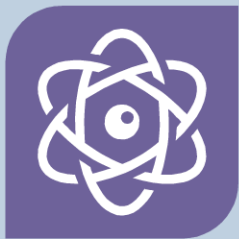


Generating Interest in **Language Learning** in the 21st Century

Programs Focus on STEM, Business Skills to Connect with Students



EDITOR'S NOTE: Too often, educators today find themselves having to defend the study of languages as being relevant in our globalized, high-tech 21st century society. But a number of programs are successfully connecting language learning with other crucial skills and subjects—including STEM (Science-Technology-Engineering-Mathematics) and Business—and thus demonstrating the crucial role of language proficiency to their schools and communities. Here are two such stories.

A Perfect Match: German Language and STEM

BY KATRINA GRIFFIN

“Tell me and I forget, teach me and I may remember, involve me and I learn.”—Benjamin Franklin

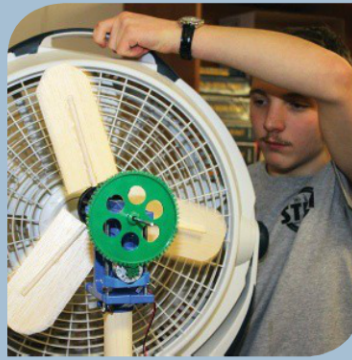
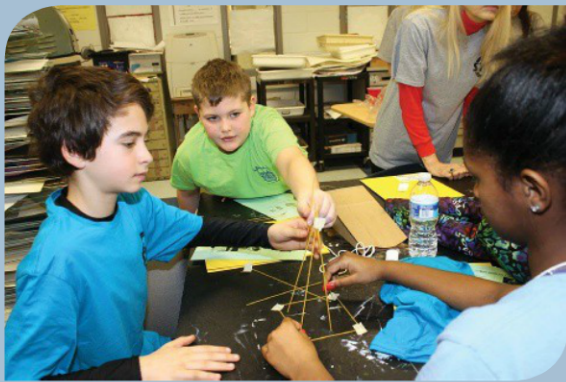
Franklin's statement about teaching and education still rings true today. Yet it can be challenging to meet the demands of learning in the 21st century where students are completely immersed and communicating in the target language about real-life topics and issues. Getting students to think critically while working together to solve problems might be one of the most difficult things educators will facilitate. Still, as challenging as this can be in the target language, it is something that we must strive to achieve.

An idea to help do this came to me while on a 2012 trip to Waldsee, the German Language Camp at Concordia Language Villages in Bemidji, MN. After participating in a *Sinnespfad* (a blind nature walk), engaging with solar panels, and watching

students conducting experiments in the one-of-a-kind passive house at the village, I observed that participants were completely immersed in the target language in their activities—whether scientific, artistic, or routine. Knowing that my students would likely not be able to attend Waldsee (given its distance from Maryland and the high poverty rate in our area), I felt it essential to find a way to bring the experience to them.

German STEM Immersion Day

Welcome to North County High School in Glen Burnie, MD! On Saturday, February 28, 2015, you could see German students from Overlook Elementary, Lindale Middle, and North County High School prepare for the second annual German



LEFT: Students from elementary and middle school work together to build spaghetti towers. MIDDLE: Senior and Waldsee STEM-D Scholarship award recipient Joey Culp helps test propeller designs. RIGHT: Sophomore Teri Laird helps her team build a tower out of LEGOs using only one hand.

STEM Immersion Day. At the check-in table, they got their special t-shirts and folders containing information about the German program at North County, colleges offering dual STEM German degrees, and handouts for the various workshops. They thoughtfully decided whether to take one of the *Sprachmeister* (master speaker) tags which indicated that they were attempting to speak only in German for the day. They filled the cafeteria and engaged in activities to practice and learn vocabulary with teachers and student leaders.

These student leaders showed participants to adjacent classrooms and helped them break into smaller working groups composed of one elementary, one middle, and one high school student. Here they engaged in three hands-on experiments based around LEGOs, spaghetti towers, and wind energy and propeller design, which introduced them to the fundamentals of engineering, built critical thinking and teamwork skills, and involved them in strengthening their use of the target language. Students learned experiment-specific vocabulary via direct instruction from workshop leaders and used their handouts as a reference for questions and responses that might arise while working together. They engaged in experiments from 9:00 a.m. to 12:00 p.m. and broke only once to switch workshops and dance “Das Fliegerlied” (the flying song) in the cafeteria.

What kinds of things did they do? In LEGO Logik, students guessed how many LEGOs were in a cup on their table. Then they counted the LEGOs to see what the difference from their projection was, sorted and counted again by color, and depicted the information in a table graph. By using the graph and assessing the size and shape of the actual LEGOs, students attempted to build the tallest tower in the fastest time, with each group member using only one hand. Students tested these basic math, engineering, and collaboration skills further with the popular engineering team builder: the Marshmallow Challenge. In the time allotted, students used string, tape, and spaghetti to build the tallest tower with a marshmallow on top. The third workshop called *Windenergie* (wind energy) was based on environmental engineering and students learned about renewable energies with a focus on wind turbines. They designed their own turbine blades which produced measurable voltage when placed in front of a fan.

“It is an opportunity for students who are not necessarily in the STEM program to be able to participate in actual engineer-

ing projects that are doable in a short amount of time, but rewarding once done. The turbine was pretty incredible. The kids were able to design the blades, test the blades, adjust the design, and retest to see how much they improved,” noted Trekker Williams, North County High School STEM department chair.

Just 1 year earlier, students designed houses to withstand hurricane force winds, were led through a man-made hurricane force winds, were led through a man-made *Sinnespfad* in the school cafeteria, learned about solar thermal energy conversion by building solar panels, built circuits, and used Arduino computer programming to illuminate LED lights on the board. After 2 years, STEM German immersion Day has taken root in our community as the premier event for STEM education.

At the end of the day, students reconvened in the cafeteria to test their creations, dance, and receive door prizes. Waldsee Director Dan Hamilton donated two full scholarships to the unique Concordia Language Villages STEM-D (STEM German) program and was in attendance to congratulate the lucky winners. “This was a fantastic day for the students, a real hands-on experience blending STEM skills with German. We look forward to working with the scholarship winners this summer in our immersion STEM-German program at Waldsee,” said Hamilton.

A STEM-based curriculum articulation grant from the American Association of Teachers of German (AATG) in early 2013 helped make the first German STEM Immersion Day possible. I worked with North County High School colleague Cora Hofstetter and University of Maryland Baltimore Campus German lecturer Susanne Sutton to plan and develop the workshops for the first STEM day. Having minimal background in STEM subjects, we sought out ideas from students and checked the science of the experiments with experts at our institutions.

North County High School has been a STEM magnet school since 2006. As a founding member of the STEM program at my school, I was able to secure extra funding for the event through the district STEM office, making it possible to provide students with specially designed t-shirts and certificates. As German STEM Immersion Day grew, student leaders at the high school and university level have taken on an increased role in its planning and implementation. In 2014, only the Arduino computer programming workshop was a student-designed and student-led workshop. It was so successful that the subsequent German

GENERATING INTEREST IN LANGUAGE LEARNING IN THE 21ST CENTURY

STEM immersion workshops are being created and led by students with guidance from German and STEM instructors.

"It is really cool to have so many students so eager to develop experiments for their peers. They are really thinking almost a year in advance and excited about the prospect of teaching others not only German, but STEM," says Hofstetter.

Most students who attend the event have novice and beginning proficiencies in German and they discover how much they can actually communicate in the language. A rich vertical team is in place for students and instructors from the elementary school level all the way through college. Such teaming not only helps with planning for the learner, but gives learners opportunities to connect with students at more advanced proficiency, thereby giving them confidence to continue their studies. The older students enjoy being the teachers and leaders of the event. They like showing the younger students that they can be successful

Videos of North County High School's German STEM Immersion Days can be viewed at:

https://www.youtube.com/watch?v=Na9zD-YE_24

<https://www.youtube.com/watch?v=Avr9GXpN2mo>

Learn more about the Waldsee STEM-D Program

www.concordialanguagevillages.org/youth-languages/programs/german-stem-d-four-week-high-school-credit-program

and they are able to see how far they have progressed since they started. Because students are given the ownership to plan and run their own workshops, they demonstrate higher engagement in the target language both in and out of the classroom.

What began as a way to provide students with an immersion experience in order to enhance instruction has had the unintended positive result of increasing enrollment in German classes in the community. Since the first German STEM Immersion Day, enrollment at Lindale Middle School (a STEM magnet that feeds into North County) has increased by 50% and it is the only school in the county to offer an Intro to German class. In fall 2014, feeder school Overlook Elementary started offering 1 hour per week of German to all of its K-5 students, only one of three elementary schools in Anne Arundel County to offer a world and classical language.

The unique cross-curricular approach gives students experience in the STEM fields, a content area with many connections with Germany, a country known for its engineering prowess. Bringing together the communicative aspects of German with the collaboration and critical thinking required for STEM subjects, is a way to empower our students for the future and help them stand out in a global job market.

Katrina Griffin is a German teacher and World and Classical Languages Department Chair at North County High School, Glen Burnie, Maryland.



TLE Spotlight on ...

Pamela Reynolds

Pamela Reynolds serves as the foreign language department chair at Siloam Springs High School in Siloam Springs, AR, where she also teaches Spanish Level IV and AP Spanish, as well as Levels I and II for heritage speakers. She describes this as teaching in two different worlds, and she works to build bridges between the two groups through language learning, cultural understanding, and challenging the stereotypes that exist between them. She was the 2014 Teacher of the Year for the Southern Conference on Language Teaching and a finalist for the ACTFL National Language Teacher of the Year.

Reynolds received National Board Certification in 2011 and worked on new language frameworks for Arkansas. She also has taken active leadership roles in her professional organizations, serving as president of her state chapter of the American Association of Teachers of Spanish and Portuguese and president of the Arkansas Foreign Language Teachers Association.

Her colleagues cite her professionalism and her efforts to continually improve and excel, and one of her students says that Reynolds teaches not just with her voice and hands, but also with her heart. As she explains, "Learning a new language and culture opens a door to new worlds for the learner, and connections are made that forever change us. My role as a teacher is to open that door for my students."

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The Language Educator

Are you curious about how each issue of *The Language Educator* (TLE) gets put together? Would you like to submit an article or photo, provide information we can use, or learn about other ways to get involved? Since our first issue was published in January 2006, TLE has been providing valuable resources to the language education profession as well as an avenue for you to share what is happening in your classroom or program.

At the 2015 ACTFL Annual Convention in San Diego, CA, we are once again offering a session focused on our magazine entitled ***The Language Educator Magazine from ACTFL: Your Voice in Print***, featuring TLE Editor Sandy Cutshall and Creative Director Pauline Goulah.

Learn how to target your submission to see your words and images in print! Find out what an article should say about excellent practices in language learning and get tips for good magazine writing. Get advice about taking great photographs that we can use in the publication—maybe even on the cover!

Friday, November 20, 2015 – 2:30–3:30 p.m. in Room 23A of the San Diego Convention Center

Presenters: Sandy Cutshall, Editor, and Pauline Goulah, Creative Director, *The Language Educator*