WEF: CONNECTED

A learning hub that will help 2.1 million Indian students improve practical learning of global problems and problem solving skills through **systems thinking**

TKS x WORLD ECONOMIC FORUM

AGENDA

01.

The Problem

An introduction to the global problem and the problem within our specific target geography.

02.

The Solution

How our system will work and how it will solve the problem.

03.

The Platform

How the learning hub itself will work and an indepth look of the various specific features that make it up.

04.

Vision for the Future

How we shall expand from our focus geography and increase the impact of our solution.

EXECUTIVE SUMMARY

PROBLEM

Current education system in India is not designed to allow students to learn about global issues, despite **97%** of them answering that they want to, and a total of **45%** of them saying they would like to pursue a career where they can make a positive contribution to solving global problems. India's education system focuses on rote learning, theoretical knowledge, and memorization, which limits opportunities for the development of practical skills and problem solving abilities.

SOLUTION

To mitigate this problem, we recommend that WEF introduces the learning hub as an **extra credit opportunity for grade 10 students in India**. Since we cannot exactly overhaul the entire Indian education system to include content about big world issues, we instead will tap into students desires to both learn more, and earn grade credit. For students participating in this extra credit opportunity and those who are not, our platform will serve as a bridge between theoretical side of the education system and actual real-world problems.

IMPACT

Utilising the learning hub will help to raise awareness about global problems among **2,1- 6,3 million** Indian students in grade 10 which will make learning less theoretical, and assist students with understanding how the subjects they learn in the classroom relate to global problems. Additionally, the learning hub will enable systems thinking skills as students will have the opportunity to explore the causes and consequences of global issues and see how they are directly interconnected.

01. THE PROBLEM

MEET
FALAK VAYEDA

indian grade 11 student

We reached out and met her, but one quote from our conversation really stood out to us:

“As a student who has been part of this education system since forever, something I have always faced was lack of awareness around big world issues- things that actually matter. I wish our education system promoted more resources, like the one you are talking about, where I can learn things outside of my theoretical subjects and know about what is happening around me so I can help out**”**

Falak’s experience is sadly the reality for many of students in her area

Understanding the problem

THEORETICAL CURRICULUM

Indian education system is heavily focused on rote learning, memorization, and theoretical knowledge. It does not emphasize practical and skill-based learning, which is required in the current job market. Students do not learn about key competencies, mental models, and skills usable in their everyday lives, such as problem-solving which is ranked among the most important skills needed to solve global complex problems, and for students to demonstrate on their resumes, with 82.9% of employers considering it a highly valued attribute.

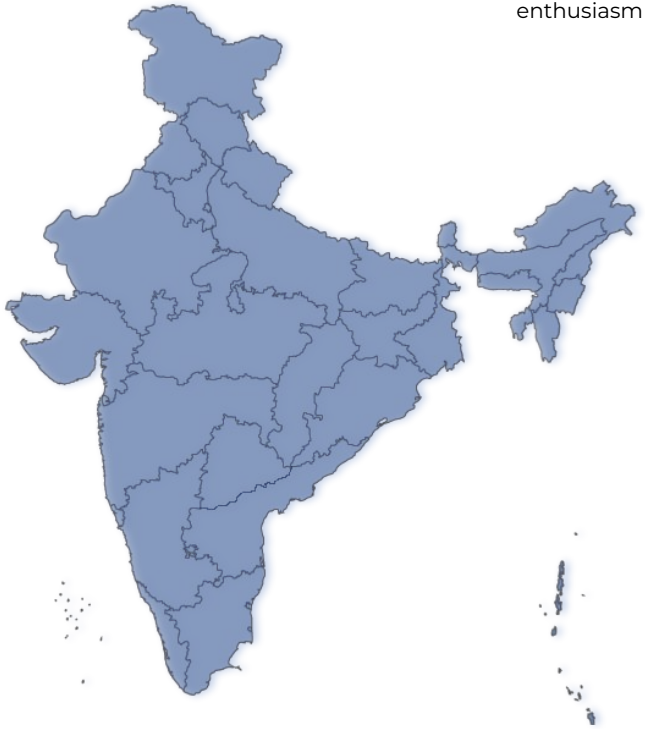
THE IMPORTANT DECISION

Students find it hard to decide the career they want to pursue. In grade 11, Indian students opt for one stream out of three streams namely Science, Commerce, and Arts/Humanities which they want to study further in the future at various universities across the globe. We want to help them make more informed decisions about their future by teaching them about the problems they will try to combat in their future careers.


The current Indian education system

THE OPPORTUNITY

India offers a good ground for our initiative; many studies show their students have tremendous enthusiasm for global issues but no accessible learning resources.



A survey conducted by Cambridge International's Global Perspectives has shown that students in India are very eager to learn about global issues, with **97% of asked students** answering that **they want to learn about them**, and a total of **45%** of them **saying they would like to pursue a career** where they can make a positive contribution to solving global problems. Unfortunately, in India, there is not enough broadly accessible learning hubs and opportunities that would suit their needs.

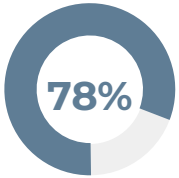
We want to turn all these **"would"** s into **"do"** s, so **our mission is clear:** to empower and equip Indian students with the knowledge and tools to become active contributors to solving global challenges. Let's shape a brighter future for India and the world together!

WHY IT'S IMPORTANT FOR STUDENTS TO LEARN AND APPLY SYSTEMS THINKING

of students exposed to systems thinking **improved** their **ability to analyze and solve complex problems**

students who engage in systems thinking, show a **30% increase in their ability to collaborate effectively with others**

consider **problem solving as a top skill** that will be **required** in the workforce by 2025



of educators believe that **systems thinking is essential** for students

Young people benefit significantly from learning about systems thinking as it equips them with essential **problem-solving skills** and the **ability to integrate data effectively**.

- Research from the National Research Council indicates that 78% of educators believe that teaching systems thinking is **essential for students to succeed in the 21st century**.
- According to a study by the World Economic Forum, 36% of employers consider complex problem-solving as one of the **top skills required in the workforce by 2025**. Systems thinking allows students to **understand complex issues** by **seeing the bigger picture**, which fosters **critical thinking** and **advocacy** for their **education** or **community**.
- A survey conducted by the OECD found that students who are exposed to systems thinking in their education demonstrate a 25% **improvement in their ability to analyze** and **solve complex problems** compared to those who do not receive such training. By understanding interconnected systems early on, students can **connect their learning to real-world problems**.
- The International Society for Technology in Education reports that students who engage in systems thinking show a 30% **increase in their ability to collaborate effectively with others**.

This skill is very important for **navigating** the **various difficulties of today's world** and **preparing** students to **thrive in an uncertain future**.

THE SOLUTION

02.

Explaining Extra Credit System

In order to expose school students to global problems, we propose utilising an extra credit system which will help to introduce global issues in schools without making any drastic changes into the current education system.

explanation

The way the learning hub will work in this system is if students will want to boost their subject grade, whether because they failed a test or just want to further increase it, the teacher may choose a specific global problem module relevant to the subject. Once the student completes the module, they will write an essay or do a project, earning them up to 15% maximum increase, so that it will be fair and not undermine the rest of the class work. Also, the hub will be accessible to any student who wants to explore it out of curiosity without having to complete any assignment attached.

example

An example of how this could work is if a student fails his/her Biology exam, the teacher may ask them to complete the biodiversity module. Once the students are done, they will be requested to write an essay about what they have learned about biodiversity and the problems related to it to determine by how many percent their mark will increase. The essays can be graded either manually or by a tool called Writable powered by ChatGPT if the teachers do not have time.

our why

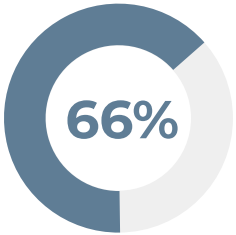
We believe that this would be a good start to introducing global problems at schools in India since it would provide good incentive for the students to actually do it, without making any huge changes to the current education system.
Our extra credit system can be quickly implemented as a part of the current system, helping students to understand how the subjects they learn are related to global problems and help them to cope with the academic pressure.

THE INCENTIVE

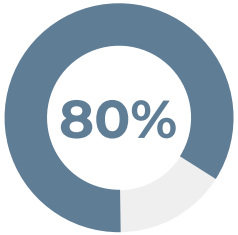
We believe that the extra credit system will provide a good incentive for students in India since they tend to be more extrinsically motivated meaning by factors like external rewards/grades and pressure from their parents, rather than intrinsically or purely by the enjoyment of the learning process. This can be backed up by a study where Indian students were compared their peers who immigrated to Canada and they scored higher in extrinsic motivation (5.35 points) than those in Canada (5.20).

> Various articles online state that 80% of students in India study for the sake of high grades, especially high school students in their pre-university years. Another 66% of students reported that their parents pressurize them for better academic performance

As a result, school students in India tend to suffer from major mental health problems. The burden of expectations and drive to outperform their peers places a strain on their minds, leading to anxiety, self-doubt, feeling of hopelessness and even depression. The extra credit system would help to not only help students to cope with the pressure of academic excellence but also improve their mental health while learning about global problems.



of students' **parents pressurize** them for better academic performance



of students' only **incentive to study** for the sake of high grades

THE PLATFORM

03.

The general look of our platform

User-Centric Interface

Our platform provides a user-friendly interface designed to empower students to navigate global challenges flexibly. Students begin their journey by selecting a specific problem they wish to explore further, initiating a personalized learning experience.

Tree of Connections:

Central to our platform is the "Tree of Connections", a visual representation of the interconnected components within each problem. It is very similar to your own strategic inteligence, since we think the idea is quite genius to demonstrate the different components to an idea/ problem. This hierarchical structure allows students to delve deeper into the problem space, selecting specific modules based on their interests and learning objectives.

Interactive Modules:

Each module within the tree of connections is crafted to provide an immersive and engaging learning experience. Through interactive videos, simulations, and real-world scenarios, students are challenged to apply critical thinking and problem-solving skills to address key aspects of the chosen problem.

Systems Thinking Approach:

Emphasizing systems thinking, our platform encourages students to analyze the relationships and feedback loops that shape the problem landscape.
By understanding the interdependencies and dynamics of the entire system, students gain insights into holistic solutions and the broader implications of their actions.

To achieve mastery of a specific problem, students must complete all modules associated with that topic.
By doing so, students not only deepen their understanding of individual components but also grasp the interconnectedness of the entire system, facilitating comprehensive problem-solving skills development. After completing a whole “problem course”, the student knows all sides of the system they were learning about. We also expect them to develop problem-solving and critical thinking skills, alongside less polarization and a strong understanding of the system.

THE FOUR MAIN FEATURES

Interactive narratives

The main way content will be displayed in our platform will be through interactive narrative videos, transforming users from passive observers to active participants. Drawing inspiration from interactive shows, users navigate pivotal moments, making decisions that shape diverse storylines. Rooted in real-world problem solving, these choices foster critical thinking and deeper understanding of global issues. By engaging users directly, the platform empowers them to grasp the interconnected nature of decision-making and its real-world impact.

Discussion board

To enhance online learning engagement, we propose to integrate discussion boards, addressing a gap in human interaction often found in online hubs. Supported by research from 2022, these boards facilitate increased student participation and improve response quality by allowing ample time for reflection. Following completion of relevant modules, students discuss pertinent problem statements. This feature diversifies the learning experience beyond video content, fostering peer interaction.

AI chatbot helper

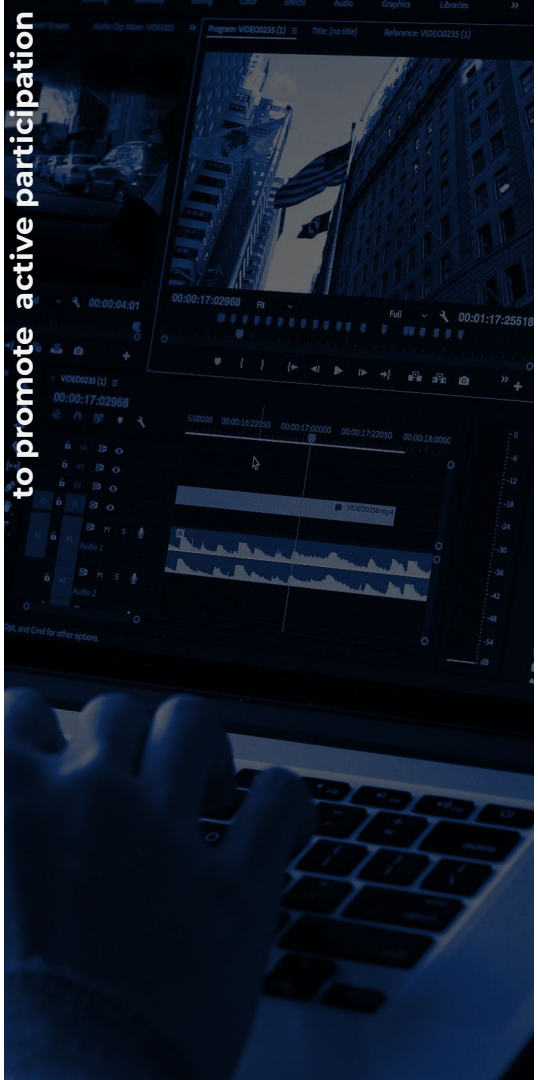
In order to address any questions or misunderstandings the students may have, they can use the AI chatbot. A script of the videos will be provided for the students, and in case they have any questions regarding the terminology or concepts, they can highlight that part in the script and paste it into the chat to request an explanation similar to ChatGPT. As AI chatbots give answers almost instantly, students can save time as they won't have to spend time finding a resource or reach out to a busy teacher just to understand the topic.

Hands on experience

Throughout the modules, this feature will connect students with local shelters and volunteer opportunities, offering tangible ways to apply and connect what they learned to real-life situations. By partnering with community organizations, students will gain experience, bridging theory with practice and fostering a deeper understanding of their studies since they see it happening around them.

1. Interactive videos

to promote active participation



We recognize the need for interactive educational tools in our learning hub. Which is why we propose to introduce an innovative feature: interactive narrative videos

- We want to allow our users to learn not as passive observer, but as an active participant in shaping the outcomes of critical scenarios. Our platform offers a dynamic narrative structure that draws inspiration from popular interactive shows. During watching our educational videos, users are presented with pivotal moments where their decisions impact the course of the story.

- At key points within each educational video, users will be prompted to make decisions that steer the narrative in different directions. These decisions are rooted in real-world problem-solving approaches, allowing users to explore the consequences of their choices. Each decision branches the story, offering diverse pathways and outcomes, thereby fostering a deeper understanding of complex global issues.

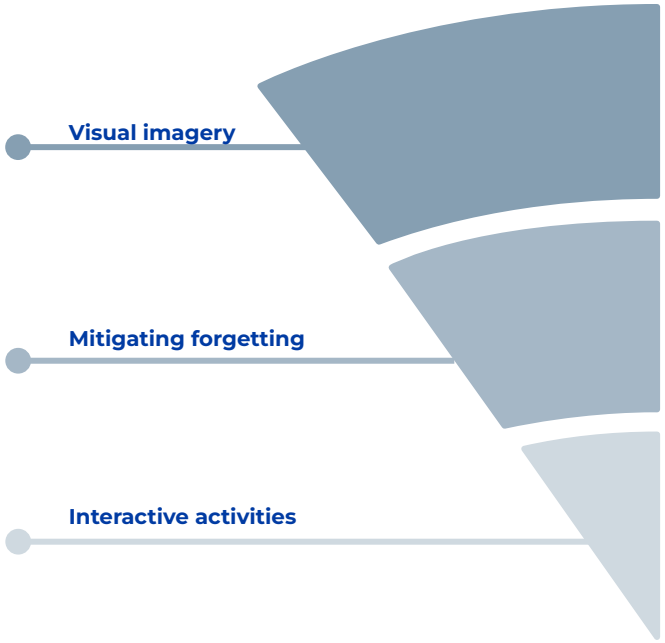
- By empowering users to engage with the material actively, we foster critical thinking and problem-solving skills. Users gain firsthand insight into the interconnected nature of decision-making and its impact on the world around them.

DATA BACKUP

Visual imagery is a potent tool for enhancing retention, with individuals typically recalling 70% to 80% of what they see compared to what they read. Live and on-demand scenarios within our interactive platform bring learning events closer to participants, maximizing engagement and retention.

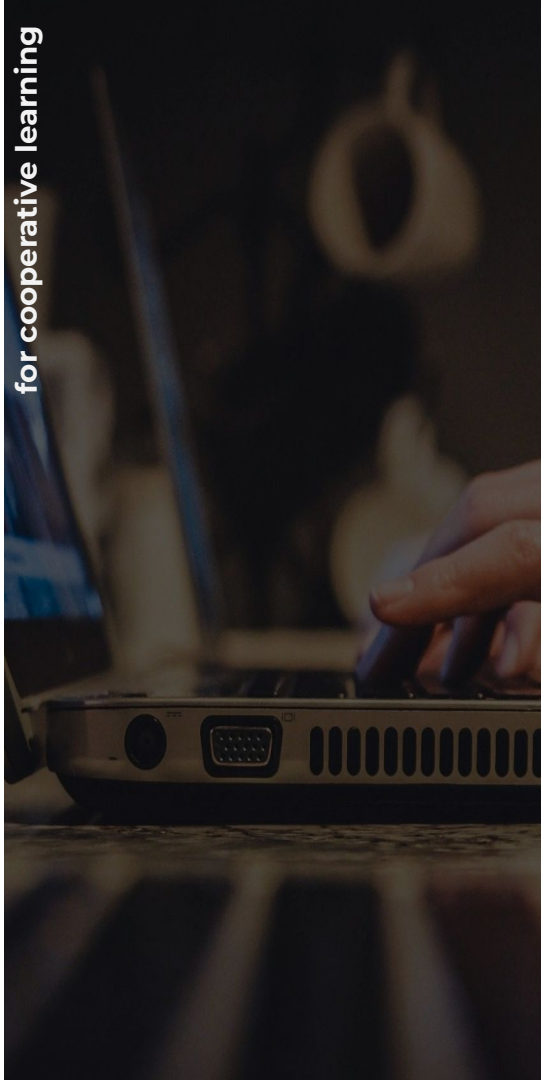
Traditional lecture-based learning methods are susceptible to the forgetting curve, with learners estimated to forget 50-80% of information within a day.
Our interactive approach counters this trend by fostering active engagement and critical thinking, thereby promoting deeper learning and knowledge retention.

A study conducted by Carnegie Mellon University has revealed a significant disparity in learning outcomes between traditional instructional videos and interactive approaches.
Interactive activities are reported to be six times more effective in facilitating student learning.



2. Discussion board

for cooperative learning



Other than introducing interactive learning methods, we want to include a human interaction element which many online learning hubs are lacking. To achieve that, we are proposing to add discussion boards as one of the main features. According to an article published in 2022, discussion boards can help to increase student participation as they have more time to think about their answer as opposed to traditional classrooms and improve the quality of the responses.

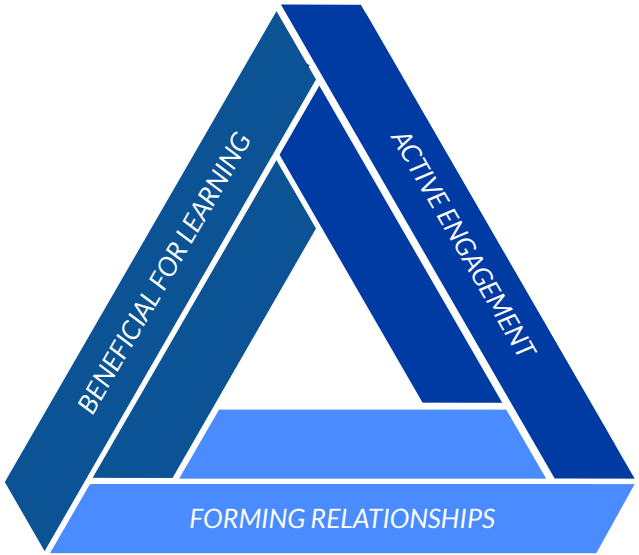
- The way the discussion board will work is that once a module covering a global problem is completed, students will be given a relevant problem statement to discuss it between themselves. For instance, when they complete the biodiversity module, students may be given a problem statement about why Australia faces biodiversity loss and what are the possible solutions.

- The discussion board will help the learning hub not only consist of videos like the majority of learning hubs but also give an opportunity for students to interact with their peers. According to an article published in 2022, discussion boards can help to increase student participation as they have more time to think about their answer as opposed to traditional classrooms and improve the quality of the responses.

- It also can help to broaden the students' perspectives on the problem and improve skills like critical thinking as students from the same study had reported that they learned something new from their peers who looked at the problem in a different way and had to prove their argument by providing relevant resources.

DATA BACKUP

According to the Cambridge International Assessment Education (CAIE), online forum discussions (OFDs) embody an active learning approach where learners actively participate in the learning process, taking ownership of their knowledge and understanding development.



Benefits

A study revealed that 93% of participants viewed OFDs as effective and beneficial for learning. Participants reported improvements in critical reading and thinking skills, as well as deeper engagement with discussion topics.

Relationships

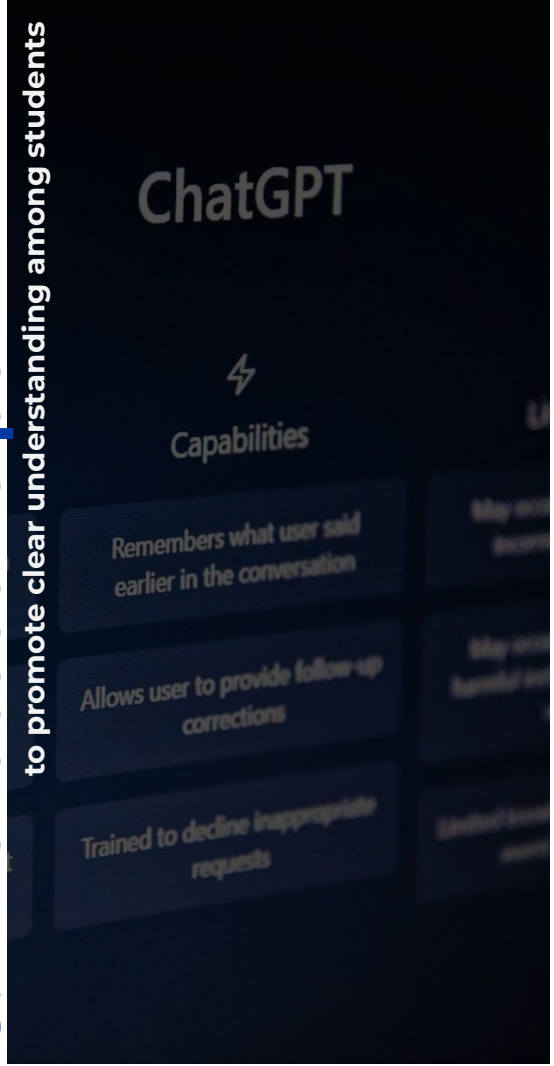
By engaging with peers and expressing their ideas, students form friendships, bolstering their confidence and overall learning experience.

Engagement

85% of participants actively engaged in OFDs, reading posts and replying to multiple threads, demonstrating high levels of participation. Participants valued learning from others' opinions, enriching their understanding of topics and promoting deeper learning.

3. AI chatbot helper

to promote clear understanding among students



In order to help students remember the content they are learning better, they will be given interactive videos and in case they have trouble understanding something, the students can use the AI chatbot to address any questions or misunderstandings they have.

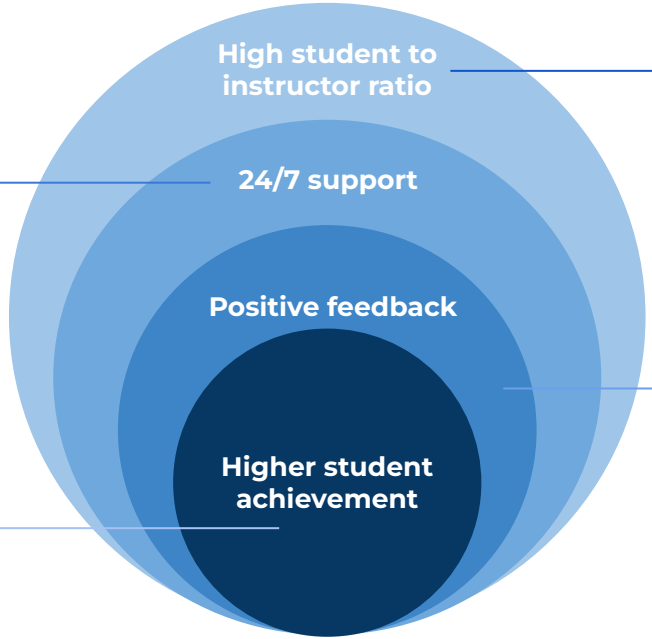
- The AI chatbot will be a complementary feature with the videos to explain or clear any misunderstandings that students may have in the context of the videos. A script of the videos will be provided for the students and in case they have any questions regarding the terminology or concepts, they can highlight that part in the script and paste it into the chat to request an explanation similar to ChatGPT.

- Because students tend to remember 70% to 80% more of the content they see in videos than read, we want to keep the momentum by adding the chatbot icon in the bottom right corner of the videos, so the information stays fresh in their mind. As AI chatbots give answers almost instantly, students can save time as won't have to spend time finding a resource to understand the topic and help teachers too since they will not be the ones explaining.

- The effectiveness of chatbots in the education sector was tested in various studies and the results were quite promising. A study done by McKinsey & Company showed that chatbots can lead to academic gains of up to 30%. Additionally, chatbots can improve student achievement by 23% and learning outcomes by 40% according to the Educational Testing Service (ETS) and the Review of Educational Research.

Case Study: the KNUSTbot

To backup of AI chatbot feature further, we decided to include not only statistics but also give an example where using a chatbot has proven to be successful. A study was conducted at Ghanaian University where the KNUSTbot was used to help computer science students to get answers to their questions



The problem

At the time of the study, the student to instructor ratio was too high, so the students had a hard time getting answers to their questions even though their instructor gave them his/her WhatsApp number..

Continuous learning support

The study began when students were learning about HTML and CSS. A group of 34 students were selected to test it out and they reported that the chatbot helped them to get answers any time of the day while with the instructor's WhatsAPP they would get answers late or none at all

Student feedback

Students also provided positive feedback in regards to the chatbot because they could get feedback at any time and know in what part of the code they made a mistake.

Higher student scores

By the time of the study, the students who used the chatbot scored 2 times higher on the test than before using it getting 81.1 out of 100 while the score before that was 46.2 out of 100.

4. Hands on experience

via volunteer opportunities

Sprinkled throughout modules, this feature will **connect** students with local shelters and volunteer opportunities, offering **tangible** ways to apply and connect what they learned to **real-life situations**. By partnering with community organizations, students will gain hands-on experience, **bridging** theory with practice and fostering a **deeper understanding** of their studies since they see it happening around them.

This initiative will also help students with their **problem solving skills** by actively helping within their communities, addressing genuine needs and creating **positive impacts**. With this innovative approach, we're not just educating student; we're also shaping compassionate, **proactive** minds who will be ready to tackle the challenges of tomorrow.

Potential Partners

To help facilitate the progress of this feature, we did some research on some charities and volunteer opportunities in the area, which could serve as potential partners:

POINTS OF LIGHT

Points of Light is a global network of organizations that mobilize volunteers to address various social challenges, promote civic engagement, corporate involvement, skilled volunteer engagement, youth empowerment, and recognition of volunteers' critical role in strengthening communities.

BHUMI

Bhumi is a prominent non-governmental organization in India that focuses on education and volunteering to address global problems. Bhumi's work revolves around providing comprehensive educational support to over 25,000 underprivileged children in India, aiming to break the cycle of poverty by bridging gaps in formal education and opportunities. The organization offers language and STEAM education, life skills support, and scholarships for higher education.

CARE INDIA

CARE India is a non-profit organisation that builds capacity of communities to ensure empowerment for marginalised women and girls. Their sustainable and holistic interventions in Health, Livelihood, Education and Disaster Relief & Resilience, provide innovative solutions to deep-rooted development problems.

REAL LIFE EXAMPLES

Successful initiatives with similar missions to ours.

INDCOR

INDCOR, which stands for Interactive Narrative Design for Complexity Representations, is a research project that focuses on developing innovative approaches to representing complex information through interactive narratives. This project explores how interactive storytelling can be used to communicate intricate concepts, data, and relationships in a more engaging and understandable manner. INDCOR aims to bridge the gap between complex information and audience comprehension by leveraging interactive elements within narratives. By combining storytelling techniques with interactive design, INDCOR seeks to create immersive experiences that facilitate better understanding and engagement with complex topics.

Khan Academy

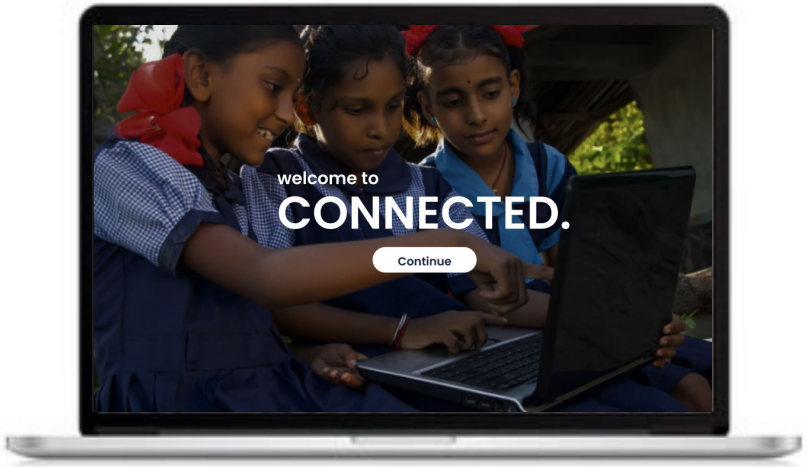
Khan Academy is renowned for providing free, high-quality education globally through its vast collection of online resources, including practice questions, quizzes, videos, and articles. With a mission to offer a world-class education to anyone, anywhere, Khan Academy has been translated into 36 languages, reaching around 18 million users monthly. The platform's success lies in its innovative approach to digital learning, utilizing technology to create an interactive and engaging educational experience. Khan Academy's emphasis on personalized learning, self-paced progress tracking, and adaptive exercises aligns well with the concept of digital learning hubs, where users can access educational content, engage in discussions, and track their learning journey in a flexible and interactive online environment.

SCRIMBA

Scrimba is an interactive coding platform that offers a unique way to learn and teach coding skills. It provides a hands-on experience by allowing users to edit code directly in the browser while watching video explanations simultaneously. This interactive approach makes learning to code more engaging and effective. Additionally, Scrimba offers a variety of coding courses on topics like web development, JavaScript, Python, and more, making it a versatile resource for learners of all levels. When learning with Scrimba students become live coding participants and not only spectators through the introduction of a new software application.

DEMO

To facilitate visualisation of the platform, we have created a demo using figma, accompanied by a loom video demonstrating exactly how everything works within the learning hub.



[VIDEO DEMONSTRATION]

[FIGMA MOCKUP]

METRICS

Monitoring various metrics of our new learning hub will be a vital step to assess our success, while also helping us update and change things according to our user's preference.

First and foremost, engagement metrics will serve as crucial indicators of user involvement and interaction with the platform. These include tracking the number of active users, session durations, interaction rates, and the percentage of module completions. A high level of engagement suggests that our users find value in the hub's content and features, indicating its effectiveness in capturing and maintaining their interest.

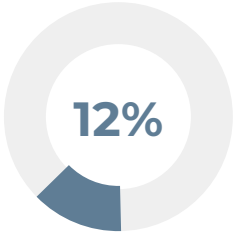
With these numbers, we can compare them to other learning hubs currently out there, such as khan academy, who routinely give out public annual reports (here is the link for '22-'23) and see how ours is doing in comparison.

In addition to this, we can also monitor how many students actually complete the modules for extra credit would also help gauge if students are incentivised enough to actually complete the extra credit program. And based on this make improvements.

Estimations of the amount of students impacted by our platform

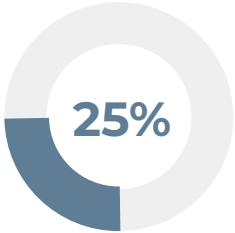
We have estimated the amount of students that will use our platform in three different scenarios as seen below, we have also shared the link to a notion page walking you through all the calculations that have brought us to these conclusions.

Conservative scenario



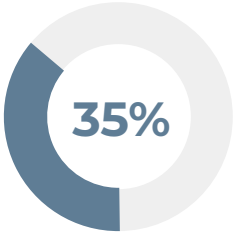
if only the students failing their exams will be interested

Moderate scenario



if the students with lower, but passing grades will be take part

Optimistic scenario



if the ambitious students wanting to maximize their scores will be interested

Detailed calculations

04.

VISION FOR THE FUTURE

TIMELINE

Month 1: Planning and preparation

The initial month involves focusing on establishing the foundation of the project, defining goals, and assembling a skilled team to oversee its execution. Thoroughly assessing needs guarantees that any customization matches the exact specifications.

Months 2-3: Design and prototyping

Developing wireframes and UI/UX designs for the learning hub, Prototyping key features including interactive narrative videos, chatbot interface, and discussion board layout. Conducting rigorous testing to identify and resolve any technical issues or usability concerns.

Months 4-7: Content Creation and Integration

Developing a content strategy outlining topics, storylines, and interactive elements for narrative videos, producing engaging and educational video content. Configuring chatbot functionality, customizing discussion board feature to facilitate collaborative learning and knowledge sharing.

Months 8-11: Pilot program

Before launching the learning hub at scale, conducting a pilot program to validate its effectiveness and gather valuable feedback. The pilot program will be implemented in grade 10 (the last grade before choosing the stream of education) of the 10 selected schools in Delhi, the capital of India, offering students the opportunity to earn extra grade credit through participating in the program. Conducting a survey on each student before and after this time period, to assess their confidence and understanding of content and the platform as a whole.

Month 12: Evaluation and Enhancement

Monitoring platform usage metrics, student engagement levels, and pilot program surveys to assess performance. Adding more courses and modules targeting new problem systems.

Months 13-16: Reboot program

Basically a pilot part 2, where with the new improvements from the feedback will be implemented but this time on a larger scale, across the whole of Delhi. Again, a survey will be done to to each participating student before and after this time period to make sure we perfect our learning hub before the official launch nationwide.

Month 17: Evaluation and Enhancement pt. 2

Again we will be monitoring platform usage metrics, student engagement levels, and pilot program surveys to assess performance. Adding more courses and modules targeting new problem systems. As we see fit, plus doing any last minute touches to our platform before launching.

Month 18+: Launch and Rollout

Preparing for the official launch of the online learning hub with marketing campaigns and promotional materials, coordinating with educational institutions for a successful rollout on a national scale.

Bringing it global

TRANSLATION TO OTHER LANGUAGES

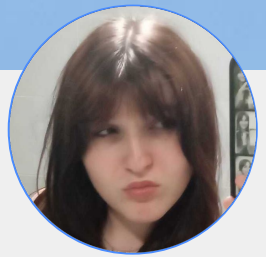
We want to make education accessible to **everyone**. Recognizing the linguistic diversity across different regions, our first step towards global expansion involves translating our platform into multiple languages. This should be fairly achievable through subtitles, and the increasing advancement of translation ai technologies such as Maestra AI and Rask AI.

INTEGRATION INTO DIFFERENT EDUCATION SYSTEMS

To integrate our platform into different education systems, we need to understand and adapt to varying curriculum standards and requirements. We understand that changes are **hard.** Although, many countries already have extra credit programs in place we can establish partnerships with educational institutions, governments, and educational organizations in target regions, to make that integration customized to each system.

"GLOCALIZATION" OF CONTENT

Teaching about **global** problems is easier, when we demonstrate them on **local** examples. This is why we plan to add learning materials that will help users to understand how each problem affects their regions. Once expanded to different regions, we believe it would be helpful to do some research on the area to find volunteer opportunities and other local examples.



Enya Dumitru

Jodie Lechtenberg

Julian Drotkiewicz

Aliya Mamadfozilova

Vibhuti Bafna

On a more personal note...

Thank you!

We are so inspired by WEF's commitment to improving the state of the world. Education is crucial to us, and we are grateful for opportunity to design the learning hub that can help to make it better. This experience has been exciting, and we hope our recommendation proves valuable!