

A CASKET OF INNOVATIVE TEACHING LEARNING PRACTICES: A BLISSFUL OR BALEFUL EFFORT?

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ABSTRACT

Scientific breakthrough and rapid advancement in information and communication technology has drastically changed our society. Accordingly, the key indicator of social change or social progress, education has changed its structure and function in the similar way. Today, aims of education, the input variables associated with human resource development, the process variables related to teaching learning process has been altered from traditional 'Gurukul' system of idealistic education to learner centric constructivist paradigm. Now, learner is in the focus of teaching learning and the teacher has to play the role of an active co-learner. Consequently, the ways of delivering information has changed its root from conventional knowledge acquisition based strategies to knowledge construction based methodology. Such modifications have been noticed particularly in the post NCTE era as per global changes and advent of comprehensive documents like Learning without burden, National Curriculum Framework (2005), National Curriculum Framework For Teacher Education (2009) and UNESCO's vision of education for 21st century as reflected in Delor's commission report 'Learning the Treasure Within'. Keeping these documents in mind, several innovative strategies have been adopted to our teaching learning arena for molding our young Y-generation learners in socially desirable pathways. In this investigation I am to explore the implications of such strategies whether they are assisting to prepare our children as socially useful productive entity or they are creating hindrance for all round development of their personality.

Keywords: Social Change, Teaching Learning, Innovations, Positive and Negative Aspects.

INTRODUCTION

Innovative teaching is a proactive approach to integrate new teaching strategies and methods into a classroom. Research on education supports the benefits that certain processes, tools and methods have on

learning. Innovative teachers implement new methods before they appeal to mainstream educators. Teaching is information sending and receiving. A teacher tries to communicate his knowledge to the learners effectively and efficiently. Any communication methods that serve this purpose without destroying the objective could be considered as innovative methods of teaching. The use of innovative methods in educational institute has the potential not only to improve education but also to empower people, strengthen governance and galvanize the effort to achieve the human development goal for the country. Innovation is the spark of insight that leads a scientist or inventor to investigate an issue or a phenomenon. That insight is usually shaped by an observation of what appears to be true or the creative jolt of a new idea. Innovation is driven by a commitment to excellence and continuous improvement. Innovation is based on curiosity, the willingness to take risks and experimenting to test assumptions. Innovations are based on questioning and challenging the status quo. It is also based on recognizing opportunity and taking advantages of it. In the world of education, innovation comes in many forms. There are innovations in the way of education systems are organized and managed. There are innovations in instructional techniques or delivery systems such as the use of new technologies in the classroom. There are innovations in the way techniques are recruited and prepared and compensated. Here I am to investigate some innovative practices exercised in our recent curricular areas and to find out leaning gap, difficulties or deficiency arises out of using such innovative approaches to our day by day learning experiences.

CONCEPT OF INNOVATIONS

Innovation is defined as the process of making changes to something established by introducing something new. It applies to radical or incremental changes to products, processes or services. However, how students learn best changes over time. Therefore, there is a possibility that there is a mismatch between the teaching styles of today's teachers and the learning styles of today's learners. In order to bridge this gap, the instructor and the teaching assistant need to consider implementing innovative teaching practices. There is a misconception that innovative teaching is only fostered through the generation of new ideas (Zhu et al., 2013). Although this is certainly an example of an innovative practice, it is not only way to implement innovation into our class rooms.

Recently, innovative teaching has been viewed as a constructivist, social constructivist and student centered process whereby students be active learners in a supportive environment engaging in authentic and relatable problem solving activity to stimulate learning (Bradon, 2004). Ferrari, Cachia and Punie (2009) expanded the definition of innovation by suggesting that it involves creative teaching that fosters students' creative potential. Indeed Zhu et al. (2013) suggested that innovative teaching also requires four competencies:

learning, social, educational and technological respectively. These competencies encompass a willingness and readiness to learning communication with students from different back grounds, passion and knowledge ability and use of technology to further student understanding. Therefore, taken together we can consider innovative teaching practices as an intentional series of student-focused actions an invested educator can take to stimulate students' ability to meaningfully and creatively engage with the material in order to stimulate interest and advance their knowledge.

FEATURES OF INNOVATIVE TEACHING

Innovations do not necessarily require novelty. Sterberg and Lubart (1999) suggested that divergent thinking, embracing alternative solutions to problem solving and demonstrating a sensitivity to problems could help educators achieve these goals. Providing opportunities for active learning and stimulating learning interests could also help foster innovative practices in the classroom. Some features of innovative practices are: (1) Ask students how they learn best. They are the experts on their own learning and therefore are valuable sources of information. (2) Listen to your students. Ask their feedback on your teaching. Then incorporate it. By doing so, you will be engaging your students in an innovative way. (3) Take advantage of working in a team. Innovation is not a solitary venture. Use your teaching network to brainstorm new ideas and learn what innovative practices are working for your peers. (4) Use EDC to capitalize on the opportunity to learn more about teaching pedagogy and use that knowledge to fuel your innovative practices. (5) Have fun and be creative. Do not be afraid to take risks and try new things. Learn from your own teaching. If it does not work the first time, adjust and try again.

SOME INNOVATIONS IN TEACHING LEARNING PRACTICES

1. Convergent-divergent thinking strategy

Convergent thinking is the type of thinking we do when solving a well-defined, straightforward, correct answer to a problem. Convergent thinking is used when there is a simple, correct answer to a question. For example, what's the capital of India? The answer is New Delhi. If you knew the answer, you used convergent thinking. When you're in school and you take a multiple-choice test you are probably using convergent thinking - you might be supplying definitions for terms or remembering a person's name that goes with a particular theory.

In contrast, divergent thinking is the type of thinking we do when solving an abstract or new problem that has many possible answers, solutions, or outcomes. Remember the beginning of this lesson when you thought about how to make a structure to protect an egg from breaking? There are many possible structures you could

make, so coming up with that solution required creativity, or divergent thinking. When you write a poem or story you have an endless supply of possible characters, words to use, and themes or events that might happen, so this creative process requires divergent thinking. Using logical and thoughtful combination of convergent and divergent thinking as teaching learning strategy in educational arena is itself a creative innovation. The schematic diagram of convergent and divergent thinking approach of learning is depicted in Figure 1.

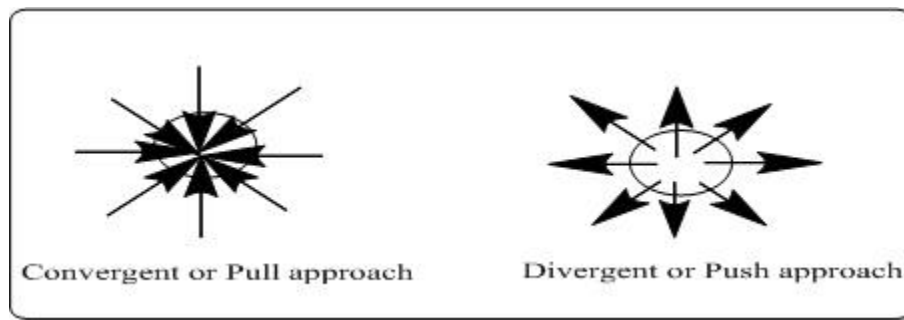


Figure 1. Schematic diagram of Convergent-divergent thinking strategy

2. Concept framing through Mind Mapping

Mind mapping were developed by Tony Buzan in the late 60s is a process of helping students make notes that used only key words and images. Mind mapping can be used by teachers to explain concepts in an innovative way. They are much quicker to make and much easier to remember and review because of their visual quality. The nonlinear nature of mind maps makes it easy to link and cross-reference different elements of the map.

As a pedagogical tool, the visibility of Mind Mapping provides an effective approach for promoting better understanding in students. Its flexibility also means that it possesses several uses in the classroom.

3. Chunking strategy for minimizing cognitive overload

Chunking refers to an approach for making more efficient use of short-term memory by grouping information. Chunking breaks up long strings of information into units or chunks. The resulting chunks are easier to commit to memory than a longer uninterrupted string of information. Good chunking facilitates comprehension and retrieval of information. Chunking is a strategy used to reduce the cognitive load as the learner processes information. The learner groups content into small manageable units making the information easier to process. Essentially chunking helps in the learning process by breaking long string information into bit size chunks that are easier to remember. Chunking process contains the following steps (i) breaking larger amounts of information

into smaller units, (ii) identify similarities or patterns, (iii) organize the information, (iv) group information into manageable units. Chunking is used most commonly to organize or classify large amounts of information, even when there are no obvious patterns. Occurrences of chunking as a memory device can be seen in the way of information is grouped in our daily life. Chunking strategy has been depicted in Figure 2.

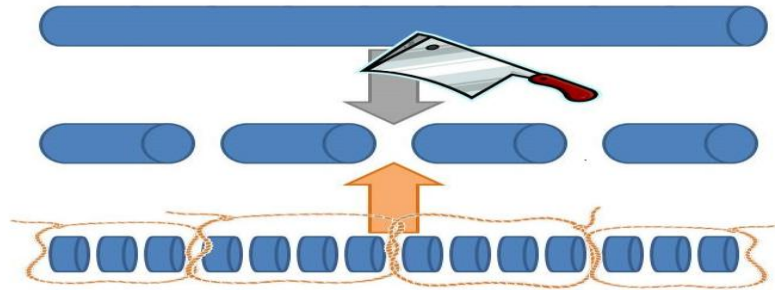


Figure 2. Chunking strategy for minimizing cognitive overload

4. Scaffolding strategy

Scaffolding as proposed by Vygotsky's zone of proximal development (ZPD) theory, is a creative pedagogical tool to facilitate learning in socio-cultural context. Scaffolding refers to a variety of instructional techniques used to move students progressively toward stronger understanding and, ultimately, greater independence in the learning process. The term itself offers the relevant descriptive metaphor: teachers provide successive levels of temporary support that help students reach higher levels of comprehension and skill acquisition that they would not be able to achieve without assistance. Like physical scaffolding, the supportive strategies are incrementally removed when they are no longer needed, and the teacher gradually shifts more responsibility over the learning process to the student.

Scaffolding is widely considered to be an essential element of effective teaching, and all teachers to a greater or lesser extent—almost certainly use various forms of instructional scaffolding in their teaching. In addition, scaffolding is often used to bridge learning gaps i.e., the difference between what students have learned and what they are expected to know and be able to do at a certain point in their education. For example, if students are not at the reading level required to understand a text being taught in a course, the teacher might use instructional scaffolding to incrementally improve their reading ability until they can read the required text independently and without assistance. One of the main goals of scaffolding is to reduce the negative emotions and self-perceptions that students may experience when they get frustrated, intimidated, or discouraged when attempting a difficult task without the assistance, direction, or understanding they need to complete it.

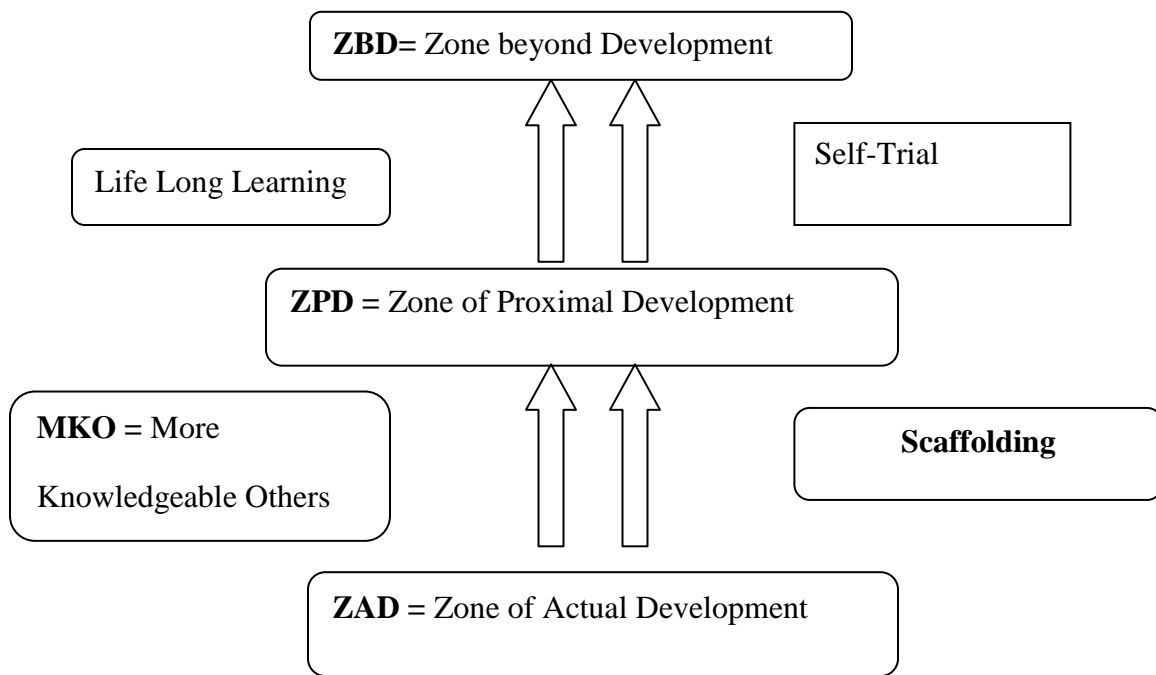


Figure 3. A conceptual frame work of Scaffolding strategy

For successful scaffolding, five key features need to be addressed. These are: (a) Teachers take into consideration students’ perspectives, (b) Scaffolding tailors to the needs of students, (d) Teachers continuously assess students’ understanding, (e) Students explain and justify their solutions, (f) Students take up or use the scaffolding. Scaffolding is a pragmatic approach which involves the use of typical examples and applications to illustrate and illuminate the curriculum. This strategy suggests that content learned through appropriate context will be better anchored in the memory and correspondingly easily recalled and applied to real world problems associated with similar contexts that may be encountered in the future. Scaffolding strategy of learning is collated in Figure 3.

5. Collaborative and cooperative learning for strengthening student-teacher relationship



Figure 4. Example of Collaborative and cooperative learning project

Cooperative learning can be used in tutoring and coaching situations. The learners work in small groups (face-to-face or online) on an assigned project or problem under the guidance of a trainer or expert who monitors the groups, ensuring the learners are staying on task, and are coming up with the correct answers. It includes five basic elements: (i) Individual

Accountability: The learners work on a clear task with a group goal. All learners must make a contribution or the goal cannot be achieved, (ii) Positive Interdependence: The group is accountable for achieving its goals and each individual member is accountable for a particular, identifiable contribution, (iii) Face-To-Face interaction: Learners interact with each other face to face as part of the task. They discuss problems, explain their learning to each other, and tease out ideas. In *online* cooperative learning, the face-to-face part may be more discrete, for example, interacting with each other using e-mail, (iv) Social Skills: Groups skills such as attentive listening, questioning to clarify ideas, eliciting responses, or disagreeing in a constructive way are explicitly taught. Their development is not left to chance, (v) Group Processing (Reflection): Groups reflect on the cooperative learning skills they have used and consciously focus on developing their skills in working together.

Collaborative Learning is quite similar to cooperative learning in that the learners work together in small teams to increase their chance of deeper learning. However, it is a more radical departure from cooperative learning in that there is not necessarily a known answer. For example, trying to determine the answer to "how effective is e-learning?" would be collaborative learning as there are a wide ranges of possibilities to this question, depending upon the learners' perspectives. Because the collaboration sometimes results from less purposeful and focused activities, some of the learning will be unintentional or serendipitous.

6. Anchor Instruction for thoughtful engagement in the learning process

Anchored instruction (Figure 5) is a technology-based learning approach which stresses the importance of placing learning within a meaningful, problem-solving context. A form of situated learning, anchored instruction uses context- stories or micro- to situate the learning and application of knowledge. In other words, the learning is contextualized to provide students with realistic roles that serve to enhance the learning process. Learning and teaching activities are designed around an "anchor" which is often a story, adventure, or situation that includes a problem or issue to be resolved and that is of interest to the students. The "anchoring" refers to the bonding of the content within a realistic and authentic context: Anchored modules typically embed all of the information need- embedded data or hints are used as scaffolding- to solve the problem, making it easier to manage in environments with limited time or limited resources. It is similar to problem-based learning (PBL) but not as open-ended. In PBL, students would be expected to do more first-hand research into resources external to the learning environments. Anchored learning is also related to case-based learning, although the stories presented are meant to be explored and discussed rather than simply read or watched.

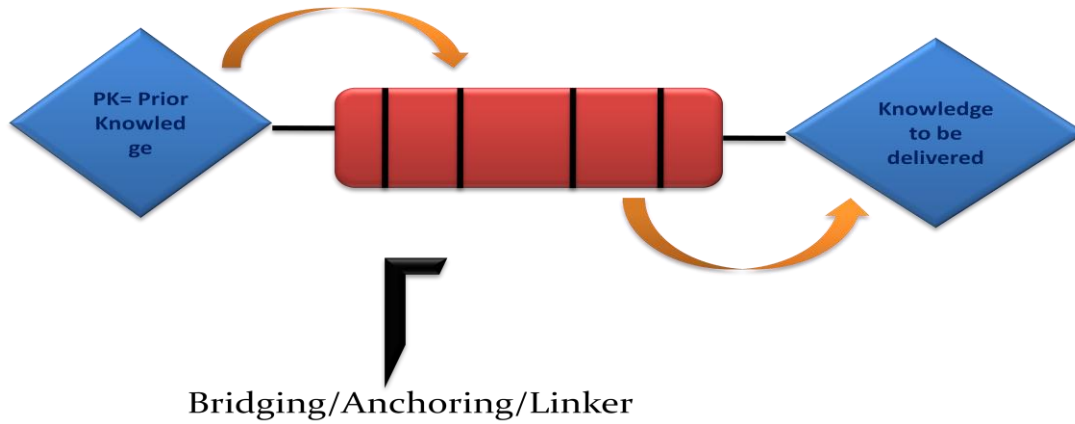


Figure 5. Linear diagram of Anchored instruction

7. Peer Tutoring for practicing academic skills

Peer tutoring (Figure 6) is a flexible, peer mediated teaching learning strategy wherein students are paired together to practice academic skills and master content. Typically, a higher performing student is paired with a lower performing student to review critical academic or behavioral concepts. Teachers may use peer tutoring to help accommodate a classroom full of diverse students who need more individualized attention. There are many benefits and challenges of peer tutoring that teachers should consider before implementing such a good pedagogical tool in their classrooms.



Figure 6. Model diagram of Peer tutoring

In spite of some challenges of this strategy like higher time requirement for planning and parents' confusion due to ignorant about the process peer tutoring can be effective pedagogical tool for meaningful learning inside the classroom of secondary schools with heterogeneous distribution of learners group.

8. Mnemonics for improving memory power

A mnemonic (Figure 7) is an instructional strategy designed to help students improve their memory of important information. This technique connects new learning to prior knowledge through the use of visual and/or acoustic cues. The basic types of mnemonic strategies rely on the use of key words, rhyming words, or acronyms. Teachers may develop mnemonic strategies or have students come up with their own. Some examples:

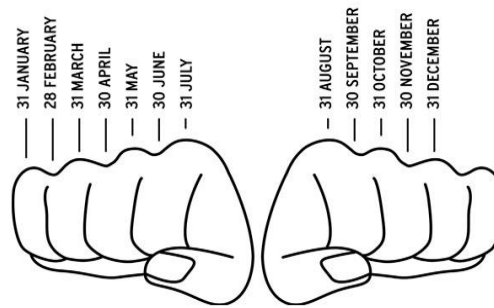


Figure 7.An example of Mnemonic device

Mnemonics are effective pedagogical tool that can be modified to fit a variety of learning content. This method enhances memory of complex words or ideas and promotes better retention of material to be learned. It is especially beneficial to lower age group students and others who may have difficulty with information recall.

9. Microteaching and Simulated Teachingfor mastering teaching skills

Microteaching is defined as a system of controlled practice that makes it possible to concentrate on specified teaching behavior and to practice teaching under controlled conditions. While simulated teaching is imitation of real classroom situation. Hence students-teachers experience the reality of the scenario and practice to master all the teaching skills simultaneously is a strategy that fits well with the principles of student-centered and constructivist learning and teaching.

Microteaching (Figure 8) is a scaled down, simulated teaching encounter designed for the training of both pre-service and in-service teachers. Its purpose is to provide teachers with the opportunity for the safe practice of an enlarged cluster of teaching skills while learning how to develop simple, single concept lessons in any teaching subject. Microteaching helps teachers improve both content and methods of teaching and develop specific teaching skills such as questioning, the use of examples and simple artifacts to make lessons more interesting, effective reinforcement techniques, and introducing and closing lessons effectively. Immediate, focused feedback and encouragement, combined with the opportunity to practice the suggested improvements in the same training session, are the foundations of the microteaching.

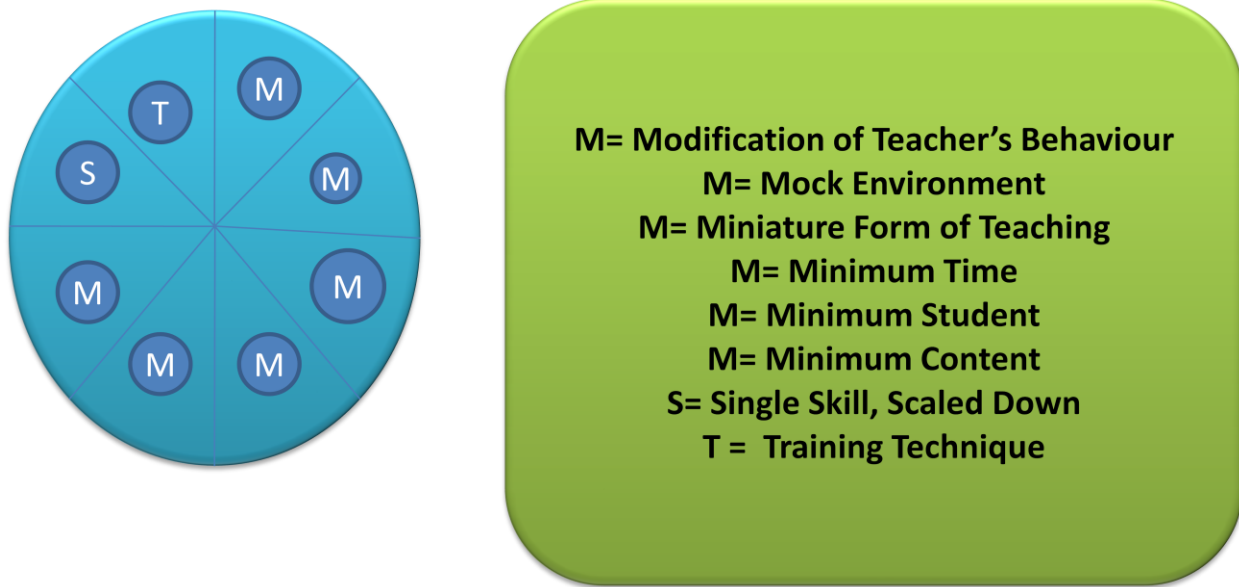


Figure 8. Circular diagram describing features of Microteaching and Simulated Teaching

Micro and simulated teaching which is a positively effective pedagogical tool for student teacher focuses on sharpening and developing specific teaching skills and eliminating errors. It enables understanding of behaviours important in classroom teaching. It increases the confidence of the learner teacher. It is a vehicle of continuous training applicable at all stages not only to teachers at the beginning of their career but also for more senior teachers.

10. Programmed Learning to promote self-paced self-learning process

Programmed learning is a teaching technique or pedagogical tool for effective self-pacing learning in which a learner is presented with a small unit or concept of information, and is asked to answer a question after understanding it. If the answer is correct, the learner may proceed to the next unit or concept of information, otherwise go back to a previous piece of information and proceed from there. Programmed learning is also effective pedagogical teaching-learning strategy based on the principles of small steps, self-pacing, and immediate feedback. Programmed learning is an educational innovation and auto-instructional device. It is not only a technique for effective learning but also a successful mechanism of feedback device for the modification of teacher-behaviour. Programmed learning has arrived on the educational scene mainly due to the laboratory experiments of Prof B.F Skinner. Prior to Skinner the concept of “Conditioning” as presented by Pavlov and Watson and the ‘Law of effect’ as formulated by Thorndike are the main historical links in the developing chain of important events. The procedure for shaping behaviour as developed by Skinner was called ‘operant conditioning’ and this finally becomes the basis for programmed learning technology.

11. Problem Based Learning (PBL) to develop self-directed learning skills

Problem based learning (PBL) is student centered pedagogy in which students learn about the subject through the experience of solving an open ended problem found in trigger material. It begins with introduction of an ill-structured problem on which all learning is centered. The problem is one that students are likely to face as future professionals. Expertise is developed by engaging in progressive problem solving. The students, individually and collectively, assume major responsibility for their own learning and instruction. Most of the learning occurs in small groups rather than in lectures. As teacher's role changes from "sage on stage" to a "guide by the side" i.e. more likely a facilitator and coach of student learning, acting at times as a resource person, rather than as knowledge holder and disseminator. Similarly student's role is more active and engaged as a problem solver, decision maker, and meaning maker, rather than being merely a passive listener and note-taker.

Thus, it has been suggested that problem –based curricula can lead to increased retention of knowledge, enhanced integration of basic scientific concepts into clinical thinking, development of self-directed learning skills and increasing intrinsic interest in the subject matter being learned. This instructional method challenges students to 'learn to learn'.

12. Blended learning

Blended learning (Figure 9) is a hybrid learning which is carried out in both formal and informal settings. It combines online digital media with traditional classroom 'chalk and talk' methods. It requires the physical presence of both teacher and student, with some element of student control over time, place, path, or pace.



Figure 9. Blended learning model

Blended learning is a learner-centered approach. It creates a learning experience whereby the learner interacts with other students, with the instructor, and with content through thoughtful integration of online and face-to-face environments.

Blended learning achieves better student experiences and outcomes and more efficient teaching and course management practices. It can broaden the spaces and opportunities available for learning. It supports the provision of information and resources to students. Blended learning engages and motivates students through interactivity and collaboration. The increasing population in India demands an economical, modern teaching learning process or method like blended learning. In blended learning there is a scope of using resources optimally. Hence blended

learning is a useful Pedagogical tool effective learning in respect of economy, time, learner's pace, optimal use of resources etc.

13. Multimedia Learning

Multimedia, defined, is the combination of various digital media types such as text, images, sound and video, into an integrated multisensory interactive application or presentation to convey a message or information to an audience. In other words, multimedia means "an individual or a small group using a computer to interact with information that is represented in several media, by repeatedly selecting what to see and hear next" (Agnew et. al, 1996). Multimedia application design offers new insights into the learning process to represent information and knowledge in a new and innovative way (Agnew, Kellerman & Meyer, 1996).

The use of computer assisted multimedia as a supplement to traditional teacher directed instruction produces positive effects. It enhances the academic performances improvements to the pre-service teachers. Computer assisted multimedia applications enhances learning rates. Student's score on delayed tests indicate that the retention of content learned using computer assisted multimedia application is superior to retention following traditional instruction. Multimedia instructional strategy at secondary level is feasible because of its reproducibility and cost management.

DRAWBACKS OF INNOVATIVE APPROACHES AND POSSIBLE REMEDIES

Innovations in teaching learning is essential. But its implementation is a matter of question. Primarily it is more technology drive. It lessens the creativity on the part of teachers. It also reduces the flavor of usual class room learning. In some cases it ignores the cognitive sector which is contrary to our human resource development. Again all the innovative strategies are not useful everywhere. Hence judicious use of innovative strategies is well encouraged. In this connection thoughtful and meaningful integration of innovative strategies are necessary for further development. Again use of innovative strategies should be evidenced based. Otherwise it will deplete the all-round development of the learners.

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