Transforming Teaching & Learning in School Education with Education Technology Platforms

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Self Introduction

- ADB Education Sector Group, expert pool in Education Technology
  - Covers ADB's engagement in education technology related projects with DMCs: Uzbekistan, Sri Lanka, Amenia, Bangladesh, Kyrgyz Republic, Cambodia, Fiji, Nepal, etc.
- Prior to joining ADB, with one of the largest education technology companies in China for 6 years
- Information Technology professional with over 22 years of experiences of digital transformation in different sectors including:
  - Education: New Oriental Education Technology Group (China)
  - Real estate (CapitaLand China)
  - Pharmaceutical (Novartis China)
  - Financial services (Freddie Mac USA)
  - Satellite Communications (DirecTV USA)
- M.S in Computer Science & MBA in Finance from Virginia Tech USA
- Three Children, Daughter (21 years old), Son (18 years old) , Daughter (12 years old)

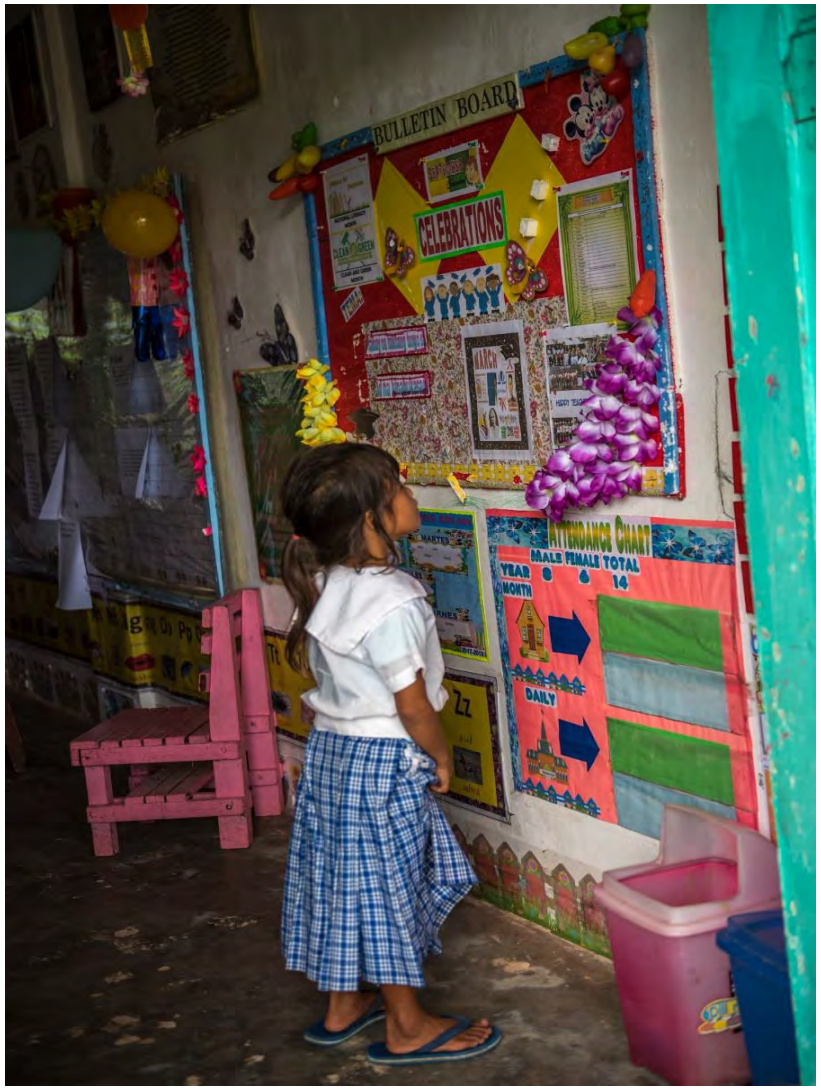
Agenda


BAN School Education
Mongolia School Education
LAO Resettlement Village School
1. Challenges Pre & Post COVID-19
2. Emerging Country Needs from Asia
3. Global Education Technology Trends
4. ADB Education Technology Framework
5. Recommendations
KYR School Education
Philippines Secondary Education
VIE School Education
ADB

1. Country Challenges Pre and Post COVID-19

I.

Challenges Pre-Covid 19



- Critical need to address '**learning crisis'** with students not acquiring foundational literacy and numeracy
- Education sector solutions require 'back to basics' to strengthen foundational skills such as cognitive (literacy and numeracy), noncognitive (soft skills and digital skills) and occupational skills at higher levels
- Extensive support is needed for 21st century skills such as soft skills and digital skills and lifelong learning for upskilling and reskilling
- Embracing new generation technologies such as adaptive and personalized learning to scale learning, equity and employability/entrepreneurship
- More investment needed to build data and processes, assessment, and capacity of education and training workforce to address learning, teaching and skill gaps

Challenges post COVID 19

- Amplified existing inequities and learning crisis
- Lack of digital contents and assessments
- Lack of teacher readiness to manage distance learning
- Lack of teacher in-service training
- Shift of learning not only in school but also at home (learning anytime anywhere)
- Sudden demand to mainstream EdTech solutions and much wider acceptance in public education
- Government policies key to apply distance education in a more holistic way and by linking short-term and long-term solutions
- How to protect and mobilize education finance at a time when revenues are declining, and costs are increasing

source: newatlas.com

source: world economic forum

2. Emerging Country Needs

II.

Emerging Country Needs from Asia

SDG4: Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all

SIX OVER-ARCHING PRIORITIES:

1. How to sustain uninterrupted learning: online, offline, mobile apps, TV/Radio, print?
2. How to ensure health, safety and wellbeing of teachers and learners for reopening schools and continued learning?
3. How to revamp training of teachers and trainers to transform teaching and learning?
4. How to develop digital learning materials and embed large scale and real-time learning assessment systems?
5. How to scale learning and equity in a balanced way?

3. Global Education Technology Trends

III.

Digital principles: a set of recommendations about how we can chart a path forward in digital development.

Design for Scale Achieving scale requires adoption beyond an initiatives pilot population and often necessitates securing funding or partners that take the initiative to new communities or regions.

Understand the Existing Ecosystem Well-designed initiatives and digital tools consider the particular structures and needs that exist in each country, region and community.

Be Collaborative Being collaborative means sharing information, insights, strategies and resources across projects, organizations and sectors, leading to increased efficiency and impact.

Design With the User User-centered design starts with getting to know the people you are designing for through conversation, observation and co-creation.

Address Privacy & Security Addressing privacy and security in digital development involves careful consideration of which data are collected and how data are acquired, used, stored and shared.

Build for Sustainability Building sustainable programs, platforms and digital tools is essential to maintain user and stakeholder support, as well as to maximize long-term impact.

Be Data Driven When an initiative is data driven, quality information is available to the right people when they need it, and they are using those data to take action.

Use Open Standards, Open Data, Open Source, and Open Innovation An open approach to digital development can help to increase collaboration in the digital development community and avoid duplicating work that has already been done.

Reuse and Improve Reusing and improving is about taking the work of the global development community further than any organization or program can do alone.

Trends in education delivery before COVID-19

1. Shift from school-based learning to open access (i.e. skillshare)
2. Shift from degrees/diplomas to certificate and course completions (and microlearning)
3. Shift from time-based to outcome based
4. Shift from scheduled classes to customized learning

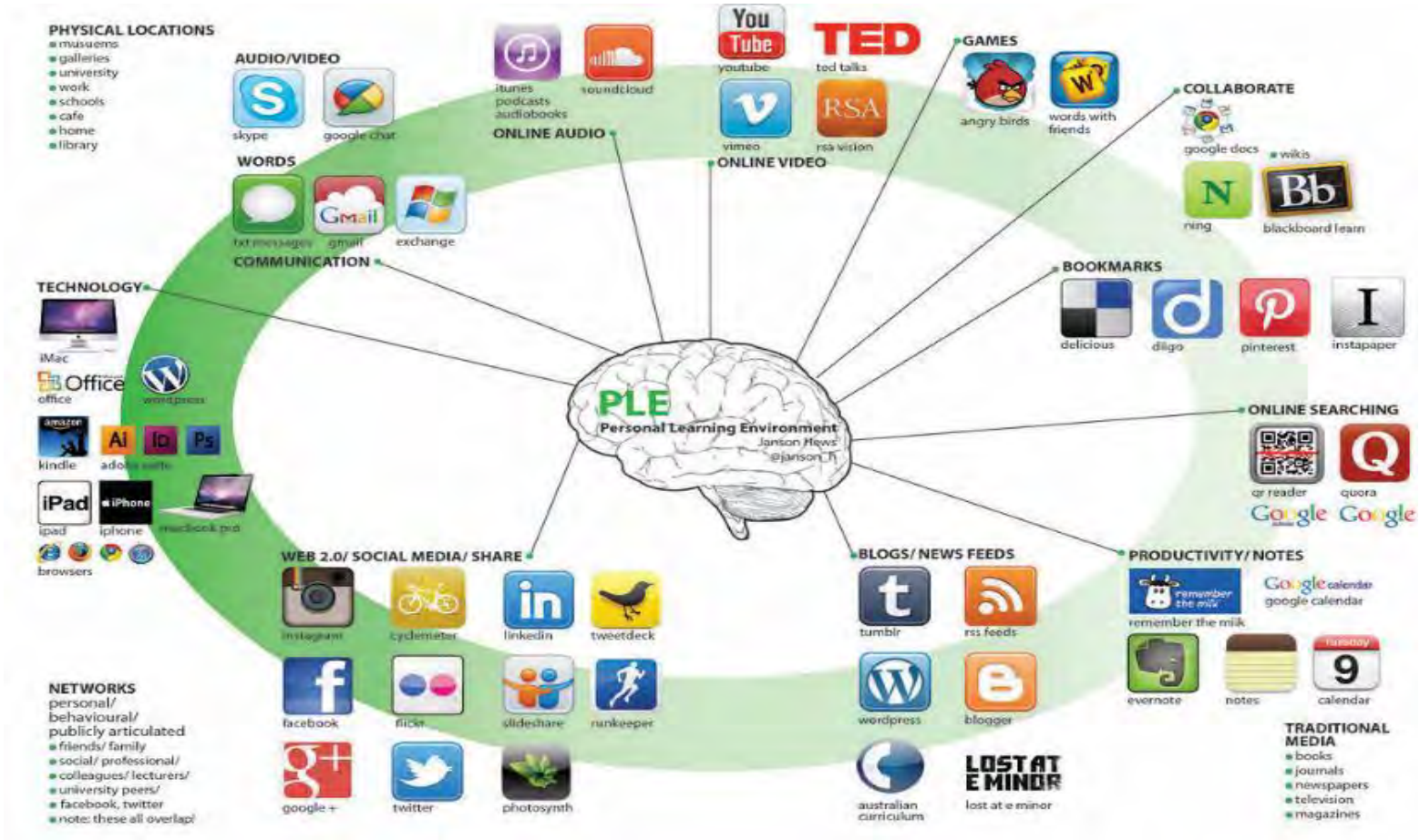
Shift from school based learning to open learning

https://www.skillshare.com/

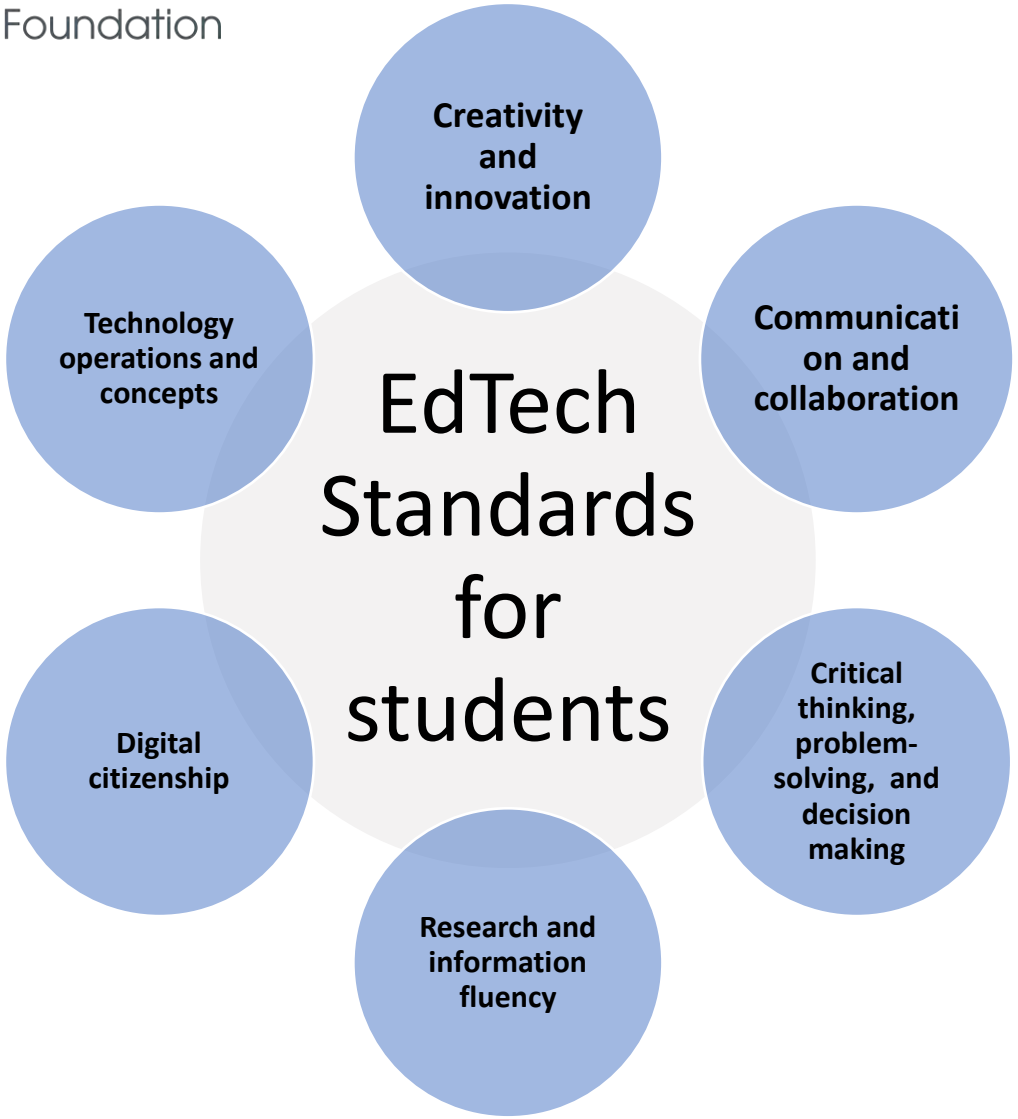
Creative	Business	Technology	Lifestyle
Animation	Entrepreneurship	Data Science	Crafts
Drawing	Freelance & Entrepreneurship	Game Design	Culinary
Graphic Design	Leadership	Mobile Development	Gaming
Illustration	Marketing	Product Management	Health & Wellness
Photography	Productivity	Web Development	Languages
2d Animation	Accounting	Blockchain	Baking
3D Animation	Bitcoin	CSS	Cooking
3D Design	Blogging	Data Science	Crafts
3D Modeling	Branding	Game Design	Culinary
Adobe After Effects	Business Analytics	Game Development	Embroidery
Adobe Illustrator	Content Marketing	HTML	Fashion Design
Adobe InDesign	Data Visualization	HTML5	Flower Arranging
Adobe Lightroom	Entrepreneurship	Javascript	Gaming
Adobe Photoshop	Finance	Mobile Development	Health & Wellness
Adobe Premiere	Freelance & Entrepreneurship	Product Management	Interior Design

As of March 2019, Skillshare has over 27,000 premium classes and more than 2,000 free classes available. The platform has introduced the "Groups" feature that allows members to connect with other creators, share work, and take skills to the next level through engaging discussions and prompts. This feature enables to connect with other Skillshare members more easily — ask questions, give and receive feedback, or simply discuss the interests.

Vast resources of digital information that allows customized learning outside of school classrooms



Shift from time-based to outcome based



Shift from degrees/diplomas to certificate and course completions

Focus on learning employability skills, not degrees. Example of top elearning market players

- Coursera
- Udemy
- Udacity
- Linkedin/Lynda.com
- Khan Academy

EdTech in the prior 10 years and next 10 years
Huge Opportunities to be mainstreamed

	2010 Source: Worldbank	2020 Source: Forbes
1	**Ubiquitous learning (incl. mobile Learning)** With the emergence of increasingly robust connectivity infrastructure, cheaper computers and mobile technologies, school systems globally are developing the ability to provide learning opportunities to students "anytime, anywhere".	**More accessible education** Online learning makes education available to those even in remote areas as well as make it easy to share curriculum across borders. Technology can improve access to education. Students can access communities of experts.
2	**Smart portfolio assessment** The collection, management, sorting, and retrieving of data related to learning will help teachers to better understand learning gaps and customize content and pedagogical approaches. Also, assessment, being supported by real-time data collection technologies, is becoming increasingly formative.	**More data-driven insights** By analyzing the data about how digital content is consumed, or educational technology is used, valuable data-driven insights for how to enhance learning can be attained. Technology, including big data, machine learning, and artificial intelligence, allow for in-depth personalization of the content for an individual's learning needs.
3	**Personalized learning (and teaching)** Education systems are investigating the use of technology to better understand a student's knowledge base from prior learning and to tailor teaching to both address learning gaps as well as learning styles. The role of the teacher in the classroom is being transformed from that of the font of knowledge to an instructional manager helping to guide students through individualized learning pathways, identifying relevant learning resources and creating collaborative learning opportunities.	**More personalized education** EdTech improves the quality of interactions with teachers. Today's classrooms are diverse and complex, and access to technology helps better meet each student's needs. Technological tools can free teachers up from administrative tasks such as grading and testing to develop individual student relationships. Teachers can access a variety of learning tools through technology to give students differentiated learning experiences outside of the set curriculum.
4	**Teacher-generated open content.** Schools are empowering teachers and networks of teachers to both identify and create the learning resources that they find most effective in the classroom. Using online sources, teachers can easily customize material to suit specific learning needs, such as style and pace of the learning course.	**More immersive education** Extended reality encompassing virtual, augmented, and mixed reality brings immersive learning experiences to students no matter where they are. This technology enables learning by experiencing. A lesson about ancient Egypt can literally come alive when a student puts on a VR headset and walks around a digital version of the time period.
5	**Redefinition of learning spaces.** The ordered classroom of 30 desks in rows of 5 will soon become a relic of the industrial age as schools are re-thinking the most appropriate learning environments to foster collaborative, cross-disciplinary, student-centered learning.	**More automated schools** Automation will continue to alter schools as more smart tools get incorporated, including face recognition technology to take attendance, autonomous data analysis to inform learning decisions as well as help automate administrative tasks.

Top EdTech Trends Post COVID-19 (1)

Trend 1: Blended learning in teacher training prominent opportunities

Electronic teaching materials

- good quality demo videos,
- lesson plans
- interactive study materials
- …

Well-designed teacher training systems can become a good complement and even replacement in some cases to the traditional face to face cascade teacher training models

Practice

- trial teaching
- preparing lesson

Teacher learning

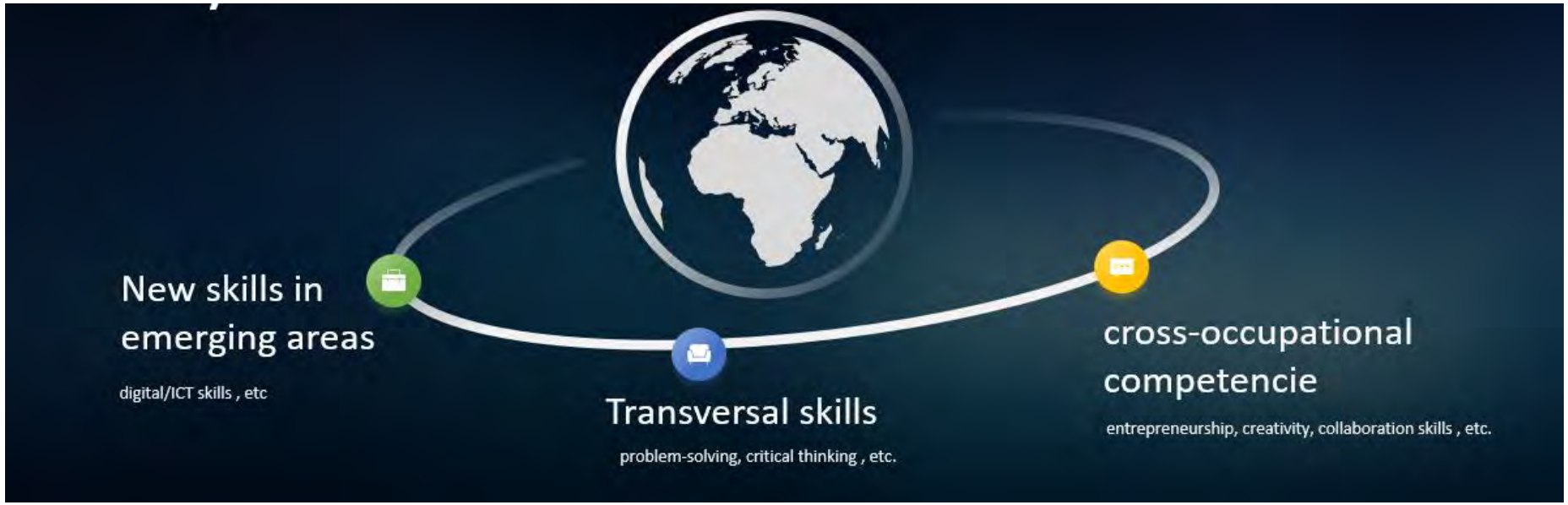
- self-taught
- live streaming teacher training lessons
- on-line examination
- …

Top EdTech Trends Post COVID-19 (2)

Trend 2: Blended learning for students the New norm post COVID-19

Top EdTech Trends Post COVID-19 (3)

Trend 3: As digitalization is changing the world of future jobs, demand for transversal and applied skills as well as digital skills will grow significantly in next 10 years.



Top EdTech Trends Post COVID-19 (4)

Trend 4: Student health monitoring integrated into school management systems

Top EdTech Trends Post COVID-19 (5)

Trend 5: Infrastructure investments that further enable education technology

Network 4G/5G

Electricity

IDC

Top EdTech Trends Post COVID-19 (6)

Trend 6: Multi Channel access with different devices and IoT

Mobile phone
iPad

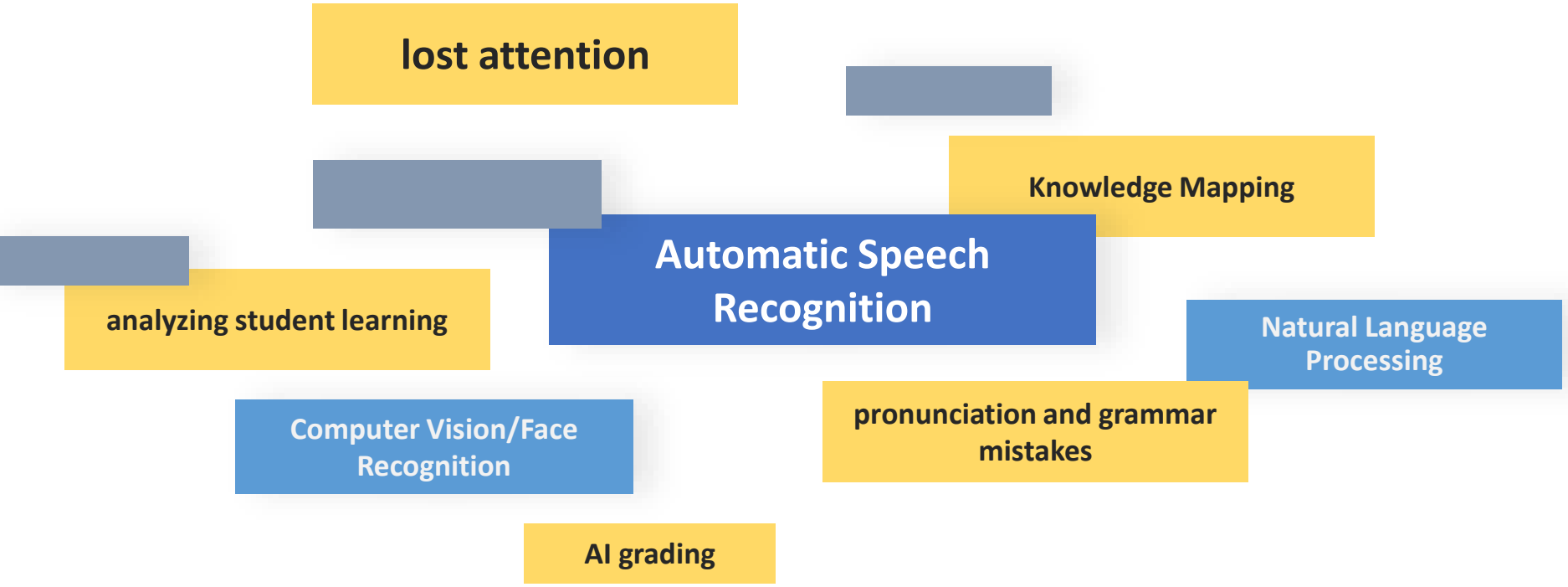
Radio

PC

TV

Top EdTech Trends Post COVID-19 (7)

Trend 7: AI capabilities and big data across the full learning process empower opportunities for personalized learning

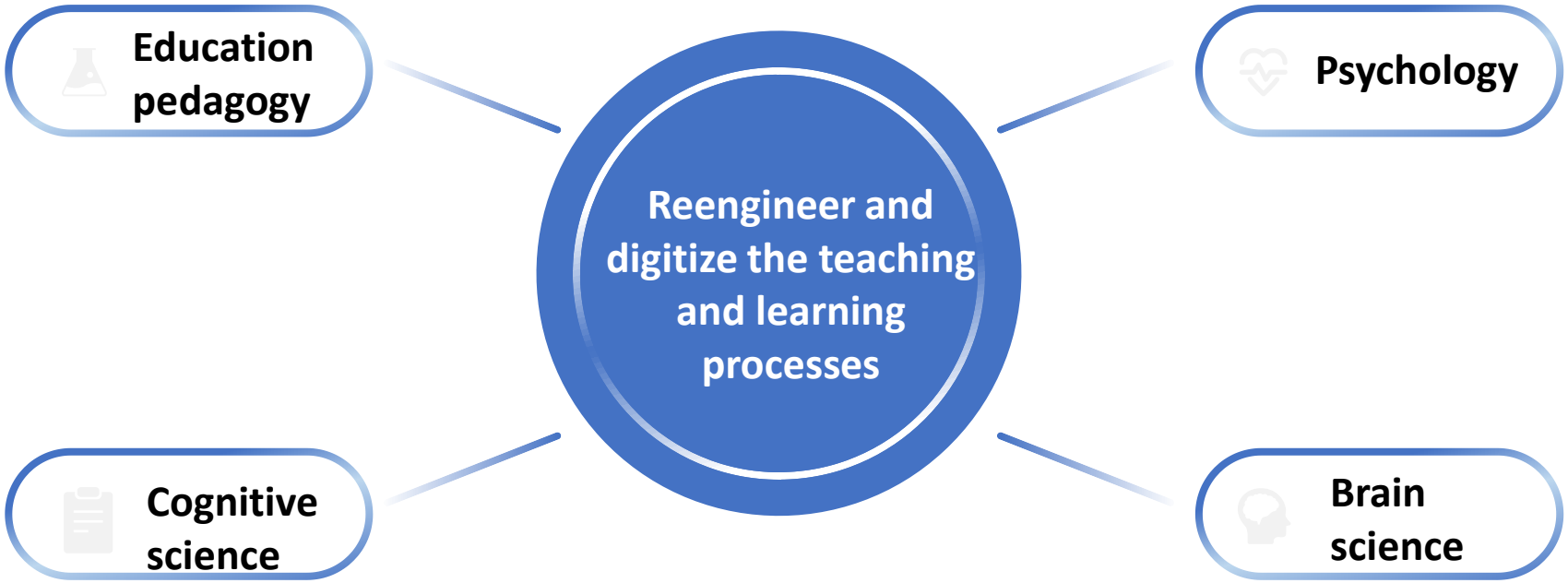


Top EdTech Trends Post COVID-19 (8)

Trend 8: Immersive learning through AR(Augmented Reality)/VR(Virtual Reality)

Top EdTech Trends Post COVID-19 (9)

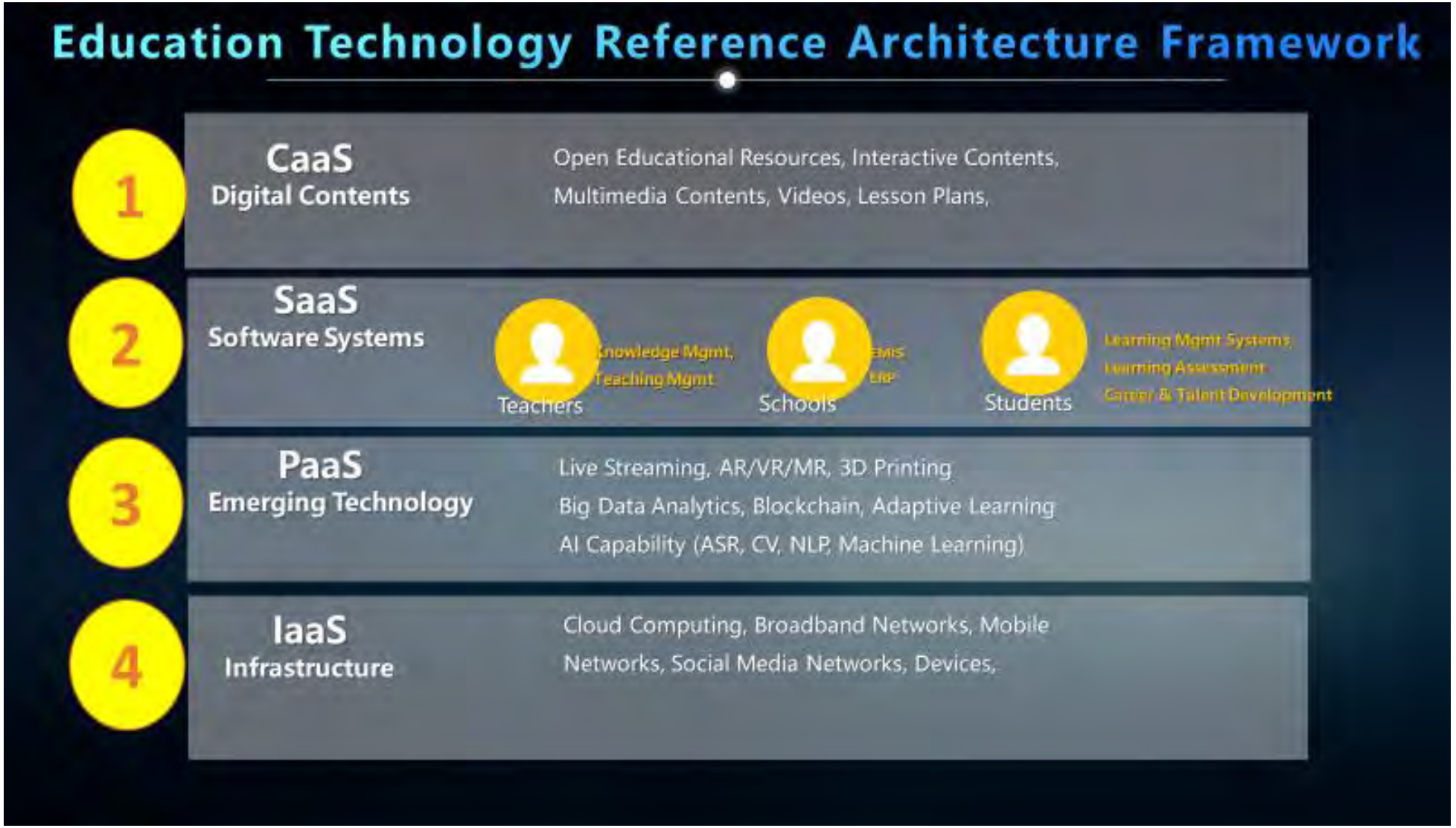
Trend 9: Convergence of cross discipline research and innovations



4. Education Technology Framework

IV.

What Is Education Technology?



ADB strategy: broadband to broad connectivity -Opportunities with EdTech

Technology
- Multi-channel approach depending on context: no tech, low tech, mid tech, high tech

Data
- Big data analytics on gaps of market demand & human capital supply
- Data visibility of teacher trainings & improvements
- Data visibility of student learning progress

Finance
- Leveraging domestic, private and global financing

Government policies

Quality
Equity
Governance
Financing

Infrastructure

Connectivity
Devices
Digital contents

- Ensuring learning for all
- Enhancing employability

School/ teachers and principals

Teacher/Principal Quality
Quality and equity
Community interaction and support
Resource mobilization and use

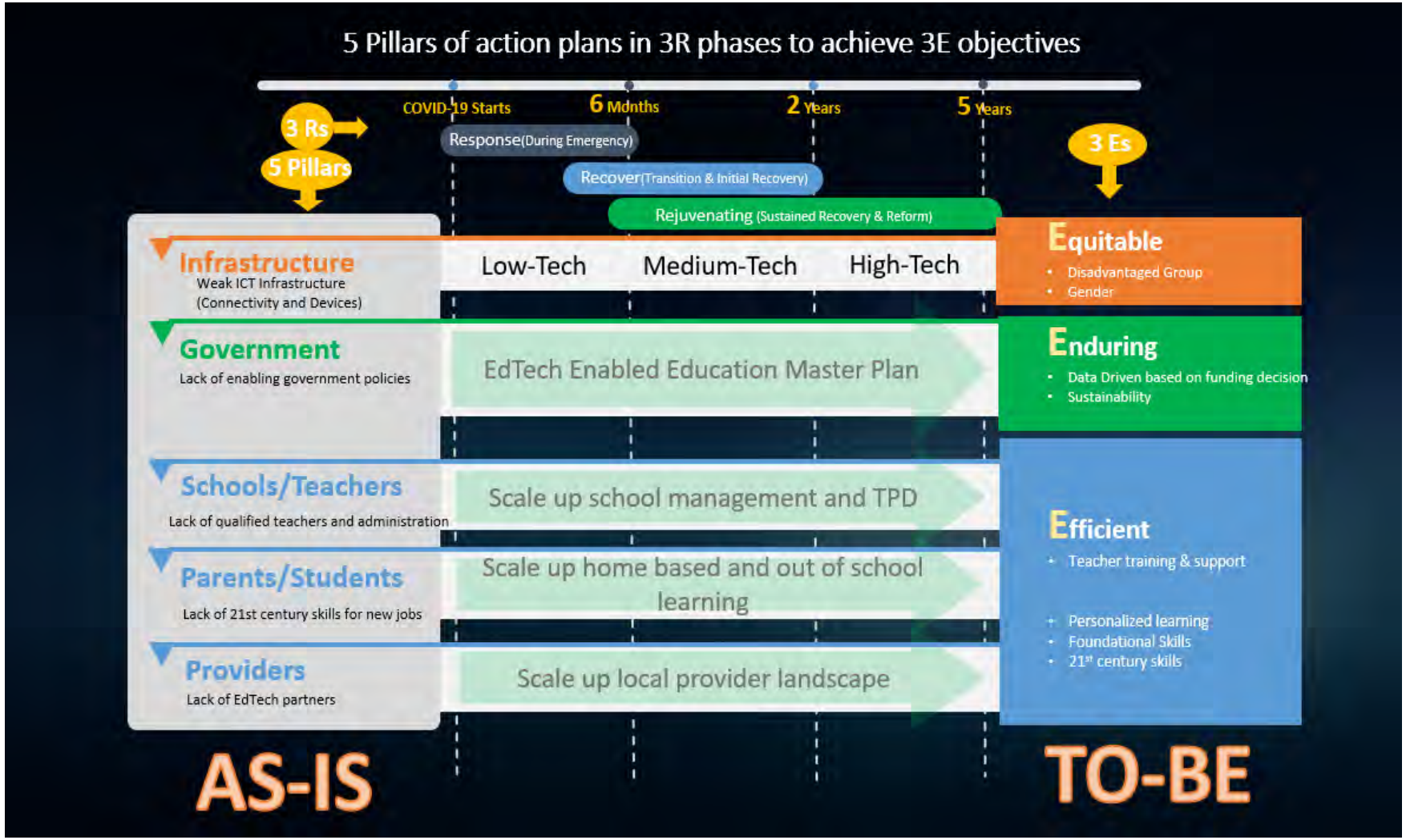
Home / students and parents

Parental support
Student learning support

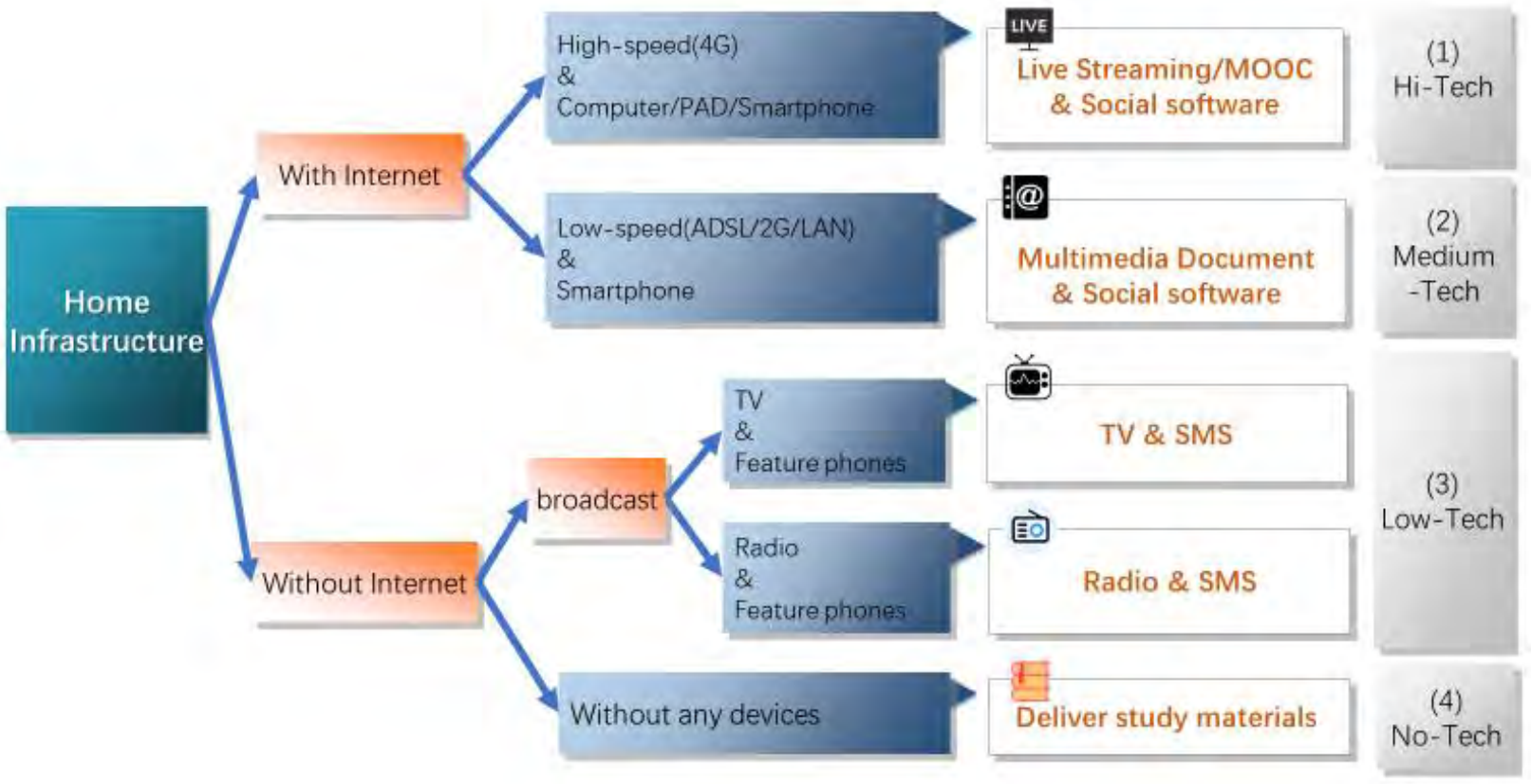
Providers/public private partnership

Education System Providers
Content Providers
Telecom Providers

Country EdTech Planning

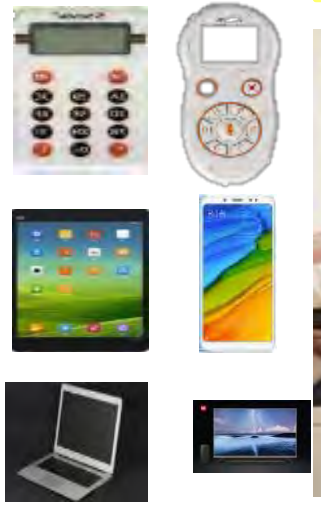


Levels of Access Based on Infrastructure Situation



Equitable

In Class

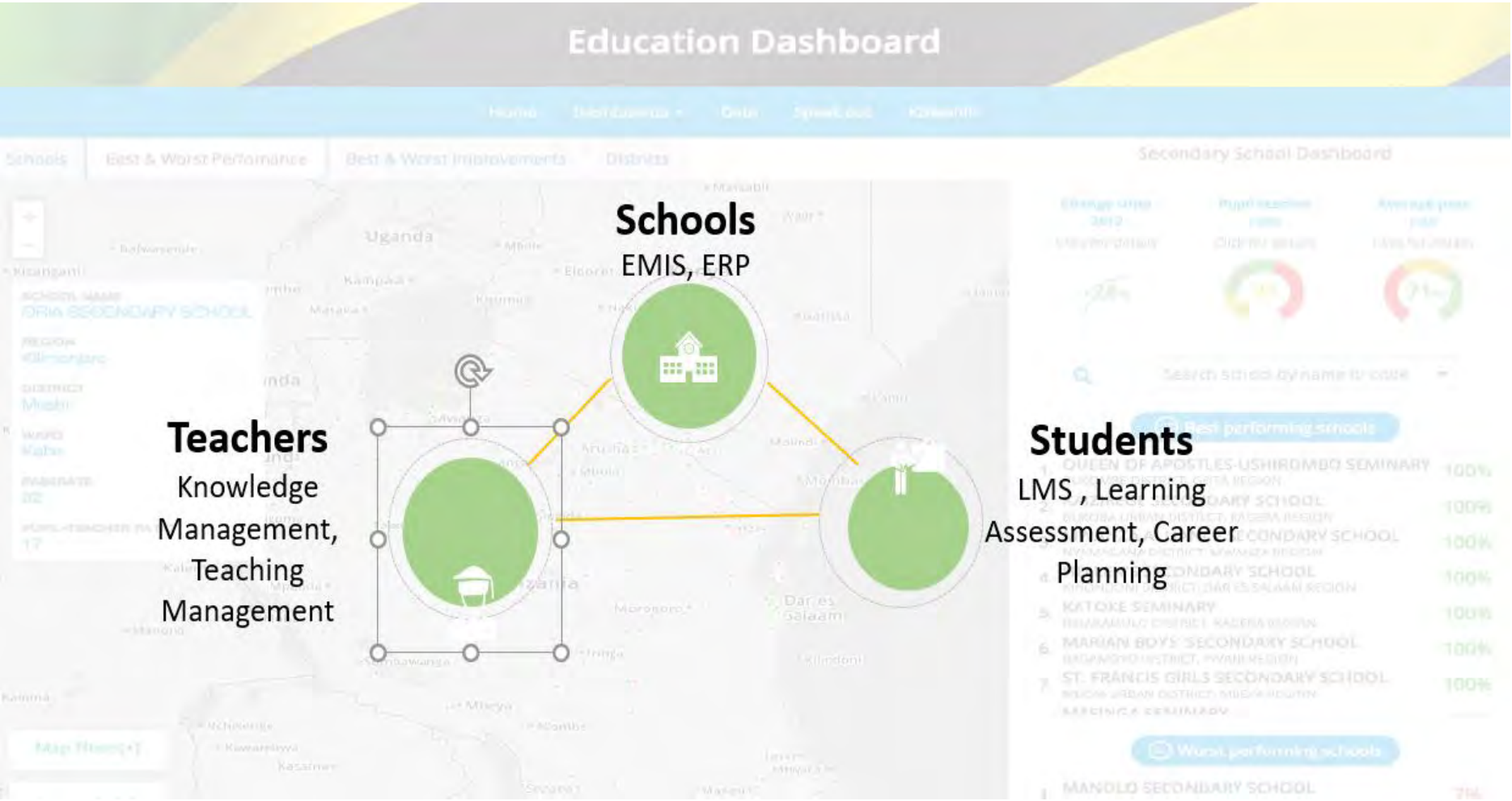


1. Teacher Digital Readiness
2. School Internet Connectivity
3. Labs & Devices

Outside of class

1. Student Digital Readiness
2. Network connectivity at home
3. Digital devices available at home

Efficiency in Teaching



Double Teacher Classroom

Expert tutor deliver lecture online covering 1 or many remote classrooms

Assistant tutor present in class interacting with students, answering basic questions, marking the assignment and homework, and collecting feedback.

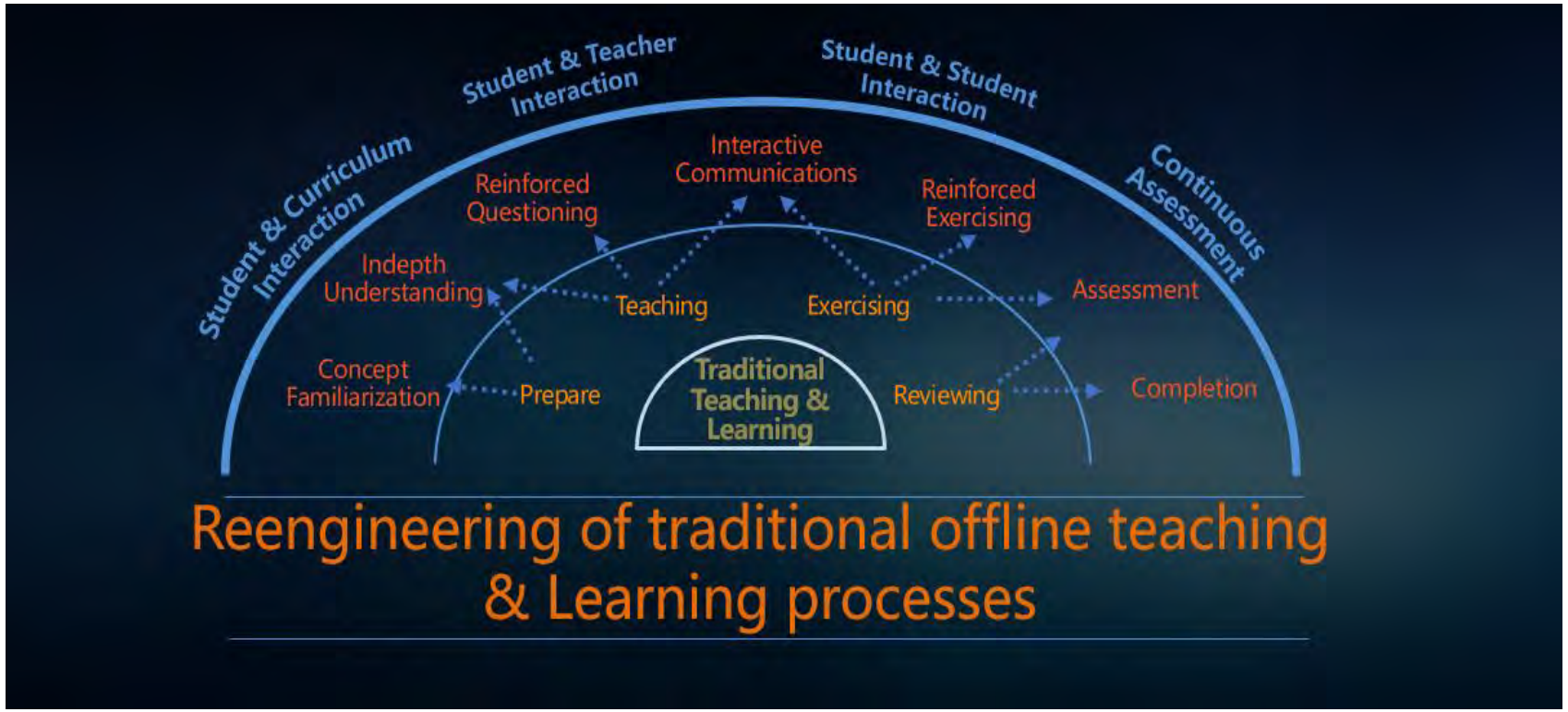
ADB

The HEAD Foundation

Revolutions to the Classrooms

Efficiency in Learning

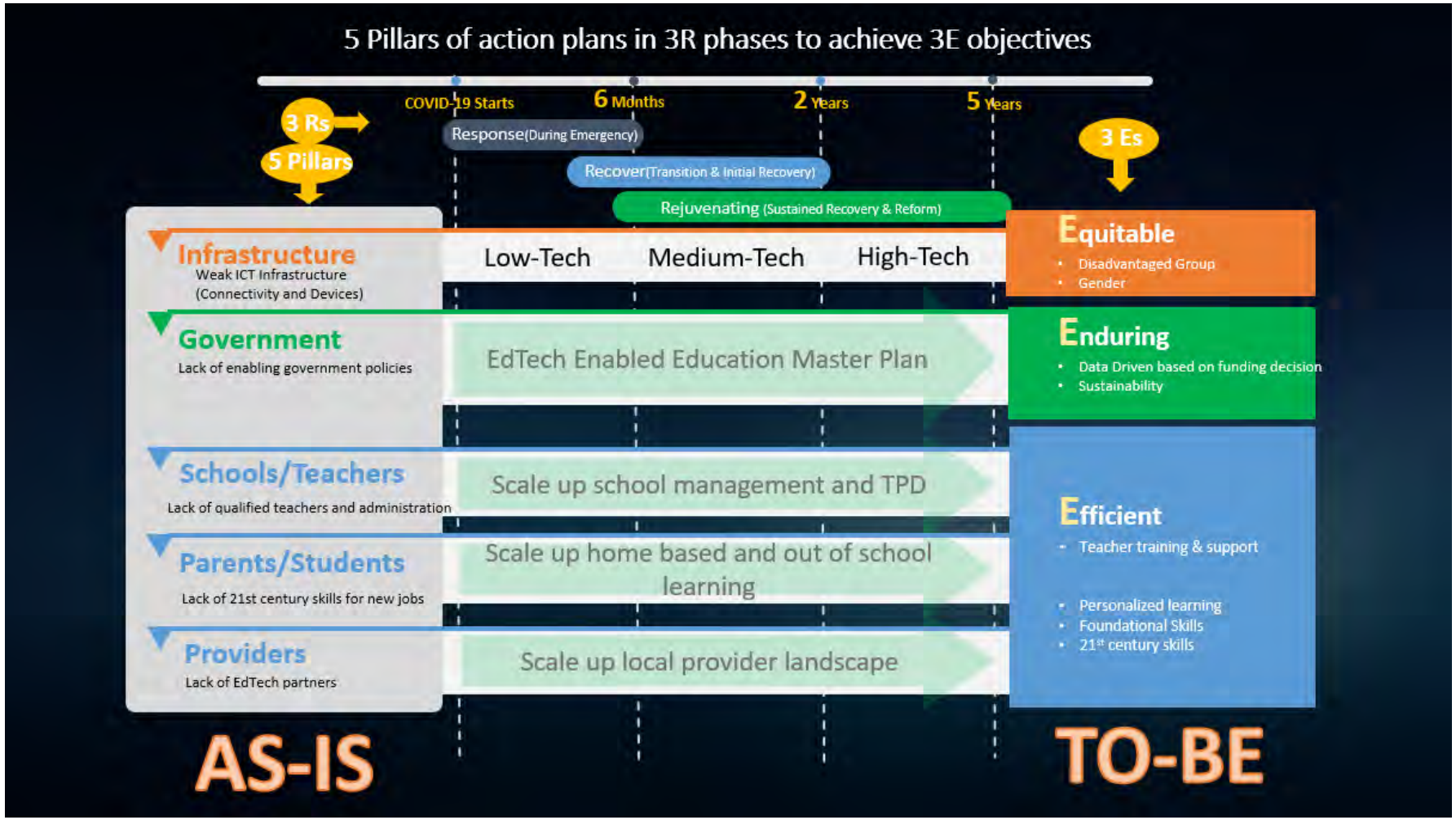
Digitizing the traditional Learning and Teaching Processes



5. Recommendations to Countries

V.

Recap the Country Planning Framework



Country Gaps and Opportunities for Improvements (1)

	Findings/gaps	Ideas for improvement	Digital principles
1	Schools lack connectivity, technical and training **capacity**. • lack of timely budgetary support for connectivity, equipment maintenance (replacements) and servicing. • lack of funding for technical support, user training, and capacity building.	• Develop mid to long term strategic sustainability plans that focus on "return on investment". • Support local capacity building in connectivity, technical servicing, support and user training.	Build for Sustainability Building sustainable programs, platforms and digital tools is essential to maintain user and stakeholder support, as well as to maximize long-term impact.

2	The general education system lacks robust digital **data collection** tools.
	• Gaps in data collection on:
	  • relevant, measurable outcomes
	  • school performance data
	  • behavioral data
	  • teaching and learning metrics useful for customizing learning
		• Develop a robust digital EMIS and data-driven school information system.
		• Integrate performance and behavioral data sources
		• provide due access to schools and teachers to help them customize and enhance student learning.
			Be Data Driven When an initiative is data driven, quality information is available to the right people when they need it, and they are using those data to take action.

Country Gaps and Opportunities for Improvements (2)

	Findings/gaps	Ideas for improvement	Digital principles
3	The current **curriculum** lacks focus on learning outcomes and does not seem to leverage the best digital standards and practices. Evidence shows: • The well-established systems, standards and principles are not being fully utilized. • The new systems currently under development conceptually resemble the old ones.	• Use and adapt established systems, tools and content freely available on world portals. Leapfrog mistakes by learning from other countries' experiences. • Draw upon the lessons learnt from the previous projects in creating new ones. Utilize the internationally accepted digital principles.	Use Open Standards, Open Data, Open Source, and Open Innovation An open approach to digital development can help to increase collaboration in the digital development community and avoid duplicating work that has already been done.
4	Education communities of practice have formed online (e.g. Telegram, Facebook). There seems to be a lack of **collaboration** with these online communities. • *~90% of teachers who use Telegram use it to share ideas, learning content and discuss education topics.*	• Nurture communities of practice, share data/information, create joint projects with them. • Foster teacher interactions to support mentorship and collaboration for improvement of learning outcomes.	Be Collaborative Being collaborative means sharing information, insights, strategies and resources across projects, organizations and sectors, leading to increased efficiency and impact.

Summary of recommendations

1. EdTech is not for the sake of technology, it's about education and about learning.

2. Each EdTech project needs to consider alignment among different pillars of the ecosystem

3. EdTech master plan integrated into education sector plan

4. Make Project Assessment evidence-based , output driven as opposed to input driven

Transforming Teaching & Learning in School Education with Education Technology Platforms

Thank you!

Breakout Session

Each team discuss and decide among your team:

1. What are the key issues/challenges your country faces short term and longer term?
2. For each issue/challenge, what are the possible areas of improvement opportunities that utilize Education Technology

EdTech Emerging Opportunities

1. Blended learning for Teacher Training Prominent Opportunities

- Well designed Learning Management Systems for teacher training with both Live Streaming and Recorded contents
- Demo videos, lesson plans, teacher quality assessment that tracks teacher improvements and advancements

2. Blended Learning for Student Learning The New Normal

- Multi-channel ready contents, LMS, Assessment systems
- Full visibility of student learning progress

3. Data Driven Decision Making for School Principles

- Full visibility of teacher quality and student learning progress
- Visibility of school operations efficiency

4. Data Driven Decision Making for Government Officials

- EMIS and national portal reflects national school operations, teacher development, student learning progress
- Visibility of gaps between jobs(demand) vs supply of human capital from schools and institutions

Data Driven Decision Making at all levels with EdTech

Government

Data Driven Decision Making on national human capital supply and market demand

Teacher quality

School operations data

Student skills profiles

Job market data

School Principals

Data driven decision making on school operations

Teachers

Blended Teacher Training

Students

Blended Student Learning

Jobs Portal

Big Data Analytics of Market

Digital Contents & Continuous Assessment