

Preparation to Post COVID -19 Assumption of Educational Institutions

> **Colonel Inderjeet Singh** Chief Cyber Security Officer Vara Technology - Cyber Sleuths

Secretary General – International Organization for Educational Development



#### COVID – Its Impact



Institutes globally never **tested its BC**P at this scale



Not ready to transition and run education **from home** 



LMS not ported support remote worker





**Student attendance** and how to measure productivity is challenged when Working from home



Manage **student expectations** with limited capacities



Big issue how to **sustain culture**, manage Pandemic stress

#### COVID-19 Has Forced 1.4 Billion Students To Stay Home

Countries with country-wide or localized school closures (as of Mar 23, 2020)



Source: LINESCO





- Most governments around the world have temporarily closed educational institutions in an attempt to contain the spread of the <u>COVID-19</u> pandemic.
- Some 1.3-1.5 billion students and youth across the planet are affected by school and university closures.
- Nationwide closures are impacting over 72% of the world's student population.
- Several countries have implemented localized closures impacting millions of additional learners.
- Governments around the world are making efforts to mitigate the immediate impact of school closures, particularly for more vulnerable and disadvantaged communities, and to facilitate the continuity of education for all through remote learning.

- Higher education, both domestically and internationally, has been disrupted.
- Forecasts for the long-shadow implications of COVID-19 range from a five-year disruption to one of six months.
- Forecasts predict anywhere from a 15% to 25% decline in enrolment, depending in which part of the world the calculations are made. (It took higher education two years to recover from the impact of the SARS epidemic.)
- This virus has put the spotlight on antiquated financial models, rigid admission and registration procedures and dismal student progression and graduation rates.
- Virus has also presented higher education with opportunities after the dangers of COVID-19 have passed or a vaccine is discovered which makes it safe, once again, to resume normal activities.
- Functional moment will pass. The virus will recede. How will colleges and universities worldwide respond to the residuals?

Questions on Preparation to Post COVID-19 assumption of

**Educational institutions** 

How will the COVID-19 Pandemic alter the future of teaching and learning?
 How to "re-arrange" the existing process?
 How will we pay the price for this education Pandemic?
 Who will be the biggest sufferer in the education sector?

#### **The Impact Of COVID-19 In Education**

Education Disturbance

• Students Are One Year Away From Colleges

Students Seized In The Conflict



- Demand for distance learning skyrockets when colleges close and often overwhelms existing portals to remote education.
- Moving learning from classrooms to homes at scale and in a hurry presents enormous challenges, both human and technical.

2. How to "re-arrange" the existing process?



- Calendared assessments, notably high-stakes examinations that determine admission or advancement to new education levels and institutions, are thrown into disarray when colleges close.
- Strategies to postpone, skip or administer examinations at a distance raise serious concerns about fairness, especially when access to learning becomes variable.
- Disruptions to assessments results in stress for students and their families and can trigger disengagement.

#### Teaching versus learning, will need figuring

- Oscar Wilde once said, "Education is an admirable thing, but it is well to remember from time to time that nothing that is worth learning can be taught".
- Going forward, the role of the teacher will get redefined.
- Notion of a teacher or an educator as the knowledge-holder who imparts wisdom to pupils is no longer fit for the purpose of the future.
- With students being able to gain access to knowledge and even learn many a technical skill, through a few clicks on their phones, tablets and computers, we will need to redefine the role of the teacher in the classroom of tomorrow.
- This may mean that the role of teachers will need to move towards facilitating young people's development as contributing (and employable) members of society, rather than just lecturing.

#### 3. How will we pay the price for this education Pandemic?



Distance Learning	Correspondence Education
<ul> <li>Uses one of three technologies to support regular and substantive interaction between students and instructor</li> <li>The Internet</li> <li>Audio-conferencing</li> <li>One-way and two-way transmissions through open broadcast, closed circuit, cable, broadband lines, fiber optics, satellite, or wireless devices</li> </ul>	Interaction between the instructor and student is limited, not regular and substantive, and primarily initiated by the student.
Typically instructor-led. Independent study will qualify if it uses the technology above.	Typically self-paced. Independent study will be considered correspondence if interaction is not face- to-face, technology is not used, or interaction limited as above.

#### Required components for distance learning

### Examples of using technology :

- Email to students
- Email through staff
- Learning management system (available on some tablets)
- Staff-supported audio or video calls

#### **Content:**

- Physical delivery or mailing of content
- Email materials
- Learning management system







REDEFINITION

Technology allows for the creation of new tasks, previously inconceivable

MODIFICATION Technology allows for significant task redesign

#### AUGMENTATION

Technology acts as a direct substitute, with functional improvement

#### SUBSTITUTION

Technology acts as a direct substitute, with no functional change

# **FRANSFORMATION**

ENHANCEMENT



- MOOC Massive Open Online Courses empower teachers and students in remote areas to learn and furnish themselves with the latest knowledge.
- While a definitive objective is mass customization, different applications and projects will help this grow in reach and impact.
- Al and ML will be used to outline a student's qualities and shortcomings.
- Individual learning rates and records will be contemplated and computed.
- These tests, intended to support students' confidence in zones they exceed expectations in and challenge them in regions they don't will become holistic methodologies to enables students to stay encouraged and motivated.

- Recently, University of Murcia in Spain began testing an AI-enabled chatbot to answer students questions about the campus and areas of study.
- As this chatbot was rolled out, the school's administrators were surprised to discover that it was able to answer more than 38,708 questions, answering correctly more than 91% of the time.
- Not only was this chatbot able to provide immediate answers to students outside of regular office hours, but university officials also found that the chatbot increased student motivation.
- All of these benefits were achieved without the need to change the structure of the staff.
- One additional benefit of having chatbots at universities to answer students' questions is the large volume of big data that would be obtained regarding students' concerns and areas of interest.
- This data could be analyzed to help enable universities to create innovative new services and programs to further improve students' educational experiences.

#### Technology in education alone will not be the enabler



- If you want to see a true crisis in education,
  - ✓ one has to look at our government-run schools,
  - ✓ or at least the remote ones where a young teacher in an isolated village who has only received perhaps a basic college degree tries to teach 60+ children in a dilapidated,
  - ✓ multi-grade classroom where books are scarce and many of the students (and even more of their parents) are often functionally illiterate.
- While talk in some elevated places of learning, at Harvard or even our own IIT/IIMs, may be about how new technologies can help transform education, in India it will first have to be about how such tools can help education systems function at a basic level.
- Change is on the way but those in pivotal positions will have to ensure that its benefits percolate to the benefit of all.

#### How to ensure students are not disadvantaged by online teaching

- Effective online teaching is not the same as face-to-face (F2F). It is not a matter of whether it is equal
- It requires different activities, some which are better done online. However, learners become disadvantaged if they are not provided with certain resources for learning independently and online:
  - Access to devices appropriate for online learning. Some learning activities can be conducted using mobile devices.
  - ✓ Internet access and adequate bandwidth (speed). Poor bandwidth can make many synchronous activities very difficult. For schools with students in poor bandwidth areas, a combination of asynchronous activities and telephone check-ins provides more support.
  - Changing teaching schedules to shorter class times in similar time zones with more meetings but fewer students at one time is more effective in online learning situations.
  - ✓ If meeting times are combined with collaborative activities, students are more likely to log on and complete tasks or discussions.





- ✓ Effective feedback. Checking in with learners regularly is important.
- ✓ If systems allow, students can also get valuable feedback automatically from online quizzes and intelligent tutors as well as direct comments or discussion from peers and teachers.
- ✓ Opportunities for independent learning. Wherever they are, students are learning informally every day.
- ✓ Designing learning activities and discussions that capture students' experiences while they are away keeps them engaged and gives teachers valuable feedback on how the students are feeling.
- ✓ It also provides opportunities for multiple perspectives in learning that might not happen if students were all physically together.

#### How Can Teachers Authenticate Work That Is Being Completed Remotel

- It is easier to authenticate student work online than most people think.
- It requires some changes to how assignments are presented and submitted for review. It also requires teachers to monitor students' online activity more closely than in normal classroom situations.
- Here are some basic guidelines to designing and evaluating online work for authenticity:
  - ✓ Use more formative assessments that are designed to get students to work together and use online resources.
  - $\checkmark$  Have a very clear policy on how to submit work online.
  - Students who are given a precise procedure are less likely to make mistakes in submissions, which accounts for many online learning integrity violations.
  - ✓ Create more assignments that are collaborative.
  - ✓ If the teacher is working directly with groups of students on their work, it is far easier for the teacher to monitor what the students are doing and to check their understanding.

#### How Can Teachers Authenticate Work That Is Being Completed Remote

- Create questions and inquiries that require learners to embed their personal experiences and context into any assessed content.
- ✓ Since many online students will be in different locations, it will be easier for the teacher to see when a student is using their surroundings to compose their work.
- Use plagiarism checkers whenever students have to submit individual work, and assign drafts of parts of the work prior to a final submission.
- ✓ Most plagiarism checkers can accept drafts of assignments to check against final submissions.
- Create more multimedia assignments that require students to remix pictures, videos and text into their own creations.
- Create libraries and pathfinders for students to use as part of assignments, then ask students to quote from them as part of their work.
- Check how well they are able to reference and cite work as well as reduce opportunities for copying the work of others.



- ✓ Interview students about their work using a synchronous chat with audio or video feeds, if possible. It is much more difficult to produce spontaneous answers when talking online.
- ✓ For Institutes using an LMS, check login time, collaboration data, and submission types to see how often and long students are involved with assignments.
- Very short assignment involvement times may indicate students are submitting unauthenticated work.
- ✓ For older students, consider using MOOCs (massive open online courses) for certain topics or units. MOOCs are designed to create learning experiences that evaluated using more multiplechoice and short answer assignments.

#### **Transitioning From Online Back To Face-to-face Learning**

- A continuity of learning plan is advised to transition learners and teachers back to colleges.
- Learners may have to :
  - Become accustomed to more independent learning and will need time and guidance to transition from it.
  - ✓ Become accustomed to shorter activities, asynchronous assignments, more freedom in their work and less face-to-face collaboration. The school should consider how to slowly transition learners to in-college schedules.
  - ✓ Experienced illness, isolation, intensive traveling and other challenges that require them to have time to process. Colleges should be prepared to create space and interactions that take into account what their learners might have gone through.
  - Not had the opportunity to be prepared in traditional ways for examinations. College should consider how to re-focus learners and assure them they are ready.





Teachers may have:

- experienced fatigue and stress due to the rapid professional development they experienced when facilitating online learning, creative scheduling, and exposure to a wide variety of apps, solutions, and technical challenges.
- Reduced schedules and less administrative activities might help teachers transition more easily.
- Pending assignments and activities online that need to be completed before fully transitioning to face-to-face teaching.
- College's continuity of learning plan should include clear dates on when online assignments should be completed, then give teachers latitude to use blended learning techniques to move online learning back to the classroom.
- Been under quarantine or been separated from their students for extended periods of time.

Teachers may have:

- Been under quarantine or been separated from their students for extended periods of time.
- Giving teachers opportunities to collaborate and discuss student progress will be essential.
- Not had time to evaluate student work. They may need more time for catching up.
- Felt less confident that their online teaching prepared students for examinations. Creating activities that are specifically designed to prepare for examinations may be helpful.





#### Assumptions

- Vision planning will co-exist with and complement strategic planning.
- In-person, on-campus instruction will not begin until the spring 2021 semester.
- Out-of-date business models will be retired.
- Several colleges and universities worldwide will be forced to close.
- Private, small and poorly endowed colleges and universities will merge with other institutions.



#### **Opportunities**

- Vision planning will supplement strategic planning.
- Academic year will be 12 months long and combine the best of in-person and online learning and will contribute to improved progression and graduation rates.
- Year-round recruitment activities will allow applicants greater flexibility in college and university selection and enrolment.
- New business models and financing options will bring stability to the 'bottom line'.
- Collaboration, not competition, will be embraced by all members of the academy.



Confronting financial challenges facing colleges and universities

- Most immediate challenge for most institutions involves cash flow.
- As institutions lose Hostel fees, dining outlet sales, and other auxiliary revenues, they also face unexpected expenses, including partial refunds on fees, room, and board, and the need to scale virtual engagement modalities.
- To ensure continuity in the short term, some institutions will likely need to rapidly restructure their operations.
- Further compounding the cash flow challenge is the uncertainty surrounding fall enrollment.



#### Confronting financial challenges facing colleges and universities

- If students are unable to return to campus this fall, colleges and universities could face unanticipated and historic attrition from students who are either unsatisfied with their distance-learning experience or whose ability to afford tuition in the current economic climate will be inhibited;
- Others may simply decide to stay closer to home in uncertain times.
- Even well-resourced institutions will find it hard to forecast enrollment for the 2020–21 academic year.
- For institutions that were already financially stressed or operating from a deficit position prior to the pandemic, short-term unanticipated expenses and longer-term enrollment declines will likely threaten their solvency, potentially forcing numerous closures and mergers.

- One of the biggest near-term issues for enrollment managers is the lack of clarity regarding how the next academic year will unfold.
- Prospects, current students, and families have a long list of questions, none of which have easy or clear answers.
- With so much in flux, administrators on the front lines face at least two significant challenges.
  - ✓ The first challenge is helping their institutions define realistic and achievable enrollment goals for each of the various future state scenarios under consideration.
  - $\checkmark$  The second challenge involves communications.
  - ✓ College and university enrollment leaders and counselors should simultaneously acknowledge the uncertain future while instilling confidence that:



- A D E D \*
- In the wake of the pandemic, most institutions of higher education have shuttered their physical campuses for the academic year and moved their summer sessions online.
- One of the outstanding questions is how the pandemic and subsequent recession in the United States and globally will affect enrollment for the 2020–2021 academic year and beyond.
- For college and university enrollment officials in India, the challenges brought by COVID-19 are many:
  - Moving The Traditional Campus Recruiting Events To Virtual Settings,
  - Minimizing Summer Melt Among Admitted Students,
  - Dealing With Students' And Families' Shifting Financial Needs, A
  - And Accurately modeling what enrollment outcomes will look like for the fall term, which, even before COVID-19, was ramping up to be competitive and chaotic due to changes by the UGC Counseling on guidelines pertaining to student recruitment.

- One of the biggest near-term issues for enrollment managers is the lack of clarity regarding how the next academic year will unfold.
- Prospects, current students, and families have a long list of questions, none of which have easy or clear answers.
- With so much in flux, administrators on the front lines face at least two significant challenges.
- The first challenge is helping their institutions define realistic and achievable enrollment goals for each of the various future state scenarios under consideration.



- Second challenge involves communications.
- College and university enrollment leaders and counselors should simultaneously acknowledge the uncertain future while instilling confidence that:
  - $\checkmark$  Institution is prepared for whatever may come
  - ✓ Characteristics that comprise its unique student experience will not be compromised, no matter what happens with the crisis
  - ✓ Institution is still the best option for current and prospective students
- Addressing these challenges will require unprecedented levels of communication and personalized outreach.
- While the dynamics of the pandemic and its impacts continue to evolve, there are several approaches and strategies colleges and universities can employ as they contemplate their enrollment strategies for fall and beyond.

#### **3 Ways The Coronavirus Pandemic Could Reshape Education**

- 1. Education nudged and pushed to change could lead to surprising innovations
  - Slow pace of change in academic institutions globally is lamentable, with centuries-old, lecturebased approaches to teaching, entrenched institutional biases, and outmoded classrooms.
  - COVID-19 has become a catalyst for educational institutions worldwide to search for innovative solutions in a relatively short period of time.
  - With <u>5G technology becoming more prevalent in countries such as China, US and Japan</u>, we will see learners and solution providers truly embracing the 'learning anywhere, anytime' concept of digital education in a range of formats.
  - Traditional in-person classroom learning will be complemented with new learning modalities from live broadcasts to 'educational influencers' to virtual reality experiences.
  - Learning could become a habit that is integrated into daily routines a true lifestyle.



#### 2. Public-private educational partnerships could grow in importance

- In just the past few weeks, we have seen learning consortiums and coalitions taking shape, with diverse stakeholders - including governments, publishers, education professionals, technology providers, and telecom network operators - coming together to utilize digital platforms as a temporary solution to the crisis.
- In emerging countries where education has predominantly been provided by the government, this could become a prevalent and consequential trend to future education.
- In India, the Ministry of Education has assembled a group of diverse constituents to develop a new cloud-based, online learning and broadcasting platform as well as to upgrade a suite of education infrastructure, led by the Education Ministry and Ministry of Industry and Information Technology.
- is evident that educational innovation is receiving attention beyond the typical government-funded or non-profit-backed social project.



#### 3. The digital divide could widen

- Most schools in affected areas are finding stop-gap solutions to continue teaching, but the quality of learning is heavily dependent on the level and quality of digital access.
- After all, only around <u>60% of the globe's population is online</u>.
- While virtual classes on personal tablets may be the norm in Hong Kong, for example, many students in less developed economies rely on lessons and assignments sent via WhatsApp or email.
- Moreover, the less affluent and digitally savvy individual families are, the further their students are left behind. When classes transition online, these children lose out because of the cost of digital devices and data plans.
- Unless access costs decrease and quality of access increase in all countries, the gap in education quality, and thus socioeconomic equality will be further exacerbated.
- Digital divide could become more extreme if educational access is dictated by access to the latest technologies.



#### Looking ahead



A Cyclical Approach to education in emergencies

- What we are learning from COVID-19, similar to will be what we seen in previous pandemics, is that prepared test is crucial.
- While different scenarios exist, several of them assume that the COVID-19 spread will happen in waves, which means the process of addressing it should be cyclical.
- Countries not yet impacted should begin "preparing," starting with a response plan.
- This would facilitate "coping" once the crisis hits and minimizing the negative impacts.
- Plan can include introducing protocols for screenings in colleges, rolling out hygiene practice campaigns, imposing school closures, offering distance learning, using closed schools for emergency purposes, etc.



- As the emergency phase dissipates, communities could move into a "recovery" mode, with governments implementing policies and measures to regain lost time.
- The approaches may include adjustments to the academic calendar, prioritizing students in grades preparing for high-stakes examinations, and continuing with distance learning in parallel to schools.
- Countries that have shown greater resilience in repeated crises, such as those in East Asia, are the
  ones that were able to benefit from lessons learned and to respond quickly to new crises, such as
  this one.
- They have been able to use the momentum to re-prepare, investing and reinforcing systems going forward.

**Parting Shot** 

## Be Cyber Safe and Stay Safe GOOD LUCK!

## Thank You For Listening.