



EdTech Hackathon 2021

Conducted by
Interdisciplinary Programme in Educational Technology
IIT Bombay
March 13 - March 15, 2021

Supported by
Commonwealth Educational Media Centre for Asia
New Delhi

Final Report

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SUMMARY

The Interdisciplinary Programme in Educational Technology (IDP-ET), Indian Institute of Bombay, hosted the first and one of its kind - **EdTech Hackathon** - from 13 March 2021 to 15 March 2021. The event was organized to celebrate the completion of 10 years of the department. This three-day online event was supported by Commonwealth Educational Media Centre for Asia, New Delhi. India's educational needs are undergoing massive shifts right now with a huge demand for high-quality educational technology (EdTech). Teaching and learning are not confined to classrooms anymore. The need of the hour is to think deeply about learning and how we can leverage emerging technology to support learning effectively. We need to consider what education researchers know about how people learn (Evoke), how we can design effective technology-enhanced solutions for our learners (Engineer), how learners and EdTech solutions transform each other (Evolve), and how we can design solutions for everyone (Empower). IIT Bombay's EdTech Hackathon brought all these four E's together and was aimed at inspiring a community of hackers to design innovative solutions for tackling the emerging needs of teachers, parents, and learners along four broad themes - Learning everywhere, Learning for everyone, Learning without barriers, and Learning for empowerment.

This competition was open to everyone in India. 181 participants (mostly aged between 18-24 years old) from various disciplinary and vocational backgrounds applied for the competition. 51 participants or 15 teams were selected for participating in the hackathon. The event kicked off with two-day pre-hackathon orientation sessions on 11th and 12th March 2021. During these orientation sessions, IDP-ET alumni and research scholars from various parts of the world offered expert talks on various verticals of educational technology to help participants get oriented with research-based recommendations for designing effective EdTech products. During the competition, IDP-ET M.Tech students and Ph.D. research scholars mentored the teams and helped them follow a systematic process for designing learner-centered EdTech products. Teams first understood the problem they were trying to solve and their target users before starting to work on designing and testing prototypes of their solutions.

The hackathon produced numerous creative and innovative solutions. These were evaluated on the basis of the design process followed by the teams as well as the quality of the final product. The solutions were evaluated by an expert panel of five judges associated with various dimensions of education and design domain, namely -- Prof. Madhu Parhar (Director, Commonwealth Educational Media Centre for Asia, CEMCA), Prof. Ravi Bhallamudi (Institute Chair Professor, Mechanical Engineering, IIT Bombay and Professor-in-Charge, Desai Sethi School of Entrepreneurship, IIT Bombay), Dr. Amina Charania (Associate Professor, Centre of Excellence in Teacher Education, Tata Institute of Social Sciences, Mumbai), Ms. Shruti Gogia

(Project Lead, Central Square Foundation), and Dr. Sameer S Sahasrabudhe (IDP-ET alum and Director, Educational Multimedia Research Centre, Savitribai Phule Pune University). The first prize was won by Team Sahayak for building a prototype for facilitating a hands-free learning experience with gaze detection for people with Parkinson's disease. The second prize was won by Team RemoteBox for building a prototype for remotely conducting lab experiments, collaborative activities, and exams with the help of multiple low-cost robotic arms controlled by VR headset or mobile phones. The third prize was won by Team async-await for building a prototype for making learning more interactive by continuously iterating through simplified versions of the same content and conducting formative evaluations through interactive questions. Many other innovative ideas were designed by the other teams. We hope to work with all the teams further in the future to help bring their ideas to life.

PRE-HACKATHON TASKS & TRAINING

Organizing EdTech Hackathon: Process and Recommendations

Organizing EdTech Hackathon in a completely online mode took us around 7 months of prior preparation with a dedicated 8 member team involving the faculty, Ph.D./M.Tech students and a project staff each working on an average of 4 hours per week on Hackathon-related tasks. Following are the significant tasks involved in organizing the EdTech Hackathon.

1. Identifying broad EdTech challenges for participating teams

- a. This involved reviewing recent educational policy documents, proceedings of educational technology conferences, and emerging innovations in diverse technologies.
- b. We sought feedback from experts with prior experience in organizing hackathons of a similar scale.
- c. We tested the identified problems/challenges with a small group of students and refined the problems based on feedback.

2. Designing poster, brochure, website/page, and certificates

- a. This involved 4 members exclusively working on these aspects
- b. This required multiple reviews and iterations to align the design with the nature of EdTech challenges.
- c. We used graphic design platforms like Canva for this task.

3. Choosing hackathon event dates

- a. We reviewed multiple academic calendars before finalizing hackathon event dates.
- b. We ensured hackathon event dates did not clash with any major academic events like admissions or exams.
- c. We chose weekends for the hackathon to ensure students did not miss out on their classes.
- d. We suggest future hackathon organizers include a section in the application to check if event dates are clashing with any academic events of the applicant.

4. Hosting hackathon using SaaS provider

- a. We hosted our hackathon on Devfolio which streamlined the process of receiving, reviewing, and screening applications.

- b. A well-designed application form using platforms such as Google Forms combined with an exclusive hackathon webpage could equally serve the purpose. Nevertheless checking out these platforms will give an idea about important aspects which we might overlook.

5. Advertising hackathon event

- a. Ensure website, poster, brochure, application forms, social media sites are all ready before starting to advertise the event.
- b. Have the exclusive official email id for Hackathon ready beforehand.
- c. Focus on reaching out to student council members of academic institutions directly rather than the faculty or administration of the institution for quick response.
- d. We maintained the shared record of all institutions we reached out to, thus avoiding the duplication of emails by the members involved in advertising.
- e. We started advertising one and half months before the event and this ensured at least a 30-day window for candidates to submit their applications.
- f. We reached out to institutes such as IITs, NITs, IIITs, IISERs, IIMs, Makerspaces, and Central Universities. We also used a list of institutes in the NIRF ranking for reaching out.
- g. We reached out to 1000+ institutes as part of the Hackathon advertisement. This resulted in 40+ teams (3-4 members per team) finally submitting applications even though many more initiated the application process. Out of which we selected around 15 teams for participation. These numbers should give a rough idea of the extent of outreach needed depending on the number of teams you can host.

6. Hackathon application or registration form

- a. Besides the academic and demographic details, requiring teams to share a concept note with preliminary solution ideas aligned to a particular hackathon challenge played a crucial role in the selection process. This helped eliminate non-serious teams thus saving the limited available resources such as time and effort of mentors and judges.
- b. Also, consider sharing one or two sample concept notes. This will help increase the quality of concept notes.
- c. Remember to include a caution note on plagiarism. It is crucial to discourage plagiarism right from the application stage.
- d. Make sure that all applicants share their contact numbers in the application. This will be important for any urgent follow-up needed. Just an email id may not be sufficient.

- e. Make sure applicants also submit at least one government-issued photo id to validate their identity.

7. Application screening

- a. Have a set of criteria to evaluate the concept notes ready beforehand.
- b. We had a 5 member expert group evaluate and rate the concept notes collaboratively.
- c. One round of plagiarism checks for concept notes was done during the application screening process.
- d. Keep a few teams on the waiting list in case some selected teams choose to drop out at the last moment.

8. Orientation sessions for participating teams

- a. We organized orientation sessions on educational technology topics a few days before the hackathon event. This was required as we expected most participants to come with a naive understanding of educational technology.
- b. Alumni of the Educational Department currently working in various organizations were invited to conduct these sessions.
- c. These orientation sessions focused on different topics such as learning analytics, designing learner-centric MOOCs, artificial intelligence in education, designing instructional systems, introduction to learning sciences, design thinking, etc.
- d. These sessions were limited to just 2 hours in the evening since these were conducted on working days and some of our participants were working professionals.

Orientation sessions for participating teams

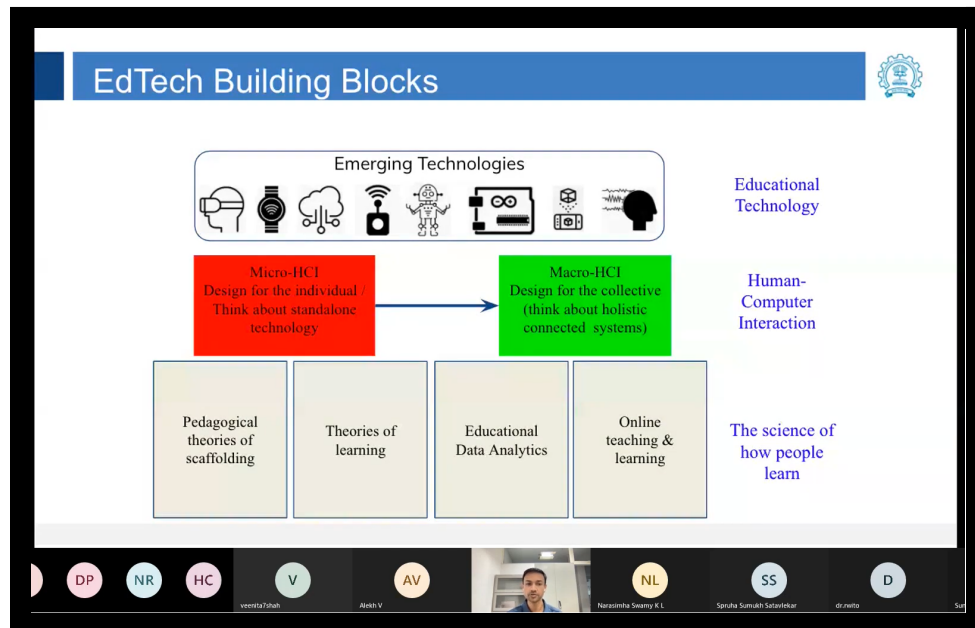
1. Orientation to Online communication platform - Microsoft Teams™

The online hackathon event required a communication platform to ensure seamless interaction between team members and mentors. Many of the participants were new Microsoft Teams. Two-hour orientation sessions followed by Question & Answer sessions were conducted by two Ph.D. scholars - Mr. Vishwas Badhe & Ms. Spruha Satwalekar - to help the participants understand various features and utilities of the platform.

2. Orientation to broad 'EdTech Challenges' chosen for Hackathon

It is important for the participants to have a clear understanding of the purpose of the hackathon, its ideologies, and the meaning of various challenges chosen for the

hackathon. Such an orientation session was conducted by Mr. Narasimha Swamy, a Ph.D. scholar in the department.



What are we intending to evoke?

Hackathon EdTech Challenges are intended to get us all to rethink our predominant conceptions about

- ❖ Where should learning happen or not happen?
- ❖ Who are learners or not learners?
- ❖ What is worth learning or not learning?
- ❖ How do people learn or do not learn?

*Educational Technology is not some random use of technology for learning or educational purpose. If the use of technology is informed by evidence based answers to the above four questions, only then it will be regarded as 'Educational Technology'

3. Learning Analytics and Data to Learn With

Dr. Rwitajit Majumdar, an IDP-ET alumnus and Senior Lecturer at the Academic Center for Computing and Media Studies (ACCMS) and Department of Social Informatics in the Graduate School of Informatics at Kyoto University (Japan) conducted this session. He introduced the basics of Learning Analytics, its implications in

the field of education, and how to make sense of associated data. He also gave glimpses of real-life scenarios, where Learning Analytics becomes significant and useful in solving research problems.

Learning Analytics based support for Teaching and Learning

	Learner's knowledge modeling	Ubiquitous learning environments	Visualized Data-support for teacher and learner
	Informal Vocabulary learning - Refugee's need	Planning support with physical and learning data	Smart Dictionaries
	Informal Vocabulary learning	Blockchain in education	Review and Preview in learning
	Machine learning in Education	Facilitating group formation activities	Tech-enhanced English as Foreign Language pedagogy
	Smart assessments	Handwriting assignment analysis	Learning Sequence mining based feedback
	Explainable recommendation	Evidence Extraction from learning logs	Reinforcement learning algorithms for Education
	Technology enhanced and Evidence based education	Analysis support with physical and learning data	Recommendation of research articles
	Digital learning wellbeing	Smart learning dashboards	

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Process model for data-informed teaching-learning workflow

Data Collection: From Teaching-Learning context

Data Analysis: Find out problems based on collected data

Planning: Decide intervention strategies to resolve problem

Execution & Monitoring: monitor, replan, collect

Reflection: Reflect on the evidence of outcome collected in the process

Evidence portal: What was the problem? What were the indicators? What was the solution? What was the result?

Semi-automatic supported by widgets

Learning Systems: moodle, BookRoll, Learning Locker

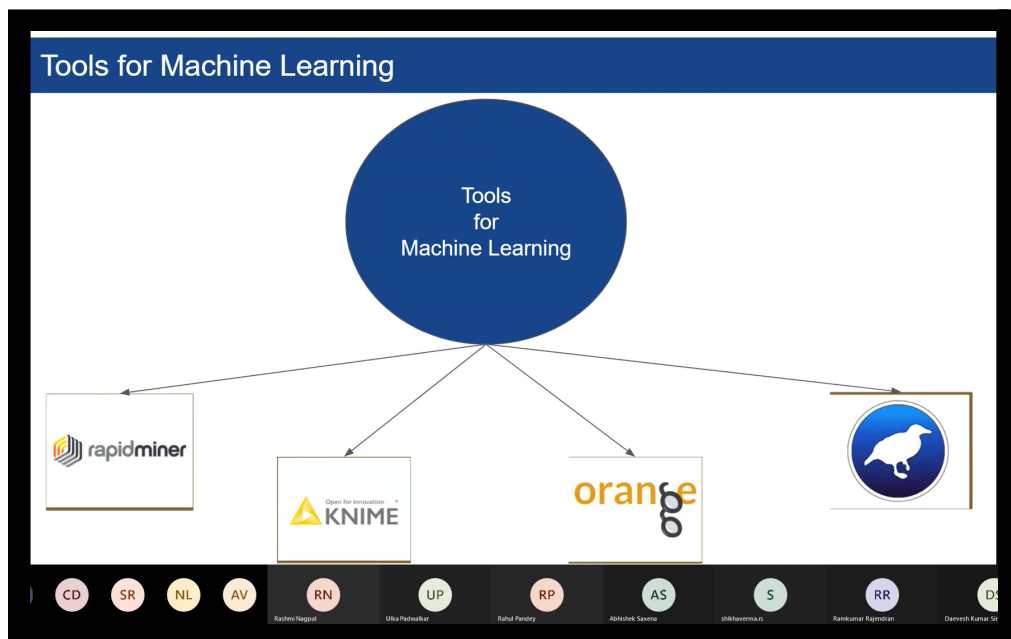
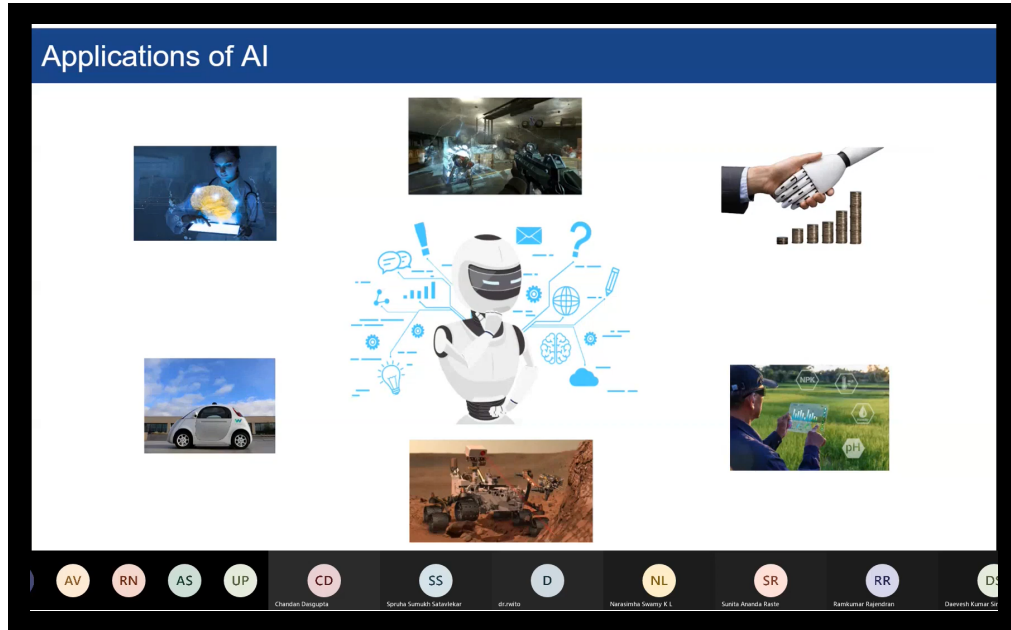
Tools: LVIEW, Smart Dashboards

Majumdar R., Yuan Yuan Yang, Huiyong Li, Akcapanar G., Flanagan B., Ogata H., GOALI: A System to Support Learner's Acquisition of Self Direction Skills, Proceedings of the 26th International Conference on Computers in Education (ICCE2018), pp. 408-415, 2018, 11, 25.

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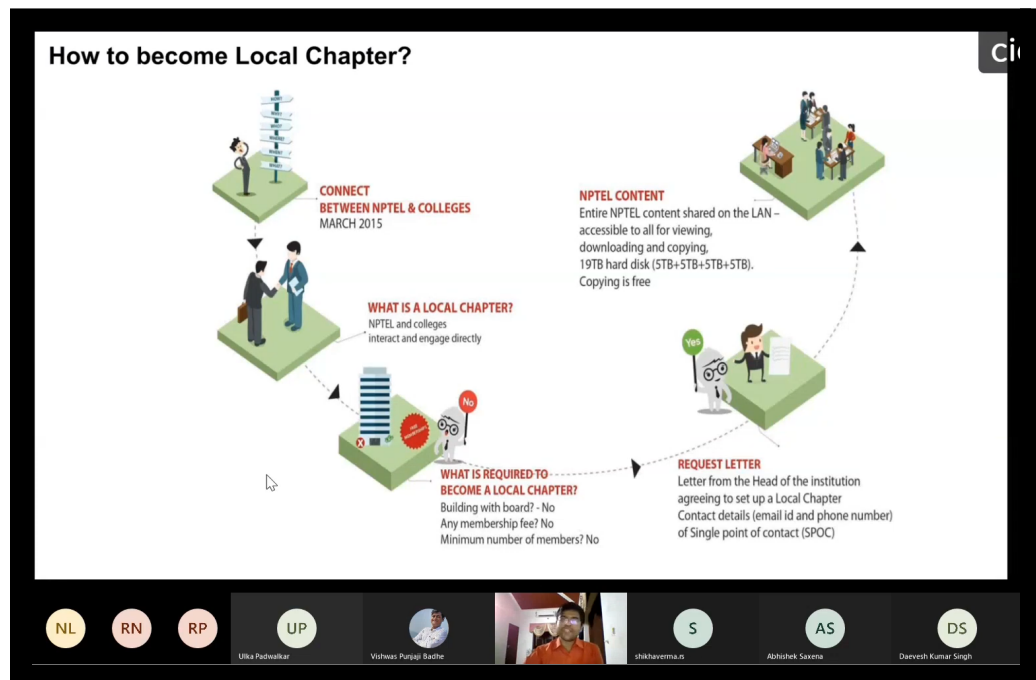
4. Artificial Intelligence in Education

This session was conducted by an IDP-ET Ph.D. scholar, Mr. Daevesh Singh. The speaker talked about the usefulness of Artificial Intelligence (AI) in education, different means by which AI is used in the field, and existing AI-based education systems.



5. Federated Learning by Communities for achieving learner-centricity in MOOCs: Ways Ahead

Dr. Jayakrishnan M, an IDP-ET alumnus and Senior Scientist at NPTEL, IIT Madras conducted this interactive session. He gave an overview of the evolution of MOOCs, the importance of learner-centric MOOCs, and possible means by which communities become part of Federated Learning to accomplish learner-centricity in MOOCs.



6. Methods from Design Thinking to Ideate for Learner Centric Designs

The session was conducted by Dr. Shitanshu Mishra, an IDP-ET alumnus and Information Technology Officer at UNESCO's Mahatma Gandhi Institute of Education for Peace and Sustainable Development (MGIEP). He talked about ways by which principles of Design Thinking can be used to tackle educational problems. The session focused on designing learner-centric solutions which were contextually relevant.

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FRAMEWORK OF DESIGN THINKING

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graph LR
    A[First identify and define the PROBLEM] --> B[Then ideate SOLUTION]
    B --> C[Then EVALUATION]
    C --> B
  
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FRAMEWORK OF DESIGN THINKING

Empathize Define Ideate Prototype Test

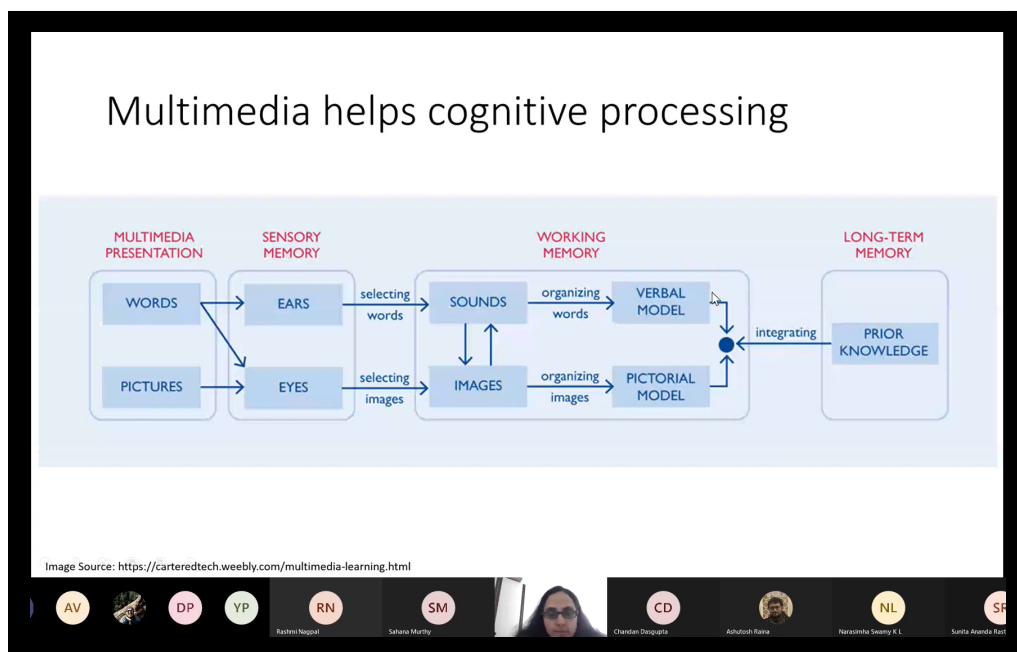
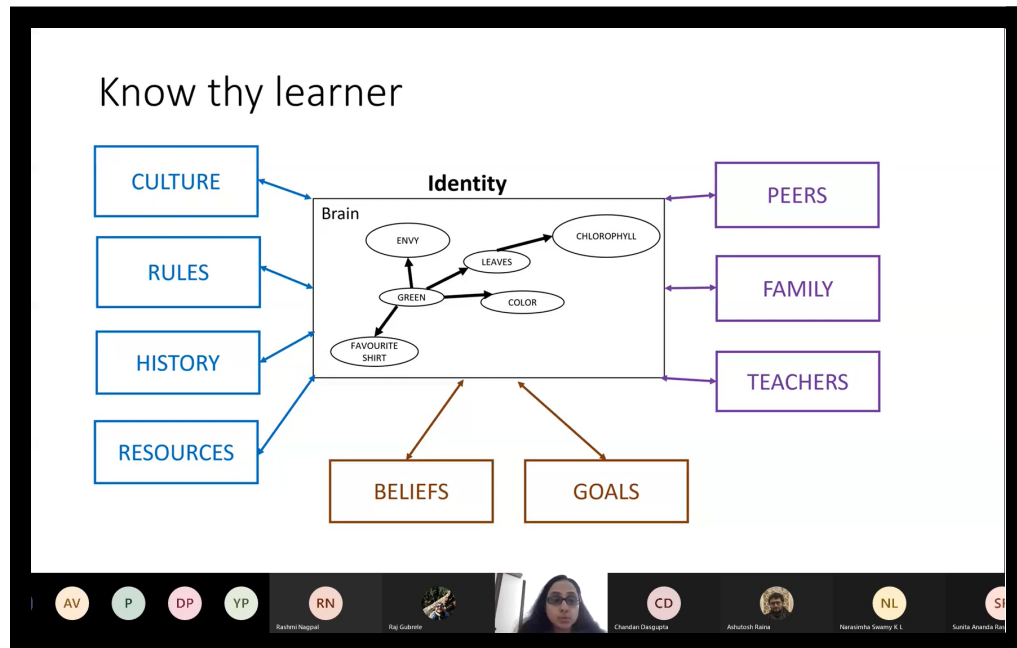
- Objective:
 - to collect the "customer journey map" - knowing the experiences/ behaviors of the customers in the present scenario.
- Method:
 - Qualitative Data Collection (Interview, observation, etc.)

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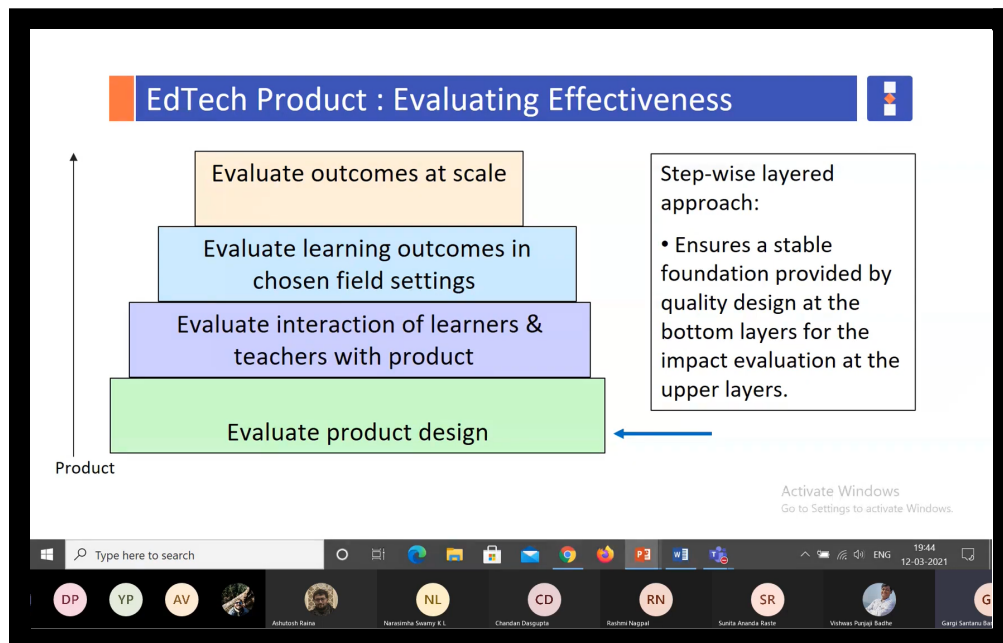
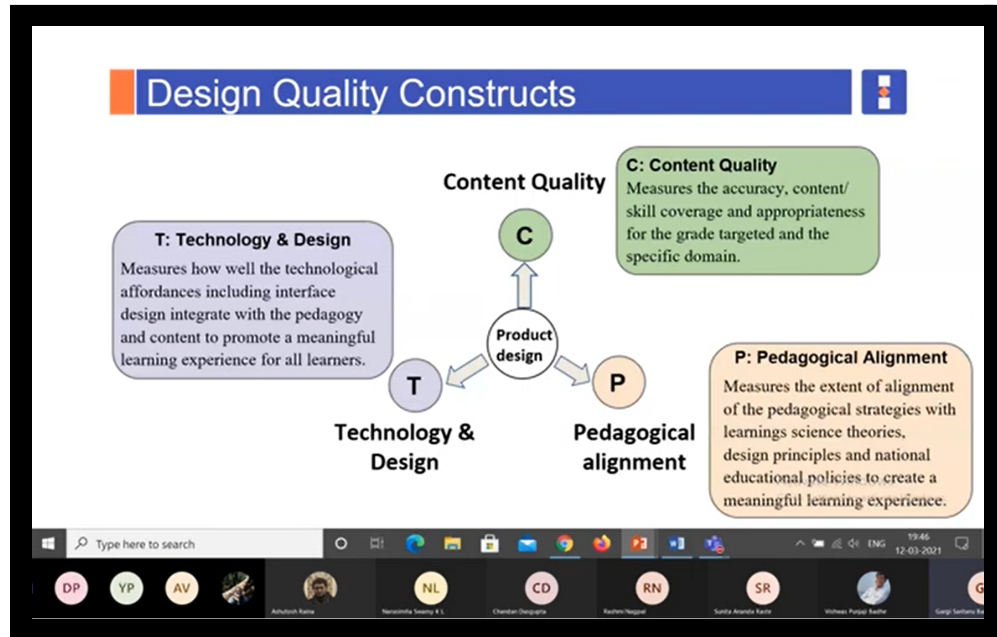
7. Introduction to learning sciences and designing learning environments

Dr. Aditi Kothiyal, an IDP-ET alumnus and Research Scientist at the Computer-Human Interaction Lab for Learning & Instruction (CHILI) Lab in the Swiss Federal Institute of Technology (EPFL), Lausanne (Switzerland) conducted this session. She focused on the fundamentals of learning sciences and how to design effective learning environments grounded in strong theories of learning and design principles.



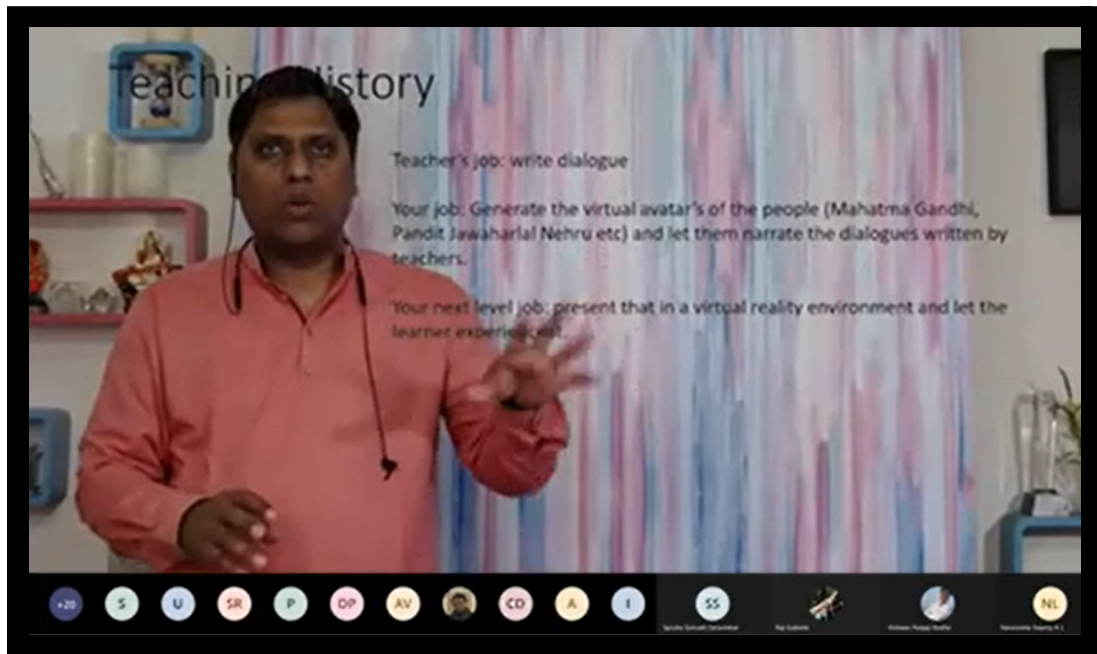
8. Introduction to Design Standards for EdTech Products

Dr. Gargi Banerjee, an IDP-ET alumnus and post-doctoral Research Scientist at IDP-ET conducted the session. She explained the importance of assessing EdTech products using research-based metrics which are robust and reliable.



9. Future of Videos in Education

Dr. Yogendra Pal, an IDP-ET alumnus and Assistant Professor at NIIT University conducted this session. He explained the current trends in the use of video content for meeting educational needs. The speaker talked about the key considerations to keep in mind while creating educational video contents, delivering content via social media, and possible future directions of videos in education.

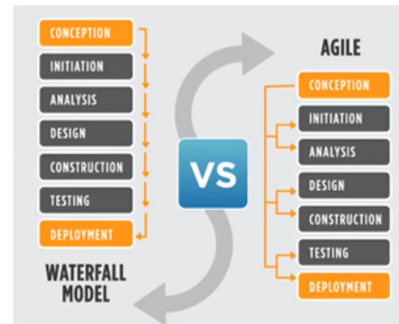


10. Instructional Systems Design

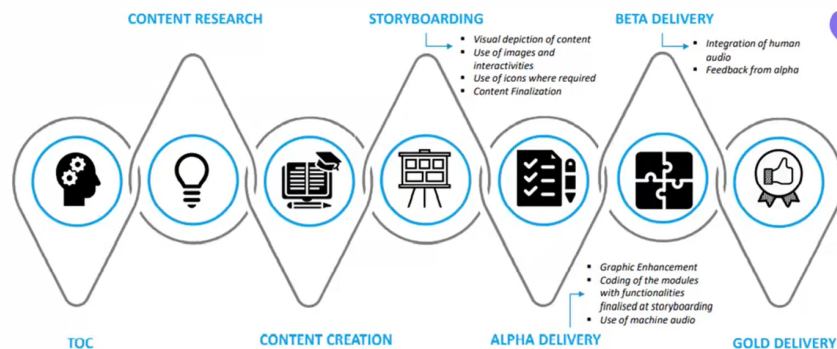
The session was conducted by Dr. Anura Kenkre, an IDP-ET alumnus and Senior Manager, Instructional Design at Bennett Coleman & Company Ltd. (Times Group). She focused on Instructional Systems Design and how to develop instructional systems with help of various existing models, guidelines, and design principles.

Theory 😊 - AGILE is preferred...

- Get it right at the first time!
- Work deployment and development is rapid.
- Frequent and early opportunities to see the work being delivered.
- Make decisions and changes throughout the development project.
- Development is often more user-focused.

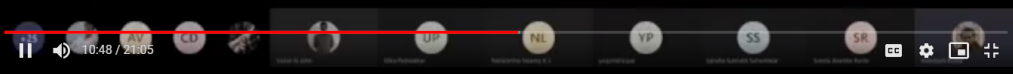
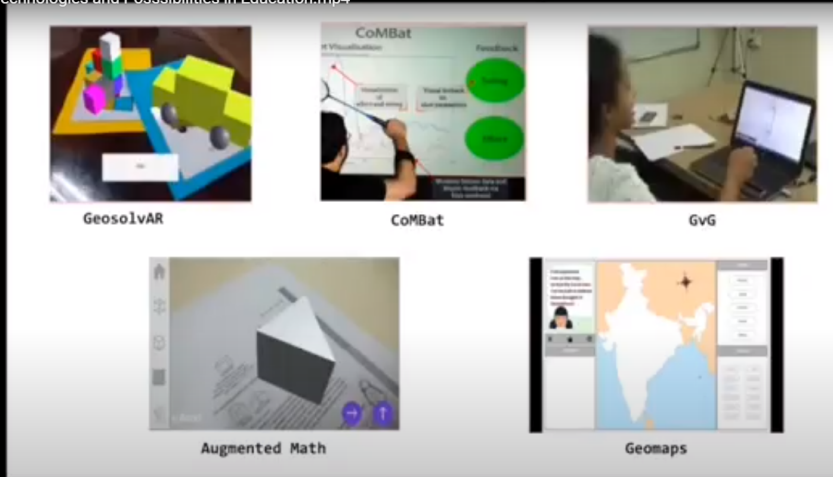


Instructional designers create effective, engaging learning experiences. They draw on best practices from education, design, psychology, systems theory, and creative writing to create eLearning, face-to-face workshops, job aids, and other performance support solutions.



11. Emerging Technologies and Possibilities in Education

The hackathon encouraged the use of the latest technologies to address various EdTech challenges listed for the event. This session was conducted by Ph.D. scholars - Mr. Ashutosh Raina and Mr. Varun John. The speakers talked about the affordances and potential use of different emerging technologies in the education field. The speakers also gave an overview of various emerging technology projects done in the department.



Overview

Learning/ Teaching Problems	Technological Affordances	Pedagogical strategies
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- Explore affordances of emerging technologies
- Look for potential benefits and use those affordances to build educational products.
- Adopt the affordances into the educational environment with theories of learning to build effective pedagogy.



MAIN HACKATHON EVENT

Day 1 Proceedings - March 13

The first day of the hackathon (March 13th) started with Prof. Sridhar Iyer giving an introduction to the decade of Interdisciplinary Programme in Educational Technology at IIT Bombay. This was followed by Prof. Madhu Parhar's introduction to the range of activities undertaken by the Commonwealth Educational Media Centre for Asia (CEMCA), New Delhi. Soon after the talks, tutorial sessions were conducted which focused on understanding users, their needs, defining the problem that needs to be addressed and ideating multiple potential solutions for the problem. By the end of the day, teams were required to submit the following documents.


1. Clear description of who their target users/learners are. Learners' profile with a clear picture of their needs, pain points, experiences, behaviors, and goals.
2. Problem statement which clearly states and specifies the target learners, their primary need, and an insight that reflects a nuanced understanding of the learners' problem.
3. A list of multiple distinct ideas they generated and the process they followed and the rationale behind selecting the best solution has been clearly presented.

Tutorial Session Overview:

Who is a User?

- Learner
- Teacher
- Parent
- ...

A user in education context is anyone who is part of the learning and teaching process.



All images - Adobe Stock licensed

A user will be using the solutions you make in this Hackathon!

Empathy mapping

- Says
- Thinks
- Does
- Feels
- Pain
- Gain

Empathy Map (Context: learning 9th std physics topic - Gravity)



Problem/ Point of view Statement

List down the needs and insights derived from your users from the Empathy map and Persona built by you.

Users (Persona)	Needs	Insights
	1.	1.

POV Mad libs – Articulate a POV by combining these three elements – “user, need, and insight” as an actionable problem statement that will drive the rest of your design work.

_____ **needs to** _____ **because** _____ .
 [user] [user's need] [Insight]

Persona

Fictional but
valid character

Personas are fictional characters, which you create based upon your research in order to represent the different user types that might use your service or product in a similar way.

Persona is a fictional but valid character for whom you are designing for!!

For example, here's a persona about someone and their eating habits:

"Amy is a professor who works long, long days. She really values fresh, flavorful food, but she rarely gets home before 7, and by then, she has barely enough energy to get house chores done, let alone cook a fresh meal. She's also usually quite hungry by the time she gets home, since she eats between noon and 1. Instead, she ends up eating a frozen dinner or leftovers or just eating out. She's frustrated about how poorly she eats and how much money she spends eating out. She certainly doesn't want to spend more time cooking." (by Amy J. Ko)

Mayer's Multimedia Design Principles

Mayer's Multimedia Design Principles **focuses on minimizing cognitive load** by eliminating extraneous information and other distracting elements or features in multimedia products designed for students.

Link:

<https://coursedev.umuc.edu/ajoyce/Mayers-Multimedia-Design-Principles/Mayers-Multimedia-Design-Principles.html>

Brainstorming techniques

Diverge/converge: List a series of wild ideas (Diverge) → Identify a criteria → Narrow the list based on ideas matching the criteria (Converge) → Expand the list meeting the criteria (Diverge) → Identify another criteria

Decomposition: Identify the functions needed and develop solutions for each function.

Inputs technique: Look around you to get inspiration for new ideas and make random connections with your problems statement or persona

Props technique: Find something in your surrounding that is unrelated to the problem & sol. Then use that object as basis for new idea.

SCAMPER: <https://www.interaction-design.org/literature/article/learn-how-to-use-the-best-ideation-methods-scammer>

Day 2 Proceedings - March 14

The second-day session included the topics of Decision matrix, Prototyping, Testing & Iterations, and Evaluation.

Decision Matrix

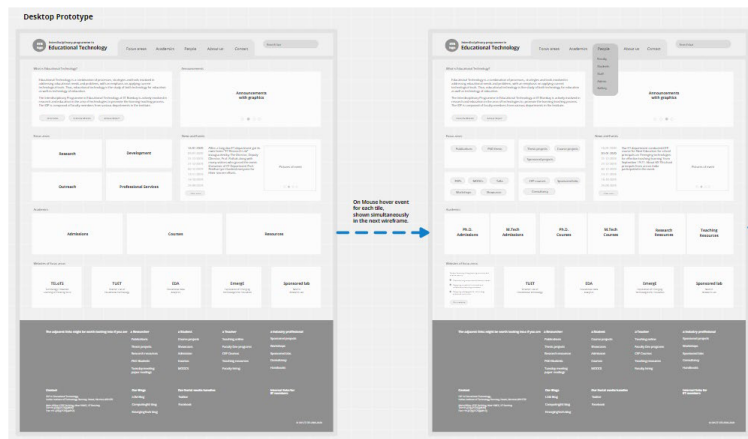
Key points

- **Rate Individually, then together:** After individual rating, all teammates come together and discuss to reach a final common rating for all ideas.
- **Write complete ideas:** A single feature of an idea is not considered a complete idea.
- **Combine similar ideas** from the ideation phase into a single complete idea and fill the matrix.
- **Add more relevant factors** to your problem statement and theme with appropriate weights.

Low-Fidelity Prototype

- Digital wireframes

Wireframing on digital medium – on Conceptboard



User testing & iteration

- Think aloud
- Retrospective

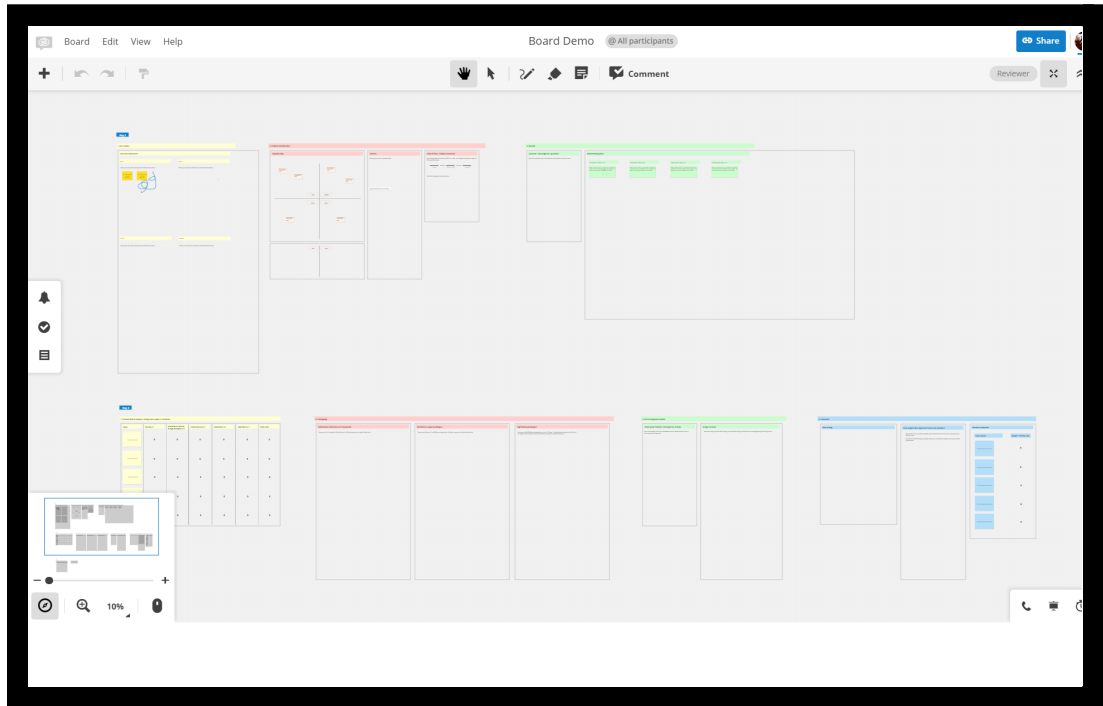
Thinking aloud protocol: The test users are asked to verbalize their thoughts, feelings and opinions while interacting with the system.

Video link: <https://www.coursera.org/lecture/understanding-user-needs/sample-think-aloud-protocol-IZWR5>

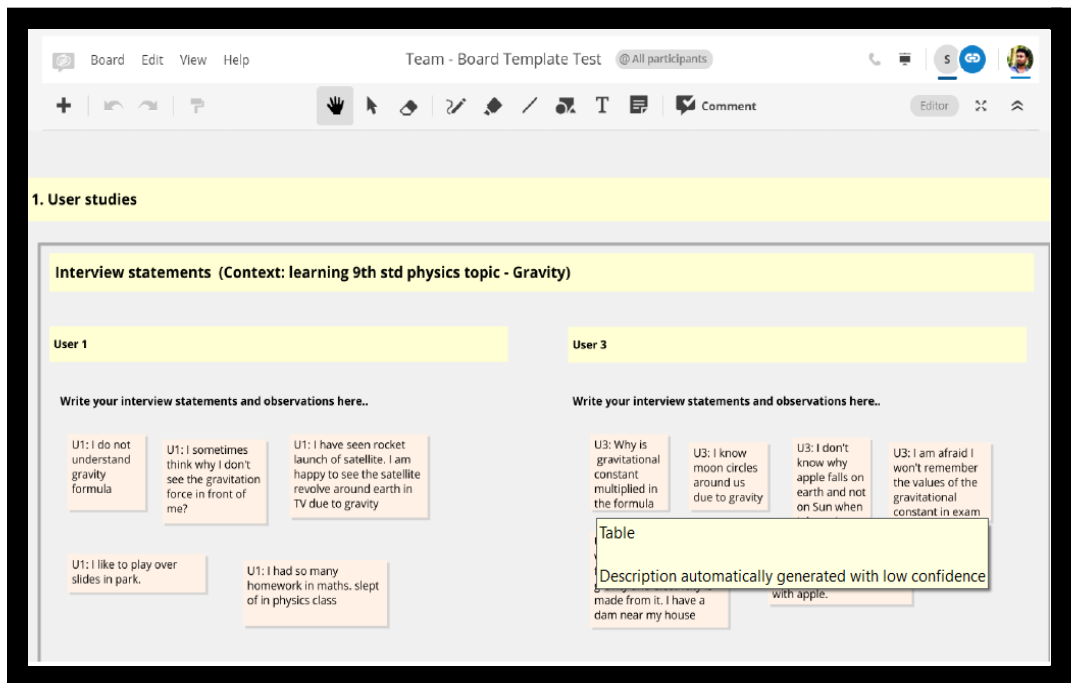
Retrospective testing: The user is made to use the system. This is followed by replaying their usage recording to ask questions prompting a stimulated recall of their usage behaviour.

Design iteration: Refine the prototype based on the feedback received from users after testing.

An online collaborative whiteboard platform was used for each team to document their progress through different design phases. The platform should be scalable, easily accessible, and user-friendly.

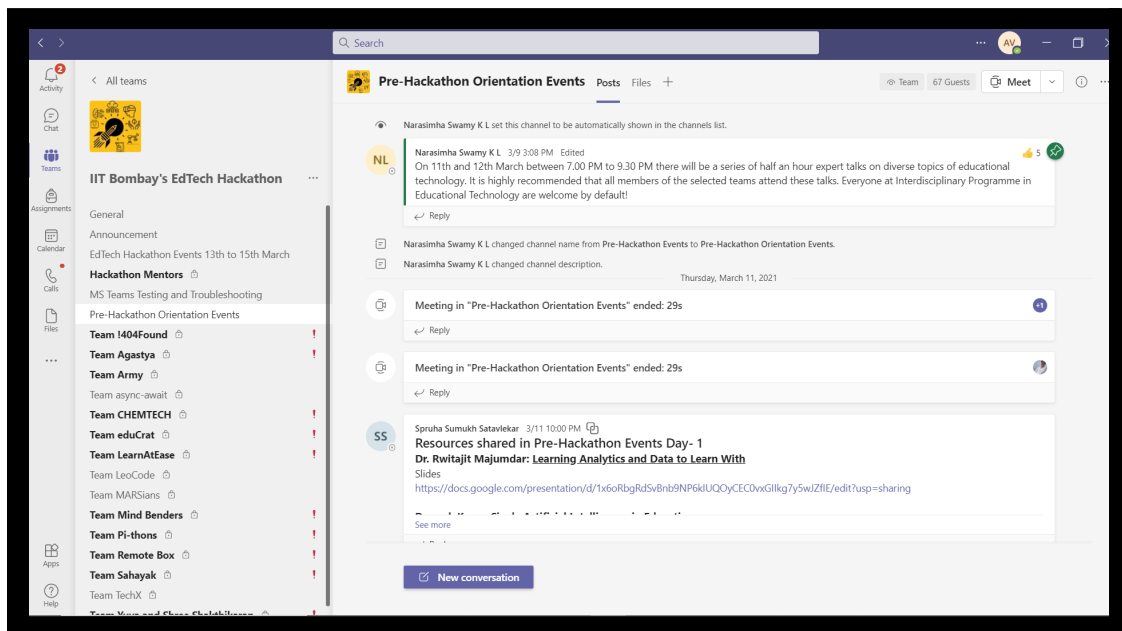


After every tutorial session participating teams would meet their mentors to work collaboratively on aspects taught in that session. These mentors act as contact points throughout the event for any domain or process-related consultation. Further, teams are advised to work on the collaborative whiteboard platform



Every team was assigned two mentors involving one senior and a junior Ph.D. student to guide them throughout the design process. These mentors were also the primary contact for the participating teams both during and after the hackathon. Rubric to be used for final evaluation was shared with teams beforehand so that they can monitor and self-evaluate their progress. This can help the participants to meet the expected solution standards and for further improvements

We used MS Teams for facilitating interactions on all three days of the Hackathon. Separate private channels for mentors, organizers, and each team were created beforehand. Orientation sessions were conducted for both mentors and participants for proper and effective use of the platform.



We also held a troubleshooting session on MS Teams even before pre-hackathon orientation sessions. This helped reduce technical issues during the hackathon. Choosing a single platform like MS Teams that serve most of the Hackathon requirements is recommended instead of using multiple platforms. This helps the event coordinators as well as the participants to regulate the hacking process and for effective interaction.

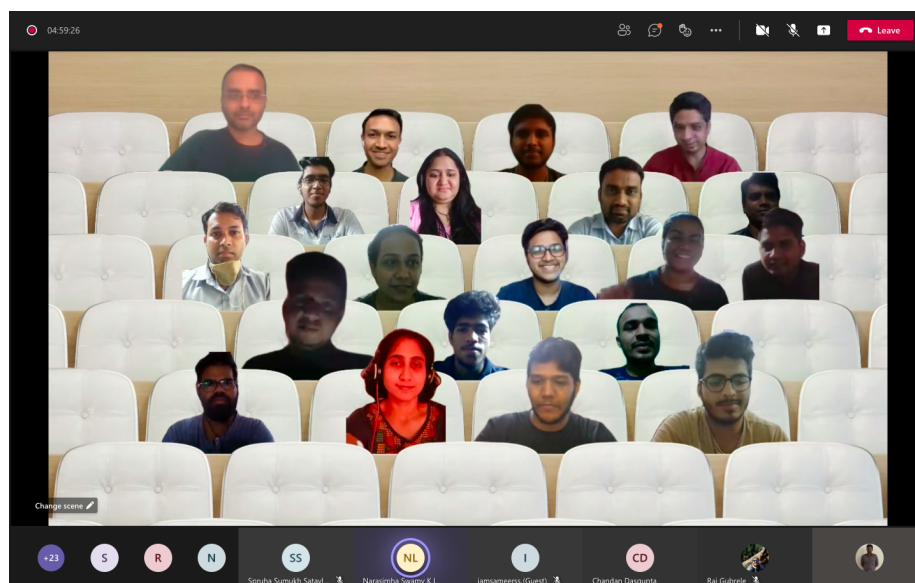
Day 3 Proceedings - March 15

From day 2 evening to day 3 morning, the participants worked on their shortlisted solution to create a working prototype. From 11 am on Day 3, the final judging round was conducted over the MS Teams meeting. The supporting organization representatives and panelists shared their

vision with the Educational Hackathon participants. The participants presented their solutions in a 10-minute slot each, to the judges and audience from 11 am to 3 pm. Each presentation was followed by a 5-minute question-answer session from the judges where the teams had to defend their design choices. Feedback about the event was received from the participants during the meeting. The event concluded with a vote of thanks from Prof. Chandan Dasgupta on behalf of the Hackathon team of Educational Technology IITB.

Judging team solutions

1. A rubric was created such that the criteria in it aligned with the focus of tutorial sessions. Standardized dimensions are always recommended to evaluate such open-ended problem-solving scenarios and to help the participants to reflect on the inputs from the tutorials.
2. The rubric was shared with participants beforehand for self-assessment. This can help the participants meet the expected solution standards and for further improvements.
3. The same rubric was shared with judges as a Likert scale using google form so that judges can immediately submit their evaluation. This can bring some uniformity in evaluating solution ideas created by the competing teams, with respect to the hackathon challenges.
4. After receiving scores from judges, we re-examined the final submissions to rule out plagiarism if any.
5. Each team's documentation of different design phases was examined to account for the design process. The rubric was designed to consider the design process along with the solution idea/product to address the respective hackathon challenges.



Case study: Team async-await

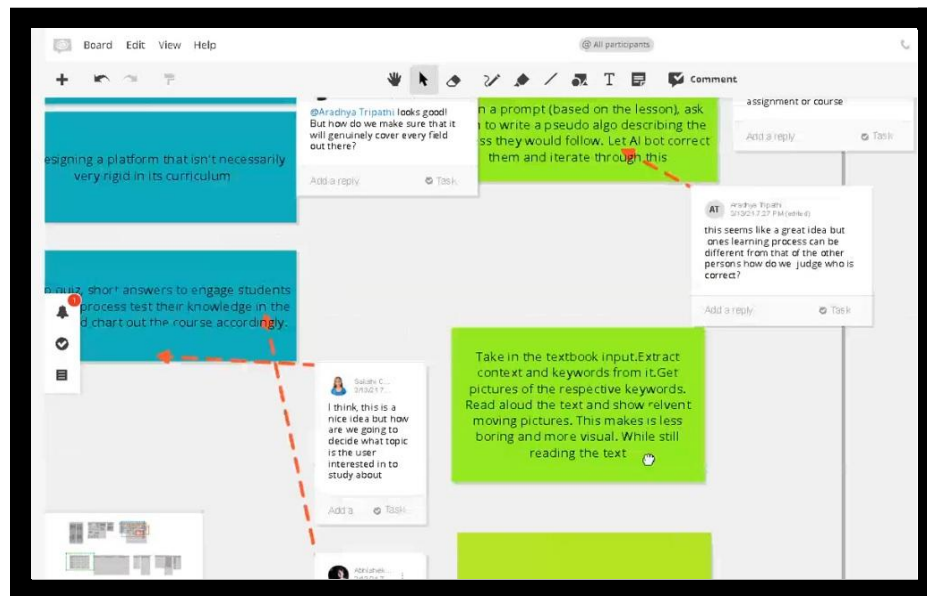
We detail here the case study of one of the winning teams from the hackathon event. The team consisted of 4 members - 2 female Engineering undergraduate students (Computer Science, Electronics & Communication), and 2 male Engineering undergraduate students (Computer Science). They worked on the problem to make literature on any topic, modular with interactive questions. The following description will be helpful to get a clear picture of the hackathon proceedings:

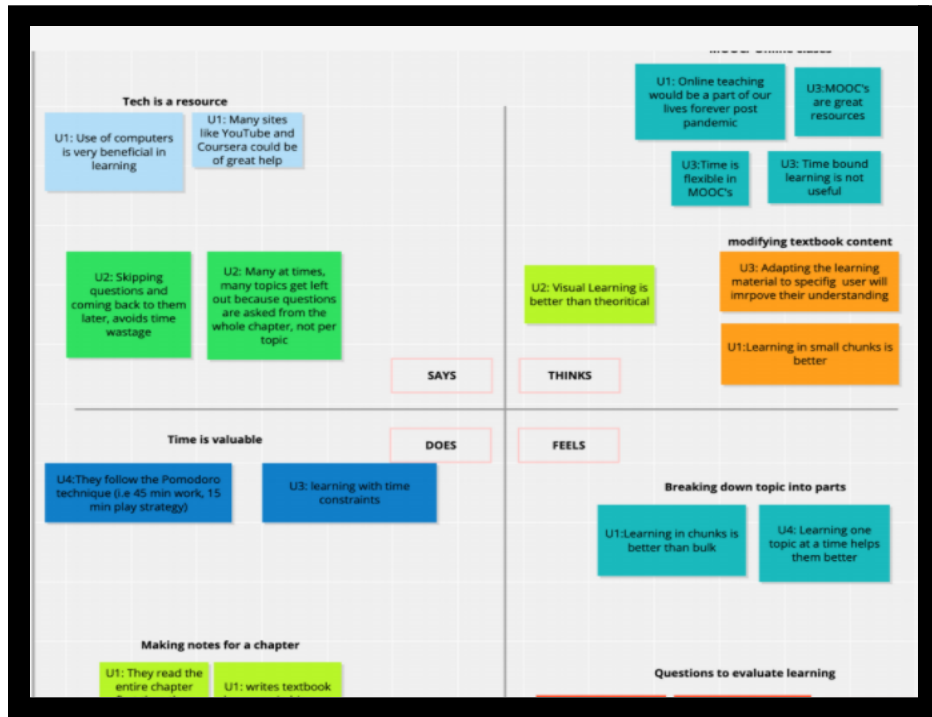
1. Mentorship

As per the standard procedure followed in the hackathon, the team was provided with a mentor - a PhD research scholar. The mentor was available throughout the event to the team for consultation and guidance. The team members are found to enquire more about the milestones and deliverables to be met for the hackathon event. The mentor helped the team members in streamlining their hackathon activities by reminding them to make use of the online collaborative platform, where templates were provided to collate information and artifacts related to the process.

2. Design process

The tutorial sessions included in the hackathon event are found to influence the team's problem solving approach and design process. The online collaboration whiteboard - *conceptboard* acted as a scaffold in creating artifacts like persona, empathy mapping for the design pipeline. User studies were performed with the help of pseudo users (i.e., team members). Problem identification, ideation and solution approach were aligned to the tutorial sessions. The team refined their prototype over multiple iterations.





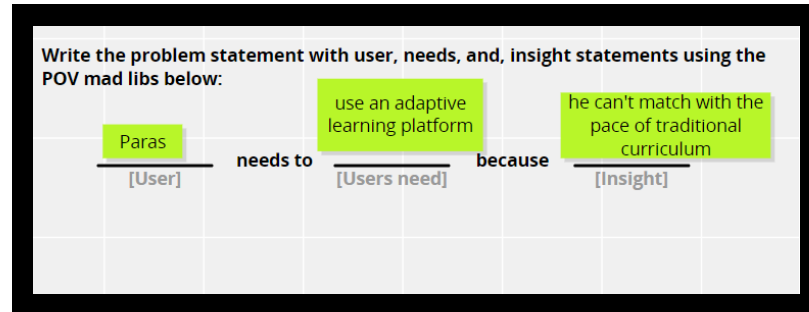
Write your persona statement here..

Paras is a regular curious student.

Append detailed Persona below:

Paras is a regular student. He has some trouble learning, but he is curious. Paras is tired of the usual way of studying. He thinks it's tedious to go through all the text in one sitting; he would much rather learn from MOOCs like NPTEL and Coursera because they explain it slowly. Some concepts need time; according to him, others might now.

He evaluates his knowledge questions. Often he gets stuck with one and needs to spend time on it. Paras would learn better if the questions could be



Final weights after agreement with team members

Upload the picture of the Usability goal setting sheet after discussion and agreement among teams.

Mention the EdTech design principles which you considered as high priority in your final presentation.

1. Content accuracy: Create content that has accurate facts, explanations, representations, and terminologies. *

Low 1 2 3 High

2. Correctness and clarity in assessment: Ensure that assessment questions and their solutions are correct, clear and unambiguous. *

Low 1 2 3 High

3. Language comprehensibility: Use easily understandable vocabulary and accent keeping the intended learners in mind. *

1 2 3

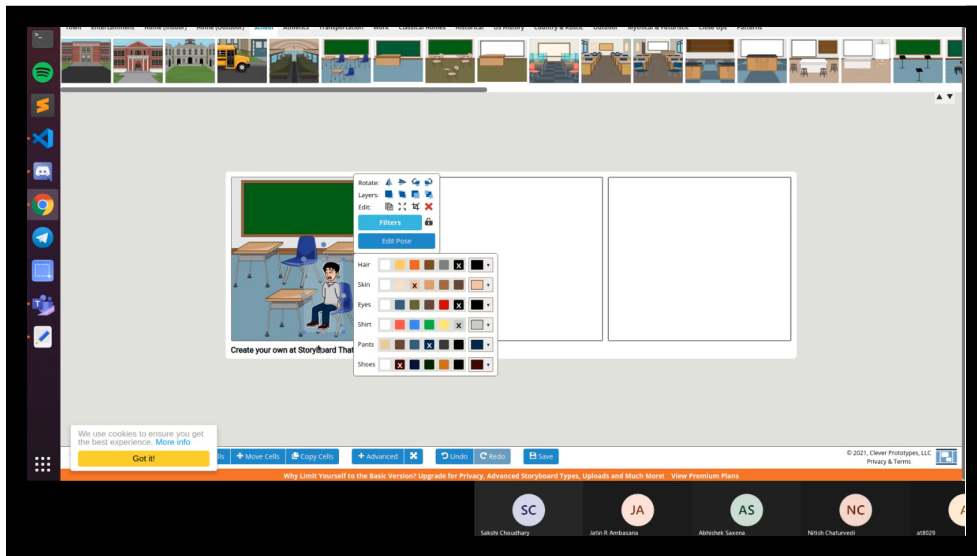
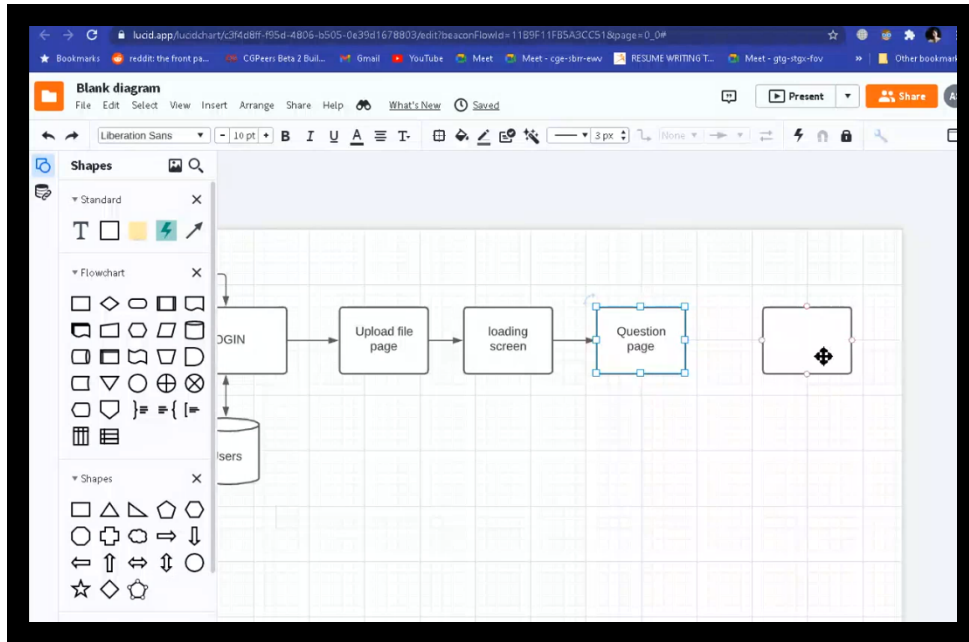
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Heuristic evaluation

Issues found	Weight / Priority rank
Encoding error	3
Pipeline implementation	4
Bug report and further fine tuning	3

3. Software / Platforms used

Throughout the entire hackathon process, the team is found to use a variety of tools/software/platforms to meet the needs of an online hackathon event and to address their problem statement. The team used *MS Teams* majorly for communication and coordination of work, along with *Whatsapp*. The organizers provided an online collaborative whiteboard - *conceptboard* with templates for artifact creation and sharing. Along with the tool, team members used *Google Docs* as a medium for documentation. Members used *Lucidchart* - a familiar tool among them - to create flowcharts, information architecture rather than exploring the affordances of collaborative whiteboards. *Storyboardthat* was used to create the corresponding storyboard. The solution to the problem selected required considerable coding. The team members broke the program into multiple sections and worked individually as well as collaboratively. *Github* was made use to upload and update the programs as a repository, where all the members can access and edit the resources.



POST-HACKATHON FOLLOW-UP

IDEAS Startup Workshop

The post-hackathon workshop was designed to provide continuing support to the participating teams. This had been scheduled for one week after the main event but got delayed due to the Covid pandemic. As part of the EdTech Hackathon 2021 post-event activities, a virtual 1.5 hours long “IDEAS Startup Workshop” was conducted by Dr. Love Sarin, Head, IDEAS Program, Desai-Sethi School of Entrepreneurship at IIT Bombay, on 10 June 2021. This event was advertised amongst all the hackathon participants. The session was attended by the members of three winning teams of the hackathon: Team Sahayak, Team async-await, Team RemoteBox. The IDEAS Bootcamp was planned to help the hackathon prize winners to think about taking their ideas and solutions to the next level of product realization and building an entrepreneurial mindset. The workshop started with each team presenting their startup ideas and business canvas models based on the work they had done in the main EdTech Hackathon previously. Dr. Sarin had engaging discussions with each team regarding their ideas and talked about how to incubate ideas for startups and product pipelines. The speaker also talked about business models, customer development, customer discovery, and customer definition. The workshop motivated the participants to think about the idea used by the respective teams in the EdTech Hackathon, from a marketing perspective as the speaker continuously provided prompts regarding market trends, primary target users, service models, etc. After considerable refinement, teams presented the respective pitches, followed by discussions on market size and problem-solution conceptualization.



Alekh V

Love Sarin

Nitish Chaturvedi

Sudhanva SP

sakshi

You are viewing Love Sarin's screen REC View Options

IDEAS
Program

End Goal: Executing the business

Setting up the business

Validated business model

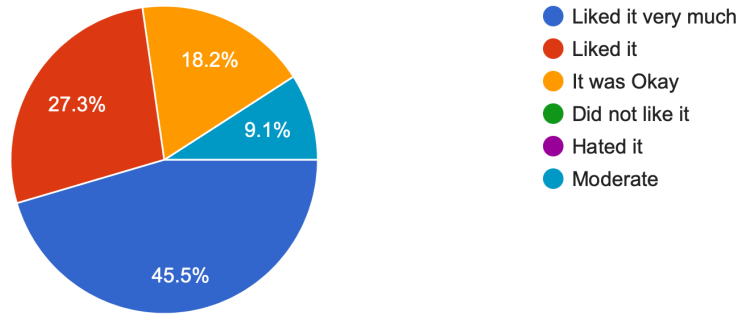
Search for a business model

Idea for a business

FEEDBACK FROM PARTICIPANTS

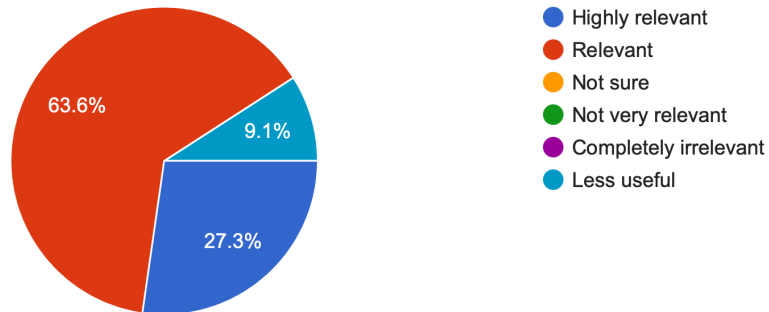
Rate your experience of the Hackathon Format

11 responses

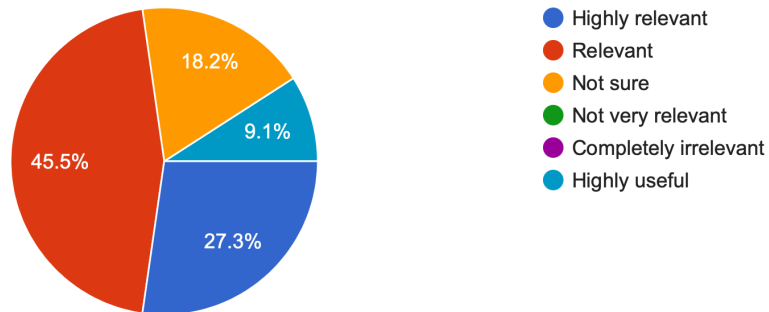


Relevance of the Pre-hackathon events/sessions/talks for your overall participation in the event.

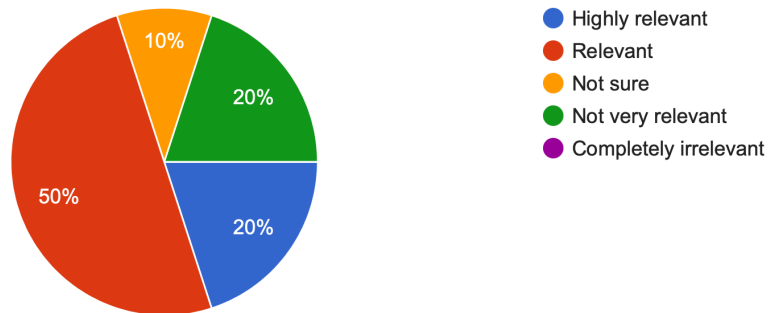
11 responses



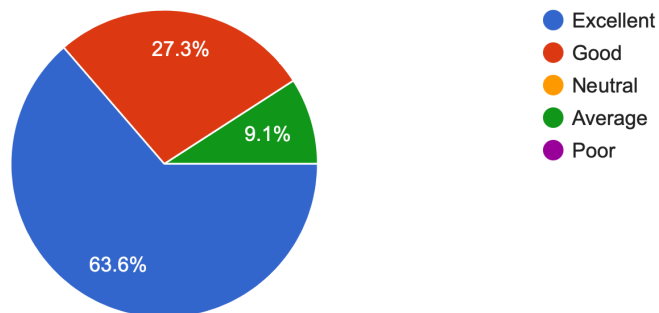
Relevance of the Hackathon Short tutorial sessions for your overall participation in the event
11 responses



Relevance of the material shared for your overall participation in the event.
10 responses

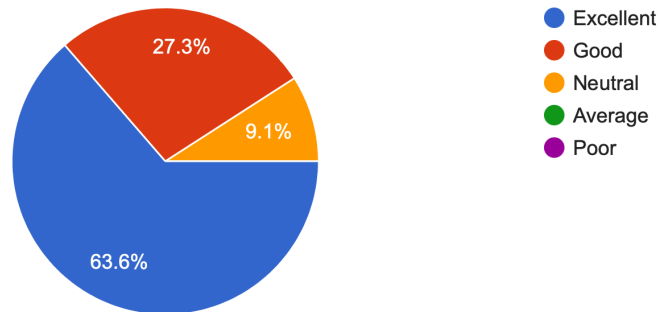


How was the overall arrangement of Hackathon event in this Pandemic situation.
11 responses



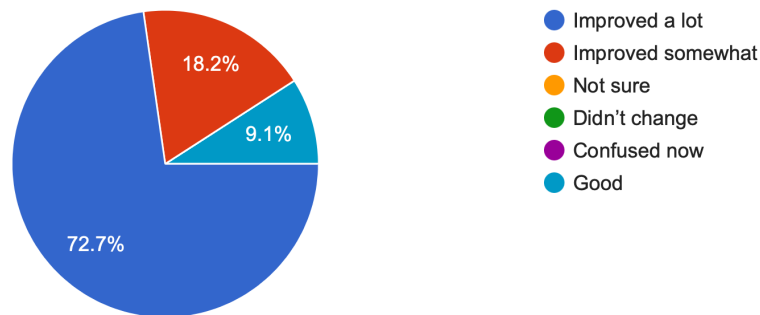
How was the mentoring activity by our mentors.

11 responses



Your understanding of Educational technology domain after this hackathon.

11 responses



How was your experience of collaboration (with teammates, mentors, etc) during the hackathon?

“I was in constant touch with my team mates & team mentor through Google Meets & Whatsapp. It was quite a good experience as we were able to connect whenever we wanted without any hassle or network issues what so ever.”

“Highly Informative and must have experience.”

“Enjoyed the interaction with mentors”

What did you like the most in this event?

“Mentorship”

“Activities to be done in concept board was engaging and fantabulous”

“Pre Hackathon events”

“The thing that I liked most about the event was learning experience that came from our mentor. He constantly motivated us to do better & showed us the right path to travel. At the end of Hackathon we were able to see much progress from what all we improved since the beginning of day 1. Even the organisers were quite helpful. They were active throughout the day & whenever we got stuck somewhere or had some issue, the problem got resolved in no time.”

What did you not like in this event?

“Though there wasn't anything that I didn't like but one could have been done which I thought could be like icing on the cake. Ideation phase made the majority part of hackathon due to which we had a bit less time for implementation of our idea in form of a prototype. To incorporate things properly I had to actually stay awake for 24 hours on Day 2. I guess if that could have been rightly balanced, it would have relieved the pressure a little. Overall it was still an amazing experience”

“Only one thing that we have to be present all the time on meet which was quite difficult due to our regular work schedule.”

EVALUATION RUBRIC

FOR DESIGN PROCESS AND PRODUCT (provided to the judges and teams)

1. Identification of target users/ learners *

The team has clearly described who their target users/learners are. Learners' profile (persona) clearly captures their needs, pain points, experiences, behaviors and goals.

Strongly Disagree 1 2 3 4 5 Strongly Agree

2. Problem statement *

Problem statement has been stated clearly, specifies the target learners, their primary need and an insight that reflects a nuanced understanding of the learners' problem.

Strongly Disagree 1 2 3 4 5 Strongly Agree

3. Ideation *

Multiple distinct ideas have been generated; the process and rationale for selecting the best solution has been clearly presented

Strongly Disagree 1 2 3 4 5 Strongly Agree

4. Testing & Refinement *

The solution has undergone iterative systematic refinement with inputs from preliminary testing within the team. EdTech design principles informing the refinement process have been presented clearly. The entire testing and refinement process has been documented and presented well.

Strongly Disagree 1 2 3 4 5 Strongly Agree

5. Design of the solution *

The team has precisely conveyed what is their solution, what are its features, and how it will be used by the users (functionality). Careful attention has been paid to user interaction with the solution and this has been presented well.

Strongly Disagree 1 2 3 4 5 Strongly Agree

6. Addressing the problem/challenge identified *

The solution clearly addresses the challenge or problem that they have identified.

Strongly Disagree 1 2 3 4 5 Strongly Agree

7. Quality of the solution *

The final EdTech solution is testable, creative, and unique. The team has clearly stated how their solution has the potential to make a significant social impact.

Strongly Disagree 1 2 3 4 5 Strongly Agree

IIT Bombay's EdTech Hackathon Credit List

Whole event, cooperation, brilliant solutions, efforts, questions, feedback	14 Participating teams
Hackathon Supporters	CEMCA (Dr. Madhu Parhar & Dr. Shiffon Chatterjee), Devfolio Team (Denver & Aniket), Desai Sethi School of Entrepreneurship IITB
Hackathon Judges	Dr. Madhu Parhar, Dr. Ravi Bhallamudi, Dr. Amina Charania, Dr. Sameer S Sahasrabudhe, Ms. Shruti Gogia
Hackathon Keynote/Speaker Sessions	Prof. Madhu Parhar, Prof. Sridhar Iyer, Mr. Akhil (Tezos)
Pre-Hackathon Talks (ET Alumni and Research Scholars)	Dr. Rwitajit Majumdar, Dr. Jayakrishnan M, Dr. Shitanshu Mishra, Dr. Aditi Kothiyal, Dr. Gargi Banerjee, Dr. Yogendra Pal, Dr. Anura Kenkre, Mr. Ashutosh Raina, Mr. Varun John, Mr. Daevesh Kumar Singh, Mr. Narasimha Swamy, Ms. Sunita Raste (Host)
Hackathon Tutorial Sessions	Mr. Herold P. C.
Hackathon Teams' Mentors (ET Students & Alumni)	Dr. Shitanshu Mishra, Mr. Ashutosh Raina, Ms. Pratiti Sarkar, Ms. Navneet Kaur, Ms. Rumana Pathan, Mr. Pankaj Chavan, Mr. Herold P C, Mr. Nandan P. A., Mr. Varun John, Ms. Indrayani Nishane Jayant Renu, Ms. Spruha Satavlekar, Mr. Amit Paikrao, Mr. Vishwas Badhe, Mr. Jatin Ambasana, Ms. Rajashri Priyadarshini, Mr. Debarshi Nath
Hackathon Student Coordinators	Mr. Narasimha Swamy and Mr. Alekh V
Hackathon themes identification	Mr. Alekh V and Mr. Narasimha Swamy
Hackathon website	Mr. Vishwas Badhe, Ms. Spruha Satavlekar and Mr. Nagesh Pokle
Hackathon logo, poster, brochure and certificate design	Mr. Amit Paikrao and Mr. Raj Gubrele
Hackathon formal/informal advertisement	Mr. Pravin Ingle, Mr. Narasimha Swamy, Ms. Spruha Satavlekar, Mr. Raj Gubrele, Mr. Vishwas Badhe, Dr. Yogendra Pal, and all ET members

Hackathon Application Screening	Dr. Shitanshu Mishra, Dr. Prajish Prasad, Mr. Alekh V, Mr. Narasimha Swamy, and Prof. Chandan Dasgupta
Devfolio platform setup and management	Mr. Narasimha Swamy, Mr. Alekh V and Mr. Pravin Ingle
Microsoft Teams setup and management	Mr. Vishwas Badhe, Ms. Spruha Satavlekar, Mr. Alekh V, Mr. Raj Gubrele, and Mr. Deepak Pathak
ET Faculty	Prof. Sridhar Iyer, Prof. Sahana Murthy, Prof. Ritayan Mitra, Prof. Ramkumar Rajendran
Hackathon Faculty Coordinator	Prof. Chandan Dasgupta

EdTech Hackathon 2021 - Schedule

Pre-Hackathon Schedule - Day 1 - 10th March 2021		
Time in IST	Live or Synchronous Sessions	Speaker(s)/Member(s)
05:15 PM - 07:00 PM	Mentoring session for selected Mentors	Mr. Herold PC, Prof. Chandan Dasgupta
07:00 PM - 08:00 PM	Orientation to Microsoft Teams Testing and Troubleshooting with all Members of Selected Hackathon Teams	Ms. Spruha Satavlekar and Mr. Vishwas Badhe
Pre-Hackathon Schedule - Day 2 - 11th March 2021		
07:00 PM - 07:30 PM	Orientation to broad 'EdTech Challenges' chosen for Hackathon followed by question & answer session	Mr. Narasimha Swamy, Prof. Chandan Dasgupta
07:30 PM - 08:00 PM	Learning Analytics and Data to Learn With	Dr. Rwitajit Majumdar
08:00 PM - 08:30 PM	Artificial Intelligence in Education	Mr. Daevesh Kumar Singh, Prof. Ramkumar Rajendran
08:30 PM - 09:00PM	Federated Learning by Communities for achieving learner-centricity in MOOCS: Ways Ahead	Dr. Jayakrishnan M
09:00PM - 09:30PM	Methods from Design Thinking to Ideate for Learner Centric Designs	Dr. Shitanshu Mishra
Pre-Hackathon Schedule - Day 3- 12th March 2021		
07:00 PM - 07:30 PM	Introduction to learning sciences and designing learning environments	Dr. Aditi Kothiyal
07:30 PM - 08:00 PM	Introduction to Design Standards for EdTech Products	Dr. Gargi Banerjee
08:00 PM - 08:30 PM	Future of Videos in Education by Yogendra Pal	Dr. Yogendra Pal
08:30PM - 09:00 PM	Instructional Systems Design	Dr. Anura Kenkre
09:00 PM - 09:30 PM	Emerging Technologies and Possibilities in Education	Mr. Ashutosh Raina, Mr. Varun John, Prof. Ritayan Mitra

EdTech Hackathon - Day - 1 (13th March 2021)		
09:00 AM - 09:30 AM	Introduction to Decade of Interdisciplinary Programme in Educational Technology at IIT Bombay	Prof. Sridhar Iyer
09:30 AM - 10:00 AM	Keynote Talk by Director, Commonwealth Educational Media Centre for Asia (CEMCA)	Prof. Madhu Parhar
10:00 AM - 10:20 AM	Tutorial: Users/learners	Mr. Herold PC
10:20 AM - 10:30 AM	Introduction to mentors and their role	Mr. Herold PC
10:30 AM - 12:00 PM	Phase 1: Understanding users/learners	Mentors
12:00 PM - 12:30 PM	Tutorial: Problem Identification	Mr. Herold PC
12:30 PM - 01:00 PM	Doubt Clearing Session	Mr. Herold PC
01:00 PM - 02:00 PM	Lunch Break	
02:00 PM - 04:30 PM	Phase 2: Problem Definition	Mentors
4:30 PM - 5:00 PM	Tutorial: Ideation	Mr. Herold PC
5:00 PM - 6:00 PM	Phase 3: Ideation and brainstorming	Mentors
09:00 PM - 09:30 PM	Sharing reflections, Expectations for Day 2 and Q & A	Mr. Herold PC
11:59 PM	Deadline to submit Day 1 deliverables	
EdTech Hackathon - Day - 2 (14th March 2021)		
09:00 AM - 09:30 AM	Talk by Devfolio Partners	
09:30 AM - 09:50 AM	Tutorial: Decision Matrix Analysis	Mr. Herold PC
09:50 AM - 11:00 AM	Phase 4: Selecting an Idea	Mentors
11:00 AM - 11:30 AM	Tutorial: Prototyping	Mr. Herold PC
11:00 AM - 01:00 PM	Phase 5: Prototyping	Mentors
01:00 PM - 02:00 PM	Lunch Break	
02:00 PM - 05:00 PM	Phase 5: Prototyping	Mentors
05:00 PM - 05:30 PM	Tutorial: User testing & Design iteration	Mr. Herold PC

05:30 PM - 07:30 PM	Phase 6: Testing and Iterations	Mentors
07:30 PM - 08:00 PM	Tutorial: Evaluation methods	Mr. Herold PC
08:00 PM - 09:00 PM	Phase 7: Evaluation	Mentors
09:00 PM - 09:30 PM	Doubt Clearing Session	Mentors
11:59 PM	Deadline to submit Day 2 deliverables	
EdTech Hackathon - Day - 3 (15th March 2021)		
09:00 AM - 11 AM	Phase 8: Post-evaluation design iterations & update presentation as per template	Mentors
11 AM	Deadline for uploading all work in Conceptboard and Presentation, for evaluation by Judges	
11:30 AM - 03:30 PM	Team presentations in front of Judges (10min + 5min Q & A)	Panel of judges
3:30 PM - 4:00 PM	Closing session	
EdTech Hackathon winners announced on March 16, 2021		

Participants selected for the EdTech Hackathon

S. no.	First Name	Last Name	Gender	College
1	Rishabh	Dhenkawat	Male	National Institute of Technology Hamirpur
2	Arnab	Saha	Male	National Institute of Technology Hamirpur
3	Nixon	Nelson	Male	St. John College of Engineering and Management
4	Aradhya	Tripathi	Male	SRM Institute of Science and Technology
5	Sakshi	Choudhary	Female	SRM Institute of Science and Technology
6	Abhishek	Saxena	Male	SRM Institute of Science and Technology
7	Nitish	Chaturvedi	Male	SRM Institute of Science and Technology
8	Kaamil	Verma	Male	Don Bosco School, Nerul
9	Nikunj	Jadhav	Male	Abhinav College of Arts, Commerce and Science
10	Shatakshi	Raman	Female	Bharati Vidyapeeth's College of Engineering
11	Prathamesh	Mundada	Male	Vishwakarma Institute of Information Technology
12	Palak	Chandak	Female	Vishwakarma Institute of Information Technology
13	Abhinav	Mangla	Male	Bharati Vidyapeeth's College of Engineering
14	Shikha	Verma	Female	Dayalbagh Educational Institute
15	Deepanshi	Mamgain	Female	Bharti College of Engineering and Technology, Durg
16	Mrunal	Vaidhya	Female	Vishwakarma Institute of Information Technology
17	Hardik	Chadda	Male	Dayalbagh Educational Institute
18	Shravan	Nanjunda	Male	Jyothy Institute of Technology
19	Deepankar	Bhade	Male	Vidyalankar Institute of Technology
20	Kartik	Bodhankar	Male	Vidyalankar Institute of Technology
21	Viraj	Jadhav	Male	College of Engineering Pune
22	Rohit	Chaudhari	Male	College of Engineering Pune
23	Kranthi	Chowhan	Female	Raghu Engineering College

24	Harsh	Patil	Male	Sanjay Ghodawat University
25	Vithesh	Shetty	Male	Jyothy Institute of Technology
26	Shreyas	Songirkar	Male	Vishwakarma Institute of Information Technology
27	Rishabh	Varma	Male	National Institute of Industrial Engineering
28	Prajwal	Adsul	Male	College of Engineering Pune
29	jeet	patel	Male	Sanjay Ghodawat University
30	Siddhant	Kuchnure	Male	Sanjay Ghodawat University
31	Komalchitt	Juneja	Female	Dayalbagh Educational Institute
32	Vismai	Kumar S	Male	Jyothy Institute of Technology
33	Sudhanva	S P	Male	Jyothy Institute of Technology
34	Akshaya	Ashok	Female	Bharatiya Vidya Bhavan, Coimbatore
35	Rahul	Pandey	Male	Indian Institute of Technology Bombay
36	Vishnu	Jayan	Male	Indian Institute of Technology Bombay
37	Rakshit	Kharbanda	Male	Bharati Vidyapeeth's College of Engineering
38	Megha V	Asrani	Female	Kgisl Institute of Technology
39	Ishaan	Desai	Male	National Institute of Technology Rourkela
40	Sagnik	Sarkar	Male	Vellore Institute of Technology
41	Shaashwat	Agrawal	Male	Vellore Institute of Technology
42	Mihir	Jain	Male	National Institute of Technology Hamirpur
43	Sameer	Sahu	Male	National Institute of Technology Rourkela
44	Pulkit	Mahajan	Male	Vellore Institute of Technology
45	Aditi	Chowdhuri	Female	Vellore Institute of Technology
46	Ulka	Padwalkar	Female	Bharatiya Vidya Bhavans Sardar Patel Institute of Technology
47	Yuvraj	Kadale	Male	National Institute of Technology Hamirpur
48	Anshuman	Sandhibigraha	Male	National Institute of Technology Rourkela
49	Umadevi	K R	Female	Bharatiyar University, Coimbatore
50	Rashmi	Nagpal	Female	Madurai Kamarajar University
51	Ritik	Dhedia	Male	St. John College of Engineering and Management

