

## INTERVIEW WITH RABI KARMACHARYA, FOUNDER AND EXECUTIVE DIRECTOR OF OLE NEPAL



*Interview conducted by Quentin Wodon*

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### EXCERPTS:

- “Digitalization has the potential to transform the teaching-learning process. Many students around the world still use rote learning and memorization methods, and prepare for exams that test how much they can remember to succeed in schools.”
- “The more challenging aspect is the change in the status quo required to realize the full potential of digitalization. Teachers who had been following methodologies based on delivering lectures and instructions with little or no interactions in the classroom will need to change their practices and allow students to ask questions, seek answers, and discuss more using the digital resources.”

#### Could you please describe where you currently work and what your responsibilities are?

OLE Nepal was established in 2007 with the goal to use technology to enhance teaching-learning both inside and outside of the classroom. We believe that the effective use of technology can improve student learning outcomes, while also providing a fun and meaningful learning experience. We aim to leverage technology innovations to make education more learner-centered whereby students are engaged in their learning through interactive learning materials, project-based learning methodologies, and active participation in the learning process.

In addition to improving the quality of teaching-learning, we use technology to reduce the disparity in access to learning opportunities by introducing programs that are designed for students from rural and disadvantaged communities. As the head of the organization, I am responsible for the formulation of strategies and plans, as well as building partnerships required to fund and implement the programs. I lead a team of educators, curriculum experts, trainers, program specialists and technology experts to design and develop programs that

#### Box 1: Interview Series

**What is the mission of the Global Catholic Education website?** The site informs and connects Catholic educators globally. It provides them with data, analysis, opportunities to learn, and other resources to help them fulfill their mission with a focus on the preferential option for the poor.

**Why a series of interviews?** Interviews are a great way to share experiences in an accessible and personal way. This series will feature interviews with practitioners as well as researchers working in Catholic education, whether in a classroom, at a university, or with other organizations aiming to strengthen Catholic schools and universities.

**What is the focus of this interview?** In this interview, Rabi Karmacharya, Founder and Executive Director of OLE Nepal, discusses some of his experiences with digitalization in education. The interview is part of a series on that topic.

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can provide better learning opportunities for students all across the country. As a technology enthusiast, I also head the innovation and research efforts of the organization so that we are constantly seeking ways to integrate technology advances in our programs.

**What has been the experience of OLE Nepal with digitalization in education. What has worked well?**

When we started 15 years ago, there was still a lot of confusion about the use of technology in education. While the enthusiasm to introduce computers in schools was on the rise, many stakeholders did not plan beyond hardware and connectivity. Most programs were limited to teaching students about computers. Since regular internet connectivity was limited and expensive, and with no digital content available, the computers were used more as glorified typewriters.

OLE Nepal developed a comprehensive program to use digital technology to improve the teaching-learning process with the help of educators, trainers, curriculum experts and technology experts. This included the design and development of interactive digital materials aligned with the school curricula, extensive teacher training and support, appropriate technology infrastructure and maintenance at schools, and awareness and participation of local stakeholders. In addition to raising awareness about the potential to use digital technology in improving education, OLE Nepal set out to implement the proof-of-concept and expanded to more schools in partnership with the Ministry of education and other development partners. The emphasis on content, training, infrastructure and local support has proved to be a successful formula in our programs. These programs have been expanded to more schools while we continue to incorporate feedback and learnings from the schools and upgrade the programs to leverage advancements in technology over the years.



Photo: Two children with an OLE Nepal device.



## What has been challenging?

There are the usual technical and operational challenges faced by most programs that introduce technology interventions in places that do not have the required support system. The devices and systems require regular maintenance support, and even though we have gone to great lengths to ensure that the hardware and software are not complex and require low maintenance, the lack of even basic technical expertise means the schools have to wait for outside support. And that can hinder their ability to use the digital resources for the regular classroom teaching-learning process.

However, the more challenging aspect is the change in the status quo required to realize the full potential of digitalization. Teachers who had been following methodologies based on delivering lectures and instructions with little or no interactions in the classroom will need to change their practices and allow students to ask questions, seek answers, and discuss more using the digital resources. Instead of limiting the lessons within the covers of the textbook, teachers will need to encourage students to be curious, explore and think more. They have to develop new lesson plans that integrate digital effectively so that students are engaged in meaningful learning. The teachers need to be comfortable in their new role as facilitators in students' learning rather than their previous role as the provider of knowledge. While teachers understand the value and essence of the new methodologies, it takes a lot of time and effort to bring about behavioral changes.

## What do you think more generally are the opportunities from digitalization for K12 education?

Digitalization provides the opportunity to address a number of challenges that we face in providing quality and meaningful learning experience for K12 students. On the one hand, it provides students with the technical skills necessary to excel in any field of work in the current economy. But more than that, digitalization has the potential to transform the teaching-learning process. Many students around the world still use rote learning and memorization methods, and prepare for exams that test how much they can remember to succeed in schools.

However, this method does very little to prepare them for today's knowledge economy. They are not entering the workforce of the industrial era when workers were expected to follow instructions to carry out tasks. Today's workers will be expected to use their knowledge to find solutions to the tasks presented to them, and they need to be creative and resourceful to carry out the tasks successfully. Hence, we need a K12 education that is designed to help students develop their critical thinking skills. This can best be done by allowing students to collaborate and explore to solve problems themselves

with guidance from teachers. Such methodologies can be greatly supported by the digitalization of education. Technology enables students to research, investigate, explore and collaborate effectively to solve problems.



Photo: students and teachers in the classroom.

## And what do you see as the main challenges?

The challenges are twofold. One is to ensure proper access to technology to millions of students who have so far been deprived of the opportunity to learn and succeed in today's economy. It is important that the benefits presented by technology do not further widen the disparity that already exists between students from relatively well-off communities and those who come from disadvantaged communities. This will call for sincere efforts, strong conviction and sizable investment from the concerned parties.

The second challenge concerns the willingness to change for the better. We have to realize that technology is not a silver bullet that will solve all the woes faced by education systems around the world. As we have already witnessed, technology is only a magnifier of human intent. It can do wonders if the school management, teachers and the communities are ready to leverage it to provide better education to their children. But digitalization will have very little impact in teaching-learning if the school system is not committed to address other problems related to better management, teacher motivation, school environment and community relations.

## During the COVID pandemic, you tried to help schools and communities. What was your approach?

During the early stages of the pandemic, we sat down with the Ministry and tried to figure out how we can collectively ensure that students have access to learning

and instructions while the schools were closed down. We provided technical inputs to the Ministry in the creation of a learning portal, and provided all of our digital resources for free access through the portal. However, we were also well aware that only a tiny proportion of the school-going population has access to reliable and affordable internet connectivity. Hence, we sought ways to disseminate our learning content to students who did not have devices or connectivity required to learn using online portals. We reached out to our program schools and local authorities to allow students to check out the laptops from the schools on a rotational basis so that they can use them to learn at home. In some areas where the pandemic was not as widespread, schools allowed students to come in limited numbers to use digital resources.

Once it was clear that schools would not open for months, we quickly developed a home-based learning program using tablet computers loaded with curriculum-based interactive lessons and questions and instructional videos. We also prepared detailed lesson plans with the help of teachers to guide the students at home, and created and distributed workbooks to go along with the lesson plans. Students checked out the tablets from their schools on a rotational basis and took them home for a few days at a time. They used them to go over the lessons and videos loaded on them together with the textbooks to do the exercises in the workbook. This program was especially helpful for marginalized students who did not have devices and affordable connections at home.

**You have also developed new initiatives for people with disabilities recently. Could you explain them?**

Children with disabilities in Nepal have been served well by the digitalization of education thus far. That group has traditionally been deprived of equal access to learning compared to their counterparts. We wanted to change that, and we started by addressing the needs of two groups of students, those with visual impairment and those with hearing impairment. In order to make digital learning useful for students who have hearing impairment, we created Nepali Sign Language (NSL) interpretation videos on hundreds of digital learning content. We also created interactive digital activities for students to learn NSL as well. These learning activities can also be used by family members and friends who want to learn NSL so that they can communicate easily with children with hearing impairments.

We also realized that students with visual impairments have limited access to books since there are only so many braille books that are available in Nepali language. Braille books are expensive to print and distribute, and they tend to wear out easily with use. Hence, we started working on converting Nepali textbooks to a format required by screen readers. Since the text to speech (TTS) and optical character recognition (OCR)

technologies for the Nepali language are in the rudimentary stages, the conversion demanded a lot of manual work as well. As we continue to convert more books and develop the technologies around screen readers, we are hopeful that soon there will be no limitation on the number of books that are available for students with visual impairment. We have also made our digital library site accessible so that users with visual impairments can navigate it with ease to find the books that they want to read.

These technology-enabled platforms have been received with a lot of enthusiasm by the respective groups of students. We will continue to incorporate the feedback received, and work on developing the TTS and OCR technologies to make it easy for users with blindness to access reading materials.

**What has been your own journey? How did you end up creating OLE Nepal and working in this area?**

I was born and raised in Nepal, and later trained as an engineer in the U.S. After I obtained my bachelor's and master's degrees in electrical engineering and computer science, I worked for three years as a design engineer in Silicon Valley before returning to Nepal to start a technology company. A few years after establishing the company, I was increasingly drawn to the plight of thousands of students who did not have the critical thinking skills and problem-solving acumen needed to succeed in today's knowledge-based economy. This spurred me to change my trajectory and establish OLE Nepal in 2007, and dedicated myself to improving the classroom teaching-learning process, especially in the rural areas of Nepal. I was especially motivated by the prospect of leveraging technological approaches to transform school education and provide better learning experience to all learners.

**Finally, could you share a personal anecdote about yourself, what you are passionate about?**

I am passionate about seeking how educational technology can be leveraged to improve the lives of people around the world. My professional quest has been fueled by a desire to help develop a global society where everyone has a legitimate shot at living a purposeful life and pursuing her/his dreams. I have been struck by how many people are denied an opportunity to realize their full potential because they lack access to education, training and meaningful engagement. Despite the proliferation of affordable devices and internet connectivity, technology has not made a significant impact on learning opportunities for students from disadvantaged backgrounds. We need to address this disparity with urgency.