

Working to Improve the Math Skills of Children in Developing Countries Partnership with the GAKUHAN Program

Through its products, Casio contributes to education around the world under a program called “GAKUHAN.” In Bangladesh, since 2016 Casio has partnered with the non-profit organization e-Education to use scientific calculators to improve mathematics skills among middle and high school students. We spoke with Masao Naka, Managing Director, Casio India Co., Pvt. Ltd., who oversees the GAKUHAN program in Bangladesh, and Kaito Miwa, Executive Director, e-Education, regarding their massive effort to partner with India's Ministry of Education and school teachers to change the face of mathematics education in India.



Kaito Miwa, Executive Director, e-Education (left), Masao Naka, Managing Director, Casio India Co.,Pvt. Ltd.

Challenges in working with the Bangladesh education market

Q. What have been the respective initiatives of Casio and e-Education prior to this partnership?

Miwa: e-Education is a non-profit that supports education in developing nations. We have been active in Bangladesh since 2010. In Bangladesh, it is common to see families whose children have completed secondary education but who are unable to attend a university. There are no educational opportunities to prepare them for university entrance exams and what opportunities do exist are extremely expensive, which are barriers to most students. But these students want to go to university so that they can get good jobs and make their families happy. Under these circumstances, we developed our organization with a primary focus on supporting university entrance exam preparation by providing video-based educational materials to high school students living in agricultural areas.

Naka: Casio has long contributed to education in Asia, but since we do not have an office in Bangladesh, our activities in the area weren't as far-reaching as we would have liked. With limited information from local sources regarding the state of education in the region, we were unable to identify the type of approach that would be effective. Also, the local schools were flooded with counterfeit copies of Casio scientific calculators. These factors combined to make Bangladesh an incredibly challenging market for Casio.

Q. How did this partnership get started?

Naka: Things got started when a Casio employee reached out to e-Education via its website. Ascertaining the state of education in Bangladesh prior to proceeding with our initiatives meant it was vital that we partnered with an organization with contacts and experience. For 20 years, I had been working based in India, a neighbor to Bangladesh, and while I did not have a direct connection with e-Education, I had heard of you as a group that provides support for students in Bangladesh preparing for university exams.

Miwa: To be honest, I was surprised when we were first contacted by Casio, because most middle and high school students in Bangladesh were already using scientific calculators with a "CASIO" logo. I thought Casio had to be more familiar with the education market in Bangladesh than e-Education was. However, when we inquired more closely, we learned that the majority of the products the students were using were counterfeit.

Naka: Unfortunately, that is true. Those counterfeit products quickly break and are sometimes made with lead and other materials that pose health risks. Users were being victimized. As a manufacturer, this was not a situation that we could ignore. The question of how to deal with counterfeit products was a serious issue.

Miwa: We conducted information exchanges with members of the GAKUHAN team, from whom we could sense a sincere desire to understand the educational system in Bangladesh fully and involve various people in elevating the educational level of the region. In truth, we were able to trust the record Casio already had of contributing as a private company to elevating the educational levels of children around the world, and their methods resonated with us. The issue Casio struggled with of not understanding local educational systems and not being sure of how to approach the Ministry of Education was similar to the struggles we faced when we first launched our activities in Bangladesh. We had already gone through the process of trial and error in Bangladesh, so I believed we would be able to help.

Three challenges to contributing to mathematics education with scientific calculators



Q. Please provide some details of the projects undertaken through the partnership between Casio and e-Education.

Miwa: Since 2016, we have been involved in three projects. The first is the creation of support educational materials that summarize usage and instruction methods for scientific calculators. The second was creating scientific calculator workshops gathering all the secondary education schools in the capital city of Dhaka. The third was strengthening relationships with teachers by visiting each school that participated in workshops.

Naka: For these projects, we chose to use the CLASSWIZ, Casio's latest scientific calculator. Compared to the counterfeit calculators being used in Bangladesh at the time, products based on an older Casio design, the CLASSWIZ enabled users to display formulas as they were shown in their textbooks, and were compatible with table calculations. The CLASSWIZ could do dramatically more. We also knew that the high-precision display and many other hardware design nuances meant the CLASSWIZ was difficult to copy, making the product itself an effective countermeasure against counterfeit products.

Miwa: A scientific calculator is an invaluable tool for middle and high school students in the region who are considering going to college. The education system in Bangladesh is somewhat different from the system in Japan. College admissions are influenced by the total scores for middle and high school graduation exams. Students are allowed to bring scientific calculators into exams, and if they are unable to use the calculators well on the exam, it is difficult for them to get good scores. Thus the ability to use a scientific calculator more effectively is extremely important. However, the reality is that many schools struggled to provide proper instruction in the use of scientific calculators. That's where this project came in. We created education materials and held workshops on using calculators, both of which used the CLASSWIZ as the model.

Naka: During the creation of education materials, we took full advantage of the collective knowledge and experience cultivated by e-Education. Local partner teachers from e-Education thoroughly analyzed existing textbooks. From that analysis, we were able to create a high-quality textbook that teachers could use for classes that incorporate the scientific calculator effectively. It fully complies with textbook standards and is written in the local Bengali language.

Miwa: The second project, creating a mathematics workshop that incorporates the scientific calculator, was a major undertaking that involved both the private and the public sector, with some 1,200 teachers gathered from all 450 schools in Dhaka. To provide detailed support, we limited the maximum number of participants to 30 people per workshop and held workshops over a period of six months. In total, we conducted 40 workshops with every school in Dhaka taking part in a workshop. This project became the first program to be certified by the Bangladesh Mathematics Society (BMS), a group of reputed mathematicians and members of the Bangladesh Ministry of Education.

Naka: I was at the workshops and what surprised me was the passion of the teachers. They were taking part in the workshops on their days off, eager to learn and intensely engaged in the lectures. Many of the teachers were young, and I sensed their belief that they would be working to make their country a better place. In the third project, our current initiative involves the GAKUHAN team and members of e-Education conducting joint school visits to provide continuing support to each school as they move forward. Visiting the classroom, one sees that not only the teachers, but also the students themselves, are proactively engaged in their studies with an energy unique to developing nations.

Wave of change comes from collaboration between a private company and a non-profit

Q. What struggles did you face when promoting this project?

Miwa: It took time and effort to get the Ministry of Education to understand how our project is different from private companies trying to promote their products. We began by engaging with the BMS, a group with which we had prior involvement through other e-Education projects, to convey the meaning of Casio's GAKUHAN program. Then, together with BMS, we visited the Ministry of Education. This was a critical and invaluable step. In the end, I believe the Ministry of Education and the BMS chose to place their trust in us as a non-profit that had spent many years supporting local high school students preparing for university exams in Bangladesh.

Naka: Since we were requesting participation by all schools in Dhaka in the name of the Ministry of Education, the condition that no private company name be used was established in the interest of fairness. The workshops were only possible thanks to our collaboration with e-Education, a non-profit organization that is rooted in the local region. We would not have been able to accomplish this on our own.

Miwa: On the other hand, we would never have been able to secure the financial resources required for such a large-scale project. It is because Casio, a large company, sponsored the costs of holding the workshops that we were able to approach the Ministry of Education without giving them the impression that such an undertaking was not financially feasible. I believe this is a shining example of something that neither a private-sector company nor a non-profit organization could do on its own; it really shows the success that is possible when the two collaborate and mutually complement each other.

Q. What progress has been made in the year since the project started, and what are your thoughts looking back on the past year?

Naka: Since holding the workshops, there are schools with new mathematics classes that incorporate the CLASSWIZ. Even compared with GAKUHAN in other countries, it is rare to see this level of change in a previously untapped market in the short span of only one year. For me, this emphasizes just how important partnerships with e-Education, as well as the Ministry of Education and the BMS, have been, and the great value of the local activities conducted based on these partnerships.

Miwa: On the other hand, it is a reminder of the difficulty of addressing counterfeit products. Despite the fact that a CLASSWIZ counterfeit product did not exist one year ago, such counterfeit products have already reached the streets of Bangladesh. Once they're released, even products that bring together all your advanced technologies can be easily copied, which may reflect the speed of manufacturing around the world.

Naka: As a manufacturer, it is disappointing that we must deal with counterfeits. However, taking a different view, it is in a sense rather impressive that even counterfeits of our products have upgraded from the old model to a new model CLASSWIZ. So we are even seeing changes happening with the counterfeit products on the education market — one way or the other, the standard of mathematics education is being raised.



Miwa: Many of the teachers who participated in the workshops are grateful to Casio and have become fans of Casio. This is sure to lead in the future to an increase in people who wish to use authentic Casio products over counterfeit products. More and more teachers hope that using Casio scientific calculators will mean Casio will continue to offer excellent programs in the future. I think it is important for GAKUHAN to help develop the Casio fan base, even though it may not lead to tangible results right away.

Contributing to developing countries by creating a method for resolving education issues



Q. What kind of value do you think the GAKUHAN program can offer in Bangladesh?

Naka: Today, scientific calculators support higher mathematics skills for children, not only in Bangladesh, but all around the world. The global trend in mathematics education today is to focus on logical thinking and problem-solving skills by using computers, calculators, and other technology to quickly and accurately solve the calculation aspect of problems. Mathematics is the foundation of numerous industries, including science and IT, and it is vital to increasing the core competence of entire nations. There is nothing better than encouraging children in developing nations to use scientific calculators, thereby promoting increased mathematics skills and fostering the development of the human resources who will one day support the future of that nation.

Miwa: This GAKUHAN program is probably the first attempt in Bangladesh's history by a private company to make a change in the classroom. In developing nations, private companies tend to avoid getting involved in the education landscape, and schools were not in the practice of collaborating with private companies. In developed nations, however, it is commonplace for companies and schools to partner, and in Japan, too, companies have played a large role in innovation in education. As we saw in the schools we visited in Bangladesh, where many of the teachers were excited and welcomed Casio to their schools, teachers in the classroom want to work with companies to improve education. It is no exaggeration to say that this program will change the history of education in Bangladesh, and Casio was at the center of this effort. I believe this is a massive social contribution about which we can all be excited.

Naka: I am so pleased to be involved with this project, and I find it very rewarding. In contrast to something like a one-time donation, contributions through projects like these can continue indefinitely. Bangladesh today is a developing country, but I think we should be thinking of providing support that helps with growth 20 or 30 years down the road.

Q. Moving forward, how will you further advance your initiatives?

Naka: For now, I think it is important that we continue to focus on grassroots activities in the capital of Dhaka to strengthen partnerships with schools and establish a program model. From there, we will look to expand activities to cities other than Dhaka as we gradually expand into other regions.

Miwa: Right now we only provide printed teaching materials, but in the future, I can imagine that we will create video materials as visual aids that help students more easily understand how to use scientific calculators. In terms of addressing counterfeit products as well, it is simply not good enough to provide hardware. Our fight against counterfeiters, whose only interests lie in their own profits, must provide education support solutions involving a combination of products and services. Thus, we are using the scientific calculator to start our educational contributions, but next we will move into activities designed to raise the overall level of education by addressing the education issues that each school faces.

Naka: I feel exactly the same way. Casio is a pioneering company that has contributed to the global society with its commitment to “creating something from nothing” in many different fields from calculators to musical instruments. Now that the times have changed, we realize that what the world needs are solutions that transcend the traditional framework of manufacturing. We must contribute to society by creating methods of resolving problems based on our corporate creed of “Creativity and Contribution.”

Miwa: Your GAKUHAN program is the embodiment of your corporate creed of "Creativity and Contribution." The GAKUHAN program is also highly commendable for its link to contributing to the fulfillment of the Sustainable Development Goals (SDGs), which have become a priority focus for the international community. Among the SDGs is not only Goal 4, "Quality Education," but also Goal 17, "Partnerships for the Goals." Since long before the adoption of the SDGs, Casio's GAKUHAN has developed globally, partnering with Ministry of Education officials and teachers from various countries to contribute to the creation of quality education. In that sense, the world is just beginning to catch up to Casio. We value this partnership with Casio and hope to continue working together on various initiatives.

