

## Global STEAM & Leadership Challenges – Case Study

### Programmatic Area: STEM

#### *Transforming Education: The Chemistry Game Board Initiative*



*“ In the face of a monumental challenge, we embraced creativity and collaboration to transform education and ignite a passion for science among our students. This project has shown us that with determination and teamwork, we can turn adversity into opportunity and inspire the next generation of leaders and innovators.”*

—Ibukoluwa Ajayi, STEAM educator  
and [Teach For Nigeria](#) alumnus

### Filling the Science Gap in Western Nigeria

My name is Ibukunoluwa Ajayi, and when I arrived at Community High School in Western Nigeria as a first-year Teach for Nigeria fellow, I was immediately struck by the vibrant community and the students' thirst for knowledge. But beneath their eagerness to learn was a serious problem—there hadn't been a science teacher for Physics and Chemistry for three years. Without proper guidance in these critical subjects, students were losing confidence in their ability to succeed in science, and many had given up hope of pursuing careers in fields they once dreamed of. I knew I had to find a way to change that.

### Science Education in Crisis: Confronting the Absence of Teachers

The primary issue identified was the absence of qualified Physics and Chemistry teachers, which had left students struggling with fundamental concepts in these subjects. Without proper instruction, students found it nearly impossible to grasp more complex ideas and theories. This deficiency led to widespread boredom and a lack of participation in science classes. Further research revealed that this was not an isolated issue but a systemic problem affecting many schools in the area. In some schools, there was only one science teacher available, making it difficult to provide adequate support and instruction. As a result, less than 25% of students were enrolled in science classes, discouraged by the lack of proper teaching and support. This situation was not only impacting their current education but also limiting their future opportunities in science-related fields.

### Turning Chemistry into a Game: A Collaborative Journey

Determined to reignite the students' passion for science, I spent weeks brainstorming a solution. In November 2023, the idea for a 'Chemistry Game Board' was born—an interactive way to make chemistry fun and engaging. At first, I worked on it alone, combining basic chemistry concepts with a game format, but soon realized that to truly make an impact, I needed my students' creativity. I presented them with the challenge, and they rose to it with enthusiasm. Together, we designed the game,

their ideas breathing life into the project. The process became a lesson in teamwork, creativity, and problem-solving—skills that went far beyond just learning chemistry.

### Turning Ideas into Reality: Building the Chemistry Game Board

Step by step, we turned our vision into reality. We started with a simple board and spinner, where students would answer chemistry questions to test their understanding. It was fun, but we wanted to take it further. That's when we decided to incorporate Arduino and breadboard technology to make the game truly interactive. This new challenge required coding—something we didn't have many resources for. But that didn't stop us. My students brought their own laptops from home and pooled their resources, determined to make the game work. The pride they felt when the game finally came together was undeniable. This wasn't just a science project—it was a testament to their teamwork and perseverance. This collective effort not only facilitated the development of the game but also demonstrated the power of collaboration and resourcefulness.

Our hard work paid off when we showcased our game at the Children International School STEAM week, where our project won third place. This achievement boosted our confidence and highlighted the importance of resilience, creativity, and collaborative problem-solving

### What We Learned and Where We're Going

This project taught us more than just chemistry. By involving the students in every step, we saw their confidence grow as they took ownership of their learning. They didn't just solve problems—they discovered how resourcefulness and teamwork can overcome even the biggest challenges. When our Chemistry Game Board earned recognition at the STEAM week, it wasn't just about winning—it was proof that with determination, we could close the gaps in science education and inspire a love for learning. Moving forward, we're excited to share this game with other schools and show more students that they can achieve anything when they work together.

Our community learned that with resilience and creativity, we can overcome challenges and create impactful solutions. This project has sparked a renewed interest in science among our students and has equipped them with skills in technology, engineering, and leadership. Looking forward, we hope to share our innovative game design with other schools in neighboring communities facing similar challenges. We aim to enhance our designs and continue making science education engaging and accessible, empowering more students to excel in life and contribute meaningfully to society.

In conclusion, our journey underscores that achieving great things starts with a single step in the right direction. We are excited to continue this journey of innovation and leadership, confident in our ability to make a difference. The Chemistry Game Board project has not only addressed an immediate educational need but has also laid the foundation for future initiatives that will continue to inspire and empower students in our community and beyond.

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