



World's biggest science film festival expands in Southeast Asia, North Africa, and the Middle East

www.sciencefilmfestival.org

By Tim Palucka

The road to a major film festival might involve a limousine ride that ends at a red carpet outside a luxurious theater. In contrast, the road to the Goethe-Institut's Science Film Festival (SFF) held in Southeast Asia, North Africa, and the Middle East might mean a 12-hour ride along bumpy dirt roads in a van, ending at an elementary school with a small movie screen in a classroom. In the Philippines, the "Science Explorer Bus" is equipped with video screens so the bus itself can serve as the festival's venue when it travels to distant regions like La Union, a province about a four-hour's drive from Manila.

The Goethe-Institut, the German cultural institute headquartered in Munich,

Germany, with 159 branch institutes in 98 countries worldwide, is clearly not in this for the glamour. The organizers' goal is to introduce science to as many students as possible in their native language so they can discover topics they might otherwise never encounter. The Institut chose the medium of film because it can be entertaining while educating, and can reach more young students than a printed publication could. "We think it's important, especially in developing countries, for children to be introduced to new scientific developments," says Andreas Klempin, Regional Science and Media Project Manager for the Goethe-Institut in

Bangkok, Thailand. "It could blow their minds to learn that there's something out there that's lighter than a feather but harder than diamond."

A brief history of the Science Film Festival

The Science Film Festival has been dazzling children, university students, and teachers since it began in 2005 in Bangkok, in cooperation with Thailand's Institute for the Promotion of Teaching Science and Technology. The theme was "Einstein – Never Stop Asking Questions," and more than 5000 people attended the first festival. Klempin, who has both German and Thai heritage, was hired to lead the film festival's operations in Thailand in 2007. In 2015, more than 750,000 people in 14 countries enjoyed the festival's film offerings, from 150 attendees in Oman to almost 400,000 in Thailand. This makes the SFF the world's largest film festival in terms of attendance. Burkina Faso, Cambodia, Indonesia, Jordan, Laos, Malaysia, Myanmar, Oman, the Palestinian Territories, the Philippines, Qatar, Sudan, the United Arab Emirates, and Vietnam also participated in 2015.

The theme for 2016 was materials science. Often, the theme is chosen to coincide with that of UNESCO's international year, but their 2016 "seeds and grains" theme, while an important topic, was not broad enough for the film festival. "On the other hand, we wouldn't do something as general as biology or chemistry as a theme," Klempin says, "but materials science is a beautifully interdisciplinary and very broad field. It's kind of a base science for a lot of things that surround us in our modern world."



The Science Explorer Bus on its way to La Union, a province located in northern Philippines, for the special screening of science films to public school students.



How the Science Film Festival works

Once the theme is set, individual filmmakers and institutions begin planning the films they will submit to compete for the six awards presented each year (view a list of the 2016 awards at www.goethe.de/ins/th/prj/wif/enindex.htm). Klempin says they receive approximately 180 submissions a year, of which 25–30% are on the theme topic. Restricting entries to just the theme would unnecessarily limit the number of entries, and leave out some excellent subjects and films.

A pre-jury comprising approximately 40 experts in science, media communications, film, and education from many participating countries judges the submissions, selecting about 60 finalists. From these, each participating country selects the films they wish to show based on their particular interests and budgetary restrictions. They then translate each film into their region's native language; no subtitles are allowed because an eight-year-old would spend the whole time reading the subtitles and would miss the visual elements of the film. The Goethe-Institut maintains the rights to show these films for the length of the festival, which in 2016 lasted from October 1 to December 18. Each country determines the length of its festival. Burkina Faso showed 20 films in its capital city Ouagadougou on October 18–21, while Thailand screened 30 films at various venues from November 3 to December 16.

Materials science theme in 2016

Materials science has been part of the SFF before: nanotechnology was the theme in 2006, bionics in 2007, and energy and sustainability in 2013. Even in years with no materials-related theme, films on materials science often made it into the mix. Of the 62 jury-selected films of 2016, approximately 25 deal with materials science, depending on how broadly the field is defined. They are divided into films for early learners (ages 5–8), primary school students (9–11), secondary school students (12–16), and young adults (17+) (see www.goethe.de/ins/th/prj/wif/flm/enindex.htm).



Top: Children in rural villages in Cambodia learn more about the topics covered in the films through hands-on experiments and activities, often simply using readily available low-cost materials.

Bottom: Science in films has the ability to entertain as much as educate young audiences, as this visiting class at the Children's Discovery Museum in Amman, Jordan, is finding out for themselves.

Some films are part of a series featuring a continuing character who investigates scientific mysteries, like Checker Tobi, a boy who researches gold, plastic, rubber, sand, and paper in five films in 2016. Checker famously floats on a boat made of paper in one film.

Some films add an important cultural element to the science. "I Got It! – Lotus Textile" tells the story of a young girl named Hnaung Nge from Myanmar who wants to weave

a shawl from lotus fibers to keep her mother warm in the winter. By doing this, Hnaung is continuing the tradition of paying respect to one's elders by giving them handmade gifts during the annual Thadingyut festival—an important lesson that may resonate with children from other cultures. This cross-pollination of ideas is important. "If you see something from the other side of the world—you're sitting in the heat of Dubai and watching a film from



For the majority of the nearly 1 million visitors of the Science Film Festival, the event shows how science can connect and transcend cultures. Here, students in the Palestinian Territories are enjoying science experiments after the screenings.

Canada in the frozen snow—it has a certain emotional impact,” Klempin says.

Other materials-based films in 2016 include “X:enius – Infrastructure – Self-Healing Tarmac,” about self-healing asphalt; “Spinning a Web – Fascination on Eight Legs,” about the amazing strength of spider silk; “Rare Earths,” about the environmental hazards involved in mining rare-earth elements; and “Hawkeye: Filipino Ingenuity,” that shows how the children of the Philippine Robotics Team make new paper and pencils from recycled paper.

Aaron Lindner is the Science Editor for Multimedia at the Max Planck Society, a frequent festival contributor that produced the films “Biomaterials – Patented Solutions from Nature” (which won the festival’s annual Technology Award) and “Corrosion – Rust Belongs on the Scrap Heap,” about research on a polymer coating that can “heal” scratches in metal, for the 2016 festival. “The great thing about this film festival is that it’s not only on one occasion in one country, but it’s distributed in multiple countries and

it has a really huge audience compared to other film festivals that we know,” Lindner says. “By submitting a film there we can reach a bigger audience in many different countries—people we would otherwise never reach because they are not our typical audience. That’s a great thing for us.”

The need for the SFF in developing countries

While the United Kingdom has the masterfully produced BBC Horizons series, and the Discovery and National Geographic channels are easily available in countries that have cable, Wi-Fi, and YouTube, children in developing countries often have no way to view these channels. Even if they did, language barriers would likely hinder understanding. So providing science-themed films in the local language is one major reason the SFF is needed and has been so successful. “We can reach a much younger audience with film than with outreach efforts we do,” Lindner says, “and we can reach people who are not intrinsically interested in science because of the medium of film.”

The culture of education in many of these regions is dominated by rote learning—pure memorization of facts. Klempin says that many teachers and education ministry officials want to make education more dynamic to facilitate critical thinking. By listening to the teachers, Klempin’s team learned that to instill critical thinking it was also necessary to have hands-on scientific activities for the children before and after the films, so the concepts would stick. If they watch a film about wind energy, Klempin says, they learn about a wind turbine and how it generates energy. Afterward, the students build their own little wind propeller and observe how the wind creates the rotation. “The activities are really cost-effective as well as engaging, so that they can be replicated by all participants in the SFF, even in remote regions,” Klempin says. “We think that this double approach works really well and it’s basically our unique selling point: It’s not just a science film festival, it’s an education festival, and the activity part is just as important as the films.”

Surveys show that 90% of the children attending the SFF are excited about what they have learned, and their teachers confirm that their interest in science remains long after the festival is over.

“The Science Film Festival is able to inspire everyone to see that science can be fun and exciting,” says Ruby Cristobal, the principal coordinator for the Department of Science and Technology for the Republic of the Philippines, whose job is to promote science, technology, engineering, and mathematics (STEM) careers in the country.

She adds, “It shows children that science can be a good option as a future career, or simply as a way of thinking that can make them more creative in whatever they do in life.” □

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