

## STEM LEARNING AND ITS APPROACHES TO LEARN ENGLISH LANGUAGE

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### ABSTRACT

Science, Technology, Engineering, and Mathematics, or STEM education broadens career options, fosters gender equality, builds resilience, and enhances communication, critical thinking, and cognitive skills. It also enables students to learn about real-world applications of concepts and helps them prepare for the future. This type of instruction focuses on a student's growth and development from an early age so they can establish innovative and curious habits. The effective use and connectivity of information and communication technology skills are essential for the advancement of STEM fields.

**Key words:** STEM, Inquiry-based learning, Resilience, Critical thinking, Cognitive skills, Collaborative learning, English as second language (ESL)

Rapid advancements in technology might affect one's ability to grow professionally, socially, and personally. The need for information and skills will shift, and there will be more opportunities for teaching and learning. These developments will have an impact on education. STEM stands for Science, Technology, Engineering and Mathematics. But, it is more than that. It has grown to represent a unique approach to teaching and learning that centers around individuals' learning styles and interests. It has something to offer to every student. It integrates subjects in a way that connects the various disciplines and relates them. STEM education is a special kind of learning that combines math, science, technology, and engineering. This type of instruction mainly emphasizes problem-based and experiential learning. It emphasizes developing logical and critical thinking skills by exposing pupils to diverse perspectives.

It focuses on beyond simple test performances and focuses on developing higher-level thinking skills by connecting classroom learning to the real world. This learning emphasizes on collaboration, communication, research, problem-solving, critical thinking, and creativity skills that are prominent in the current situation.

Some essential STEM components are:

- Attentive learning
- Personalised learning system
- Problem-solving-based learning
- Connecting with a larger community

English influences STEM extensively because it is reliant on understanding and comprehension of the world around us. In every subject, students are required to passage or a paragraph and they are required to answer based on that information. Without a strong grasp of comprehension, students will find things extremely difficult.

English learners develop STEM knowledge and language proficiency when they engage in meaningful classroom interactions and participate in several kinds of activities. In STEM, activities provide an enjoyable and engaging setting for a child to learn English. Not only will the child learn English but they will also learn valuable skills that will help them to excel in life. It helps the learners to improve problem-solving skills, broadens their vocabulary, and allows students to learn through a different medium that is technology. Here, students are no longer solely relying on books to acquire knowledge. Some education centers are now including STEM programs such as coding in their curriculum.

The following are a few of the STEM goals:

- (a) The primary objective is to fulfill the need for experts with advanced skills.
- (b) It is centered on helping students strengthen their skills.
- (c) The courses contribute towards the development of equality.

School plays a crucial role in imparting knowledge to students. STEM focuses on building habits that can help students throughout their lives, from critical thinking skills, problem-solving skills, and creative thinking to computation and interpersonal skills. When elementary school children around the age of five are exposed to STEM, it sparks their natural interest and encourages them to pursue these subjects on their own volition later on. In middle school, the course design is such that they learn 'how' and not 'what' to study. It allows students to develop an interest early on and become aware of the available career opportunities. In high school, STEM program focuses on applying subjects in a challenging and rigorous manner. This period guides them for post-secondary education and employment.

Some of the teaching methods for STEM learning are –

**Project-based learning:** This method encourages students to learn skills and apply their knowledge by participating in the project and the role of a teacher is of a facilitator.

**Problem-based learning:** Students should analyze and evaluate a problem that is given to them. It requires a high level of thinking. This approach encourages creativity, teamwork, and leadership.

**Inquiry-based learning:** The main purpose is to emphasize the student's role in the learning process which is why they are encouraged to ask questions. It enhances critical thinking, questioning, and problem-solving.

This approach is helpful in following ways that are enumerated below-

**(a) Strengthens critical thinking skills:**

Because STEM teaches students how to solve issues effectively, it is one of the most important components of their education. Early exposure to this educational system teaches students how to analyze problems and come up with solutions.

**(b) Encourages students to try new things:**

Students are encouraged to attempt new things and are given a healthy environment through this schooling. They follow this method of instruction and recognize the value of failure.

**(c) Develops the ability for teamwork:**

It encourages collaboration between students of all levels and centers on team-building exercises. Students meet together to solve problems together, have discussions, gather information, present their work, make reports, etc. They are aware of how critical it is to collaborate and grow in a fully developed team atmosphere.

**(d) It Increases Students' curiosity:**

Developing children's curiosity and inventiveness as ingrained behaviors is one of STEM's benefits. Asking questions gives them more confidence and improves their critical thinking skills.

Indians first encountered the English language in 1612, when the East India Company was founded. However, the language began to spread after the British took over as this nation's rulers. English language teaching was first offered at all educational levels in 1813. English as a Second Language (ESL) students are students who first learned to speak, read and write a language other than English. Language development is the responsibility of all teachers. It is believed that teaching of a language means teaching what has been traditionally known as LSRW skills as the objectives of language teaching.

## 2. CONCLUSION

Introducing STEM to ESL students can be an enjoyable and practical approach for them to pick up new language and abilities. Learners' vocabulary will grow and their problem-solving abilities will increase when they study STEM subjects. They can study using a variety of media, including technology, through STEM lessons. Students increasingly utilize interactive programs, games, and robots in addition to books and worksheets to learn new material. Rather, children learn in a far more participatory way by doing. Students who are learning English as a second language have many opportunities to practice and engage in discussion when STEM is included in the curriculum.

It offers students a genuine motivation to hone their English language skills in speaking, listening, writing, and reading. The effective use of ICT is essential for the STEM learning but with the growing advancements in the technologies, there is a dire need of learning effectively. The effectiveness in the teaching-learning process can be achieved through STEM learning as it gives the learner the opportunity to practice and then learn.

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