TABSA 2024 Science Workshops: A Joyful Collaboration

After spending the first six months of 2024 fostering hands-on science learning in Liberia, I was thrilled to join the TABSA team for the second and third weeks of this year's workshops. Working with a group of other educators to facilitate the workshops instead of being on my own was a welcome change. Also, I heartily appreciated the behind-the-scenes organizing efforts made by TABSA's administrative team and support staff; their work allowed the rest of us to focus on our classroom sessions with local teachers. We were again in the Free State and this time were based in the Thabo Mofutsanyana district, a picturesque region that provided an inspiring backdrop for our work. The attendees were Senior Phase teachers, focusing on grades 7, 8 and 9, and ranged from novice teachers to seasoned educators, all eager to share their experiences and learn fresh approaches to teaching complex scientific concepts. The eagerness of the Free State's Department of Education to welcome us back was a positive sign and several South African administrators who'd attended past TABSA workshops actively participated in TABSA's classroom sessions alongside the local teachers.

Every day started with music as teachers opened our sessions with praise songs, harmonizing beautifully, setting an uplifting tone, and filling us all with joy to carry us through the day's work. I was so grateful to experience the enthusiasm of the local teachers. Unfazed by our sparse working environment and unheated classrooms, they eagerly engaged in the sessions, demonstrating a strong willingness to explore hands-on science activities using simple, everyday materials. Friendly with other workshop attendees they'd just met, the teachers' cooperation and willingness to support each other were an essential element of each session.

Our workshops were designed to make science accessible and relatable. Instead of merely talking about the scientific theory, we carried out hands-on experiments with local materials. For example, we explored physics concepts like electrostatics and static electricity using plastic bags, balloons, and soda cans. These activities were not just demonstrations; the teachers actively participated, experimenting and discussing the scientific principles involved. This hands-on approach demystified the abstract concepts and allowed teachers to see physics in action. The room buzzed with excitement as participants eagerly took notes and brainstormed how they could incorporate similar experiments in their own classrooms, especially since this topic was the first one they'd teach at the start of term 3, after our workshop. We made frequent connections to the CAPS curriculum, aware that South African learners will have to take standardized tests based on that material.

We encouraged a collaborative learning environment, where teachers shared their own methods and experiences to enrich the activities we introduced. The colleagues worked in small groups at their tables and individuals frequently were up at the board, explaining how to add variations and create connections to other topics, making our activities suitable for their learners. For instance, during an exploration of acid-base chemistry, we combined vinegar and baking soda with red cabbage juice to observe the color. Some teachers suggested using other household acids and bases to compare results and combining chemicals to create a neutralization reaction, enhancing the learning experience for everyone. A key feature of the workshops was the time devoted for teachers to test out the activities we introduced and add their own spin. During one session, we did acid-base testing immediately after a chromatography experiment and some teachers suggested combining the two experiments by using the red cabbage juice to test the pH of the chromatography chemicals. Thus, they modeled curiosity about their environment and creative experimentation.

The workshop sessions were consistently interactive. This was exemplified by our session on the periodic table in which teachers acted as elements, forming compounds by pairing up according to their valencies. This role-playing activity not only reinforced their understanding of chemical bonds but also provided a fun and engaging way to teach learners in their own classrooms. They engaged in meaningful conversations about pedagogy and practical applications, quickly forming effective, collaborative teams. The teachers' active participation and the lively discussions that followed each activity showed their deep engagement and interest in finding new ways to teach science. In this manner, teachers demonstrated that science needn't be a solitary or overly serious endeavor; it can be a joyful, collaborative experience.

One of the most enriching aspects of the workshop was the interaction between teachers of different generations. One week, a young teacher was in the same table group as the woman who'd taught her chemistry in high school, the former student now serving as a colleague to her mentor. More experienced teachers shared analogies to make difficult topics more accessible to learners. Younger teachers brought fresh perspectives and technological savvy to the table. The exchange of ideas between experienced and newer teachers enriched the workshop, blending traditional techniques with modern innovations.

We concluded each activity with reflection time in which teachers shared plans for implementing what they had learned. Many spoke about feeling empowered and inspired to try new approaches in their classrooms. The Free State administrators emphasized the importance of continuous professional development and encouraged teachers to form local support networks. Thus, the workshops provided a platform for educators to exchange ideas and obtain support, ensuring that science education remains vibrant and accessible despite challenges. As the participants departed, there was a palpable sense of excitement and anticipation, knowing that they were equipped with new strategies to inspire and educate the next generation of scientists.