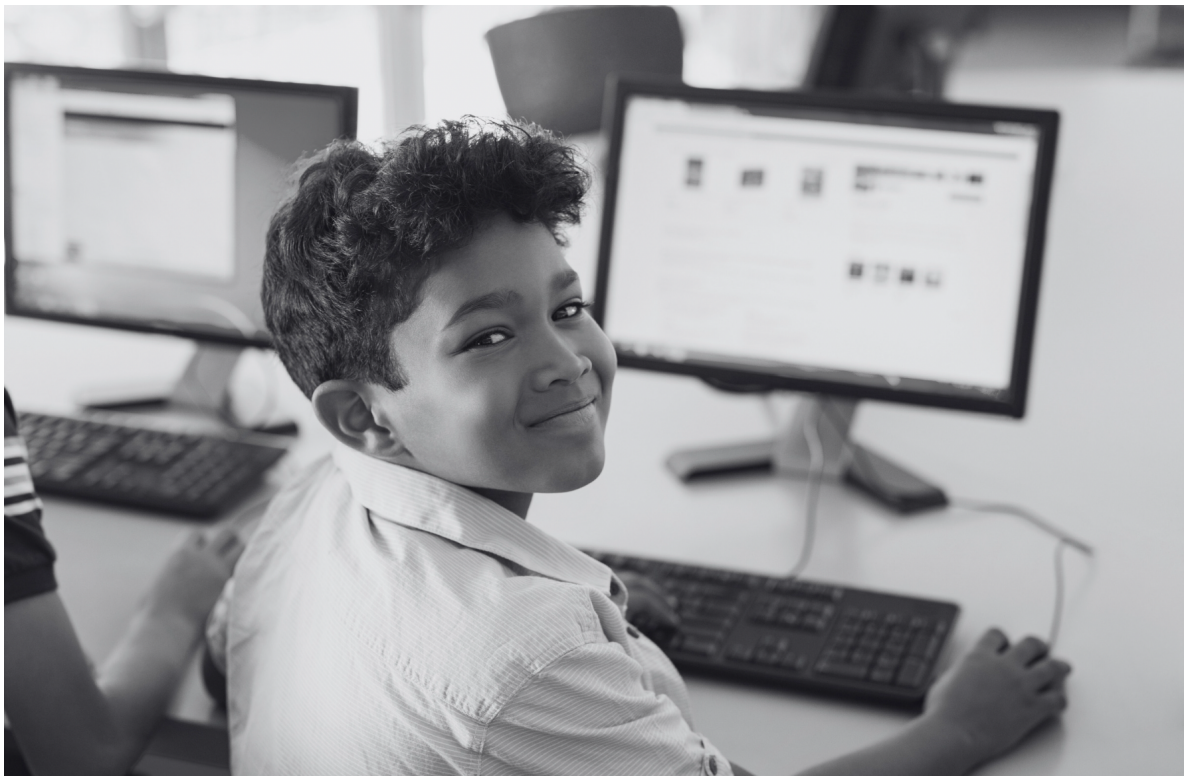
EduBull

Shaping the Future of Learning & Assessments



Introduction

The contemporary challenges of our time demand re-invention and re-imagination in all areas of our lives. education, with its many challenges, demand action plan for the future. the onset of the COVID-19 pandemic has heightened learning disparities at alarming rates around the world. While access to education was worse in developing countries, even those with a stable internet connection suffered the consequences of the pandemic-induced school closure and may suffer the long-term consequences of it. A recently published McKinsey report suggests that on average students around the world are 8 months behind where they would have been without the onset of the pandemic.

A study by the Azim Premji Foundation suggests that as early as January 2021, more than 90 percent of students assessed in India have lost at least one language ability (such as reading words or writing simple sentences), while more than 80 percent lost a

math ability (for example, identifying single- and double-digit numbers or naming shapes). It is estimated that the global economy by 2040 would have to face economic losses caused by the learning gaps widened by the pandemic. These studies demand meaningful intervention through technology and sustainable yet effective learning methodologies.

Additionally, in recent times innovation in education has largely been concerned with the task of teaching, on simply delivering lessons with little to no focus on arguably the most important aspect of education i.e., assessment. assessment that examines problems from the core, assessments that provide tools to improve and introspect not just assign numerical values to assess a student's capabilities. A bad grade can be devastating for a child's confidence and future

Owing to the changing trends and economic demands of the future, education needs to be skill-based and personalized to every child's skill set, the National Education Policy of India (NEP) 2020, clearly highlights the shift towards skill-based learning. Moving away from the 1835 model of education, education needs reimagination to support both the students and teachers who are equal stakeholders in the future of our children.

An ed-tech revolution awaits us, this is why we have developed our approach to education 4.0 through our trademarked Gap Anlyzer. Education 4.0. is the new way of tackling challenges ahead for education.

Problem Statement

1. COVID- 19 Pandemic & the Effect on Education

With the closure of schools, there was a rapid shift towards online learning to ensure continuity in education. However, the transition to online platforms was challenging, especially for students in rural areas with limited access to digital infrastructure and internet connectivity. The digital divide further exacerbated educational disparities.

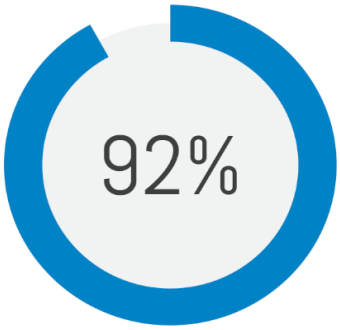
- **Socioeconomic Impact:** The pandemic deepened existing educational inequalities in India. Students from economically disadvantaged backgrounds faced greater challenges in accessing online education due to lack of resources, including smartphones, computers, and stable internet connections. The closure

of schools also affected children dependent on mid-day meals provided by schools for their daily nutrition.

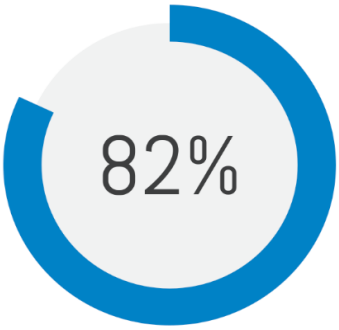
- **Innovations and Adaptations:** Despite the challenges, the pandemic also brought about innovations and adaptations in the education sector. Many educational institutions and teachers adopted digital tools and developed online content to engage students remotely. Educational television programs and radio broadcasts were used to reach students with limited digital access.

- **Policy Reforms:** The pandemic highlighted the need for policy reforms in the education sector. It underscored the importance of bridging the digital divide, investing in digital infrastructure, and ensuring access to quality education for all students, including those in remote areas. Efforts have been made to address these issues and develop strategies for future crisis management in education

- **Learning Loss:** The disruption caused by school closures and the shift to online learning led to significant learning loss for many students. The sudden change in the learning environment, reduced interaction with teachers and peers, and difficulties in adapting to online platforms affected the educational progress of students, particularly those from disadvantaged backgrounds.



Of children have lost at least one specific language ability from the previous year across all classes



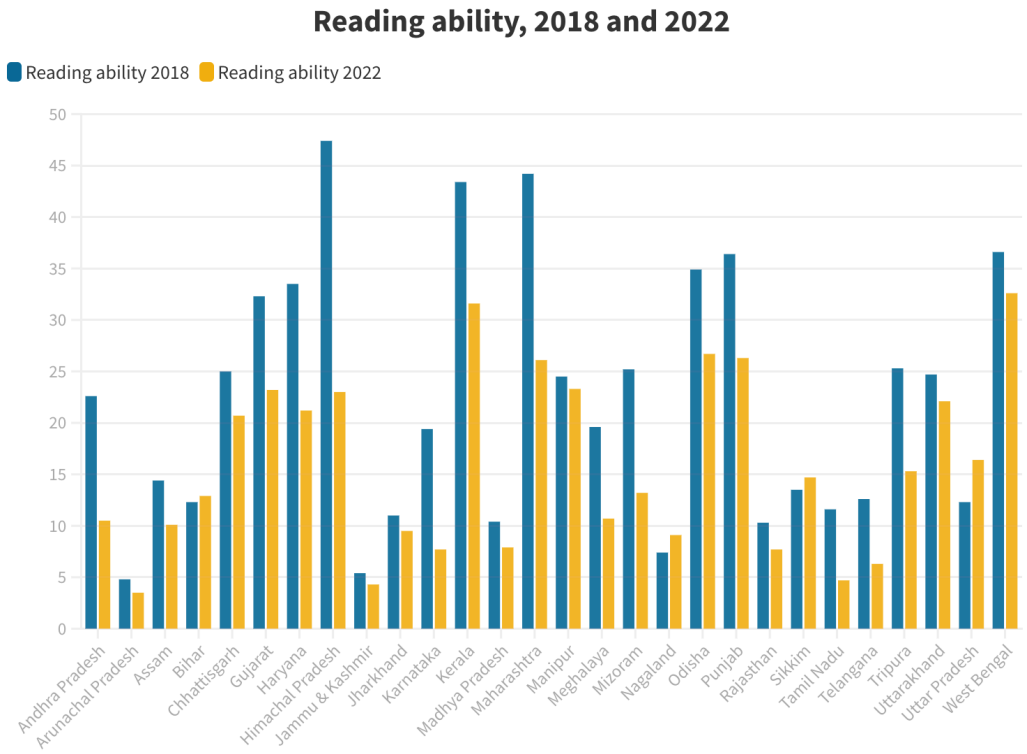
of children on an average have lost at least one specific mathematical ability from the previous year across all classes

1.1. Azim Premji University Research, 2021

The reading ability of school children. The reading ability, the study finds, has dropped to pre-2012 levels. This drop is seen across both government and private schools in most states and among both boys and girls

Reading ability loss by state in India

source: ASER REPORT 2022, [Current Year - ASER: Annual Status of Education Report]



Those who were not familiar with technological tools faced great difficulties in teaching and took longer to connect with students. The unpreparedness caused disturbed classroom sessions, interrupted lectures, technical errors and glitches and hence students took time to adjust to the new set up as well. This required them to develop an extra skill set of technological usage and online learning.

Besides the effect on short-term learning outcomes, extended school closures during the pandemic may even result in a loss in human capital and diminished economic opportunities in the long run for India.

Keeping up with a changed educational sector and dealing with the effect of learning loss will require new strategies and innovations at every level of the educational sector.

2. Absence of Effective Edtech

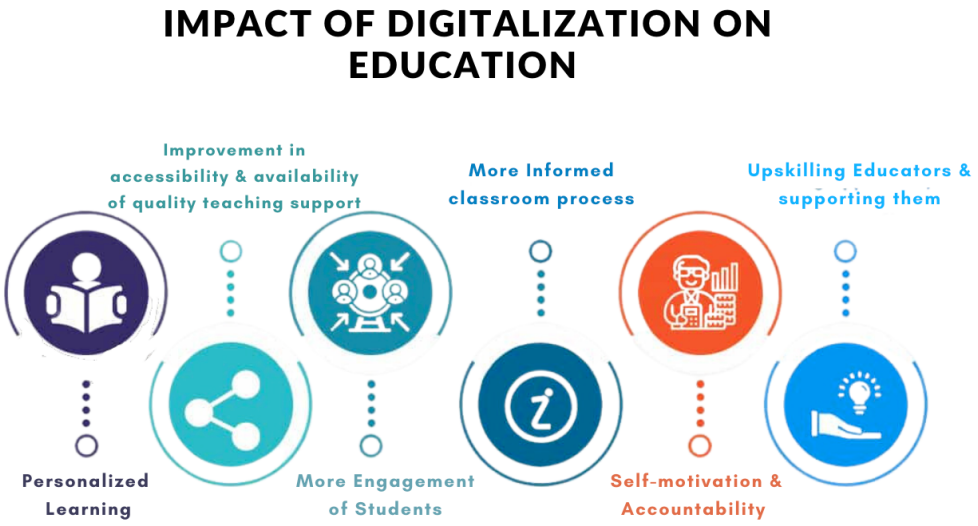
Edecutation Technology in India saw a record-breaking growth with the onset of the pandemic as the world was quickly adopting a online model of learning during lockdowns. The sudden burden on Indian schools caused the demand for edtech companies' services in the country. However, now, as the threat of the virus has subsided and educational institutions have opened their doors, the popular opinion towards online studies has changed.

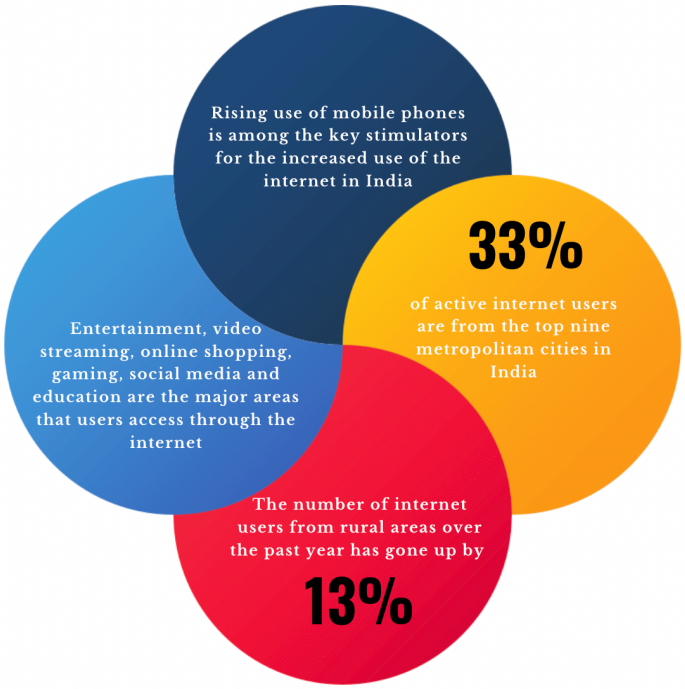
The Ministry of Education released its National Achievements Survey (NAS) 2021 late in May which assessed the health of the school education system in the country. The report, which was initially accessed by The Hindu, found out from a sample size of about 34 lakh Indian school going students that about 80 percent found learning at home during the pandemic burdensome. Further, they felt that they learnt better in school offline than online when they are connected with their peers

The current market offerings in india do not actually assess the real need of the school and teachers. They have neglected to inform the most valuable aspect of learning i.e., the school and the teacher. Furthermore MOST edtech companies have failed to provide real proof of concept to schools. This has caused for schools to digitalise at a slow pace, which is hampering the growth of the school ecosystem as well as indian students.

What Indian School need is not just a website or an app but a comprehensive, proven and seamlessly integrated method of digitalising. A supportive edtech solution that caters to their needs and takes every stakeholder - teacher, principal, student and parent along, connecting them to each other and bettering the process of learning and accessing.

Digitalization In India: An Opportunity for All





Government Intervention

The government of India with the ministry of education is bringing policy and actions to the centre stage in Indian Edtech space. The government is actively focusuing on more adoption and value creation of edtech in indian schools at all levels.

There are various inclusive considerations undertaken by every State/UT that bridge the digital divide to bring media, internet, and digital literacy to all students, not just those who are easiest to reach. With pro-active lead of the state governments to cater to and engage students in the learning process, tablets/smart phone were provided.

In financial year 2023, the total budget allocation for the education sector in India was estimated to be over a thousand billion Indian rupees. This was an increase from about 818 billion rupees in fiscal year 2018. India spent about 3.1 percent of its total GDP on education in 2022.

A comprehensive initiative called PM eVidya is launched as a part of the Atma Nirbhar Bharat Programme, which unifies all efforts related to digital/online/on-air education to enable coherent multi-mode access to education. Initiatives include

- DIKSHA is the nation's digital infrastructure for providing quality e-content for school education in states/UTs: and QR coded Energized Textbooks for all grades (one nation, one digital platform)
- Access through TV channels: One earmarked TV channel per class from 1 to 12 (One class, One channel)
- Extensive use of Radio, Community radio, and CBSE Podcast- Shiksha Vani
- Special e-content for visually and hearing impaired developed on Digitally Accessible Information System (DAISY) and in sign language on NIOS website/ YouTube

NISHTHA on DIksha - a teacher's upskilling initiative by the government

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A nationwide initiative to train teachers towards their holistic development and to provide quality education. 33 States/ UTs initiated the training in face-to-face mode and due to pandemic, 18 courses have been contextualised for online delivery. Around 24 Lakh teachers

have completed these online NISHTHA courses on DIKSHA with a record of 5.1 Crore enrolments and 4.6 Crore course completion across the multiple courses launched by 30 States/ UTs and 8 autonomous organisations under the Ministry of Education (MoE), Ministry of Defence (MoD) and Ministry of Tribal Affairs (MoTA). Courses are offered in 11 languages such as Assamese, Bangla, Bodo, English, Gujarati, Hindi, Kannada, Odia, Telugu, Punjabi, and Urdu

NEW EDUCATION POLICY (NEP) 2020

The National Education Policy's primary purpose is to raise the standard of education in India to a global level, allowing the country to emerge as a leader in knowledge-based sectors. This goal is reached by the National Education Policy's universalization of education.

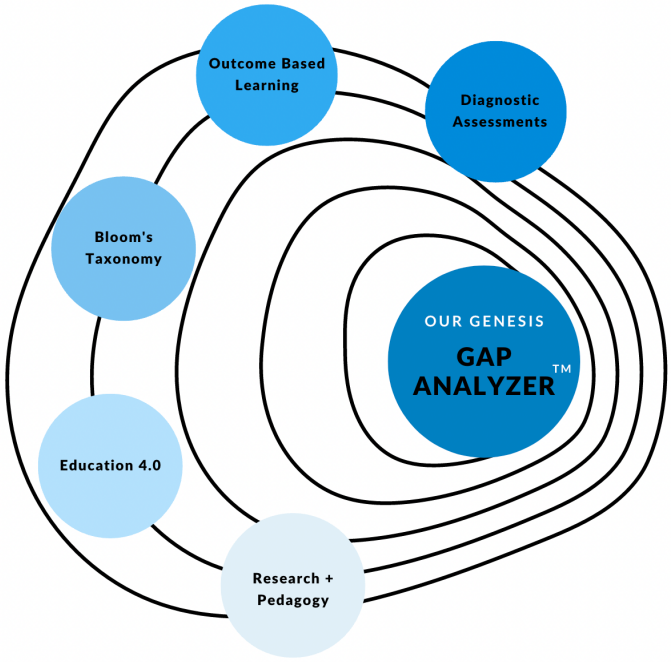
As per NEP 2020, Ensuring Equitable and Appropriate use of technology in all levels of education–

- To improve student learning outcomes,
- Teaching-learning and evaluation processes at scale.
- Enhance educational access to disadvantaged groups.
- Increase availability of data to enhance understanding of how children learn and
- Streamline educational planning, administration and management.
- Creating a Dedicated Unit for Building of World Class, Digital Infrastructure, Educational Digital Content and Capacity
- Promoting Education Technologies for Improving the Quality of Education
- Align major technology-related schemes with NEFT (ODB, ICT@Schools) etc.,
- Establishing NDEAR (Digital Architecture)

Digital techniques of teaching have recently been a component of schooling due to technological advancements. the digital techniques that the government will adopt to improve education through NEP 2023:

- The government will create a NETF (National Educational Technology Forum). This conference will aim to improve digital teaching methods in various schools by presenting new and innovative ideas.
- The government will establish a new organisation that will work across the country to offer more resources for digital education.
- There will be technology integration to improve the many operations in the classroom.

OUR GENESIS



After studying the emerging market and assessing the long-term and immediate needs of society for 2+ years to perfect our technology, study the market and work with feedback, we have developed our approach to education 4.0. An approach to education that seeks to evaluate individual skills and enhance them through addressing conceptual as well as skill-based gaps to support teachers and students in classrooms in an extremely simple manner. One assessment at a time.

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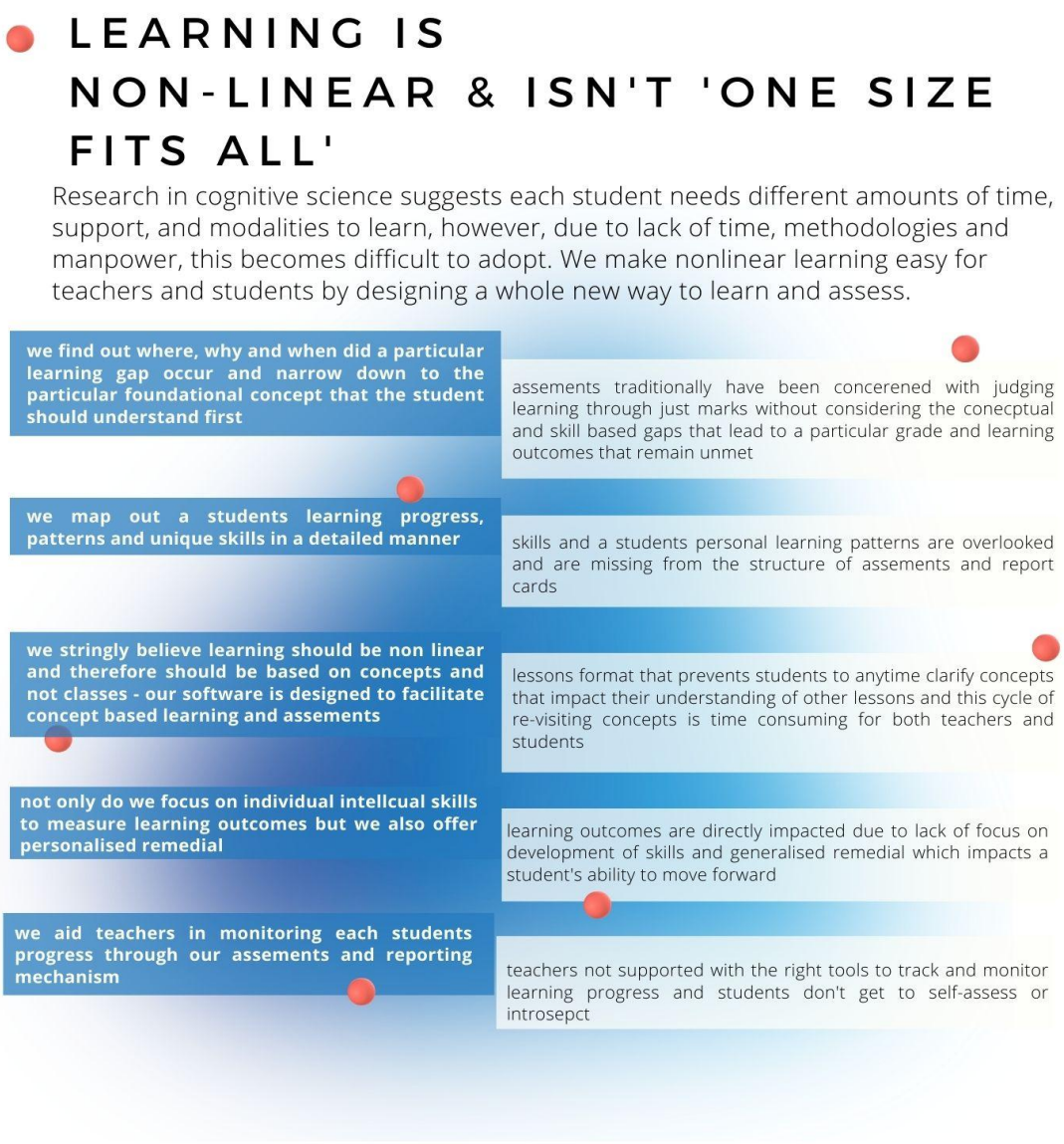
An ed-tech revolution awaits us, this is why we have developed our approach to education 4.0 through our learning audit system. Education 4.0. is the new way of tackling challenges ahead for education.

Our trademarked GAP ANALYZER through its unique ability to identify previous, current concept and skill based gaps, personalized remediation, and monitoring of individual learning aims to bridge the gaps in every child's learning supporting both teachers and students.



1. Diagnostic Assessments

Diagnostic Assessments are pre and post lesson assessments that help teachers understanding student’s previous and current learning gaps so that teachers can plan ahead and teach students more strategically, saving time and improving learning outcomes and help obtain better grades/results

Diagnostic assessments have multiple benefits for students and teachers, they can be utilised to improve the quality of teaching, improve results indirectly by helping teachers personalise learning and strategize working on weaknesses of the students through road maps of a concept and having personalised analysis of each student will make the teachers approach in teaching more informed. They help students achieve learning outcomes in an efficient manner. however , diagnostic assessments only yield results if proper remediation is done by the teacher/stakeholders.

THE DIFFERENCE BETWEEN

OUR DIAGNOSTIC ASSESSMENTS VS. CURRENT ASSESSMENTS

POWERED BY OUR AI TECH

	Our Diagnostic Assessments System	Current Assessments Sysrem
ACCESSIBILITY	Diagnostic assessments are cost-effective and can be accessed anytime, anywhere by teachers for pre and post-lecture analysis	Limited Accessibility and thus have to supervised by teachers in class
WORK LOAD ON TEACHERS	Reduces teacher's workload significantly and is a teacher-centered form of assessment that can be made with a single click	Teachers have to devote a significant amount of energy and time in making lesson plans, discussion topics and other assessments for each class
LEVEL OF ANALYSIS	Provides detailed individual and class-wise analysis reports measuring academic skills, and weaknesses & strengths. Also outlines previous and current learning gaps	Teachers have to manually figure out metrics to analyze tests and have to devote a lot of time in making reports on it
IMPACT	Measurable and positive impact on overall learning outcomes of students and support for teachers	The impact cannot be measured as there is no system of determining each student's actual learning
LEARNING OUTCOMES	Learning outcomes are more clear and personalised for each student, supporting teacher in teaching and student in achieving those learning outcomes	Learning outcomes are manually defined on for the entire class or course, not individually for each student
REMEDIAL	Remedials are essential to benefit from diagnostic assessments and improve learning outcomes. We offer the biggest library of notes, questions banks, solutions, & videos - teachers can provide personalized remedial without any extra effort	Teachers have to take extra classes and invest a lot of time and energy into solving doubts and ensuring every student is learning which makes increases their workload even more
REPORTING & MONITORING	System of reporting and monitoring of learning and skill gaps, and academic progress for each concept, for each student is done automatically	Teachers have to manually establish ways to monitor learning and spend time making quizzes and tests
RESULTS	Complete and analytical academic & skill-based results along with grades are automatically generated in real time for each student and the entire class	Result based assessments are used to provide grades only

THE BEST PART IS - YOU DON'T HAVE TO CHANGE ANYTHING TO ADOPT OUR DIAGNOSTIC ASSESSMENTS SYSTEM!

2. Outcome Based Learning

Pioneered by psychologist William G. Spady, outcome-based education is characterized by defined goals, student comes first approach, and flexible learning until students achieve their goals successfully.

The concept of outcome-based education has been adopted in the traditional systems, however, its implementation as a student-centered, goal-oriented and flexible system is increasingly becoming redundant in the face of hybrid learning. Through Edubull, we aim to provide technology and tools for students to define and achieve their goals by addressing problems at the root and seeking remedial to move towards their goals. with the help of technology, we aim to create a supportive infrastructure for students, their teachers, and guardians to develop a fresh perspective on outcome-based learning.

OBE can provide several benefits to teachers in a classroom setting. Here are some ways in which outcome-based education can help teachers:

Clarity of Goals: OBE emphasizes clearly defined learning outcomes, which helps teachers to have a clear understanding of what students should be able to achieve by the end of a course or lesson. This clarity enables teachers to align their teaching strategies and instructional materials to the desired outcomes.

Targeted Instruction: With clear learning outcomes, teachers can design instruction that is specifically tailored to help students achieve those outcomes. They can identify the essential knowledge, skills, and competencies required and develop appropriate teaching methods, activities, and resources to support student learning.

Assessment Alignment: OBE ensures that assessments are closely aligned with the learning outcomes. Teachers can design assessments that directly measure student progress toward the desired outcomes. This alignment helps teachers evaluate student learning accurately and provide constructive feedback to guide further instruction.

Individualized Instruction: OBE encourages teachers to focus on individual student progress and growth. By continuously assessing student learning against the desired outcomes, teachers can identify areas where students may need additional support or enrichment. This allows for more personalized and differentiated instruction to meet the diverse needs of students in the classroom.

Engaged Learning: Outcome-based education promotes active and engaged learning experiences for students. Teachers can design activities and projects that are directly connected to the learning outcomes, making the learning more relevant and meaningful for students. This can enhance student motivation and engagement in the classroom.

Continuous Improvement: OBE emphasizes a cyclical process of assessment, feedback, and improvement. Teachers can use the data from assessments to identify areas where students may be struggling and adjust their instructional strategies accordingly. This iterative process allows teachers to continuously refine their teaching methods and improve student outcomes over time.

Accountability: OBE holds teachers accountable for student learning outcomes. By focusing on specific, measurable outcomes, teachers can track student progress and demonstrate the effectiveness of their instruction. This accountability helps in identifying areas of improvement and enables teachers to make evidence-based decisions about their teaching practices.

Overall, outcome-based education provides a framework that empowers teachers with clear goals, targeted instruction, aligned assessments, and continuous improvement opportunities. It enables teachers to create a more purposeful and effective learning environment that supports student success and achievement.

We advocate for students to have their own tools and time to understand and learn and believe that each student deserves to learn at their own pace with the support of their teachers.

3. Bloom’s Taxonomy

Bloom's Taxonomy is a widely recognized framework in education that classifies learning objectives into a hierarchical structure. Developed by Benjamin Bloom in the 1950s, it provides a valuable tool for educators to design instructional strategies, assess learning outcomes, and promote higher-order thinking skills. In this note, we will explore the importance of Bloom's Taxonomy and analyze the impact of each level of the taxonomy on student learning.

Remembering:
The first level of Bloom's Taxonomy, Remembering, focuses on the recall of factual information. This level provides a foundation for learning by ensuring students have a solid understanding of essential facts and concepts. By facilitating the acquisition of knowledge, Remembering sets the stage for higher levels of cognitive processing.

Understanding:
The Understanding level involves comprehending information, interpreting ideas, and explaining concepts in one's own words. This level encourages students to go beyond simple memorization and helps them develop a deeper understanding of the subject matter. Understanding promotes critical thinking and the ability to connect ideas and concepts.

Applying:
The Applying level involves the transfer of knowledge and skills to real-world situations. It emphasizes the practical application of learned concepts and principles. Through problem-solving, applying learned knowledge to new contexts, and using acquired skills, students develop the ability to analyze complex problems and generate creative solutions.

Analyzing:
Analyzing requires students to break down information into its component parts, examine relationships, and identify patterns or trends. This level enhances students' ability to evaluate information critically, draw conclusions, and make informed judgments. Analyzing enables students to identify biases, evaluate evidence, and develop a deeper understanding of the subject matter.

Evaluating:
The Evaluating level focuses on the assessment and judgment of information, arguments, or methods. It requires students to assess the value, credibility, and reliability of information

sources, arguments, or solutions. Evaluating enhances students' critical thinking skills, enabling them to make informed decisions, justify their opinions, and engage in reflective thinking.

Creating:
The highest level of Bloom's Taxonomy, Creating, involves generating new ideas, designing original solutions, and producing innovative products. This level promotes higher-order thinking skills and encourages students to synthesize information, apply their knowledge creatively, and engage in problem-solving. Creating fosters innovation, entrepreneurship, and the ability to think outside the box.

Bloom's Taxonomy provides a comprehensive framework that supports effective teaching and learning practices. By incorporating all levels of the taxonomy into instructional design, educators can promote deeper learning, critical thinking, and higher-order cognitive skills in students. Remembering establishes the foundation, while Understanding, Applying, Analyzing, Evaluating, and Creating progressively enhance students' abilities to think critically, solve problems, and generate creative solutions. Understanding the importance and impact of each level of Bloom's Taxonomy empowers educators to design engaging and effective learning experiences that promote holistic student development.

PROOF OF CONCEPT

What is a Proof of Concept?

While EdTech testbed activations are the gold standard for efficacy research, a short-sharp alternative is a proof of concept.

Proof of concept refers to evidence obtained from a pilot project. In relation to EdTech solutions being trialled in new international markets- A proof of concept is executed to help demonstrate the solutions suitability and probable acceptance in the market.

A formal product-market fit assessment as part of a proof of concept program provides EdTech companies with a clear understanding of how their product may be accepted with consideration to onboarding, training and support, as well as ongoing use and overall impact.
The process is a hands-on, in-market learning experience connecting EdTech organisations directly with in-country education partners and prospective customers. The program delivers direct feedback and testimonials from engaged users who are seeking to improve learning outcomes for their students.

This is a model that can fast track an EdTech company's understanding of any differences in customer behaviour, to maximise their solutions acceptance in a new market, provides access to new customer prospects, and provides a tangible example for approaching new education customers.

Currently, no edtech start up in India has been able to produce proof of concept or even has conducted a detailed research on it. This has been the cause of decline of most indian edtech start ups of the time that ventured into the market without actually assessing what the market needs, demands and can digest in India.

This is why, we aim to be the first to provide proof of concept and provide real life proof of the importance and efficacy of Edubull.