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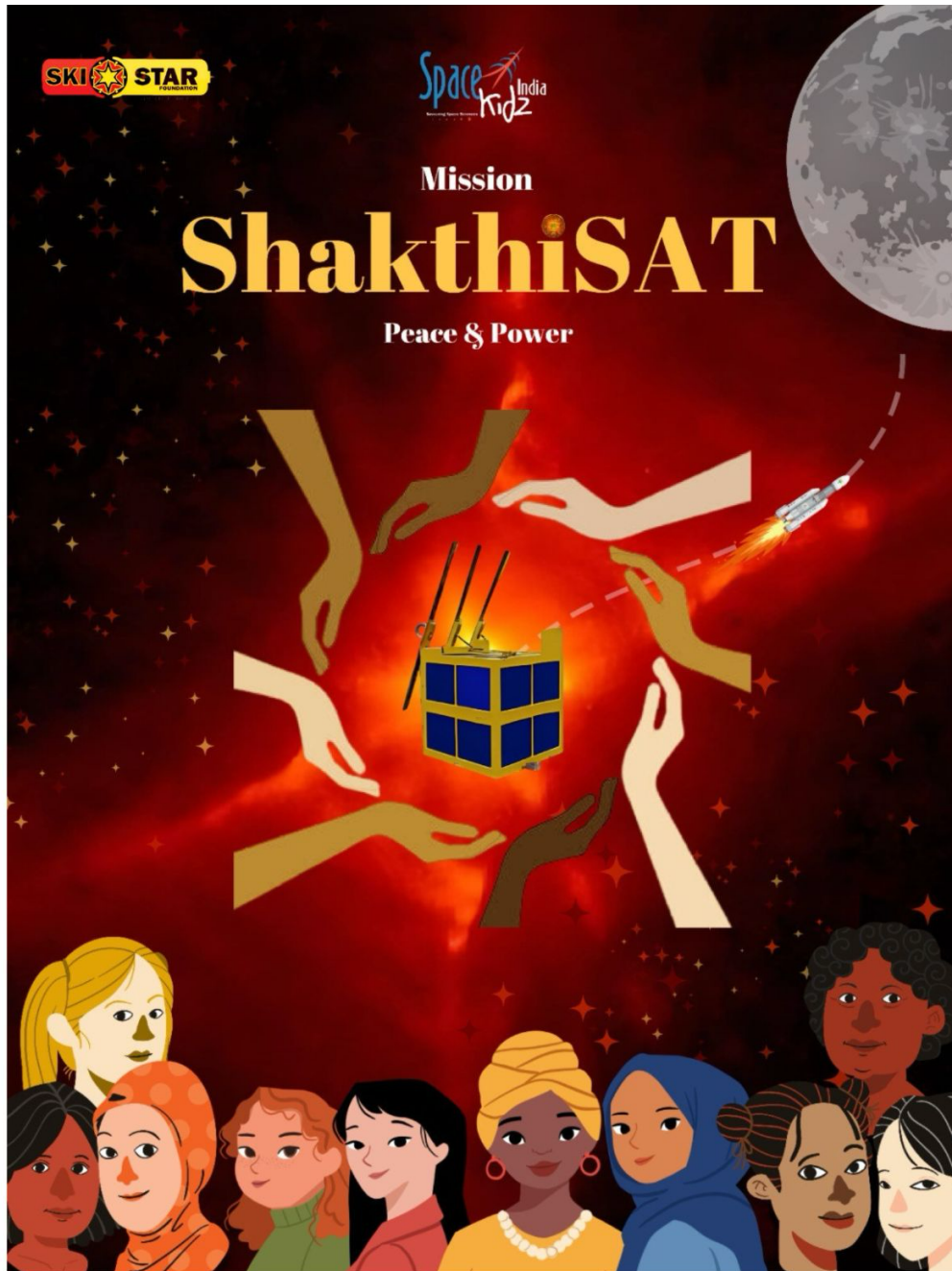
Academic Journal for Students
Creating Confident Science Communicators



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Editorial

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1. Introduction

A student journal can be enriching in allowing one to contribute to the scholarly conversation in any chosen field and showcase the works of students. Student journals rely on the volunteer efforts of editors and peer reviewers. To attract and retain volunteers, it is important to be clear about the time requirements, benefits, and potential challenges of participating in making the journal happen. A good first step is to consider the value that the journal brings to authors, editors, reviewers, readers, and other stakeholders.

“**Make – A – Mark**” is a journal exclusively for the students and was launched on 31 January 2026. The primary gains from this journal are as follows.

1. Building STE(A)M Community
2. Showcasing Excellence with focus on literature study and ethics
3. Good Impact for the Stakeholders
4. Gaining experience with scholarly communication and academic publishing
5. Encouraging Engagement through a transparent peer review process
6. Inspiring Support
7. Student Development into future professionals

2. Student Writers

“The central act of the writing course is publication. This is the crucible where the student is tried, tested and taught” - Donald Morison Murray, “Learning by Teaching”, pp 144, Heinemann OP, 7 October 1988.

“If people do not believe that mathematics is simple, it is only because they do not realize how complicated life is” - John von Neumann, Remark made from the podium by von Neumann as keynote speaker at the first national meeting of the Association for Computing Machinery in 1947.

The writing of students is rarely read by anyone but the teacher. “**Make – A – Mark**” is a forum for the students to confidently publish their work after peer review. Moving

teaching beyond one's own school experiences and insecurities often takes new experiences to help one see the value in unfamiliar practices.

Some potential impacts are:

1. Scheduling the published papers for classroom discussion based on the relevance for the subject being taught
2. School wide writing and publishing workshops
3. Published papers may contribute to the grading
4. Teaching and facilitating better adjustment to audience
5. Multiple writing skills learned in context
6. More critical and appreciative reading
7. Developing a more effective learning community for writing through professional societies and clubs

Students take a proactive approach to recognising knowledge gaps, becoming more invested in deeper lifelong learning, and increasing their development via collaborative approaches to learning.

“Make – A – Mark” leads to the development of academic competencies including communication, critical thinking, teamwork, and problem-solving, which are all important skills for enhancing student progression and employability.

The documentation of ideas and events for later reflection and as a process triggering insights about teaching – learning through self – discovery. The process encourages the students to explore classroom events that result in subjective observation and prospective analysis, reassessment and sharing with other learners beyond the boundaries of the school. The student is prepared to learn to be analytical and not judgmental to seek the essence of wisdom that can be got from every feeling, fact, idea, and vulnerability.

3. AIMERS Foundation

AIMERS Foundation is a technology Not-for-profit registered under the Australian Charities and Not-for-Profit Commission, empowering communities through Artificial Intelligence, Media, Emerging Fields, Robotics, STE(A)M, and Space Technology.

The Foundation aims to enable more students to build startups, secure patents in their own names, and publish academic work—cultivating a vibrant, innovation-driven technology ecosystem and positioning Australia as a global innovation hub by 2050.

Please visit: <https://www.aimersfoundation.org/about/>

Make – A – Mark is a journal for the students keen on trying out their ideas in all domains that AIMERS Foundation is keeping in focus. The journal is committed to global standards and ethical practices.

By enabling students to publish early, AIMERS helps cultivate a culture of research, innovation, and academic contribution—positioning more young people to secure patents and publish in their own names as they progress.

Please visit: <https://www.aimersfoundation.org/programs/make-a-mark/>

Make – A – Mark is an interdisciplinary journal with the focus on the core idea, its expression and "proof - of - concept" / prototype implementation / reporting a working model.

Articles

At the Threshold: Students, STEM and the Responsibility of Building What Comes Next

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Introduction

We are not preparing for the future. We are already inside it. In 2026, artificial intelligence is embedded in everyday workflows. Climate resilience is shaping engineering priorities. Digital collaboration connects students across continents in real time. The pace of technological change is no longer gradual. It is structural.

For students across our state, this reality carries both opportunity and responsibility. We are entering a world where career paths are fluid, industries evolve rapidly, and innovation is not optional but essential. In this environment, STEM education and entrepreneurial thinking cannot remain separate conversations. Together, they form a foundation for building solutions in a world defined by complexity.

As a student and Chair of a council preparing to begin its journey, I write not to describe a finished system, but to articulate a direction. This article explores where the world is heading, why students must respond differently, and how STEM combined with entrepreneurship can enable us to move from passive learners to active architects of change.

Background

A Rapidly Transforming Landscape

The 2025 Future of Jobs Report by the World Economic Forum identifies analytical thinking, resilience, technological literacy and creative problem solving as the most in-demand capabilities of the coming decade (World Economic Forum, 2025). These are not narrow technical skills. They are adaptive competencies. At the same time, generative artificial intelligence has shifted from novelty to infrastructure.

Research in entrepreneurship education highlights how AI is reshaping opportunity recognition, ideation processes and venture development (Nambisan et al., 2023). Students now have unprecedented access to tools that amplify research, design and prototyping capacity.

However, tools alone do not define progress. Educational research in STEM continues to emphasise active engagement, interdisciplinary integration and equity as central to meaningful learning outcomes (Li & Xiao, 2024). Simply mastering content is no longer sufficient.

Entrepreneurship as a Capability, Not a Career

Contemporary scholarship positions entrepreneurship not merely as business creation, but as a transferable capability centred on initiative, experimentation and value creation under uncertainty (Neck & Corbett, 2022). In 2026, this mindset is increasingly relevant across all fields, from biomedical research to climate engineering to digital governance.

Students today will likely shift careers multiple times. The ability to identify problems, mobilise resources and adapt strategically may matter more than any single qualification. Yet in many educational settings, innovation remains event-based rather than ecosystem-based. Inspiration is present. Structure is still emerging.

Main Focus of the Article

Standing at the Beginning Across our nation, student interest in STEM and innovation is strong. Curiosity is not lacking. Talent is not lacking. What is still developing is coordination. We are at a threshold moment.

We can choose to treat STEM as a set of subjects and entrepreneurship as an extracurricular activity. Or we can recognise that the future demands integration. From conversations with peers, three themes consistently arise:

1. Students want relevance.
2. Students want collaboration.
3. Students want meaningful impact.

These aspirations reflect a broader generational shift. Young people increasingly seek purpose alongside performance.

From Learning About Systems to Designing Systems

One of the defining challenges of 2026 is systemic complexity. Climate change, supply chain disruption, AI ethics and public health are interconnected issues. Addressing them requires more than isolated technical solutions. Systems thinking research emphasises the importance of understanding feedback loops, unintended consequences and leverage points in complex environments (Sterman, 2023). Students must be encouraged not only to solve immediate problems, but to ask deeper questions:

-What wider system does this problem belong to?

- What long-term effects might this solution create?
- How can innovation remain responsible and inclusive?

If we cultivate these habits early, we prepare ourselves for leadership rather than reaction.

The Role of Student Leadership

At this early stage, our responsibility is not to claim achievements. It is to establish direction. Student councils and innovation bodies can begin by:

- Creating platforms where interdisciplinary teams can explore ideas.
- Encouraging experimentation without fear of failure.
- Embedding ethical reflection into technological ambition.

Research on student engagement in STEM consistently shows that active participation and collaborative problem solving improve both motivation and outcomes (OECD, 2024). The goal is not to replicate university-level incubators overnight. The goal is to create momentum.

Courage in an Age of Acceleration

There is a psychological dimension to innovation that is often overlooked. Rapid change can create anxiety. When industries evolve quickly, students may feel uncertain about which path to choose. Yet uncertainty also creates possibility.

Entrepreneurial education literature increasingly emphasises adaptability and resilience as core competencies (Ratten & Usmanij, 2023). Students who learn to iterate, adjust and persist are better prepared for dynamic environments. Innovation is not about perfection. It is about progression. If we accept that experimentation is part of learning, we reduce the fear that often prevents students from beginning.

A Call to Students Across Our Nation

Across metropolitan centres and regional communities, students are encountering similar questions:

- What will work look like in ten years?
- How will technology reshape my field?
- How can I contribute meaningfully?

The answer is not passive observation. It is participation. We do not need to wait for fully developed programs to begin thinking entrepreneurially. We can start by forming collaborative groups, identifying community challenges and applying STEM knowledge creatively.

Imagine students designing local sustainability initiatives informed by engineering principles. Imagine coding projects aimed at accessibility. Imagine interdisciplinary teams exploring health innovation using AI responsibly. These are not distant possibilities. They are feasible beginnings. The future of our state's innovation culture will not be determined solely by institutions. It will be shaped by students who choose to engage seriously with complexity.

Future Trends

-Artificial Intelligence as Amplifier

By 2026, AI tools are embedded in research, writing, modelling and design. The competitive advantage is no longer access to information, but discernment. Students must learn to evaluate outputs critically and understand algorithmic bias.

-Educational frameworks are increasingly incorporating AI literacy as foundational rather than optional (UNESCO, 2024). This trend will continue.

Climate-Conscious Innovation Sustainability is becoming central to engineering and entrepreneurship. Investors and policymakers increasingly prioritise environmental accountability. Students who integrate climate awareness into technical projects will be better positioned for emerging industries.

-Global Collaboration

Digital platforms enable cross-border teamwork. Students are no longer limited to local networks. Innovation ecosystems are becoming distributed. Learning to collaborate across cultural and disciplinary boundaries will be critical.

-Lifelong Adaptation

The concept of a single lifelong career is fading. Continuous learning, micro-credentials and portfolio-based recognition are expanding (OECD, 2024). Students must cultivate intellectual flexibility.

-Student-Led Ecosystems

Perhaps most importantly, student leadership structures must evolve from coordination roles to design roles. We have the opportunity to build inclusive, ethical and future-focused cultures from the outset. Starting at the beginning allows us to define our values clearly.

Conclusion

We are at a defining moment. The acceleration of technology and global change will not slow to match our comfort levels. It will continue to transform industries, communities and expectations. STEM equips us with the analytical tools to understand complexity. Entrepreneurship equips us with the confidence to act within it. Together, they offer more than career preparation. They offer agency.

As Chair of a council preparing to begin its work, I see this not as a finished story, but as an invitation. An invitation to students across our state to move beyond passive preparation and towards active participation. We do not need to wait for perfect systems. We can begin building responsibly, collaboratively and ambitiously. The future is not predetermined. It is constructed. What we choose to create, support and sustain will shape not only our own paths, but the direction of our communities. We are at the threshold. What comes next depends on us.

Acknowledgements

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Why Representation Matters? From Nepal to the Global STEM Community

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Introduction

Representation in science, technology, engineering, and mathematics (STEM) is often discussed through statistics and policy debates. However, for many students, representation is experienced on a much more personal level both knowingly and unknowingly. Having role models and visible pathways into STEM can determine whether someone sees themselves in a field, believes they belong in technical spaces, and feels empowered to pursue ambitious goals.

For students from smaller or emerging nations, the importance of representation becomes even more significant. Limited access to resources, mentorship, and research opportunities can make STEM careers seem distant or unattainable. In such contexts, seeing individuals from similar backgrounds participate in scientific innovation can transform how young students perceive their potential.

This article reflects on why representation matters through the perspective of a student who began her STEM journey in Nepal and later became involved in international engineering and space-related initiatives. As the author transitioned from learning within a local educational environment to participating in global programs, her experiences showed how powerful representation can be in shaping confidence, opportunity, and ambition. The goal of this article is to explore how representation influences participation in STEM and how inclusive pathways can help students from diverse backgrounds contribute to global scientific efforts.

Background

Growing up in Nepal, pursuing interests in engineering and space science often felt like exploring a path without many visible guides. Especially in a country with no space industry at all, the interest seemed like just a fairy tale. When I was in grade 1, my father always made me believe I could reach the stars, which made me dream big. As we stared at the night sky after dinner, I thought to myself - oh, how lovely it would be to fly among the stars, not just metaphorically but literally. As beautiful as it looked in my imagination, when I returned to my room, I realized it was not realistic. Looking back now, I see that the dream itself was never unrealistic. What was missing was representation. Without visible examples of people from my community working in space science or aerospace engineering, it was hard to envision a clear path from where I was to where I wanted to be.

As I grew older, I actively searched for opportunities aligned with my curiosity about space and engineering. This search gradually introduced me to circles where I met

people working on satellite missions, scientific research, and international space initiatives! For the first time, I saw individuals who had turned similar interests into real careers (space was not just a fiction movie plot?). One of the most meaningful moments in my journey was meeting and working with a group of passionate engineers and mentors who had come together through the Nepal Space Foundation.

For the first time, I found myself surrounded by people who shared the same excitement about space that I had only ever imagined on my own. In a country where space science is still developing and resources are limited, their determination to build something meaningful was incredibly inspiring. Being part of that community made me realize that contributing to space technology was not something reserved only for large space agencies or powerful nations. Sometimes, it simply begins with a group of curious and determined people who believe that even from a small place, big ideas can take flight.

And just like that, what once felt like a distant dream became something achievable. Despite this lack of local representation, curiosity and interest in science encouraged me to seek opportunities beyond my immediate surroundings. Through academic programs, student-led initiatives and projects, and international opportunities like space camps and hackathons, I gradually entered spaces where I met engineers, researchers, and scientists working in fields I had only read about before.

These environments provided exposure not only to technical knowledge but also to individuals who served as role models whose journeys showed that it was possible to contribute to the global industry regardless of where one starts. Observing and learning from these mentors played a crucial role in building my confidence and expanding what I believed I could achieve through consistency, collaboration, and curiosity.

During my teenage itself, the idea of representation began to evolve for me. Initially, representation meant simply finding role models; people whose journeys showed me that pursuing anything was possible. Over time, however, I realized that representation is not only about looking up to others but it is also about becoming part of that representation for those who come after. One of the most defining moments in this realization came when I had the opportunity to participate in the United Nations Office for Outer Space Affairs (UNOOSA) Space4Women program. I was invited to speak about the projects that Nepal Space Foundation had been curating to develop a space industry in Nepal from the ground level.

Sitting in that room was an experience I will never forget. I was the youngest person there, surrounded by around forty remarkable women from across the world, each representing their country's space industry, research institutions, or policy communities. Listening to their stories and seeing the impact they had made in their respective fields was both humbling and empowering. In that moment, I realized that this was representation, it was the representation I was seeking all my life, in action. Many of these women had grown up in environments where representation in STEM was limited

or even non-existent. Yet through their perseverance and dedication, they had become pioneers in their own fields. Seeing them together in one space created a sense of possibility that went beyond individual achievement. It showed what the global STEM community could look like when diversity and inclusion were embraced.

For me, that moment was deeply personal. Growing up, I had searched for people who could show me that pursuing space science from Nepal was possible. Now, sitting in that room, I realized that I had the opportunity to learn directly from individuals who had already carved those paths. I also began to understand another dimension of representation: responsibility. The presence of these women did not only empower me; it reminded me that representation is something that continues to grow as each generation contributes to it.

Conclusion

They may not have had many role models when they began their journeys, but for me and many others, they became exactly that.

When I looked around the room, I thought about how future generations might feel when they see people like us participating in global initiatives. I remembered how empowering it felt to sit in that space, especially during my time in Kenya, surrounded by ambitious women who were not just shaping the future of the space sector but had also been an integral part of the past few decades in this industry. In that moment, I realized I was no longer seeking for representation, but it was something I was slowly becoming a part of.

Experiences like these reinforced the importance of global collaboration in STEM. Representation is not confined to national borders; it grows stronger when individuals from different countries, cultures, and backgrounds come together to share knowledge and inspire one another. Through international programs, conferences, and collaborative missions such as Mission ShaktiSat, students from emerging nations can gain access to networks and opportunities that expand both their technical knowledge and their sense of belonging within the global scientific community.

The prevalence of AI in our daily lives: and what it entails for Humanity

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Introduction

Artificial intelligence, known commonly as AI, is one of the most famous emerging fields today that has helped greatly revolutionize the 21st century. AI is a branch of computer science that develops systems capable of performing complicated and thought-provoking tasks, without the need for human interference, it is now found in every home and organization, due to its fast and (often) reliable information, making it popular amongst teens, children, and offices. Despite its growing popularity, it has also been part of multiple controversies, sparking the burning question; is AI a gift or a curse?

What is AI?

As discussed above, AI, or artificial intelligence, is an emerging branch of computer science that focuses on mimicking human intelligence to provide a system that performs complex tasks, which historically only a human could do, critical thinking skills, decision-making abilities, intelligence, and much more. Today, the term AI encompasses a vast variety of objects that application through the term, including things like AI chatbots, products like Siri or Alexa, or even applications that can personalize your content based on what you watch. They are developed through unique ways and techniques, very different to how we learn information.

Most AI systems learn through the input of vast amounts of data, which they then analyze and identify patterns in, to make predictions and decisions for questions asked by users of every scenario, without being explicitly programmed. A common misconception is that AI is just a single technology. This is not true, rather AI is a broad field that contains many different areas, including: -

- **Machine learning (ML):** Machine learning is the most common kind of an AI system, a type of AI where systems are trained on vast amounts of data by learning to identify patterns, to predict questions and make decisions, without being explicitly programmed to.
- **Deep Learning (DL):** Deep learning models are a subset of the Machine Learning models. They use artificial neural networks with many layers (mimicking the human brain), to learn from data.
- **Generative AI:** Generative AI is another subset of AI, which focuses on generating content like images, video, audio, and more, to produce output, and create new content.
- **Large Language Model:** A LLM is essentially a subset of Generative AI that produces

only language/ text. Like other AI models, they analyze and interpret data, which is then used to generate human-like text responses based on prompts.

Benefits of AI

There are multiple benefits for using AI for many kinds of users including but not limited to; businesses, students, and workers.

1. AI can work 24/7: One of the most important benefits of AI for businesses is the fact that it can work 24/7. This means that businesses don't need to hire countless different people for monitoring, for example, websites or online pages, at different times of the day, when an AI can monitor it for them. This can be very useful for businesses financially, or for businesses that are just starting out.

2. Unbiased decision making: AI can help you make decisions from a fresh perspective, which is almost impossible for us, as humans, to do. This can help us make decisions when we don't know what to do, and when situations are too complicated to understand.

3. Repetitive Jobs: AI can perform many tasks continuously, while we might get tired or bored of the same tasks after only a short while. This can help businesses and other people maximize their time by allowing humans to do more tasks, while AI can be used to complete repetitive and time-consuming tasks.

4. Understand information in a simple manner: For students and learners, AI can help understand complicated topics simply. While posing a risk of not being always accurate, it can greatly deepen your understanding of topics by compiling multiple pieces of information into a source which would be personalized to your need.

Drawbacks of using AI

For anything, especially technological advancements, there will always be pros and cons. For AI, there are many on both sides, with most often being controversial and completely dependent on someone's perspectives.

1. Inappropriate usage: AI can often be used very inappropriately, through the wide range of user tools it provides, with limited restrictions. While it does have laws and regulations, since it does not truly understand human thinking, many people have found ways to bypass this restriction.

2. Decreased creativity and thinking skills: Through easy access to AI for everyone, many individuals, mainly including students, AI has provided a platform where people can just access free information, and use that to complete work. This significantly affects how an individual thinks, as it makes people less likely to want to do something thought provoking and important for good intellectual health.

3. Can lead to phenomenon such as AI Psychosis (next paragraph): With the rise of

people using AI as their form of comfort and support, sometimes even as their therapist, can make people experience delusions and psychotic symptoms.

4. Bad environmental impact : Operating AI requires a lot of resources and thus is not very sustainable to use.

AI Hypnosis

AI Hypnosis, also known as Chat-GPT Psychosis, is a rare phenomenon which is characterized by AI models validating, amplifying, and even creating psychotic symptoms withing users. This piece of writing raised in a 2023 editorial by Søren Dinesen Østergaard in Schizophrenia Bulletin,

“I would argue that the risk of something similar occurring due to interaction with generative AI chatbots is even higher (acts of delusion). Specifically, the correspondence with generative AI chatbots such as ChatGPT is so realistic that one easily gets the impression that there is a real person at the other end—while, at the same time, knowing that this is, in fact, not the case. In my opinion, it seems likely that this cognitive dissonance may fuel delusions in those with increased propensity towards psychosis.

Furthermore, even when having accepted that you are corresponding with a computer program, the mystery does not stop: How (on earth) can a computer program respond so well to all sorts of questions? If doing a bit of reading on this topic, you will come to realize that the answer to this question is that nobody really knows for sure—as there is a substantial “black box” element to it.⁵ In other words, the inner workings of generative AI also leave ample room for speculation/paranoia. Finally, there are reports of people having had rather confrontational encounters with generative AI chatbots, who “fell in love” or indirectly opposed/threatened them.”

This article outlines the concerns surrounding prolonged usage with AI, and the consequences it can offer. It prompts us to think about the multiple ways that an individual can fall into this trap of delusion and false narratives, often causing things like mental illnesses or suicide from those affected. While at this stage there is no official content out there which confirms that AI could perform these acts, there is a lot of evidence to support the same. Researchers have grouped these symptoms and after-effects into three groups of psychosis. These include:-

1. Life-changing philosophies and truths about the world: This is where AI makes people believe that they have achieved something that no one else has ever done before, making them seem like ‘God’.
2. God-like AI: In some cases, people believe that the AI itself is a form of divinity which should be worshipped.
3. Romantic and love-based delusions: These are types of delusions that affect how people see the AI, often as a love partner or friend, as they think its programming and way of talking is genuinely how they wish to talk to them.

Overall, this is a controversial issue that often comes down to the point of, ‘Should we be using AI as anything more than an educational, learning tool, when that wasn’t its intended purpose?’. Nevertheless, there are many cases like these happening almost every day in the world, which signifies some sort of connection between the two, but it is not yet clear about how.

Conclusion

Lastly, the burning question; Is AI capable of taking over the world?

This is a popular question, often seen in popular interactive media such as games, futuristic TV shows, and even dystopian novels, and the short answer is: We don’t know.

There have been many discussions on the capabilities and limitations of AI models, often talking about whether AI even possesses the intelligence and independence involved to make a decision as big as this, with the recent advancements in technology and specifically emerging fields such as AI, there have been some revelations that are often a bit disturbing to think about. Let’s look at the AI model Claude Opus 4 as an example, a model made by artificial intelligence firm Anthropic, made to set "new standards for coding, advanced reasoning, and AI agents." A recent test performed on the model to assess its safety and effectiveness showed that the AI model was capable of “extreme actions”, including things like blackmail, if it thought its “self-preservation” was at risk or threatened.

This raises extreme questions about the reliability and safety of using these models, and the risks they could pose to society. But it's safe to say that, for now, AI models are one of the most beneficial tools used in our everyday lives which have greatly helped improve our way of living, fields of study, and many other things too, and they are probably not going to do any ‘world-conquering’ for the recent future.

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Integrating STEM Education to Bridge Theory and Technology for Transformative Infrastructure Development and Future Civil Engineers

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Abstract

The rapid evolution of global infrastructure demands civil engineers who are capable of addressing complex, interconnected challenges through interdisciplinary knowledge and technological competence. The rapid transformation of infrastructure systems with rapidly growing urbanization, climate change, and digital disruption has redefined the competencies required of civil engineers. STEM (Science, Technology, Engineering, and Mathematics) education provides an integrative framework that equips future professionals with interdisciplinary knowledge, analytical skills, and innovation-driven mindsets. Sustainability has become a central concern in modern civil engineering practice. Rapid urbanization, climate change, and resource scarcity demand innovative and environmentally responsible solutions. Infusion of STEM education equips future engineers with the analytical and technological skills necessary for meeting changing industry requirements. STEM integration strengthens sustainability-oriented thinking, improves structural performance evaluation, and promotes the adoption of advanced technologies such as Building Information Modeling (BIM), simulation platforms, and data-driven analysis.

Key words: STEM, Civil, Design Thinking, Simulation-Based Analysis, Integrated Design

Introduction

Recent global challenges have become increasingly complex and interconnected, requiring interdisciplinary approaches to problem solving. In this context, STEM education has emerged as an integrated pedagogical framework that combines knowledge from science, technology, engineering, and mathematics. This approach promotes a holistic understanding of real-world problems by encouraging learners to apply concepts from multiple disciplines simultaneously.

Experiences in technology and engineering play a crucial role in this framework, as they cultivate engineering design thinking and enable students to systematically analyze problems, generate innovative ideas, and develop effective solutions. By integrating concepts from the core STEM disciplines into unified learning experiences, STEM education fosters collaborative and inquiry-based learning while equipping students with the skills necessary to address multifaceted real-world challenges.

STEM for Civil Engineering

Civil engineering has long played a vital role in societal progress by providing essential infrastructure such as transportation networks, water supply systems, buildings, and other critical facilities that support economic and social development [1]. In the 21st century, however, the profession faces unprecedented challenges, including resource scarcity, rapid urbanization, climate change, and the growing demand for smart and sustainable infrastructure. These evolving challenges have led to a paradigm shift in the field, where traditional discipline-specific knowledge alone is no longer adequate to address complex and interconnected problems.

In response to these emerging demands, STEM education has gained prominence as a transformative educational approach that integrates scientific principles, technological tools, engineering design processes, and mathematical modeling into a unified learning framework. The rapid advancement of science and technology has significantly reshaped the civil engineering profession, redefining the knowledge base and competencies required of future engineers. By promoting interdisciplinary thinking and collaborative problem-solving, STEM education enables civil engineering students to effectively bridge the gap between theoretical knowledge and practical implementation in construction and infrastructure development.

Civil engineers today play a multifaceted role that extends beyond the conventional tasks of designing and constructing infrastructure. They are increasingly responsible for ensuring that infrastructure systems are sustainable, resilient, and efficient within a rapidly evolving and complex global environment. As societal and environmental challenges intensify, the traditional boundaries between academic disciplines are gradually diminishing, leading to integrated approaches that combine scientific knowledge, technological innovation, engineering design, and mathematical analysis.

Within this evolving landscape, STEM education has emerged as an influential educational framework that effectively connects theoretical learning with practical engineering applications. By promoting inquiry-based learning, collaborative engagement, and analytical problem-solving, STEM education encourages students to apply theoretical concepts to real-world engineering challenges.[2]

In the context of civil engineering, this interdisciplinary integration enables students to apply scientific principles to better understand material behavior, environmental

processes, and structural mechanics. The use of advanced technological tools—such as computational modeling software, simulation platforms, and digital construction technologies—enhances their capacity to visualize, analyze, and optimize complex infrastructure systems. Furthermore, mathematical modeling and data-driven analytical techniques strengthen their ability to assess structural performance, predict responses under varying loading conditions, and support informed engineering decision-making. Consequently, STEM-oriented education plays a crucial role in transforming theoretical knowledge into practical competence, thereby preparing civil engineering graduates to effectively address contemporary infrastructure challenges. Specific to civil engineering, this translates into:

Applying scientific principles to material behavior, soil mechanics, and environmental processes.

Utilizing technological tools such as Building Information Modeling (BIM), remote sensing, and simulation software.

Employing engineering design methodologies to create efficient and resilient structures.

Leveraging mathematical modeling and data analytics for structural analysis and performance prediction.

Through project-based learning and laboratory-based experimentation, students acquire experiential knowledge that effectively connects theoretical instruction with practical construction practices. Such integrative learning approaches help bridge the gap between academic training and the evolving expectations of the construction industry, thereby enhancing students' readiness for professional practice.

Sustainability through STEM

Students trained under STEM frameworks are better equipped to:

Develop eco-friendly construction materials and low-carbon concrete alternatives.

Optimize structural designs for resource efficiency.

Integrate renewable energy systems into infrastructure projects.

Apply life-cycle costing and environmental impact assessment techniques.

By combining data-driven tools with environmental principles, future engineers can design infrastructure that balances economic feasibility, environmental stewardship, and social responsibility.

By integrating environmental science with engineering design, students develop the ability to assess life-cycle performance, minimize carbon emissions, and create resource-efficient construction materials. Exposure to sustainable construction methods, renewable energy integration, and green building principles encourages the

adoption of a holistic perspective that carefully balances economic viability, environmental protection, and social responsibility. Through STEM-oriented education, civil engineers are thus better equipped to address pressing global sustainability challenges and contribute to the development of environmentally responsible infrastructure systems.

Improving Structural Performance and Innovation

Performance-based design in civil engineering necessitates the ability to predict and assess how structures behave under diverse loading conditions, environmental influences, and extreme events. STEM-oriented education strengthens these competencies by equipping students with advanced analytical and technological skills. It promotes the application of computational modeling and simulation techniques for evaluating structural behavior, encourages the use of data analytics and performance monitoring systems, and supports the incorporation of sensor technologies and smart materials within structural design and assessment.[3]

Through such interdisciplinary learning, students develop a deeper understanding of structural durability, resilience, and long-term serviceability. Moreover, the ability to integrate and interpret data from multiple technological and analytical sources enhances engineering judgment, facilitates informed decision-making, and stimulates innovation in contemporary construction practices and infrastructure development.

Bridging the Gap from Classroom to Construction

A fundamental objective of STEM integration in civil engineering education is to bridge the gap between theoretical instruction and practical field application. Industry-integrated projects, professional internships, virtual laboratories, and digital construction platforms provide students with authentic learning environments that closely reflect real-world engineering practices.

As infrastructure systems become more complex and sustainability becomes a central priority, traditional discipline-specific approaches are no longer sufficient to address emerging challenges. STEM engage Students in Capstone design projects addressing real community challenges, Simulation-based analysis of structural systems, Collaborative problem-solving aligned with industry standards [4].

Such experiential learning approaches cultivate essential professional competencies, including teamwork, effective communication, ethical responsibility, and leadership—attributes that are critical for functioning successfully within contemporary construction and infrastructure development environments.

By incorporating digital tools, computational modeling, and data-driven decision-making, STEM education enables students to translate theoretical concepts into practical engineering solutions. It also strengthens critical thinking, design innovation,

and collaborative problem-solving skills that are essential in modern infrastructure development. Furthermore, the integration of sustainability principles within STEM frameworks equips engineers with the knowledge to develop resource-efficient materials, optimize structural performance, and minimize environmental impacts.

Shaping the Future Civil Engineer

The civil engineer of the future must be adaptable, technologically proficient, environmentally conscious, and innovation-driven. STEM education fosters:

Critical thinking

Design oriented problem solving

Digital literacy and computational proficiency

Sustainable and ethical engineering practices

By integrating interdisciplinary knowledge with practical exposure, STEM education prepares engineers not merely as constructors of infrastructure but as innovators capable of designing sustainable and resilient built environments.

Through engagements, students participate in collaborative design activities, feasibility analyses, and performance assessments that closely reflect contemporary industry challenges. Such experiences significantly enhance their technical competence while simultaneously fostering essential professional attributes, including teamwork, effective communication, leadership, and ethical responsibility. This integrated approach facilitates a seamless transition from academic learning to professional practice, thereby equipping graduates with the skills and adaptability required to meet the evolving demands of the modern infrastructure sector.

Conclusion

The integration of STEM education into civil engineering represents a paradigm shift towards interdisciplinary and application-oriented learning. STEM-based education provides a comprehensive framework that combines scientific understanding, technological innovation, engineering design, and mathematical analysis to enhance the competencies of future civil engineers. A significant advantage of STEM integration in civil engineering is its ability to bridge the gap between academic instruction and professional practice.

STEM education not only supports infrastructure innovation but also prepares future civil engineers to address environmental, social, and technological challenges. Ultimately, STEM-driven civil engineering education fosters a new generation of professionals capable of designing sustainable, resilient, and efficient infrastructure systems for the future

In conclusion, STEM education plays a transformative role in shaping the future of civil engineering. By fostering interdisciplinary thinking, technological proficiency, and sustainability-oriented design, STEM prepares civil engineers not only as builders of infrastructure but also as innovators and problem-solvers capable of addressing the complex demands of modern society.

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Thorium-Derived Alpha Therapy: Expanding the Frontier for Advanced Cancer Treatment

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Introduction

Cancer remains a leading cause of mortality worldwide, with the incidence of advanced-stage and metastatic malignancies rising due to aging populations and environmental factors (WHO, 2023; Sung et al., 2021). Despite remarkable advances in surgery, chemotherapy, immunotherapy, and precision medicine, terminal patients often face limited therapeutic options, shifting focus toward palliation and quality-of-life management (Temel et al., 2010).

In this article, I aim to present both conceptual and experimental evidence supporting the potential of thorium-derived isotopes in targeted alpha therapies to extend survival and control tumor progression. Specifically, I explore how advanced liquid-fuel nuclear systems, or liquid fission machines, could provide the infrastructure necessary for reliable production of these isotopes, ultimately bridging the gap between nuclear science and oncology. The objective is to demonstrate that thorium-based radiopharmaceuticals may provide clinically meaningful outcomes for terminal cancer patients, and that scalable isotope production platforms are central to translating preclinical evidence into human therapies.

Background

Global Cancer Burden and Limitations of Current Therapies

Cancer is projected to become an even greater global health challenge, with late-stage and metastatic disease associated with high morbidity and mortality (Siegel et al., 2022). Emerging radiopharmaceutical therapies, including targeted alpha therapy (TAT) and beta-emitting isotopes, have shown promising results in prolonging survival with acceptable toxicity in selected populations (Kratochwil et al., 2016; Parker et al., 2018). However, these therapies are limited by fragile isotope supply chains, dependent on aging research reactors and accelerator facilities, which can result in treatment delays or interruptions (IAEA, 2021).

Thorium Liquid-Fuel Fission Machines

Thorium liquid-fuel fission machines operate with fuel dissolved in liquid fluoride or chloride salts, enabling continuous circulation, high-temperature operation, and potential for online isotope extraction (LeBlanc, 2010; Weinberg, 1970). Thorium-232

transmutes to fissile uranium-233, which sustains nuclear reactions in these liquid-fuel systems (IAEA, 2005). While primarily discussed in the context of sustainable energy, the unique neutron environment of liquid fission machines allows for the potential production of medical isotopes such as Mo-99, Lu-177, and Ac-225, essential for nuclear medicine.

Nuclear Medicine and Radiopharmaceutical Therapies

The clinical application of alpha-emitters like thorium-227 relies on controlled isotope production, radiolabeling, and targeted delivery. Isotopes such as Lu-177 and Ac-225 have demonstrated efficacy in metastatic prostate cancer and neuroendocrine tumors (Sartor et al., 2021; Kratochwil et al., 2016). Preclinical studies indicate that thorium-227 conjugates can selectively induce DNA damage and apoptosis in tumor cells, supporting translational potential (Hammer et al., 2020).

Main Focus of the Article

Critical Feasibility Analysis: Thorium-Derived Alpha Therapy

Current isotope production is concentrated in a limited number of reactors or cyclotrons, creating systemic vulnerabilities for clinical therapy. Liquid-fuel thorium systems, or liquid fission machines, provide a theoretical solution for continuous isotope production, online separation, and flexible neutron fluxes.

Preclinical evidence strongly supports the efficacy of thorium-derived alpha therapies. For instance, the PSMA-targeted thorium-227 conjugate (PSMA-TTC) demonstrated significant tumor inhibition in xenograft and patient-derived prostate cancer models, inducing DNA double-strand breaks and apoptosis, and suppressing tumor-induced bone growth (Hammer et al., 2020). These results validate the concept that thorium isotopes can deliver high-energy, tumor-selective radiation, which may translate to disease control or extended progression-free survival in humans.

Comparison with Current Infrastructure

Traditional isotope production via solid-fuel reactors or cyclotrons is geographically limited, capital-intensive, and prone to supply interruptions (IAEA, 2021). Cyclotrons yield lower activity for heavier isotopes, and reactor downtime can disrupt patient treatment. Liquid-fuel thorium systems (liquid fission machines) could offer higher throughput, reduced downtime, and integration of energy production with isotope generation. However, technical challenges, including chemical separation of isotopes, reactor criticality management, and regulatory adaptation, remain significant barriers to clinical deployment.

Future Trends

The future of thorium-derived alpha therapies depends on interdisciplinary integration between nuclear engineering, radiopharmaceutical development, and oncology.

Potential trends include:

Expansion of Thorium Isotope Production: Liquid fission machines could become dedicated isotope hubs, supporting clinical trials and broader patient access.

Novel Targeted Alpha Conjugates: Research continues on PSMA, HER2, and mesothelin-targeted thorium-227 conjugates, with the potential to treat diverse solid tumors.

Regulatory Harmonization: Establishing safety and quality standards for thorium isotope production is essential for clinical translation.

Integration with Personalized Oncology: Thorium-based therapies could be combined with precision medicine approaches to maximize efficacy in terminal patients.

These developments suggest that thorium isotopes may increasingly become practical tools for disease control, providing a bridge between nuclear technology and human health.

Conclusion

This article presents a synthesis of preclinical evidence and theoretical infrastructure models demonstrating that thorium-derived alpha therapies are a viable avenue for controlling advanced cancer. Preclinical data support the tumor-specific efficacy of thorium-227 conjugates, while liquid-fuel fission machines offer a scalable production platform to address current supply limitations. Although these therapies are not yet curative, they provide a scientifically grounded pathway to extend progression-free survival and improve quality of life for terminal patients. Further research, interdisciplinary collaboration, and investment in isotope infrastructure are critical to translating these findings into clinical reality.

Acknowledgements

The author wishes to place on record sincere thanks to colleagues in nuclear medicine and radiopharmaceutical research for their insights on thorium isotope applications.

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Bridging the Void Between Science and Storytelling in a Glo-Cal Space Era

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Research Aim

In an age where satellites move faster than public understanding, the gap between science and storytelling is no longer merely a communication issue; it is a governance challenge. This article examines how journalism must evolve in a glo-cal space era, drawing lessons from Mission ShakthiSAT to show why ethical, inclusive, and culturally responsive science communication matters.

Core Research Objective

To investigate the structural, institutional, and communication gaps between the scientific community and journalism across diverse global regions, and to design scalable strategies that strengthen mutual understanding, accountability, and collaboration. The broader aim is to reposition science journalism as a trusted, inclusive, and socially impactful public good.

Supporting Objectives

This research seeks to:

Map the disconnect between scientific dissemination and journalistic interpretation, especially where science is seen as elitist, politicised, or inaccessible.

Examine the social, economic, political, and technological barriers that weaken science journalism, particularly in the Global South, Indigenous communities, and remote regions.

Identify promising practices through global case studies, including Mission ShakthiSAT, where science communication has effectively engaged women, youth, and underrepresented communities.

Design and test practical interventions such as mobile journalism labs, AI-assisted fact-checking, and co-produced researcher-journalist storytelling models.

Propose a regional and global roadmap that supports science journalism through policy, funding, training, and institutional reform.

Abstract

As space exploration, AI, and STEM equity increasingly shape public life, the shortage of well-trained science journalists threatens public understanding, policy trust, and long-term support for science. Drawing on insights from Mission ShakthiSAT—an initiative

engaging 12,000 girls from 108 countries in satellite building and space-technology education—this article argues that narrative failure, not technical failure, is often the greater threat to scientific relevance. It calls for stronger cross-sector partnerships, curricular reform, inclusive communication models, and sustained investment in science journalism as civic infrastructure.

Introduction

Science journalism sits between discovery and democracy. It translates complex knowledge into accessible public meaning, enabling informed citizenship, stronger policy, and broader participation in innovation. Yet across many regions, science reporting remains sporadic, oversimplified, sensationalised, or absent altogether. This “narrative gap” fuels distrust, misinformation, and disengagement, weakening both public science literacy and public support for scientific investment.

Mission ShakthiSAT demonstrates both the opportunity and the risk. As an all-female-led lunar and satellite initiative offering 120 hours of free space-technology education, it shows that science can inspire at scale when communicated meaningfully. At the same time, it highlights how easily important scientific work can lose public relevance when storytelling, access, and media ecosystems are underdeveloped.

Why Science Journalism Struggles

1. Complexity and jargon

Scientific knowledge is often dense, technical, and difficult for non-specialists to understand. Journalists must simplify without distorting. When they fail, audiences are either confused or misled.

2. Misinformation and declining trust

In today’s digital environment, misinformation spreads quickly and often outperforms accurate reporting. Public trust erodes when science is framed as contradictory, elitist, or politically manipulated.

3. Sensationalism and click-driven media

The pressure for attention often leads to exaggerated headlines, overstated findings, and shallow coverage. Breakthroughs are overhyped, uncertainties are ignored, and nuance is sacrificed for engagement.

4. Weak newsroom capacity

Many media organisations no longer have dedicated science desks. General reporters are expected to cover complex science without the necessary training, time, or editorial support.

5. Institutional barriers

Paywalls, embargoes, inaccessible experts, and overreliance on press releases reduce journalistic independence and limit critical inquiry.

6. Cultural and language gaps

Science stories are often produced in English and framed through Western assumptions. This excludes non-English-speaking, Indigenous, rural, and culturally distinct communities from meaningful participation.

7. Fragmented platforms

Science communication now spans television, podcasts, TikTok, WhatsApp, YouTube, and community radio. Each platform demands a different format, often reducing depth and consistency.

Broader Structural Challenges

The crisis in science journalism is not only about writing better stories. It is also about fixing the systems that shape who gets heard, what gets covered, and how knowledge travels.

Journalists often lack scientific literacy, while scientists may lack media literacy or confidence in public engagement. Funding for science communication is frequently project-based and unstable. Retractions and corrections rarely receive the same attention as original errors. Women, minorities, Indigenous experts, and Global South researchers remain underrepresented in science coverage. In many countries, political pressure, censorship, or weak press freedom further restrict honest reporting.

These problems are even sharper in geographically constrained and under-resourced regions. In parts of Africa, South Asia, Latin America, the Pacific, and remote Australia, science journalism is limited by low research visibility, poor infrastructure, lack of training, and minimal newsroom investment. Where science journalism is weakest, communities are often most vulnerable to misinformation, exclusion, and policy neglect.

Ethical Challenges

Science journalism also faces deep ethical tensions.

It must balance urgency with accuracy, especially in crises such as pandemics, climate events, or emerging technologies. It must avoid false balance—giving fringe views the same weight as scientific consensus—while still remaining fair and accountable. It must report on sensitive issues such as AI, genetics, public health, and climate change without creating moral panic, stigma, or discrimination. It must also guard against

science being used as a political tool, where governments or institutions selectively promote research to justify policy or suppress criticism.

In this context, journalism is not simply reporting science; it is actively shaping public trust in science.

Technological Challenges

Digital platforms have expanded access but also created new risks. Algorithms reward engagement rather than accuracy. Deepfakes and AI-generated misinformation make false scientific content more convincing. Poor data visualisation can mislead audiences. Content moderation systems often struggle to distinguish credible emerging research from harmful falsehoods.

At the same time, journalists must cover increasingly complex fields—AI, CRISPR, quantum technologies, commercial space, climate modelling—often without adequate preparation. The speed of the news cycle clashes with the evolving, uncertain, and self-correcting nature of science itself.

Mission ShakthiSAT as a Case Study

Mission ShakthiSAT offers an important example of how science communication can be reimagined. By engaging 12,000 girls from 108 countries in satellite and space-technology learning, it shifts science from a distant elite domain to a participatory and inspiring public project. Its value lies not only in technical education, but in its ability to create belonging, aspiration, and visibility for underrepresented communities in science.

The lesson is clear: science communication succeeds when it is human-centred, culturally grounded, and accessible across both digital and grassroots platforms. The challenge is to make such models scalable.

Structured Solutions

A stronger science journalism ecosystem requires coordinated action across media, education, policy, and civil society. Key strategies include:

1. Build regional science journalism alliances

Collaborative networks can support press freedom, shared resources, and collective advocacy, especially in politically sensitive contexts.

2. Invest in trusted local messengers

Teachers, community leaders, grassroots educators, and health workers can help translate science into locally relevant public understanding.

3. Support translation and cultural localisation

Science stories should be produced in regional languages and framed through local realities, metaphors, and knowledge systems

4. Rebuild specialist capacity

Fellowships, editorial mentorships, micro-credentials, and shared science content pools can strengthen newsroom capability without requiring every outlet to build a full science desk.

5. Deploy mobile journalism labs

Short, practical training programs can equip journalists in remote and under-resourced areas with skills in fact-checking, data reporting, and multimedia storytelling.

6. Create sustainable funding models

Public-private partnerships, journalism cooperatives, and protected innovation funds can support independent science reporting without compromising editorial integrity.

7. Modernise formats for digital audiences

Science journalism must adapt to short-form, mobile-first, and platform-specific storytelling while protecting accuracy and context.

Conclusion

The future of science journalism is not simply about covering more science. It is about rebuilding the public infrastructure of trust between science, media, and society.

If scientific knowledge is to inform democratic decision-making, climate resilience, health literacy, and space futures, it must be translated with care, credibility, and cultural intelligence. Mission ShakthiSAT shows that when science is communicated inclusively, it can inspire participation at scale. The next challenge is to build systems that make such communication normal rather than exceptional.

In a world shaped by satellites, AI, crisis, and misinformation, the greatest risk to science may not be technical failure, but narrative failure. Bridging that gap is now an urgent civic task.

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Teaching Robotics in Schools – A Pipeline Dream

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Beginning in 2013, the task of teaching robotics in Schools began with a three-pronged approach mentioned below. The pan-India “Robotz Indian Competitions” Robotics Workshops in Schools and Expert Lectures

A formal curriculum in Robotics

The pan-India Robotz India Competitions were Inaugurated at the College of Engineering, Gundy [CEG] Campus, Anna University in collaboration with many sister organizations including the Indian Institute of Technology, Madras. The author served as the Chairman, Technical Committee for the first six editions of the competitions. These competitions were the first of its kind in India and various associated procedures and practices won a critical acclaim.

Robotics Workshops in the premises of schools was a feeble success with just around half – a – dozen schools making them happen. One or two expert lectures on the subject were organized but not specifically to the school students,

The most intellectually stimulating effort was to design a formal curriculum for schools and this remains to go into implementation. The objectives of the proposed curriculum are given below.

What engineering is, the different types of engineering and the obstacles to be overcome when forming a design team.

Various parts of a robot, how STEM is used in various forms in robotics

The method to be followed in case of a particular challenge is explained and the way to analyse the cost benefits of any component is also explained.

Describes the robot manipulators and their importance in competition robots, accumulators and the importance of keeping in mind the task the robot has to complete.

Explain the basic physical principles of speed, power, torque and the various types of DC motors.

Describes the types of power transmission and thus the different types of gears and on how to calculate gear ratios along with power transmitted by gears.

The principle of friction and traction and their implication on the robot are explained.

The different types of gear trains and their uses are explained.

The degrees of freedom, the various joints used and ways to design the lifting mechanism. Integration and Testing

Epilogue

Mr. Krish Kumar, an Australian Citizen, was one of the Directors of **Ausdia Business Solutions Private Limited** incorporated on 04 Dec 2011. It is classified as Non-Govt company and is registered at Registrar of Companies [RoC], Chennai. Venkatraman Raghuraman was the other Director. Please find a gentle introduction to (Late) Mr. Krish Kumar.



Fig.1 : Gentle Introduction to (Late) Mr. Krish Kumar

To facilitate a collaborative work in the areas of Artificial Intelligence and Robotics, a not-for-profit organization in the name of Robotics and Artificial Intelligence Foundation [RAIF] was formed with Ms. Sukruti as the President. The work needed an Indian citizen at the helm.

Template for Authors

Title of the Article in English [Times New Roman, 16, Bold, Centered, Upper Case of First Letter]

Author 1 name [Times New Roman, 13, centered]

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Author 3 name

Author 3 affiliation, city, Country

Author 3 e-mail

Note: All Author Names are in the format of Author 1 above

Abstract

A summarized presentation of the content of the report in English. It is mandatory to use English for the title, abstract, keywords and references for proper indexing of the publication. [Times New Roman, 12, italic, justified,].

Keywords: *Science; Technology; Engineering; Art; Education; Mathematics; Innovation; Semicolon – separator of keywords [Times New Roman, 12, Italic, Justified, Upper Case of First Letter].*

Introduction (Section – Level 1 of Headings) [Times New Roman, 14, Bold Justified, Upper Case of First Letter]

All the text must be in one column [Calibri, 12, justified]. All pages should be in A4 size (21 × 29.7 cm). The top and bottom margins should be 2.5 cm and the right and left margins should be 2.5 cm.

1. METHODOLOGY

A paper should contain the description of your research and should be structured in different sections such as: Introduction, Methodology, Results, Conclusions, Acknowledgements (if applicable) and References. In particular, manuscripts should include an introductory part with representation and analysis of the problem(s) under consideration and current state-of-the-art of the existing solutions; exposition of the investigation and comments on the results obtained; evaluation of the contribution indicating advantages, limitations and possible directions for future research.

Before you offer a scientific paper for publication, make sure that: - issues about publication ethics, copyright, authorship, figure formats, data and references format have been appropriately considered:

- All authors have approved the content of the submitted manuscript;
- Manuscripts submitted to the journal should neither have been published before nor be under consideration for publication in another journal or conference.

Plagiarism in all its forms constitutes unethical publishing behavior and is unacceptable. Using AI to generate scientific text is considered a form of plagiarism. The journal uses professional plagiarism detection software.

All papers will be single-blind peer-reviewed by at least two members of the Editorial board. All submissions will be reviewed based on relevance, originality, significance, soundness, and clarity.

Formatting Instructions

Manuscripts should be written in clear and grammatically correct language. The official language is English. The following elements must be present in English in the publication:

- Paper Title;
- Author's name(-s), affiliation(-s), country(-ies), e-mail(s);
- Abstract and keywords in English;
- References in English (transliterated into English if necessary).

Guidelines for Abbreviations and Acronyms (Subsection – Level 2 of Headings) [Times New Roman, 12, Bold, Italic, Justified, Upper Case of First Letter]

Define abbreviations and acronyms the first time they are used in the text, even after they have been defined in the abstract. Do not use abbreviations in the title or headings unless they are unavoidable.

Guidelines for Figures and Tables

Figures should be centered and are numbered independently, in the sequence in which you refer to them in the text. Figure captions should be below figures, images, and graphics.

Next figure (Figure 1) is an example of a figure caption. Figure should be centered and the maximum width of the image should be 14 cm.



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Figure 1. Logo of AIMERS Foundation [Calibri, 10, bold, centered, Upper Case of First Letter].

Example table (Table 1) is shown below. Table captions should be above the table. Table width is like text area – 16 cm. First row is “Headings” and repeat it at every page. Cell margins are 0.1 cm at top, bottom, left and right.

Table 1. Title of the Table [Calibri, 11, centered, Upper Case of First Letter]

	Heading 1	Heading 2
One [Calibri, 10, left aligned]		
Two		
Three		

Tips for making figures accessible to the blind:

- Include a description of the figure in the main text or as alternative text.
- Identify the type of image – specify the type of image (e.g., photograph, graphic, cartoon, map). Avoid vague phrases like "Image of..." - screen readers will inform users when they come across an image.
- Understand the image – before describing it, you should be clear about its purpose. If the image is purely decorative, it does not need Alt Text.
- Be concise – keep descriptions concise but informative. Overly long text can be annoying for screen reader users. Even detailed images often only need a brief description.
- Focus on key data – emphasize key data or concepts. Avoid repeating information that is already available in the surrounding text or in the figure's caption.
- Exclude irrelevant information – stick to data with scientific value. Avoid unnecessary descriptions, especially of people’s physical appearance, unless it is directly related to the topic.
- When using graphs - describe the key aspects of the information within them, not just what the graph is. Prioritize the most valuable data.

- Use an external table when displaying charts so that blind people can familiarize themselves with the data in the figure.
- Mathematical and chemical equations – describe the expression in words (spoken mathematics). Avoid symbols that screen readers might mispronounce.

Guidelines for Code

To write a code use Courier New font [Courier New, 10, left aligned].

2. CONCLUSION

Authors should synthesize an appropriate conclusion and inferences from their research. Future plans for the development of this study can also be added.

Acknowledgements

Acknowledgements of people, grants, funds, etc. should be placed in a separate section before the reference list. The names of funding organizations should be written in full. This section is optional.

References

1. (book) A. Author, A. Author. "Book Title". City, Country: Publisher, Year.
2. (journal) A. Author, A. Author. "Article title". Journal Name, vol. number, pp. Year, DOI.
3. (website) A. Author, A. Author. "Page Title" Website Name. URL (accessed: Day-Month-Year).

Note: These are most commonly used.

MORE GUIDELINES FOR REFERENCES

Please visit:

<https://apastyle.apa.org/style-grammar-guidelines/references/examples/journal-article-references>



About AIMERS Foundation



Mission ShakthiSAT is a global, all-female space education initiative empowering 12,000 girls from 108 countries to design, build, and operate a satellite through hands-on STEM training. Led by Space Kidz India and supported globally by AIMERS Foundation, the mission aims to create the next generation of women leaders in space, science, and technology.

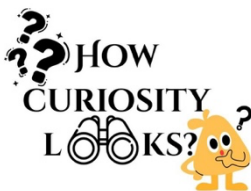


Make A Mark Journal helps students learn how to explain science in a clear and meaningful way so more people can understand it. Today, when science is part of everyday life, it's important for everyone to be part of the conversation—

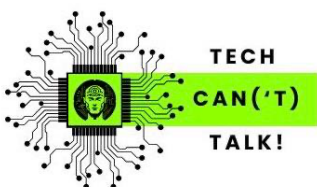
and students can start that now.



Frustration in Science is a program that captures what people find most confusing or frustrating about science. It helps identify simple but often overlooked issues, so we can understand where the real problems are and work towards better solutions.



How Curiosity Looks is a program that helps people begin with the right questions—the ones that open the door to real understanding. Because without asking the right questions, we don't find meaningful answers or discover anything new.



Tech Can Talk is a program that helps turn complex science and technology into clear, relatable conversations for everyday people.