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Presentation teaching at cross roads a paradigm shift from cognitivism to constructivism

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ABSTRACT

Teaching is a time – honored process and the teacher is now trying to look for better content presentation skills in the light of recent tendencies to reach theory of teaching through practice in the field of learning. The day of teacher's exclusive concern with presentation of knowledge on Herbartion lines to form apperceptive mass in the minds of learners has come under careful scrutiny by researchers like J.Piaget, D. Ausuble and Guilford. Now cognitive learning is being understood with greater insight and content presentation has become more thoughtful and technical. The practitioners have gone beyond the organization of concepts in the mind of the learner through presentation techniques. But that is not enough. How the learner moves from his personal concrete experience to reflective observation, abstract conceptualization and active experimentation of it in real life situation is the new constructivist schemata which compels the thoughtful teacher to travel from his ivory tower of presentation teaching to the earth rooted learner's constructivist approach to learning.

Introduction

Teaching is a time –honored process and has passed through many experimental stages in order to reach a point, which might make it truly effective and efficient. In general, teachers have been paying full attention to their preparation of subject matter to become effective and efficient. They never had authentic and research knowledge about the transmission skills. The pedagogical skills concentrated on logical presentation or psychological presentation of subject –matter. Very scant attention was paid to teaching and learning process. It is one thing to arrange the subject matter and quite another to make it tailored to suit the intellectual level of the learner John Dewey advocated a marriage of the logical and psychological presentation of subject matter. George Herbart, a German educationist, introduced a 5-step lesson plan for teachers. The steps were introduction, presentation, association, generalization and application. The whole lesson plan revolved round the teacher action and his skill in exposition and lecturing. This is considered as the old paradigm of teaching.

Assumptions of the Old Paradigm

1. The very first assumption was that teaching is only process of transmission of knowledge, skills and attitudes and all attention be paid by the teacher in his preparation, presentation, association, generalization and application of new knowledge thus imparted.
2. The second assumption was that human nature in like a blank slate and it only receives the new ideas, registers and stocks these in the memory.
3. The third assumption was that successful teaching meant only good model lessons, good preparation and good presentation and good delivery by the teacher.

The Rationale of the Old Cognitive Paradigm

The cognitive paradigm envisaged by the traditionalist or conservative teachers was based on the theory of apperception advocated by Herbart. Herbartion analysis of knowledge acquisition had no research backing like association theory of Hull and Skinners theory of connectionism. It was mainly speculative. Herbart (6-44) advocated that the old ideas act as hosts to the new ideas and form a conglomeration or apperceptive mass inside the mind of the learner. The special features of the old and new ideas enhance the apperceptive mass., These special features are similarity, contrariety, regency, frequency, intensity and contiguity of ideas. The job of the teacher, therefore, was to present new ideas in such a way that the new ideas are readily accepted by the old ideas and thus increase the apperceptive mass of knowledge of the students.

The theoretical aspect of this theory was not put to empirical test. The experimental psychologists demanded a clearer picture of the cognitive map involved in teaching. Herbart 5-144 considered consciousness the arena for the grappling of the new and old ideas through a process termed as apperception. The lacuna in this interpretation was avoiding of the nexus which unites perceptions to form ideas or concepts. Modern cognitive psychology recognizes distinct status of concepts and ideas and does not equate it with apperception. Emmanuel Kant (8-271) has placed sensations separate which on repetition lead to perception and then formation of concepts.

Cognitive Paradigm Shift

The new paradigm of cognitive development is based on research finding it has appeared on scene with a new outlook about cognition and consciousness. The stimulus – response pattern of learning as advocated by Skinner and other behaviorists is no more recognized as a true picture of how learning takes place. The psycho analytical theory of Freud also is not practicable in the field. Having dispensed with these two very powerful adversaries, the cognitivists have proclaimed their theories with experiential confirmation.

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Leaders of New Cognitive Paradigm

(a) **D. Ausuble** 2-315 is more clear – headed than Herbart and his associates believing in the theory of association as conducive to efficient learning Ausuble has actually annulled the old apperecptive mass theory based on the principles of similarity contrariety, frequency, intensity and contiguity by asserting that association of ideas does not take place by merely observing these principles. Similarity of ideas is no guarantee that association shall take place, similarly the other principles cannot bring about learning just by their observance. Vague, unclear, half- baked and imprecise ideas do not promote learning, on the other hand they create apathy towards learning, If efficient learning has to take place, then the ideas must be first made clear, related, stable, organized, cohesive, generalizable, comprehensive and transferable. In other words concept formation is the end of all good teaching. The teachers have to work for concept formation in their students, which should have the attributes, mentioned above. In place of the old theory of apperceptive mass, which is just a conglomeration of ideas, D. Ausuble (6-315) puts forward a theory of hierarchical subsumption of ideas. He advocates that it is not just a single pattern in which ideas combine together. He names several subsumers under which all the other ideas are placed in a hierarchical fashion.

A subsumer may be considered as the main idea, which covers all the minute ideas which are its correlates, several subsumers are arranged by our cognition in a hierarchical pattern and all ideas get linked up in patterns which are ready to recall. They are not a jumble or conglomeration or mass of ideas. They are clear cut concepts and not percepts as was mistakenly considered by Herbart and his associates. Ausuble (6-319) preferred to speak of the host and guest ideas: the new and the old ideas, in terms of some guest ideas acting as helpers to the host ideas. He gave out the scheme of advance organizer ideas which should be placed before the old ideas for acceptance. Once the guest ideas in the name of advance organizer are introduced the old ideas try to re-organize around the new arrival and make mutual interaction quick and easy. Advance organizers are guest and the hosts at the same time. They may be termed as arousal seekers or attention getters for ideational scaffolding.

D.Ausuble posits two functions of mind, which are simultaneous. The subsumers get strengthened through the process of differentiation Distinct ideas generate new ideas which are akin and this happens in a progressive manner. The function of mind is to add new knowledge though progressive differentiation. An example of this process may be found in the dictionaries where one word provides access to several other shades of meaning, normally termed as synonyms. The submmption always follows a hierarchical pattern. The second function of mind for acquisition of new knowledge is to integrate the inchoate ideas which are termed by D.Ausuble as integrative reconciliation. Analysis and synthesis go hand in hand.

(b**) J. Piaget** The theory of concept formation has opened a new vista of how ideas become stable, clear, organized concept which subsume certain cognate ideas and has been ratified by J-Piaget also. He offers two invariant functions of mind as the basis for knowledge formation. One function of mind is to accommodate new ideas and the other function is to get assimilated with the old ideas. Assimilation and accommodation go hand in hand. These functions seem to be parallel functions mentioned by D. Ausuble i.e. progressives differentiation and integrative reconciliation as functions of mind. Only then meaningful learning is likely to occur. Simply following the traditional cognitive approach of Herbart and adherence to his principles of similarity, contrariety frequency, receney and intensity of ideas does not produce the required connection. The Ausublian and Piagetion approaches are the new paradigm for cognitive learning .The traditional pardigm for cognitive learning and acquisition of knowledge was of the level of receptive learning in which these functions of mind were not involved directly by the teacher. It was simply assumed that by following Herbartion principles stable knowledge would come into being. Ausuble and Piaget have clearly shown that the teacher must consciously make use of the functions of mind of the learner so that perceptive learning occurs and leads to concept learning.

(**c) Guilford** Guilford (1-62) also joined in to put forth two very important operations of mind on the lines of Ausublean and Piagetian paradigm. He advocated divergent thought production and convergent thought production as two powers of mind like the analytic and the synthetic ones emphasized by M.Bloom.

The new cognitive paradigm envisaged mind as an arena of two opposing tendencies, which must be, put into action namely analysis and synthesis: progressive differentiation and integrative reconciliation, assimilation and accommodation: divergent thought production and convergent thought production.

Kolb 3-212 tried to unite some of these concepts into his cognitive framework for learning which he called as the cycle of learning. He made use of Piaget's principles of assimilation and accommodation and Guilford's principles of convergent thought production and divergent thought production in constructivist approach to learning.

Shift from Cognitivism to Constructivism

The model of constructivist learning according to Kolb is experiential Kolb (3-212) (1984) defines experiential learning as "the process whereby knowledge is created through the transformation of experience knowledge results from the combination of grasping and transforming experience".

Kolb developed his model from the ideas available in other models His model is called cycle became he believed in John Dewey's famous definition of education as continual reconstruction of our old experiences. He considered that learning required concrete experience (CE) as the initiator in learning which bring into motion the ability of reflective observation (RO) over it for such a long time that it results into abstract conceptualization (AC) and integration of the new ideas into sound logical orders. The mind is now set in motion to actively experiment the newly acquired idea into practice which makes the experiential cycle complete. It is the new version of knowledge acquisition. It is not like the apperceptive mass theory of knowledge acquisition by Herbart in which no further processing can be done. The Kolb's learning cycle involves reflecting, processing, thinking and further understanding. Not all people however go through the four cyclic stages in their sequential order. Some people may skip one stage and go to the next one too quickly. A person with concrete experience may straight away go over to theorizing or abstract conceptualization (AC). The other person may be at Reflective Observation stage (RO) and straight away jump to the action stage or active experimentation stage (AE) A mature learner can only pass through successive stages after full mastery in each stage. i.e. CE to RO to AC and AE.

Thus Kolb laid down the foundation of experiential knowledge or experiential learning involving four distinct stages of the learning cycle. Kolb used the available concepts to describe his new understanding of the learning process. Two abilities of mind were mentioned by Guilford in his structure of intellect, which Kolb recognized as essential abilities which linked up the two stage namely from CE to RO, the divergent thought production seemed a perfect fit and from AC to AE considered that Piaget's concept of assimilation could serve as a linker of AE and CE, thus Kolb made use of the four important abilities of mind divergence, assimilation, convergence and accommodation of ideas in the mind of the learner to complete the four stages of experiential learning cycle.

Kolb has emphasized the idea that presentation teaching on conventional lines can hardly bring about efficient and stable learning. The teachers must learn to teach by knowing how experiential learning takes place. Teaching must learn the art of learning how to teach and start understanding student leaning. Kolb's first stage may also be said to be mere feeling concrete experience and has affective complexity. It enters into watching and listening to start reflective observation and perceptual complexity comes into learning. At the next stage the ideas, concepts, logical arrangement comes into being and abstract conceptualization is accomplished and symbolic complexity occurs. The last stage of active experimentation is the action stage or behavioral complexity; all these stages constitute major stages of development of learning.

The learning styles and learning abilities involved are given in the Table I (3-214)

Table I Learning Style And Learning Abilities

Learning style	Strength	Dominate Learning Ability
Convergent	Practical Application of idea	AC & AE
Divergent	Imaginative ability & generation of ideas	CE & RO
Assimilation	Creating theoretical models and making sense of disparate observations	AC & RO
Accommodative	Carrying out plans and tasks that involve them in new experiences	CE & AE

Further thinking on how grouped knowledge and the abilities are involved is reflected in Table II

Table II Classification Of Academic Knowledge (3-215)

1. Abstract- Reflective	2.Concrete-Reflective
AC-RO Hard Pure	CE – RO
Natural sciences	Soft Pure
math's	Humanities
	Social Sciences
3.Abstract Active	4.Concrete Active
AC-AE	Soft applied
Hard Applied	Social profession
Science based professions	Education,
Engineering, medicine and	Social Work
other healthcare profession	Law

The paradigm shift is now from surface learning towards creating deep learning.

Deep approach to learning is typified as an intention to understand and seek meaning –relate concepts to existing experience, distinguishing between new ideas and existing knowledge and critically evaluating and determining key themes and concept high level of cognitive processing, the ultimate end of all good teaching and learning (3-215)

General advice about learning should not be plucked out of thin air but grounded in and aligned with theories about learning. One such learning theory is to structure the learning outcomes and it is called SOLO taxonomy of levels of understanding. (3-216)

The Solo Taxonomy Of Levels Of Understanding

Pre-structural - Understanding at word level

Unstructured - Responses deal with terminology

Multistructural - Many facts are present but they are not structured

Relational - Makes sense in relation to the topic as a whole. It involves restructuring of components

Extended Abstract- A coherent whole is conceptualized at a high level of abstraction and is applied to new & broader contexts. It represents a high level of thinking

Conclusion

Presentation teaching should include such techniques which promote deep understanding amongst the students, involve them in analysis and synthesis of concepts thus formed. All the cognitive abilities of the students must be harnessed to enable them to acquire knowledge in ways which form the foundation for future knowledge.

One common approach called SOLO taxonomy has been employed to make knowledge meaningful to the students. It aims at understanding words, the terminologies, the re-strutting of components and form an organized whole at the highest level of conceptualization. This is the end towards which SOLO taxonomy leads the students, the end of high level of thinking and even thinking about thinking the last stage of thinking called meta cognition.

One general advice to teachers is that presentation teaching should not be plucked out of thin air but take into cognizance the learning styles of the students which through practice experience and research have been arrived at.

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