INNOVATIVE TEACHING-LEARNING METHODS TO EQUIP LEARNERS FOR 21ST CENTURY NEEDS: A CASE STUDY

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Abstract: Our world is changing fast and education is a very powerful instrument that can equip the students to face the global challenges that 21st century development brings along with itself. As John Dewey has rightly said, "...if we teach today as we taught yesterday, we rob our children of tomorrow." Technology has affected all the fields and 21st century brings with it the need to not only solve complex and abstract problems but also think of creative solutions to environmental issues. Therefore, to meet 21st century expectations, educators need to do away with the traditional methods of standardized teaching and advocate teaching methods that can enable learners to adapt to the changing requirements of a fast transforming world. There is a great need to improve the quality of education and equip learners to adapt to these changes and more. Innovative teaching and learning methodologies is the only way to enhance the quality of our education. Only through innovative techniques, the teachers can provide student-centric learning environment that will make learning process interesting as well as understandable to the young learners.

Tripura, the 3rd smallest state in India in terms of size and Agartala is its Capital. This paper aims to analyze the current status of teaching and learning methods adopted by teachers in Agartala, Tripura and also to identify innovative teaching and learning methods that can be attempted in imparting knowledge to the learners.

Keywords: innovative teaching techniques, student centered learning, education, technology

I. INTRODUCTION

Education is a basic essential in a human's life. It is a powerful instrument for the growth and progress of any society. In this fast changing world, education is the only means that can equip the students to face the global challenges that 21st century development brings along with itself. The rapid advances in technology i.e. advancement in robotics, virtual reality, cloud technology, big data, artificial intelligence, the internet of things and other technologies is said to transform the nature of work, the way we live and our society in the near future. As a report from the World Economic Forum (2016) about the future of work informs us, "by one popular estimate, 65% of children entering primary school today will ultimately end up working in completely new job types that don't yet exist." Therefore, educators need to to prepare the younger generation and re-educate the current generation for changing work, social and cultural environments. A 21st century education should be about giving students skills they need to succeed in this new world.

As John Dewey (1916) has rightly said, "...if we teach today as we taught yesterday, we rob our children of tomorrow." The 21st century students are digital natives as they are living and growing in the tech culture. The young generation growing up with the advanced level of technology are bombarded with information, any answer to their questions is just a click away and they are able to teach themselves about any topic they are interested just by sitting in their bedroom. Therefore, engaging students in the classroom learning becomes a big challenge as they do not often find it interesting to learn what is taught through the standardized methods. It is time to change the pedagogy from fact-based traditional method to interactive teaching methods with the aim to enable the students to think critically and creatively so as to ensure success in future. The teachers need to embrace the technologies associated with them and advocate teaching methods that can enable learners to adapt to the changing requirements of a fast transforming world.

Technology has indeed affected all the fields and 21st century brings with it the need to not only solve complex and abstract problems but also think of creative solutions to environmental issues. The purpose of education is not just making a student literate but also add rationale thinking, knowledgeability and self-sufficiency (Ruban A, 2014). This is why teaching must include innovative classroom interaction methods that impart knowledge and deep learning. There is a great need to improve the quality of education and equip learners to adapt to these changes and more. Innovative teaching and learning methodologies is the only way to enhance the quality of our education. Only through innovative techniques, the teachers can provide student-centric learning environment that will make learning process interesting as well as understandable to the young learners.

II.OBJECTIVES

- To analyze the current status of teaching and learning methods adopted by teachers in Agartala; and
- To identify innovative teaching and learning methods that can be attempted in imparting knowledge to the learners which they need to succeed in the 21st century.

III. METHODOLOGY

- It is an empirical study and majority of the data is collected through primary sources.
- The educational institutions were purposively selected, whereas the respondents were randomly selected.
- For the collection of data schedule has been prepared on the basis of close ended and open ended questions.

IV. FINDINGS AND DISCUSSIONS

Current status of teaching and learning in Agartala

- For the present study, Agartala, the capital of Tripura has been selected. Ten schools were purposively selected and 100 respondents were randomly selected from it. Out of the ten schools, two are central government managed schools, three are State government managed schools and five are private schools.
- On the basis of the prepared schedule, questions were asked to the students and information or data have been analyzed.
- Firstly, it is found that all the five private schools provide smart classrooms in every classroom, wherein the teachers were found to be using the LCD projectors for PowerPoint presentations, videos and pictures which acts as an add-on to their teaching. But the schools that were managed by the State Government were not even facilitated with smart classroom. While the schools managed by the Central Government did have one or two assigned smart classrooms which were occasionally used. Secondly, even though the private and central government managed schools were facilitated with smart classrooms, it was found that the teaching method adopted is still the one-way communication method. Thirdly, it is found that the classroom management techniques are still the same as it was in the 19th century, where the students' desks were lined up in a rows and the teacher at the front of the room.
- Multiple responses:
  Some respondents from the Central Government managed school stated that the teachers use the LCD projectors in their teaching only when there is school visit by the higher authority.

  The most common reply that the respondent from the State government school gave was that they did not even know what an LCD projector is. Some respondents stated that the weak students were given extra tutorial classes during the school hour itself.

  Most respondents from the private schools stated that first the teacher explain the lesson and are aided with videos and pictures which was shown with the help of overhead projector. Some respondent also stated that project work was given but it was based on the prescribed textbooks and that the projector was used to give lecture notes to the students.

It could be thus interpreted that the main teaching strategy is still the teachers talking to students as they sit down on their seat and listen to the teachers i.e. the teachers have adopted the conventional method of teaching and learning. Consequently, the students are also assessed in a conventional manner. It is also found that the teaching is mainly based on the syllabus and prescribed textbooks, letting them learn only the art of reproducing in a rote form without any understanding. This type of typical classroom environment where the students are just passive listeners does not promote learners to participate and involve in the learning process. This system indeed produces a large number of literate population which results in high unemployment rates and will increase more in the near future if this continues. This can be already seen in the case of Tripura. It is found that education in Tripura has developed at a very fast pace since its formation on 21st January 1972. As per the 2011 census, literacy rate of Tripura is 87.22%, and it ranks third among the States after Kerala and Mizoram in 2011 (Economic Review Tripura, 2015-2016). However, the employment rate depicts a different story. According to Centre for Monitoring Indian Economy (CMIE) data of June 2019, Tripura unemployment rate is 26.2 per cent, which is the highest in the country.

The world is changing rapidly and along with it there has been change in the nature of work. Our learners will not be working on routine information seeking and routine problem solving; they will forge new, dynamic relationships and tackle novel challenges with sophisticated technology (McWilliam, 2008). Therefore, students must be immersed in authentic curriculum contents and tasks that are demanding and relevant to their lives and futures (Crosling, 2008). And the educators should do away with using technology to deliver the same old top-down learning. Instead they should utilize the digital technology which allows them to get access to wide range of materials in a variety format which will enhance the quality and diversity of learning and teaching by making an effort towards a more student-centric teaching.

Some innovative teaching and learning methods

Every student is unique in a classroom, and so is the way they learn. Therefore, the teaching tools used in schools or even in colleges should cater to each individual's way of learning, with the student at the centre. For a student to succeed in today's competitive environment, they will have to be skilled at critical thinking, problem formulation and problem solving, innovation, and logical reasoning. Therefore, the teacher should just be a 'facilitator' and facilitate learning through innovative methods which will create deeper learning and the needed skills so as to equip the students to face the global challenges of the 21st century.

Some innovative teaching strategies that can engage learners and can be attempted in imparting knowledge to the learners are as follows:

- **Project Based Learning:** It is a way to make learning more meaningful and real. Here, learning is not done through the prescribed textbook and syllabus. But, instead the students are made to deal with real-world problems so that students can make important connections between what they learn in school and its relevance to the world outside school which results in a deeper and more holistic understanding of the subject being studied (Nair, Prakash, 2008). Project based learning is also good medium to deliver multidisciplinary curricula. It is found that, in Mahatma Gandhi International School, Ahmedabad, the students took 'Café Project', 'City Project', 'Creating a Calendar Project, etc. which enabled them to merge their academic curriculum with real-life experiences. This kind of Project based learning makes the learning process more engaging and understandable for the students. In case of the 'Café Project' the students came out with the plan, cooking and sold the meals at the school café, therefore not only did the students learn the learning subjects like science, math, humanities but also learnt skills like communication and organization.

- **Classes outside the classroom** – Outdoor learning is also an innovative way of teaching as it breaks the monotony of the classroom. And the students will find it quite refreshing and exciting and so it will help them to learn faster and better. The teachers can also organize field trips that are relevant to the lessons so as to give them a hands on learning. Teachers can even

just simply take students for a walk outside of the classroom as sunlight and fresh air is essential for healthy human development and academic achievement.

- **Stimulation:** Every student is unique and teachers need to nurture that uniqueness which can be achieved through a stimulating environment that breeds curiosity, freedom and encouragement to pursue passion and practice of self-reflection. Classroom environment can play a vital role in stimulating a student's mind to think and learn better. This is especially true when it comes to children, a well-lit, decorated and fun environment can go a long way in getting students to explore and encourage them to delve deeper into the subject.

- **Simulation and Role-playing:** In these methodologies, the idea is to create a scenario that students could encounter in real life. A simulation basically creates a dynamic environment in which they could experiment with real world situations related to the challenges of future career conflicts. This creation of real world also allows them to gain experience in applying their theoretical knowledge. For example, when students are assigned roles as buyers and sellers of some good and asked to strike deals to exchange the good, they are learning about market behavior by simulating a market. Simulations allows the learners to become an active participant in the learning process which transforms the traditional classroom lecture into a nontraditional learning environment where students have the opportunity to develop skills in decision making and problem solving skills. One important feature of simulation is that it does not emphasize on winners and losers but instead allows students to explore decision making techniques and see the results of their decisions. Simulations not only provides enhanced learning experiences for students but it also improves their decision making and critical thinking skills. It also helps to develop interpersonal and communication skills as it creates environment to work collectively with co-learners who have variety of learning abilities. Simulations encourage motivation, provide the opportunity for student involvement, allow for the generation of new insights, increase the formulation of new concepts, and create the ability for students to solve problems within a realistic and controlled environment (Queen, 1984).

  Role Playing can be another great teaching tool**.** It not only requires that student understand the material, but playing it out improves their interpersonal skills. It will also help students understand the relevance of the academic material in everyday tasks. Such exercises of learning by "doing something" is crucial if students are to develop deep-learning which is necessary for long term knowledge acquisitions. This method is particularly helpful in subjects such as literature, history or current events. It is imperative however that the teacher makes sure that role playing is about student involvement and understanding of the subject matter and does not become a mere theatrical exercise.

  The scope of simulations and roleplays can be extended outside the classroom i.e. it can be used to understand the different global issues and not merely textual reference. In this regard MUN (Model of United Nations) projects is a good example. They are designed to complement their academic background. It is an extra-curricular activity in which students typically roleplay delegates to the United Nations and simulate UN committees. This activity takes place at MUN conferences, which is usually organized by a high school or college MUN club. This kind of simulation and roleplay increases the students understanding of multilateral organizations and at the same time empowers their capacity to negotiate and interact in a qualified international environment.

- **Problem-Based Learning**: Problem-Based Learning for students is a flouring approach to learning that is extremely useful in promoting critical and analytical thinking, and in addressing the rapid technological changes and dynamic workplace of the 21st Century (Nicolaides A, 2012). As it uses the real life situations, challenges, and problems to engage students in critical thinking, problem solving, teamwork, and self-management. It also provides opportunities for students to use digital tools which improves their learning ability as it makes them more motivated to pay more attention to the information presented and retain the information better. This approach to education suggests a strong role for factors such as authenticity, as well as student independence, and is principally associated with the encouragement of deep learning (Sutherland, 2009).

- **Interdisciplinary curriculum** – It is used to teach a unit across different curricular disciplines. For example, the eighth grade language, arts, science, math and social science teachers might work together to form an interdisciplinary unit on global warming. It provides students the opportunity to work with knowledge drawn from multiple disciplines allowing the students to learn by making connections between ideas and concepts across different disciplines. The students are able to apply knowledge of one discipline in another and thereby deepen the learning process. According to The National Council for Teachers of English (NCTE 1995) "educational experiences are more authentic and of greater value to students when the curricula reflects real life, which is multi-faceted rather than being compartmentalized into neat subject-matter packages." This is in fact very important, because real world problems hardly pertain to one discipline. They are complex and need an interdisciplinary approach to come up with a solution. For example: if we take a look at the problem of climate change which is a global problem. One needs not only understand the science behind it, but also the social implications like displacement and migration and the kind of conflict that it generates among different nation states. Similarly, any action taken to mitigate these problems need a deeper understanding of the economy, polity and society of the region. Therefore, it is not uncommon to find interdisciplinary forms of learning in higher education. We see the use of economics and statistics in sociology, geography and environmental science etc. All this, points to the importance of having an interdisciplinary curriculum from schools itself and train students not to look at subjects in isolation but connect one with the other.

- **Use of Media:** Media is a channel of communication and it takes different forms like print media, visual media, mass media and social media. Media resources can be used to engage students in the classrooms. The use of media in classroom means doing away with the traditional lecture method. The teacher takes on the role of a facilitator and encourage the students to learn through the media i.e. a video clip, a song, podcast of a lecture, documentary video etc. The teacher need to show media before the concept has been taught in the classroom as it helps the students to generate the types of knowledge that are likely to help them learn from subsequent lectures. The media needs to be repeated after the concepts are taught so as to reinforce

the concepts learnt. Therefore, the use of media not only engages students in the classroom but also aids to students' retention of knowledge, motivates interest in the subject matter and illustrates the relevance of many concepts.

- **Inquiry-Based Learning:** Inquiry-Based learning is a student-centered approach as it places students' original questions, ideas and observations at the centre of the learning experience. In traditional teaching, students are less prone to ask questions as they are expected to listen and answer questions posed by the teacher and this have discouraged the process of inquiry which may have come from lack of understanding. But, the inquiry-based learning allows the student to investigate solutions to open questions or problem. This helps the students to have deep understanding of the concept and also develops critical and analytical skills.

- **Jigsaw:** The jigsaw technique was developed in the year 1971 by Elliot Aronson. It is an activity based learning where students are engaged both with the syllabus material and with each other. It is a type of cooperative learning where students work with their co-learner to accomplish an assigned shared goal. Basically, in a jigsaw activity, students are arranged into different teams and are assigned with different piece of information. Then, the class is again divided into mixed groups, with one member from each team in each group. Students are therefore expected to learn the piece of information well enough to be able to teach it to another group of students. Each person in the group after sharing their knowledge as a group tackles an assignment together that brings all of the pieces together to form the full picture. This technique helps the students create their own learning and also helps them to become experts on the learning as they teach their peers. This kind of cooperative activity based learning not only allows the student to have a deep understanding of the course material but it also fosters individual accountability, problem solving skills and positive social skills.

  Each of the methods or techniques discussed above are student-centric which will help students connect with the world and understand the issues that our world faces. These student-centric techniques allow the students to be actively involved in their education and help built critical thinking skills, technological skills, collaborative skills, oral presentation skills, creative writing skills, and a researcher mind that are important for the students in order to be successful in the 21st century.

V.CONCLUSION

Education is a beacon for all mankind and as an educator one must make education a learning process that generates interest in the students and motivate them to be lifelong learners and a creative, connected and collaborative problem solver. The education systems need to develop the 21st century skills required for children to successfully negotiate dynamic and uncertain demands of today's workforce. However, it is found that there are some teachers who teach the same units in the same way each year. They use the same lesson plans and worksheets as they have no interest in finding out new innovative ideas. Teachers should be encouraged to constantly work on their teaching methods and be sent to attend workshops and trainings to equip them for the same. The future of our student rests on the present teaching system which needs to move away from 'one size fits all' traditional approach to more innovative teaching techniques. Innovative teaching strategies must be used not only to help students engage with the textual reference and enhance their cognitive level but also to equip them with the skills to be able to learn and adapt to the constant changing demands of the future. To meet the 21st century expectations, educators therefore need to depart from the ideas and pedagogies of yesterday and become bold advocates to develop the sorts of learning dispositions needed for our learners and their work futures. This means spending less time explaining through instruction and investing more time in experimental, and error-tolerant modes of engagement (Kwek, S. H. 2011). In addition to the above concerns, innovative teaching techniques can play a vital role in addressing the issue of social development of the students. Teaching methods should be such, that emphasis should be on life-skills rather than simply on mere mastery of content interaction with each student and also involving parents' involvement in the overall progress of each student. A complementary and equally important aspect is infrastructure of schools should be improved such that smaller classrooms should be preferred in order to facilitate more attention to individual student and foster higher interaction.

Education has and will remain the one tool we can give the future generation to cope with the demands of the 21st century. For this, we need to change we look at the role of teaching as simply reproducing the knowledge taught to us decades ago, but look at it in a holistic way. Through innovative techniques of teaching, education can help students not only attain deep academic knowledge and enable them to learn at any stage of life which is imperative in the 21st work culture. It will also equip students with the necessary social skills and life skills to navigate through the increasing impersonal society.

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