bloom

Domain
Education for the future

Field
System Design

Design Thinking
Group 6

01 THE CURRENT SYSTEM

Curriculum is redundant
Our system still values discipline and a strucured regimen under the teacher's discretion. It still teaches many of the same values, but with yesterday's methods.

The way we measure success
Our education system has come to measure success with standardized tests. Not only do these tests dictate the curriculum, but also what is deemed important for each given level of education. Standardized tests do not take into account learner differences, out-of-the-box thinking, or the individual qualities, talents, and passions of students.

Books over practice
Theoretical learning is what the knowledge is about and Practical learning is how the knowledge was learned. Practical work promotes experiential learning. Practical work encourages self-learning.

The Funding gap
Education funding in India varies by state. as state governments determine what percentage of their budget should go toward education. Hence some of the students in poorly funded institutions perform poorly on standardized test compared to well funded institutions.

Cut throat competition
Education in India has always been turned out to be competitive atleast at higher levels as a lot of children tend to give the same test without knowing any other alternative. On one hand it builds a competitive mindset but it also has a lot of ill effects.

LITERATURE REVIEW

We studied the penetration of the current education system in India over the years, the ratios of various stakeholders, to understand the retention rate and try and figure out lacunae we could target and fill with our solution, to be implemented some time in the near future.

77.7%

India's literacy rate

66.4% Andhra Pradesh

96.2% Kerela

7 : 5

Ratio of public schools to private schools

(8-11) **95%** Primary

(11-14) **69%** Secondary

(14-18) **25%** Senior Secondary

Enrollment of students in schools

45.15% Primary

42.08% Secondary

Pupil to Teacher ratio

- education.gov.in
- tarang.org

02 → WHAT DOES THE FUTURE LOOK LIKE?

We asked a group of 30 respondants a few open ended questions on the current state of the education system, and what they think the future of education will look like. The respondant group consisted of an equal number of school-going and university-level students, parents and teachers from eminent institutions across India.

93%
Believe the current system is rigid, and curtails true growth

70%
Believe the current balance of theroetical vs practical learning is insufficient

23%
Believe there's no difference in the education imparted at a private and public school

93%
believe formal school education teaches life skills along with imparting knowledge

86%
Believe education will education will be mostly digital and technology- based, especially after the pandemic.

100%
The number of student respondants who feel there is a lack of choice and personalisation

VS

16%
The number of parent respondants who feel there is a lack of choice and personalisation

- rounded off figures

03 INSIGHTS

A collection of quotes and implications from two user surveys and brief interviews. These served as an organic, real-life word-web, or a textual mood board of sorts. This helped us extract relevant topics to build what we needed to.

"Everything can't be digital. School teaches lessons for life, teaches you how to deal with people. The pandemic has already had a negative effect on my kid's social skills."

"I'm really scared of math. Yet I need to study it and bear the panic attack each exam gives me."

"CCE was a good idea. It failed because we're not ready as a society"

"Teachers may have experience but they find it hard to adapt to new technologies. "

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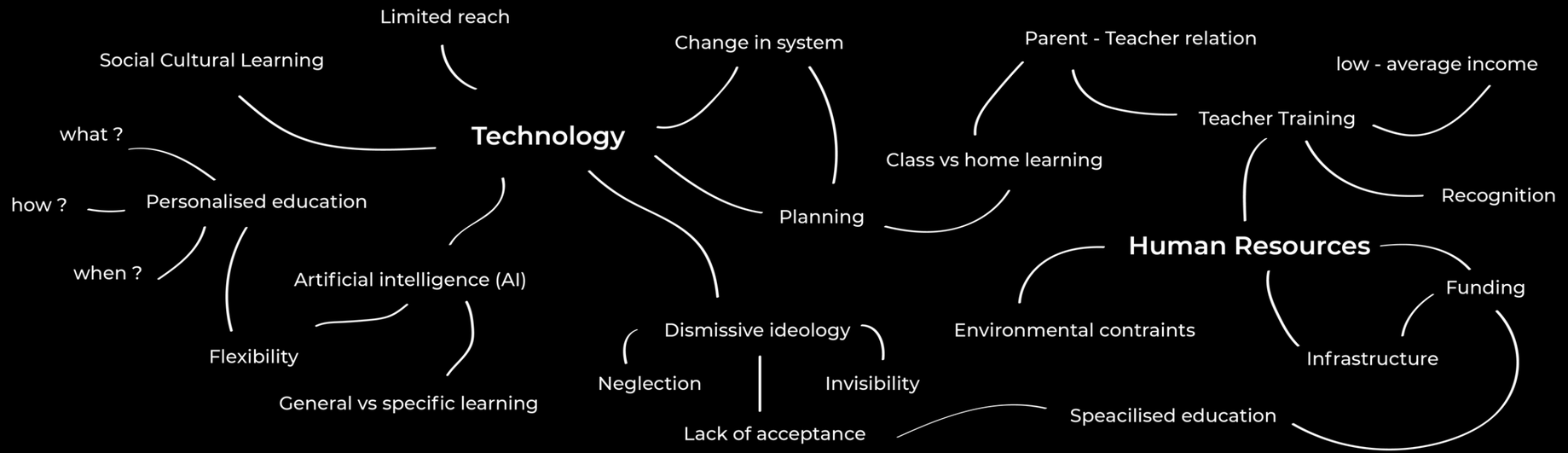

04 NATIONAL EDUCATION POLICY

The National Education Policy (2020) proposed by the central government was chosen as a realistic guideline to base the new system upon.

TThe NEP proposes sweeping, changes including opening up of Indian higher education to foreign universities, dismantling of the UGC and the ALL India Council for Technical Education (AICTE), introduction of a four-year multidisciplinary undergraduate programme with multiple exit options, and discontinuation of the M.phil programme.

In school education, the policy focuses on overhauling the curriculum, "easier" Board exams, a reduction in the syllabus to retain "core essentials" and thrust on "experiential learning and critical thinking"

In a significant shift from the 1986 policy, which pushed for a 10+2 structure of school education, the new NEP pitches for a "5+3+3+4" design corresponding to the age groups 3-8 years (foundational stage), 8-11 (prepartory), 11-14 (middle), and 14-18 (secondary). This brings early childhoon education (also known as pre-school education for children of ages 3 to 5) under the ambit of formal schooling. The mid-day meal programme will be extended to pre-school children. The NEP says students untill Class 5 should be taught in their mother tongue or regional language.

The policy aims to bring about a radical change in current education system, to make learners more global. While it talks about pre-school, school and higher education systems, for the scope of the project we stuck with developing an alternative schooling system for the future, that aligns itself with the principles of the NEP.

LEARNER-CENTERIC EDUCATION

Education systems right now are result or assessment centric, instead of being learner centric. This causes disparity in the amount of education one receives, as different learners with varying psychological and physiological needs learn differently. With a learner-centric system, we aim to bridge this gap and reduce the amount of disparity. While NEP brings out numerous points that'll prove beneficial if implemented properly, there are 4 principles that will have the biggest impact on the success of the policy, that we picked up and moulded our project around.

Flexible

A system that's customizable and personalisable according to the interests and capabilites of each learner.

Ever Evolving

A non stagnant system that reduces curriculum redundancy by evolving with the needs of the changing society.

Vocational

Promote practical hands-on learning, learning by play to maximise the inculcation of knowledge imparted, to produce industry-ready human resources

Digital

A system that makes the best of available and upcoming technology, to make learning from anywhere equally effective

05

GARDNER'S THEORY OF MULTIPLE INTELLIGENCES

The theory of multiple intelligences proposes the differentiation of human intelligence into specific “modalities of intelligence”, rather than defining intelligence as a single, general ability. There are eight primary intelligences as proposed by Howard Gardner

01 **Linguistic**

02 **Mathematical**

03 **Spatial**

04 **Musical**

05 **Kinesthetic**

06 **Naturalistic**

07 **Interpersonal**

08 **Intrapersonal**

06 GOALS

Mission Statement

Design an alternate, multi-media education system for the future.

Key Principles

Flexibility
- Courses
- Timings
- Medium of Instruction

“Dirty hands”
- Practical Learning
- Collaborative
- Experimentative

Up to date
- With technology
- Non redundant
- Ever evolving

Holistic
- Overall development
- Non theoretical
- Talent oriented

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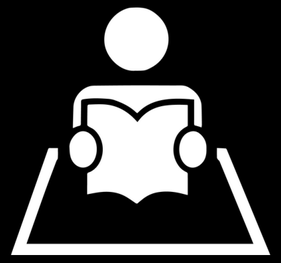
A TYPICAL EDUCATION STRUCTURE

Any educational system consists of two primary zones or experiences.

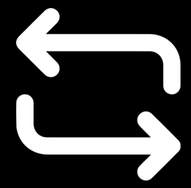
The Classroom Experience

A learner traditionally receives instructions at school, and learns all there is to learn through an instructor and their teaching aids at school.



The Home Experience

The learner is then given tasks or assignments to complete at home, to explore and understand the taught topics further and to reinforce them.



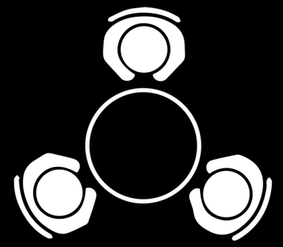
But what if we flip them?

THE bloom STRUCTURE

Understanding the importance of both, we decided to redefine what they meant and redesign the individual experiences.

The Home Experience

Through a standardised digital learning platform, the learner receives instructions at home, for them to learn, remember and theoretically explore on their own as per their convenience and state of mind.



The Classroom Experience

The learner comes to an open, collaborative classroom to practically explore the previously gained knowledge with the help of hands-on activities and relevant technology.

UNDERSTANDING HOW WE LEARN

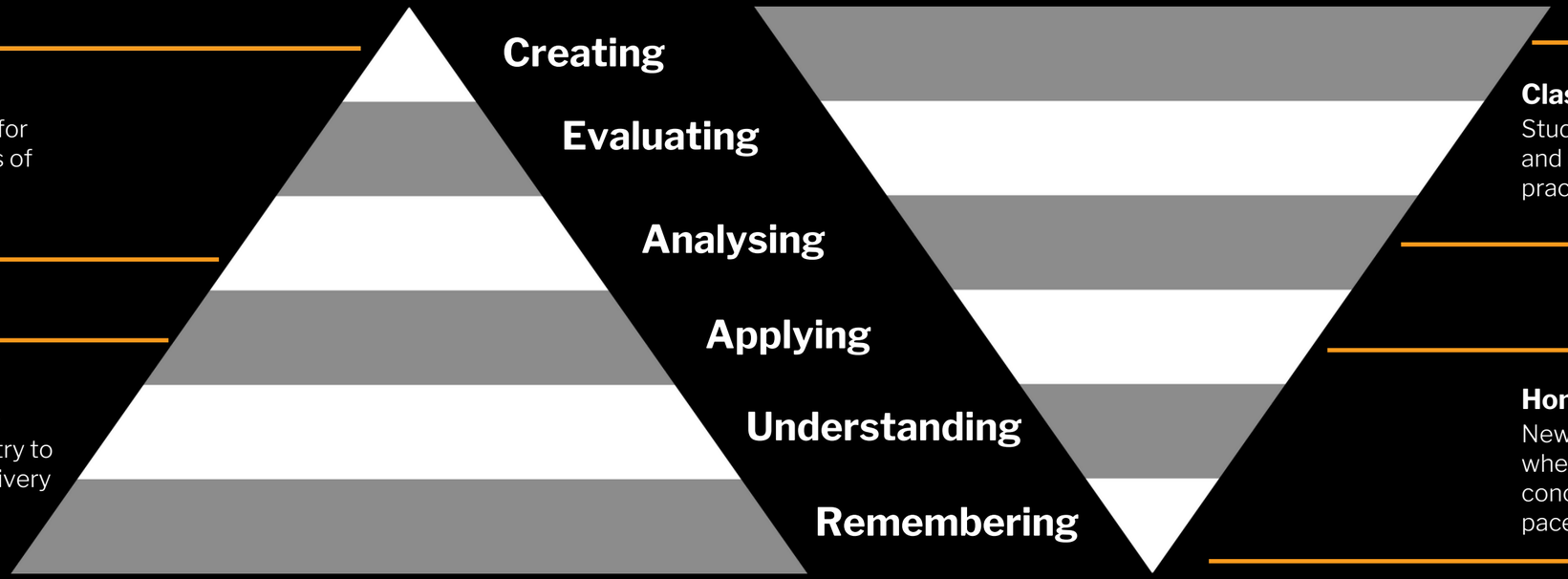
With the help of Bloom's taxonomy

Bloom's taxonomy is a universally recognized heirarchical model that defines the process of cognition and classifies educational learning objectives into levels of complexity and specificity, devised by a committee of educators chaired by Benjamin Bloom, an educational psychologist.

Traditional Model

Home
Students are responsible for homework on these levels of understanding

Classroom
Instructors introduce new material to students who try to follow their speed and delivery



Flipped Model

Classroom
Students work with their peers and instructors on these practical levels of learning

Home
New material is introduced where they focus on mastering concepts at their own time and pace

ADVANTAGES

A flipped classroom model has numerous benefits to both the mentor and mentee parties over conventional models.

Interaction

Increased interaction between students and their mentors, and amongst students themselves. Discussion and interaction opens up learners to new possibilities and provides live doubt-solving and feedback, and hence wider avenues for learning.

Practical Learning

A flipped classroom enables the possibility of knowledge reinforcement via practical activities and experimentation. These have proven to be marginally better for retention than theoretical learning

Flexibility

Students are provided with options to personalise their learning experience as per their convenience and interest. Classes, quizes can be taken up when the child feels most absorbant, governed by reasonable but strict deadlines set by the teacher. Absences are also less costly, and distance learning in pandemics and disasters becomes very easy.

Guardian Transparency

Guardians have a better chance to understand and suppor what their children are learning as there is more transparency in the curriculum, and teachers are more accessible to them than in conventional methods

Better content

Well trained teachers create and curate high quality content for the students to consume, to enable quicker and better understanding of topics by students as per their convenience.

07

REDESIGNING THE CLASSROOM EXPERIENCE

How may we encourage true experimentation and practical learning in formal STEM education in school?

Principles for a classroom of the future

Classrooms redifined

Collaboration

Collaboration between all stakeholders- teachers, students etc encourages healthy discussion and develops much needed social skills. This also helps enable a truly free flow of ideas, and in cases where there's a paucity of resources.

Experimentation

Promotion of experimentation and exploration all ideas- academic and non academic alike, encouragement to create, succeed and fail, rather than just to read about others' successes and failures

Dirty hands

Hands on, practical education has been proven to be the best reinforcer of knowledge. Provide tools and space to enable these. Instead of preventing children from writing on the board, provide an entire wall to scribble upon. Encourage performing science experiments from a young age instead of making them watch.

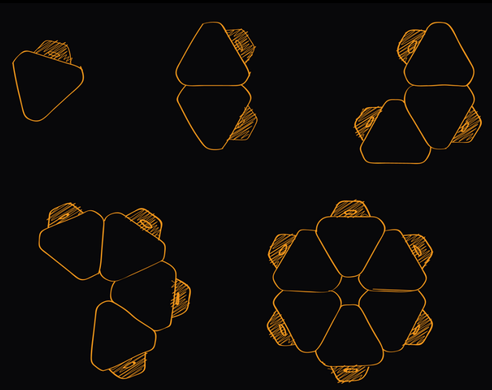
Tech-awareness

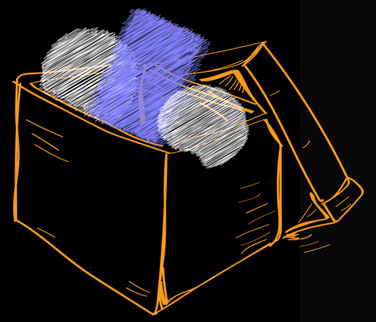
Designing for the future need not mean relying only on technology, rather making judicious use of the latest technology available. AR/VR are inexpensive and easily accessible, and will become primary tools in an open learning environment like Bloom's for the near future to teach and help with exploration. Make use of modular technology to make replacement with newer technology easier, unlike, for example, a large expensive Educomp board that is already outdated.

Ideation

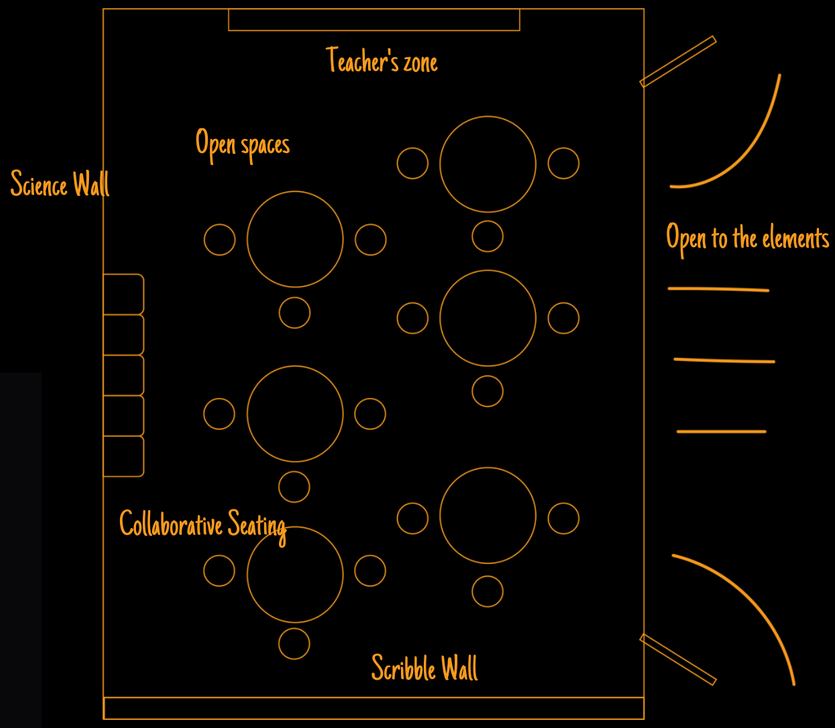
Trying out different things to bring out pre-defined principles to life in a way that actually impacts lives, and are reasonable changes to bring about.

Seating





Pick and play



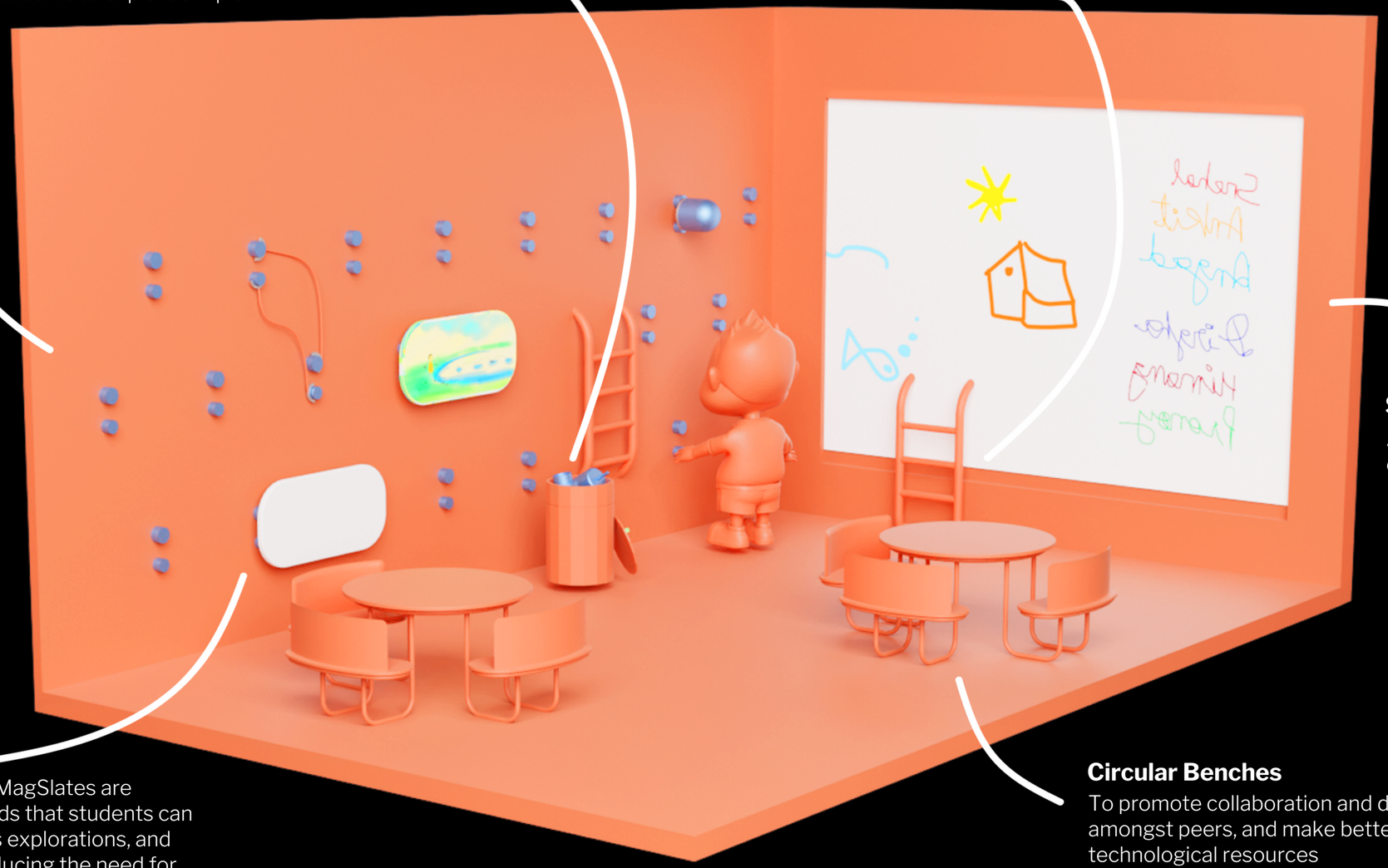
Layout

3D Mock

Magnetised Breadboard
Large, interconnected magnetic pegs act as a breadboard for students to explore simple circuits upon.

Bloom Bins
Bins full of motors, bulbs, wires, bottles- anything that can be recycled to build something new. Students are encouraged to keep refilling these with interesting materials

Rounded Ladders
Small, rounded ladders placed on the walls to reach deliberately highly placed elements to promote moving about- physical or adventurous learning.



Scribble canvas
A large erasable board for students to express and explore freely on.

MagSlates
A modern twist on slates, MagSlates are magnetised erasable boards that students can use to display their various explorations, and create dynamic charts, reducing the need for paper as well.

Circular Benches
To promote collaboration and discussion amongst peers, and make better use of limited technological resources

08

REDESIGNING THE HOME EXPERIENCE

How may we enable effective learning, remembering and retention at home?

One-stop solution for all formal learning needs

Singular Platform

Learning
Provide high quality learning material taught or curated by the school's teachers. Make teachers more accessible and involved in the child's learning process.

Assessment
Provide engaging, interesting ways to assess and analyse the child's learnings, and grade them in a competitive way that's healthy and enriching, and not stressful.

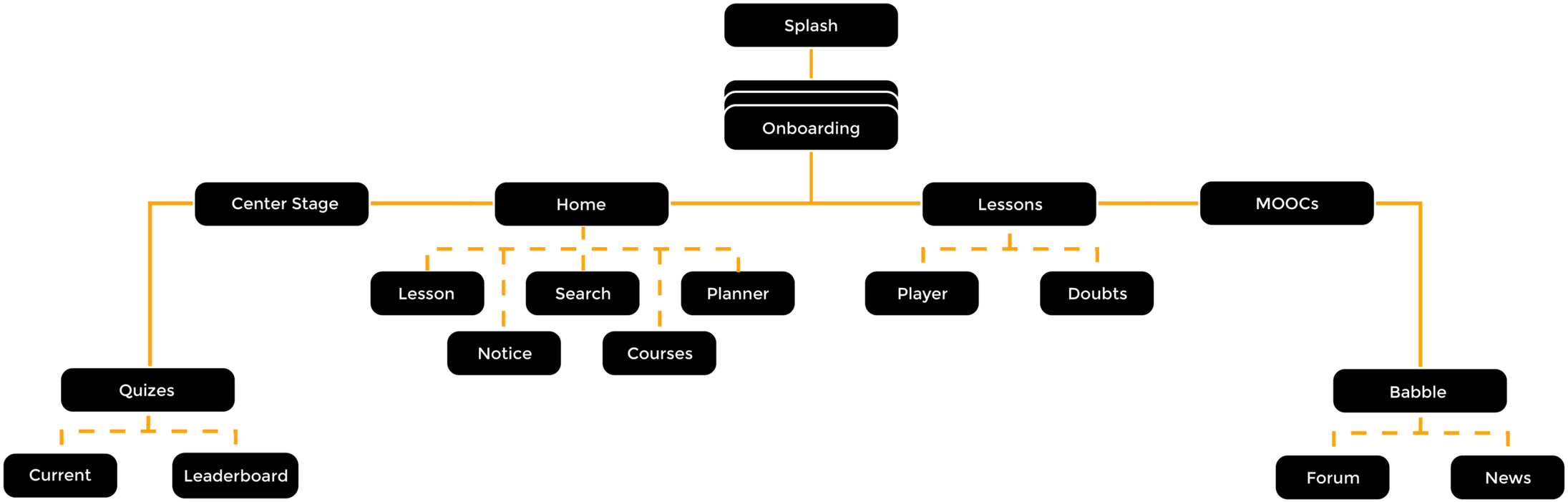
Exploration
Provide learners with extra material to explore, and both develop and quench their curiosity about the topics they're taught about.

Future Proof
Makes distance leaning as effective as contact learning in times of disasters and pandemics

Non-Restrictive
Encourage learners to pick up courses and hobbies even outside the scope of their formal learning.

INFORMATION ARCHITECTURE

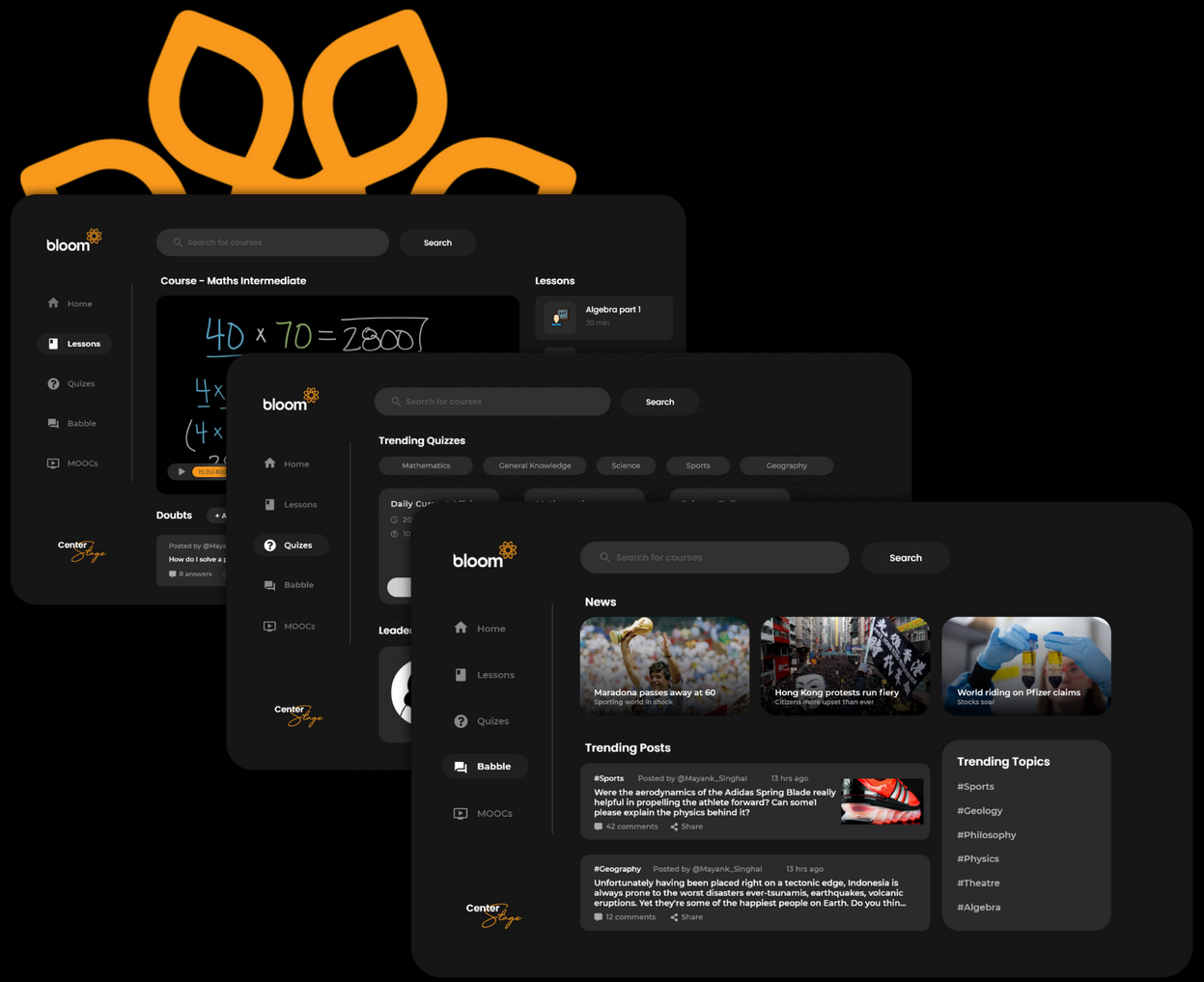
We first built a basic skeleton of the digital platform, and found ourselves wanting to cut down on the branches as much as possible, which in turn gave us a simple, intuitive framework for the platform we wanted to build.



All-inclusive

One platform, countless possibilities

Bloom's home experience digitizes the learning aspect of education- lessons, assessment, information etc. These, with tonnes of added features makes it a perfect one-stop platform for learning and exploring any topic under the sun.



Dark UI

Reduced blue-light stress

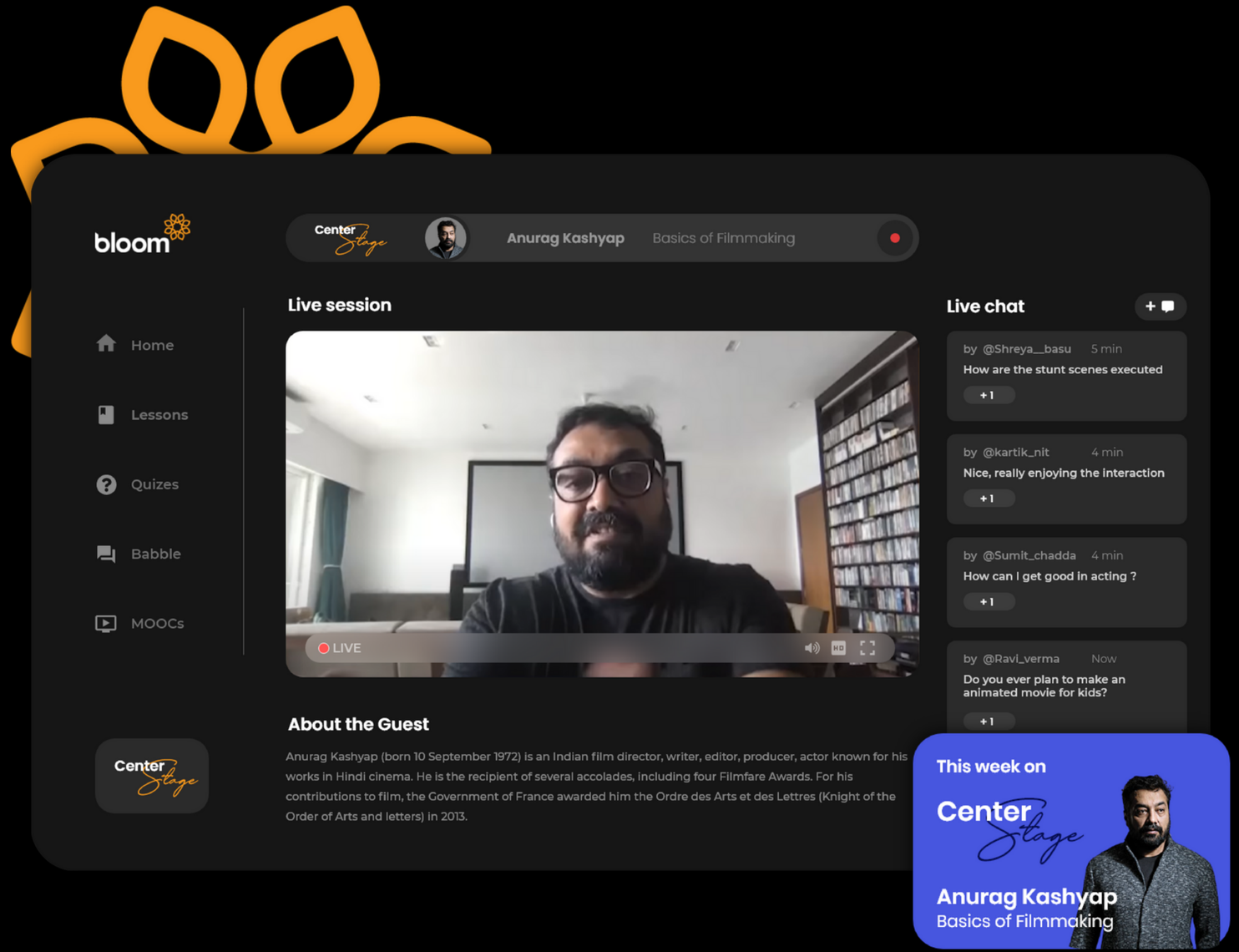
A primarily dark UI causes lesser stress on the eyes, especially when learning happens primarily online, like in the current pandemic. Soft, rounded UI elements have an inviting effect, and give a classy industrial look.

Lessons, Quiz

Learn, assess and explore

For a flipped learning model where the learning, remembering and assessment parts happen at home, a well-designed lessons and quiz framework is crucial. Bloom makes these interesting and engaging, provides true flexibility and personalization, with live feedback on the learning process.

While teachers develop the course structure and assessment styles, learners have the flexibility of taking these up as and when they feel most absorbant.



Center Stage

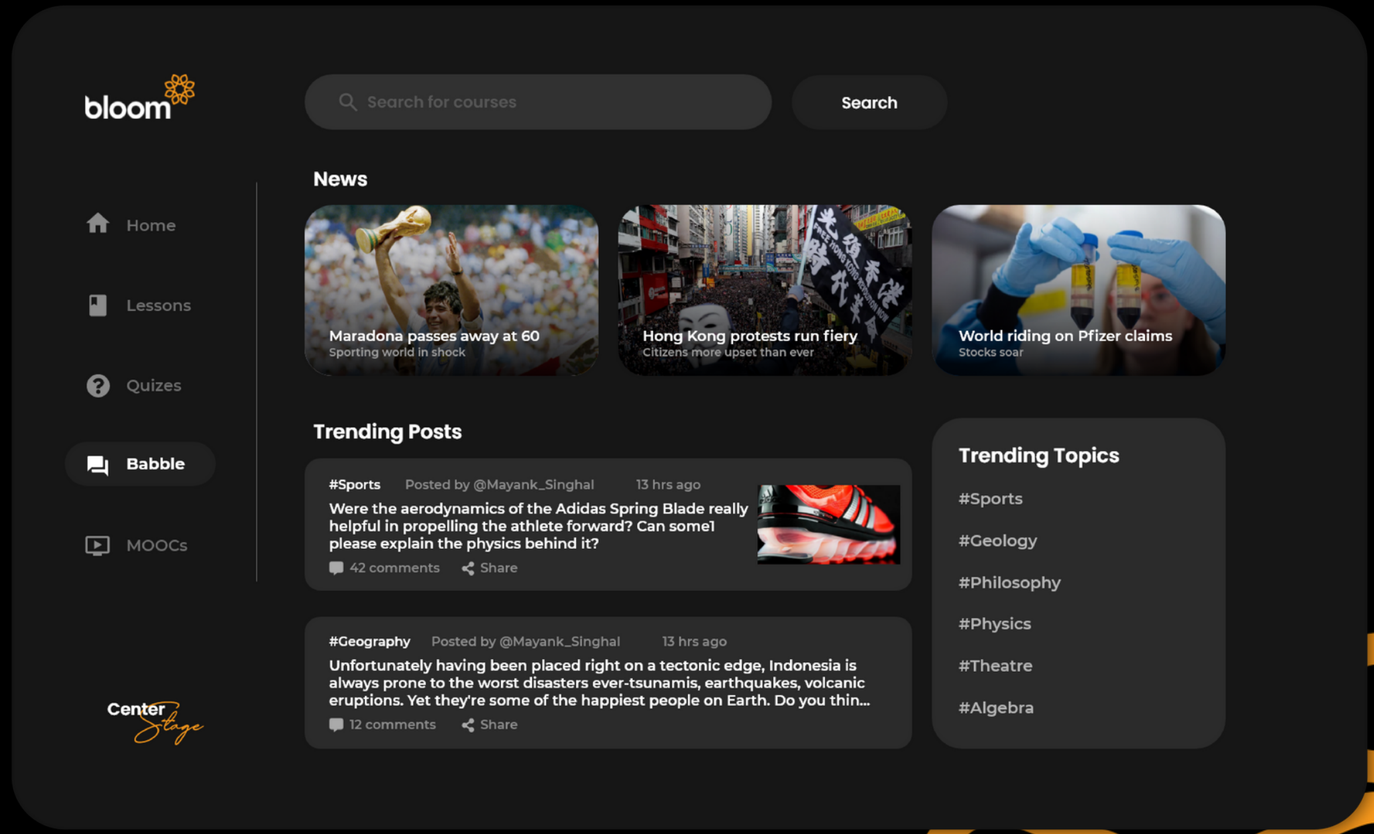
Learn from the best

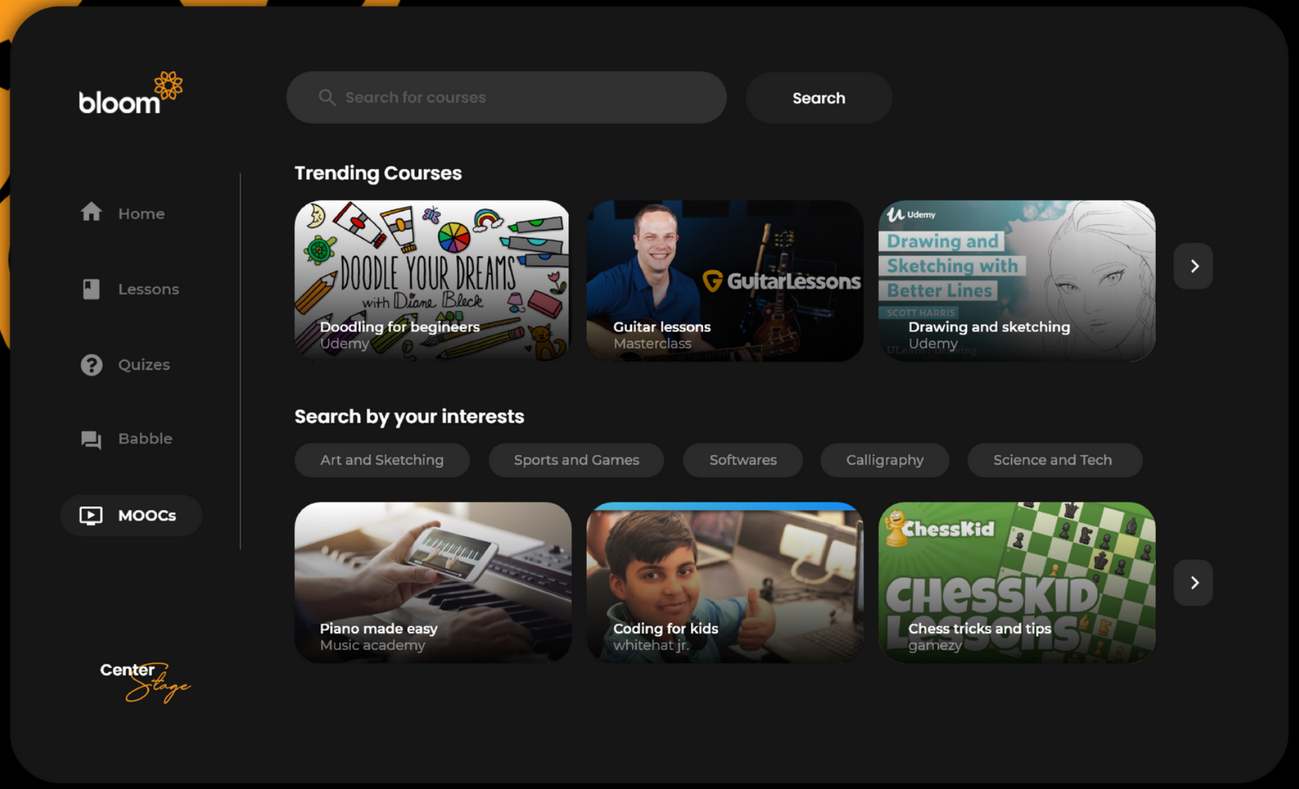
Exclusive talks by the literal best in their fields, enables children to discover new hobbies and passions in non academic, niche areas.

Babble

Engage in discourse

Babble means continuous simultaneous, excited conversation, which is exactly what the feature promotes. Constructive discussion enables true inquisitiveness, awareness and exploration as it opens up students to new ideas and perspectives. Babble is an open space where students across the Bloom system can receive latest news and post questions/thoughts up for public discussion.





Inbuilt MOOCs

Become industry ready

Exclusive partnerships with major MOOC platforms provides vast learning opportunities for students to take up in their free time, to pick up skills as per their interest and the demand of the ever-changing industry. Extra credits can be used as motivators for students to pick such courses up.

Thank *you*