Global STEAM & Leadership Challenges – Case Study

Programmatic Area: STEM

Altlearn: Empowering Future Leaders in Dhaka

> *"Through Altlearn, we are not just teaching math and science; we are empowering students to dream beyond their circumstances and equipping them with the skills and confidence to turn those dreams into reality."*
>
> —Syful Akash, STEAM educator and Teach For Bangladesh alumnus

Navigating Educational Challenges in Dhaka

In the heart of Dhaka, one of the busiest and most crowded cities in the world, I teach at a government school where hope is in short supply but desperately needed. Most of my students come from families struggling to make ends meet—43% are climate refugees, and over 60% are the first in their families to go to school. For them, education isn't just about textbooks and exams—it's a rare chance to break free from a cycle of poverty and hardship. But with no mentors to guide them and financial worries clouding their futures, many of these young minds have dreams that seem just out of reach.

In this challenging environment, the school provides a safe space where students can dream of a better life. However, the socio-economic constraints of their backgrounds often impede their ability to fully engage in their studies. The lack of resources, coupled with the absence of career guidance, means that many of these students have limited aspirations and often view their future through a narrow lens shaped by immediate survival needs.

The Cycle of Limited Aspirations

Given their socio-economic background, our students struggle with forming long-term career aspirations. The parents of these students, constrained by financial limitations and a lack of awareness, often hope their sons will join the workforce early and plan to marry off their daughters after completing lower secondary (grade 8) or secondary (grade 10). This practice perpetuates cycles of child labor and early marriage, limiting the potential of these young minds.

The students, influenced by their parent's expectations and societal norms, develop a mindset that their future is predetermined. This belief makes it difficult for them to concentrate on their studies, particularly in subjects like math and science, which they find especially challenging. The absence of role models and career guidance further exacerbates this issue, leading to a sense of hopelessness and disengagement from their education.

Bridging the Gap Between Education and Opportunity

I couldn't stand by and watch these bright young minds give up on their dreams simply because no one had shown them what was possible. So, I started asking questions—talking to students, parents, and teachers, and quickly realized the real problem wasn't just a lack of resources. It was a lack of vision. These students had never had anyone explain what careers could look like, or how education could lead them to a better future. With this in mind, I began researching global initiatives that could help bridge this gap, diving into reports from the OECD, World Bank, and Teach For All. That's how 'Altlearn: The Missing Pieces' was born—a project designed to give these students the tools they need to not just dream but to build a future.

This project, named "Altlearn: The Missing Pieces," is designed to provide students with the opportunity to converse with experts and professionals. Inspired by an OECD report that shows students who had career conversations with teachers by age 15 earned 3% more at age 30 compared to their peers, we designed Altlearn to facilitate these crucial conversations. The project aims to bridge the gap between academic learning and career readiness, empowering students to envision and work toward a future beyond their immediate circumstances.

Sparking Curiosity Through Real-World Experiences

To truly engage our students, we knew we had to tap into their curiosity and passions. Instead of following a one-size-fits-all approach, we used a framework that helped us understand their strengths—whether they were hands-on problem solvers, creative thinkers, or aspiring entrepreneurs. Armed with this knowledge, we organized hands-on activities, from building simple microscopes to exploring robotics. Students didn't just sit through lectures—they explored, created, and saw how their skills could shape their futures. They met with experts, attended workshops, and even participated in community events, making career exploration an adventure, not just another classroom lesson.
We crafted career-oriented STEM lesson plans that align with the national curriculum and incorporate aspects of future work. For instance, in one activity, students assembled paper and origami-based microscopes called Foldscopes to observe onion cells. This hands-on activity not only taught them about cellular biology but also sparked their interest in biomedical engineering by outlining the academic pathways and skills required.

In another activity, students built paper to learn about rotational motion, applying this knowledge to real-world problems like separating malaria parasites from blood. This exercise honed their critical thinking and problem-solving skills, demonstrating the practical applications of their classroom learning. Additionally, students participated in workshops on robotics and scratch programming, led by university faculty and students. These sessions provided them with the opportunity to interact with role models and engage in conversations about the qualifications needed for future careers. Beyond the classroom, students explored their community, interacting with professionals from diverse fields to deepen their understanding and align their academic knowledge with their career aspirations.

Inspiring Confidence and Building Futures

The transformation was undeniable. As students built microscopes, explored new technology, and mapped out their career goals, they began to see themselves not just as students but as future scientists, engineers, and entrepreneurs. One of my students, Maria, who once doubted her abilities, now dreams of becoming a biomedical engineer after building her own foldable microscope. Another, Arafat, discovered a passion for computer programming through our coding workshops. These hands-on experiences gave them the confidence to think bigger, dream brighter, and believe in a future they could shape with their own hands.

We are now working on creating a website that will offer STEM and career education resources, enabling students and parents to make well-informed career decisions. Our future plans include expanding Altlearn into an organization that focuses on building the capacity of students and teachers in STEM and career education, aiming to equip Bangladesh with a skilled workforce.

This initiative has not only addressed the immediate educational needs of our students but has also empowered them to envision a brighter future. By providing them with the necessary resources and guidance, we are breaking the cycle of limited aspirations and opening doors to new opportunities. Our ultimate goal is to create a ripple effect that transforms the lives of students across Bangladesh, fostering a generation of skilled, confident, and empowered individuals.

For **more information** about the **Future of Work initiative** visit the official website
Register in the **Global STEAM Community** through this link