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ARTICLE

## The way Forward for Interactive Learning

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### ABSTRACT

*Innovative teaching is the key in a rapidly changing and evolving world, where students need to adapt themselves to varying situations or circumstances and provide for logical, critical and able solutions to problems. As students graduate from a protected learning environment to a more productive and competitive work place, concepts learnt in classrooms need to be used with a more practical application. This is where innovative ways of teaching will make a deeper impact, analyzing situations and implications for application in a global platform. In today's dynamic and ever changing world, it becomes essential as educators to be responsible for designing, implementing, and maintaining educational environments that enable students to develop their potential to the fullest extent possible. Hence, **STEM** (Science, Technology, Engineering and Maths) is constantly seeking novel and creative approaches in program to enhance the educational preparation of each and every student.*

*As teacher's we must employ sound management practices which ensure that everyone's guess is important and which encourage student risk-taking and sharing of ideas. It has been an enlightening revelation as an educator in understanding and communicating on simplistic methods of innovative teaching and help students gain confidence in their work. Educational technology can be seamlessly incorporated into a classroom whether you are a teacher who is more comfortable using classroom content strictly prescribed by the school curriculum or you are in a school environment in which*

*creating content based on state wide learning outcomes is encouraged. Student engagement and understanding of materials is given more emphasis in today's education over spoon feeding the facts. Therefore, using black-boards or the typical lecture methods are not adequate to teach science and other related subjects. Many scholars and researchers have proposed advanced ideas and they claim that virtual teaching scenarios or simulations can help to build better understanding of subjects amongst students.*

## INTRODUCTION

The world is evolving rapidly. Our lives are being powered by cutting-edge innovations that allow us to be more productive, efficient and creative in our approaches. Especially in today's education *innovation* is the key in a rapidly changing and evolving world, where students need to adapt themselves to varying situations or circumstances and be more proactive in solving problems. As students graduate from a protected learning environment to a more productive and competitive work place, they must be able to apply concepts learnt in classrooms in everyday life, as the true measure of their education. That's why, interactive learning is rapidly penetrating modern education system to create a meaningful educational environment wherein students don't just gain knowledge, and they are also empowered with the vision to use it under diverse circumstances.

The role of educators in today's unique and diverse scenario is therefore is even more critical than ever before. Every teacher must be able to design, implement and maintain learning environments that enable students to develop their potential to the fullest. But the world of education is constantly changing, and one of the most exponential leaps in this world is STEM education that focuses on the fields of Science, Technology, Engineering, and Math. STEM is an interdisciplinary and applied approach. It is a curriculum based on above four disciplines.

## WHY STEM IN SCHOOLS?

Research has clearly indicated that the global technology industry will grow at an incredible rate in the near future, giving rise to the need for a professional work force of coders, designers and innovators who can solve problems and even understand what the needs of the market are, even before such needs arise. It is therefore very strongly propagated that the solution to this potential gap between supply and demand of skilled and adept professionals is STEM education. Starting from elementary school and reaching all the way through college levels, STEM education will pave the way for the future generations to be problem solvers, and use their knowledge, and their inherent skills to enhance modern way

of living. Innovations in the technology based on engineering which is combination of science and math.

### INNOVATIVE METHODS TOWARDS STEM TEACHING

Laptops, tablets, and educational applications are just some of the latest tools that teachers are using as innovative teaching methods in modern classrooms. Other hybrid-learning techniques like online project videos, instructional videos and coaching courses have also become instrumental elements towards holistic development of today's youth. All of these new methods are aimed at imbibing stronger fundamentals and towards increasing the interest of educational world towards STEM education. Schools should collaborate curriculum with technology and engineering companies. A 3D STEM laboratory should be developed by the Government.

### INTERACTIVE WORKING MODELS

Integrated STEM teaching and learning experiences are incorporated as a predominant feature of integrated and interdisciplinary approaches for use in real-world situations or problems. Interactive learning models are coined by experts in Science, Technology, Engineering and Mathematics to present students with grand challenges that sometimes connect two or more disciplines within STEM, or connect at least one STEM discipline with a non-STEM discipline. Tasking students with tackling such interactive and challenging models empowers them with the opportunity to understand the relevance of STEM in real life and gives them the opportunity to explore ideas rather than finding the 'right solution'. The goal of such models is therefore not to find the right answer but rather develop an interdisciplinary teamwork spirit that will ultimately benefit the society.

### IMPORTANCE OF STEM EDUCATION

Indra Nooyi, CEO of Pepsi, has said, "*One of the things that my experience has taught me is that if you are trained as a scientist in your youth - through your high school and college - if you stay with the STEM disciplines, you can learn pretty much all of the subjects as you move along in life. And your scientific disciplines play a very important role, and ground you very well as you move into positions of higher and higher authority, whatever the job is.*"

Students empowered by knowledge from STEM education will be vital to our world's infrastructure, economy and expansions in science & medicine. The reason STEM is so critical for a global classroom is because it fortifies the critical-thinking skills of students, fosters the spirit of collaboration. But above all STEM educations develops an inherent

problem solving mentality through knowledge learned. Together, these proficiencies, when nurtured in students give them the power to be innovators of tomorrow.

Students are curious, and they yearn for a connection between what they are learning, to how it will apply to their lives. STEM education is therefore a bridge between students and their future. It gives students the benefit of knowing that there is a reason behind each lesson and when students understand this real-world application, they approach their studies with a renewed enthusiasm that serves them well even beyond their academic life. Thus board should design an enriched practical curriculum and lab should be enabled with latest equipments. New subject like Robotics should be introduced in curriculum. Teachers and students should develop an interactive approach in subjects.

### **DEADLOCKS IN STEM EDUCATION**

Currently, policies and practices that ensure equitable access to the best STEM teaching and learning are not widespread. States, districts, and schools struggle to provide all students with the STEM experiences required for the 21st century, regardless of college and career aspirations. In particular, state and local education agencies and school-level educators struggle to close persistent achievement gaps in core subjects like mathematics and science. Research also suggests that rural schools are especially challenged in meeting the educational expertise needed in science and mathematics. Children from rural areas, especially from lower socio-economic show less progress as compared to their urban peers. School drop-out ratio is also higher in these areas, leading to a severe deadlock in implementing STEM education.

### **FUTURE AND NEEDS OF STEM EDUCATION**

With a background in STEM, students will have the qualifications and experience needed to work in many diverse, rapidly growing fields, which will not be limited to a career in engineering. The demand for skilled professionals is increasing at a rapid rate. The U.S. Bureau of Labor Statistics predicts that careers related to STEM will increase by more than 9 million by 2022. This gap creates room for students to not only land jobs after graduation, but to forge a career with significant growth potential.

While the core of a STEM education is a technical curriculum, the real take away is the building of a student's problem solving abilities. To avoid the computerization of jobs, a thorough STEM program will provide students hands-on challenges, like product conceptualization and creation, which promote creativity and social skills. Over the past 10

years, the tech industry has proved not only its staying power and adaptability to societal changes, but its continual growth. There is no shortage of innovative products on the market, and the trend will continue for the foreseeable future. For students wanting a career in a profitable and promising field, a STEM education is the first course of action. By connecting STEM subjects to real world problems, we can build enthusiasm among students, leading to a better future for everyone.

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