachers should allow movements, and changes in the arrangement of furniture for group activities to satisfy the needs of kinesthetic learners. Rehearsal, especially elaborative helps in storage in long-term memory and recall e.g., mnemonics to remember the name of planets and BODMAS to remember the order of mathematical operation and FANBOYS to remember coordinating conjunctions (for, and, nor, but, or, yet, so). Additionally, storytelling is useful in language and history lessons.

Further to illustrate and accelerate learning of theories of motivation and memory, we can take another example of teaching of the lesson "The Earth in the Solar System".

To start with, the teacher should evoke the previous knowledge of the students by asking questions about sky gazing, astronomy, sun, stars and heavenly bodies. This would help the teacher to build context for the lesson and at the same time rouse their curiosity. The teacher should ensure that the whole lesson is in sync with the learning objectives. Videos on the solar

system should be shown to the children as it will help them remember facts about planets, satellites, meteorites etc. To make the lesson more effective, the faculty should narrate to them the story of the landing of man on the moon's surface and about the space travel mission to the moon. A narrative style will appeal to students' interests. An easy way to memorize the name of the planets in order of their distance from the sun is the following mnemonic-

MY VERY EFFICIENT MOTHER JUST SERVED US NUTS. (Mercury, Venus, Earth, Mars, Jupiter, Saturn, Uranus, Neptune). Finally, a group activity should be assigned to the students in which they are required to prepare a simulated model of the solar system. The activity would be evaluated based on the creative style of presentation and best use of material.

To facilitate the teaching of poetry we can cite the example from William Blake's *Tyger*. After reading out the poetry to the students following questions can asked the students:

1. What poem is connected to The Tyger?
2. How is the experience represented in this poem?
3. What is the tiger symbolic of?
4. What does Blake mean by the phrase "fearful symmetry"?
5. Why are the first and last stanzas the same?
6. What is the central idea of the poem 'The Tyger'?

Teaching this poem would be easy because the students will easily be able to recall the previous poem taught to them (*The Lamb*) and relate that to the current one, as both the poems are written by the same author and stand as the antithesis of one another with the previous one expressing meekness and the current one expressing ferocity. Also, students will be intrinsically motivated and will feel excited to learn this poem, as most of them love literature. The teacher should first read the poem; explain the gist, and then move on to the meter, rhythm, and rhyming pattern

(aa bb cc dd etc.) This will help the students to memorize and recite the poem easily. There all the poetic images and stylistic devices should be explained so that the students can be able to visualize them. Besides this, the teacher should help the students learn new words like 'thine', 'sinews', 'anvil', 'furnace' etc. by not only telling their meanings in both L1 and L2 but also helping them find other known words in English and the native language which have similar sound patterns. Lastly, questions given in their book should be asked and they should be fostered to explain them in their own words. A week after completing this poem, students should be made to recall both the poems ('The Lamb' and 'The Tyger') in class.

By applying Cognitive development theories and motivation to teaching and academics, particularly in classrooms, students would increase their learning capacity and teachers will also be able to improve the learning methodologies in terms of increasing their productivity. These theories are even relevant today as they give necessary instruction to students to improve their academic performance and to the teachers to implement developmental psychology in rudimentary classroom sessions which is the need of the hour. Although there are different aspects associated with Piaget, Vygotsky, and Brunner, and they also cling to different views concerning developmental psychology still these theories in one way or another are very useful and advantageous in classroom interaction.

Students as learners get ample opportunities to play and learn with their other peers. This demonstrates the positive impact of Cognitive development and motivation theories in improving the impact at the elementary school level. Garner elucidates, "It is truly more efficient…to equip students for ongoing learning by using the everyday curriculum (in order) to fortify cognitive structures." (38).

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