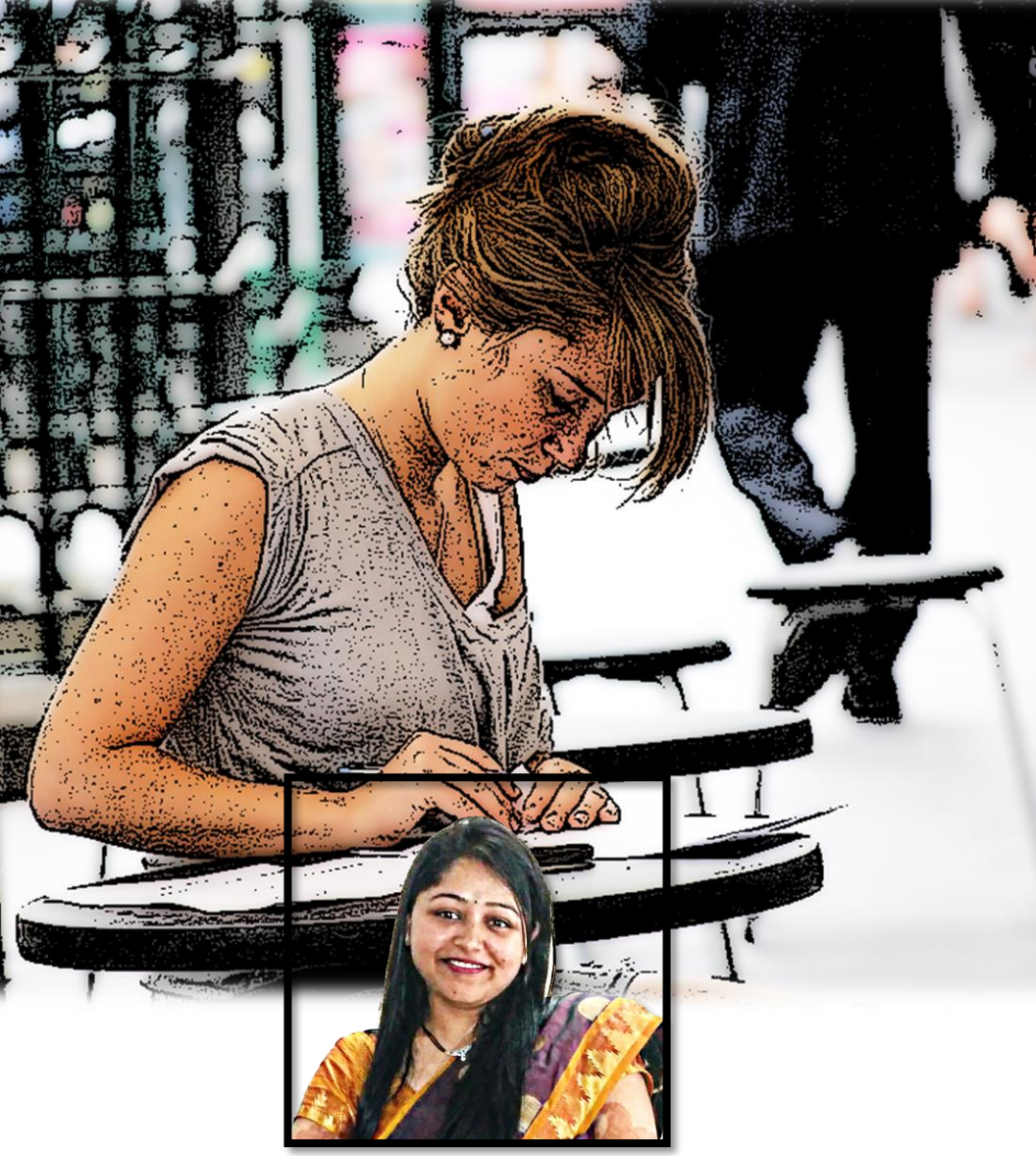


Dr. Neha Goel (Ph.D.)
VIPS (GGSIP University)
New Delhi, India

DON'T KILL INNOVATION

CHANGING EDUCATION PARADIGM

MOVING TO MODERN EDUCATION

1 INTRODUCTION

As said always, Teaching is a noble profession as it includes providing guidance, mentorship and knowledge to the future of our being. Earlier it used to be the most respected career as the students possess different mindsets and different facilities at that time.

Now a days, students have access to many devices and provisions. They have mobiles, laptops, internet, tablets, gaming accessories, apps etc. They have all the means of acquiring knowledge but the question is that are the current teaching pedagogies appropriate and suitable for the needs and motivation of future and current generations?

Today, most of the educators adopt the ancient and popular instructional method of teaching which involves passing the information from the minds of teachers to the minds of students without the understanding of the concepts.

New generations are desperate to acquire knowledge and apply that knowledge to somewhere. We are missing this application part. The old book teaching method not only imparts the out of date information but also build handicaps in the education industry. Books are necessary for the basic information but applying that information and creating something from it which is called innovation is getting murdered these days.

So, the change in the teaching methodologies are terribly required and adopting these changes is the big challenging task since it involves breaking an iceberg in the most honorable industry.

We list here some of the drawbacks of current teaching pedagogies which have no or very less effect on today's generation education.

2 DRAWBACKS OF CURRENT TEACHING METHODS

1. Students' lack of attention
2. Very less retention of knowledge outside the classrooms
3. Very little learning
4. Too many sources of information
5. Books and notes dependent study
6. Less respect for teachers

Thus, some new and innovative ideas needs to be applied to reinvent the teaching pedagogies which can encourage the students to learn actually and innovate something new. Some of the ideas are presented below.

3 INNOVATIVE IDEAS FOR ACTIVE LEARNING AND STUDENTS' ENGAGEMENT

3.1 BRAINSTORMING SESSIONS

Brainstorming is very effective idea to promote innovative learning these days. It includes posting a problem to a set or pair of students and letting them to solve it by creating new ideas and generating all possible solutions.

3.1.1 BRAINSTORMING PROCESS

i. Decide only 1 topic to discuss

ii. Divide the students into small groups (2-5 students per group)

iii. Set a time limit for letting groups to ponder over the problem given and for writing down their views.

iv. Record all ideas of all groups on board without any criticism and judgement.

v. Discuss all views one by one and discard the irrelevant and wrong answers.

vi. Choose 3-4 best ideas and discuss them in detail.

vii. Let other students to comment on the views and consider them as detailed discussion or new ideas.

viii. Encourage each student to take part in the process.

3.1.2 BENEFITS OF BRAINSTORMING

i. Students think creatively rather than just listening.

ii. It is highly motivating activity to learn anything as this generates enthusiasm and eagerness to take part in the discussion. Students who do not speak otherwise will also be motivated enough to freely express their views without fear of failure as this activity is free from any negativity and criticism.

iii. It promotes fast and out of the box learning.

iv. Knowledge retention increases as students learn by doing and not by listening or writing.

3.2 OUTSIDE CLASSROOM TEACHING

Always teaching inside the classroom means trying to prove the concepts without any proof. This leads to the demotivation in the students as they want to apply the learned knowledge in 'The Real World'. Incorporating outside classroom teaching results in the collaborative learning experience where students tend to actually grasp something useful which inspires him/her to take keen interest in the subject and go beyond the books.

3.2.1 WAYS TO INCORPORATE OUTSIDE CLASSROOM TEACHING

A. Field based learning

Visiting various places relevant to the subject reveals a new perspective of the topics learned as the students literally get to know how things work in the real scenario.

For example, visiting historical monuments and heritage walks opens up the different era of knowledge

altogether for history related subjects. Similarly, industrial visits provide wide opportunities to the students of management, engineering etc.

Benefits of field based learning:

i. Students learn by experiences which retain much longer.
ii. It creates learning communities which helps in understanding the concepts together as a team.
iii. It establishes great student teacher relationships enriching the learning experience.

B. Outdoor activities

Activities play an important role in overall development of students. They can be outdoor as well as indoor activities. Outdoor activities relevant to the topic enhances learning capabilities of those students who never pay attention in the classrooms. Examples of

outdoor activities include studying the characteristics of organic substances and flora in the form of competitions in the ground in case of biology and chemistry subjects. Also, in case of environmental studies, measuring the temperature, humidity, air pressure at different areas outside the classroom makes the learning most relevant to the students.

Outdoor activities play a major role in the development of preschoolers as they promote their well-being, wholesome physical and mental development. It also increases their self-confidence and self-esteem.

3.2.2 BENEFITS OF OUTDOOR ACTIVITIES

i. It freshens the minds of the students as they learn by staying close to the nature.

ii. It incorporates fast learning, enhanced coordination and cooperation among the students.

iii. Innovative ideas often come to the mind in outdoor activities as students are engaged in the tasks by their hearts.

iv. It enforces the learners to come out of their comfort zones and their own environments.

3.3 ROLE PLAYS

Role play is a very powerful technique that allows students to explore realistic situations and their problems by enacting like someone or something. It is a problem based learning where students simulate a given scenario by playing specific roles.

Examples of role plays in different subjects-

i. Law students practice by performing in mock courts called moot courts assuming imaginary cases involving court proceedings, arguments, drafting memoranda etc.

ii. Political science students include role plays as a learning method to understand real-life political situations in controlled teaching environments. It also helps students to assess the whole political process in a deeper manner.

iii. Management students convert case studies into role plays in order to understand the principles in depth. It also helps in preparing for the interviews, sales meetings, presentations and other difficult situations.

iv. Psychology practitioners learn by role plays in order to address problems and potential conflicts in daily lives and practice dealing with stressful situations.

3.3.1 STEPS TO INCORPORATE ROLE PLAYS

i. Identify the problem and introduce it to every member of the group. Make sure that everyone is clear about the stated problem.

ii. Give some time to think about the problem and its possible solutions.

iii. Assign roles to the members and clear their roles and responsibilities.

iv. Act out the scenario. Participants act according to the roles allocated to them.

v. Guide and help the participants in viewing the situations from the new perspectives, providing different solutions to the same problem.

vi. After finishing the role play, discuss the learning outcomes of the activity, write down the correct solutions and provide feedback to the players so they can improve their communication and interpersonal skills.

3.3.2 BENEFITS OF ROLE PLAYS

i. It enables the students to think creatively.

ii. It promotes the deeper understanding of the concepts as the students get into the shoes of the different personality altogether.

iii. It builds confidence and improves communication and social skills.

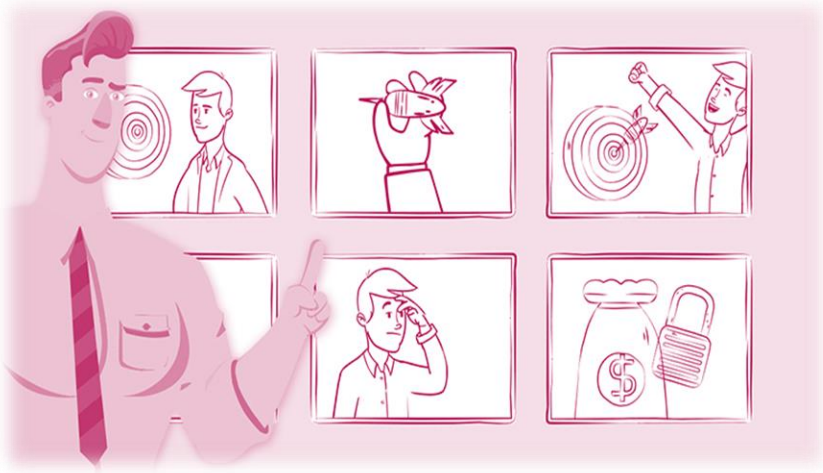
iv. It develops listening skills and creative problem solving approach.

3.4 STORY BOARDING

Storyboarding is an effective teaching technique which includes using the stories and pictures step by step to teach a particular event or a process. Storyboards are similar to the comic books where pictures and text only plots and describes a storyline. It is a visual tool to understand the complex ideas and concepts.

Various subjects can be taught using this technique effectively out of which history is at the top. All the history events can be recreated and can be placed over a timeline in the form of stories. Also, literature teachers can also include storyboarding in explaining the life events of the famous authors. Physics theories and concepts can also be visualized using storyboards and animations. In short, this technique helps in every area where step by step processes are to be memorized or highly conceptual ideas have to be visualized. Some other examples include life sciences, technical subjects, chemistry, biology etc.

Ways to draw storyboards include power point presentations, flow charts, use cases, time lines, cartoons, photographs, technical diagrams etc.



3.4.1 BENEFITS OF STORYBOARDING:

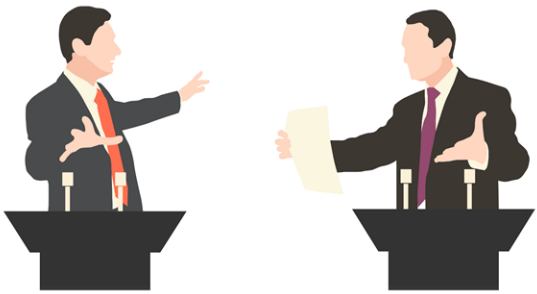
i. Students retain the acquired learning and knowledge longer as it involves learning by visualization and pictures.

ii. Complex theories and difficult concepts can be taught easily within less time and with less resources rather than writing or lecturing over them.

3.5 DEBATES TEACHING

An efficient and innovative way of learning is learning by debates i.e., through argumentation. When students argue about something in a classroom they learn how to take turns, listen patiently and respond constructively.

This method can be implemented in any subject area like science, computers, literature, mechanics, electronics, politics, behavioral science, current affairs, management etc.



3.5.1 STEPS TO IMPLEMENT DEBATES TEACHING

i. Select a question to debate about.

ii. Divide the class into 2 groups usually. 1 group is in the favor of the question decided which is called affirmative group and the other group is against it which is called negative group.

iii. Start the debate where both the groups rationally and reasonably argue by elucidating their standpoints.

iv. Discuss all the views and conclude by summarizing all the possible solutions of the question decided from both perspectives.

3.5.2 BENEFITS OF DEBATES TEACHING

i. It increases students' focus and attention and motivates them to think correlatively.

ii. Public communication is one skill which can't be learned by just reading about it. In almost all the industries you get to speak in front of people and present your ideas. So, this method greatly contributes to teach this particular skill very well.

iii. Student discussions inside the classroom imparts active and learner-centered approach which instills a great sense of poise and self-esteem in debaters.

iv. It helps in structuring and organizing the thoughts, encourages teamwork and enhances critical thinking skills.

3.6 INCIDENTAL LEARNING

Incidental learning, also referred to as random learning, as stated by UNESCO: "Random learning refers to unintentional learning occurring at any time and in any place, in everyday life" (UNESCO, 2005, p. 4). In today's scenario, formal learning which occurs in schools and colleges is not enough to innovate something new. Incidental learning means learning something new unintentionally while doing something for fun like while watching television, reading books, talking to a friend, playing games, travelling somewhere and so on. It is totally unplanned learning. For example, let us suppose a person travels to a different country and don't know the language of that country. Then, while staying there, talking to people, doing shopping, roaming around, he will learn some basic language vocabulary without using any books or any other training program.

3.6.1 IMPLEMENTATION OF INCIDENTAL LEARNING

Implementation of incidental learning in today's education:

i. This type of learning is very useful for preschoolers and small children. There are many educational games which engage children in playing and having fun while learning something new like mathematical games, environmental games and so on. Math and science are 2 most prominent subjects which can be taught to the children efficiently using games and models.

ii. There are many educational videos, apps and video games which excites students a lot. They effortlessly gain knowledge in a flexible, fun and entertaining environment.

iii. Current technology is so advanced and easy to access. It includes mobile phones, computers, laptops, internet, tablets etc. This state-of-the-art automation enables students to have fun as well as attain useful information while searching or browsing something over the internet, playing online games, discussing something on electronic forums, writing and reading blogs,

interacting on social networking sites and so on.

3.6.2 BENEFITS OF INCIDENTAL LEARNING

i. When a student is doing something for fun, he learns something from it and retains it longer without having to notice it. For example, when a person is watching an interesting movie, he/she remembers all the characters' names, story line, and events for so many days without any effort.

ii. There is no need to design a course, syllabus and classes for this type of learning. So, it saves time, money and energy.

3.7 ADAPTIVE TEACHING

Generally, all teachers use the same method to teach all the students. But students differ in their understandings, perspectives, learning styles and so on. Also, course, syllabus and material is being designed same for all. This strategy creates a learning problem for learners. Some learners will get bored, some will be demotivated, some will be lost and only a few will be interested. So, a need for adaptive teaching arises where a personalized path for every learner is being designed considering each learner's learning style, previous learning methods suited, background knowledge, current scenario, aptitude, prior achievements etc.

There are many ways to implement adaptive teaching. One way to implement is dividing a class into groups based on the students' learning styles, background, interest areas etc. For example, build one group where all students learn by reading books, build another group where all the students learn by browsing internet, and build another group where all the students learn by activities and so on. We can prepare groups based on any other criteria too rather than learning styles only. Now, decide 1 topic to learn and recommend books for 1st group, recommend websites for 2nd group or let them browse freely and design activity for 3rd group. In this way, whole class can learn the topic in their own style effectively.

Other methods of adaptive teaching include separating bright, average and weak students and mix them together so that they can learn from each other, separating students based on their interest areas and make them teach each other in an interdisciplinary manner, separating students based on their background knowledge and so on.

3.7.1 BENEFITS OF ADAPTIVE TEACHING

i. This method helps in monitoring each learner's progress and learning path.
ii. It ensures each student masters the concepts before moving on to the application part.
iii. Students can learn at their own pace and convenience.

3.8 SPACED LEARNING

When we learn something, there are two types of curves building in our brain cells: Learning curve and forgetting curve. Learning curve represents the time people take to learn something and Forgetting curve represents that if people do not use or repeat the learned knowledge regularly, then they will forget it quickly (Figure 1).

So, an approach is needed which can minimize this forgetting curve. One powerful approach is spaced learning. It is a learning technique where teacher teaches in small and intense sessions with breaks in between. For instance, a teacher introduce 1 difficult concept for 15 minutes, then provide 10 minutes break in which students can relax their minds, do some physical exercise or just pass the time, then repeat the topic again in same or different manner and then again provide some break and so on. The important part is student must do anything else during the break which is not related to the topic. This method does not focus

on how longer the learning session is rather it focuses on how frequently in between breaks are being provided. The key is in the functioning of the brain cells. By switching the brain cells on (during learning) and off (during breaks) periodically, the content settles down in the unconscious part of the brain for longer period of time.

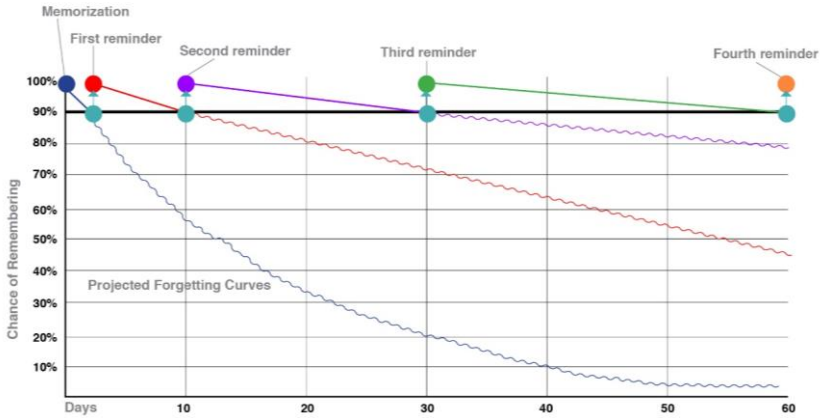


Figure 1: Forgetting Curves

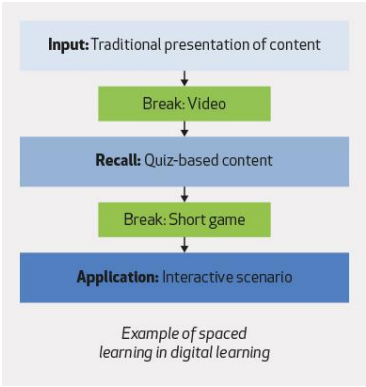


Figure 2: Example of spaced learning

Figure 2 shows the example of spaced learning where whole session is being divided into three parts and in between those small sessions, breaks are included where video and short games can be played.

3.8.1 BENEFITS OF SPACED LEARNING

i. Learners' participation increases.
ii. It is a quality based learning rather than quantity based learning.
iii. It is very helpful technique for busy learners.
iv. It is a good replacement for cramming technique.

Current world is evolving at a very fast pace due to which existing education systems start to become obsolete. An urgent need emerges to correlate with the rapidly changing learning behaviors of the pupils. All the above mentioned techniques surely supports and helps in this huge paradigm shift in the current teaching. However, applying them requires facing and overcoming certain challenges such as more time, money and space required in some methods, reluctance of mentors and mentees to adopt new arrangements as they have to come out of their comfort zones, training of some software or hardware required for some digital methods etc. But awareness with a vengeance and motivation at a world level seems to overcome these challenges at a rapid pace. Educators and students should join hands to match up with the current learning

needs to save the innovative minds of current and future generations.

4 CONCLUSION

New generations are desperate to acquire knowledge and apply that knowledge to somewhere. Drawbacks in current education system seems to be less supportive for innovation. They mostly fail to attract scholar's attentions and curiosity towards learning by practical. Brain storming is a way to ignite innovation thoughts in scholars. Field based Learning and teaching by outdoor activities have been proved to be more effective to support out of the box thinking and encourage innovation. Role Plays, Story Boarding, Debates, Incidental learning, and Adaptive teaching are other ways of innovation education that supports raw innovation of scholars and should be encouraged in modern education systems.