

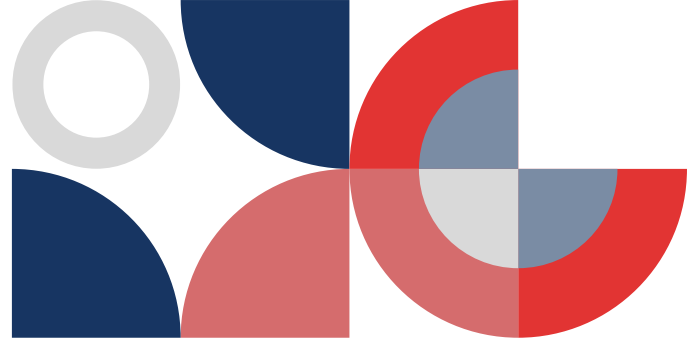
2024/2025

IMPACT ASSESSMENT REPORT
ENHANCING CONTENT &
ACCESSIBILITY TO QUALITY
EDUCATION: SCIENCE CONTENT
ACCELERATION PROGRAM

Unique Id-KMBL202223013

Program ID	KMBL202223013
Year of Implementation	2022-23
Program Duration	April 2022- June 2023
Partner Organization	Khan Academy
Location	Uttar Pradesh





Disclaimer

This report reflects our views based on the accuracy and completeness of the information provided to Kotak Mahindra Bank Limited. We assumed the genuineness of all signatures and the authenticity of original documents but did not independently verify them. This is not an audit, and we do not express an opinion or assurance. Comments are not intended as legal advice or opinion.

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Ethical Considerations

- **Informed Consent:** Interviews were conducted with respondents' consent, and permission was reconfirmed after completion.
- **Confidentiality:** Participant information is kept private, with no disclosure of identities. Findings are presented anonymously.
- **Comfort:** Interviews were arranged according to respondents' preferences and schedules for their convenience.
- **Right to Reject or Withdraw:** Respondents could refuse to answer questions or withdraw from the study at any time.

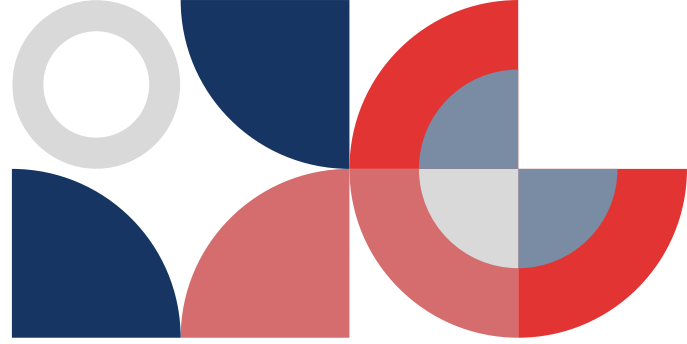
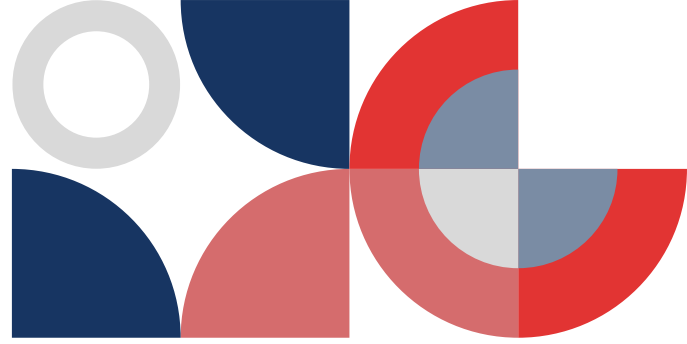


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Executive Summary

The "Enhancing Content & Accessibility to Quality Education: Science Content Acceleration" program, a joint initiative by Kotak Mahindra Bank Limited (KMBL) and Khan Academy, has made significant strides in addressing learning gaps in STEM education for students in government schools. By delivering high-quality, curriculum-aligned STEM content, the program aligns with the goals of the National Education Policy (NEP) 2020 and NCERT standards. The initiative's impact is evident across over 250,000 students and 2,500+ schools in India.

Key Achievements:

- **Content Development:** Creation of 500+ videos and 5,600 practice questions aligned with NCERT learning objectives.
- **Base for localisation:** The developed content serves as a foundational framework for adapting and localizing materials to meet the specific requirements of partner states.
- **Engagement:** Monthly Very Active Learners (MVALs) metrics highlight meaningful engagement, with students consistently interacting with both exercises and videos.

Key Insights:

- **Alignment with National Policies:** The program's focus on conceptual learning and mastery closely aligns with NEP 2020's emphasis on moving away from rote memorization.
- **Student-Centered Approaches:** Interactive exercises, progressive hints, and gamified elements foster deeper understanding and engagement.
- **Feedback and Continuous Improvement:** Feedback mechanisms involving educators and students drive iterative refinements in content and delivery.
- **Scalability Potential:** Partnerships with state governments and integration with regional curricula provide a robust framework for expansion.

Challenges & Adaptations:

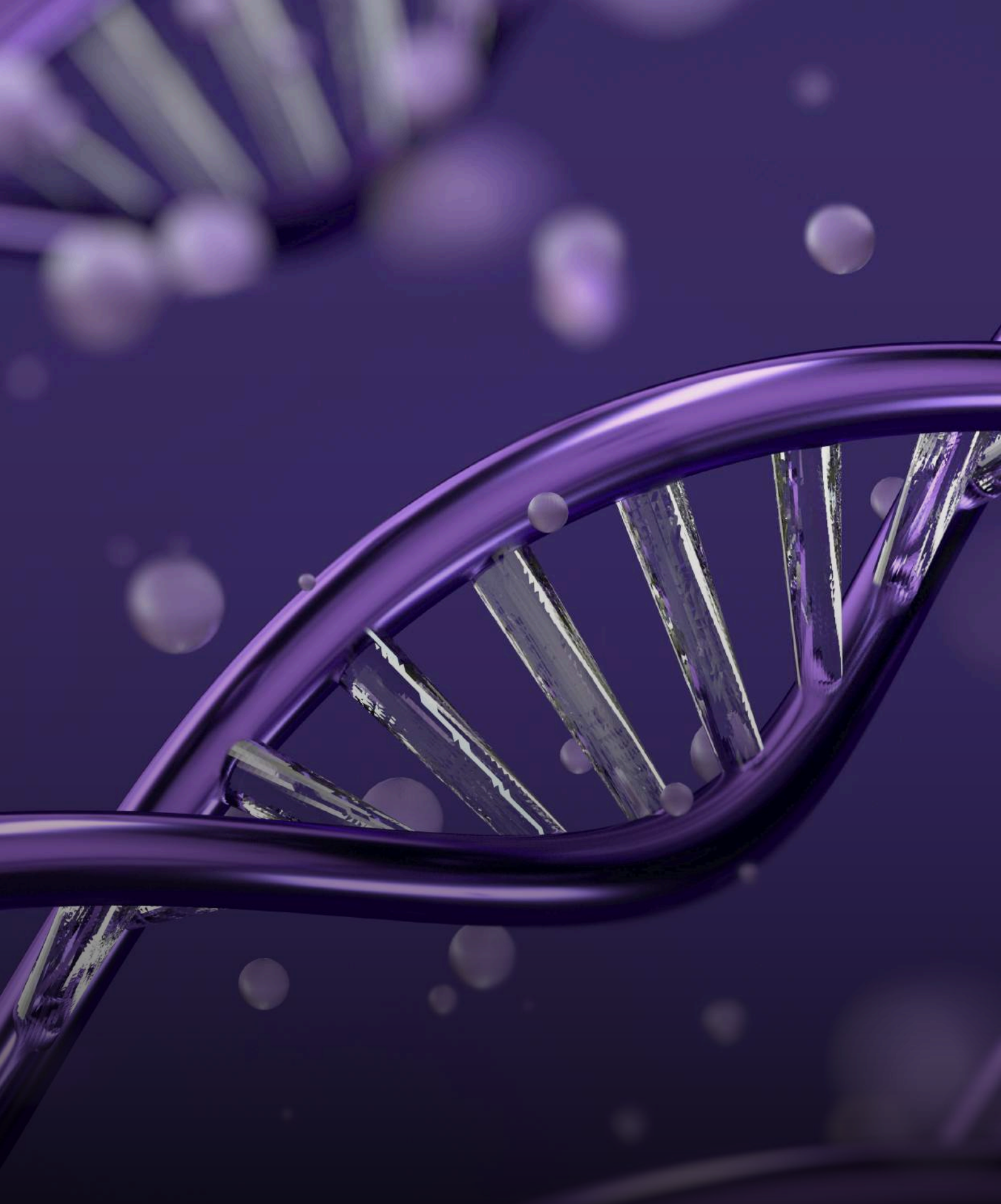
Frequent curriculum updates and resource constraints require continuous adaptation, managed through streamlined processes and peer review.

Recommendations:

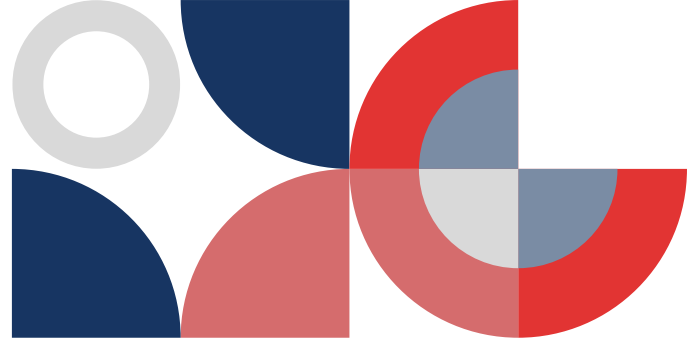
- **KMBL:** Expand CSR funding for more subjects.
- **Khan Academy:** Broaden subjects, enhance adaptive tools, and strengthen feedback loops.
- Expanding beyond STEM and collaborating with state boards can increase impact.

Conclusion:

The KMBL-Khan Academy partnership sets a scalable model for inclusive STEM education, paving the way for future digital learning advancements.



Chapter-1
Introduction



1. Background

Education is a fundamental driver of socio-economic progress, shaping individuals' capabilities and enhancing societal development (OECD, 2006; Patowary, 2020). Quality science education is particularly pivotal in fostering analytical thinking, problem-solving skills, and innovation—traits essential for navigating the complexities of a rapidly evolving world, especially in a technology-driven global economy (Marzuki et. al., 2024).

According to the National Education Policy (NEP) 2020, fostering a strong foundation in STEM (Science, Technology, Engineering, and Mathematics) is vital for achieving academic and career success in the 21st century (Gol, 2020). Research by UNESCO (2021) insists that accessible, engaging science education enhances students' critical thinking abilities and contributes to national development.

However, disparities in access to quality resources significantly impact students' learning outcomes, especially in linguistically and geographically diverse regions like India. The ASER report (2023) shows that the students face following barriers:

Inadequate teacher-student ratio	Lack of teacher training	Insufficient learning resources	Socio-economic disparities	Language barriers
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E-learning platforms have proven effective in reducing educational disparities by providing scalable, interactive, and curriculum-aligned content (Kalyani, 2024). CSR initiatives, as highlighted in the KPMG India CSR Report (2024), prioritise education, with a focus on science and technology. Hence, Kotak Mahindra Bank Limited (KMBL) supported Khan Academy's program titled Science Content Acceleration Program improve accessibility and learning outcomes for marginalized communities.

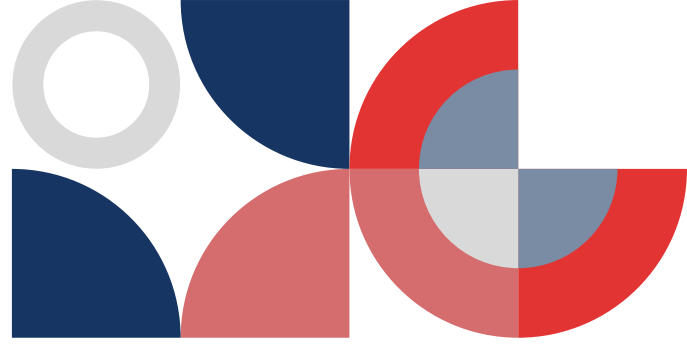
2. Project Brief

The Enhancing Content & Accessibility to Quality Education: Science Content Acceleration Program centres around Khan Academy's platform, a free and accessible online platform tailored to support Indian students in grades 9–12. This initiative offers a comprehensive and student-focused learning experience through a diverse array of resources, including:




500 high-quality educational videos: These videos present science concepts in an engaging and easy-to-understand manner, helping students grasp even the most complex topics.

5,600 interactive practice questions: Tailored to strengthen conceptual understanding, these questions are aligned with the National Council of Educational Research and Training (NCERT) curriculum standards.

Diagnostic tools and interactive exercises: These features allow students to track their progress, identify learning gaps, and build a strong foundation in core science subjects.



Initially, the program concentrated on the critical transition years of classes 11 and 12, emphasizing mastery of science concepts essential for higher education and career opportunities. Recognizing the significance of early preparatory years, the program subsequently expanded to include materials for class 9, focusing on foundational knowledge development. Supported by the Corporate Social Responsibility (CSR) initiative of Kotak Mahindra Bank Limited (KMBL), the program aspires to transform science education in India. By delivering high-quality, engaging, and accessible resources, it aims to:

-  **INSPIRE ACADEMIC EXCELLENCE AMONG STUDENTS.**
-  **FOSTER A LIFELONG LOVE FOR LEARNING AND CURIOSITY IN SCIENCE.**
-  **BRIDGE EDUCATIONAL INEQUITIES AND SUPPORT UNDERREPRESENTED COMMUNITIES.**

In 2022-23, the program focused on content creation and sharing through its site and YouTube, following a three-phase process:

1. Planning

- Content creation began by mapping the Grade, Course, and Unit to ensure alignment with the NCERT curriculum.
- Each unit was structured around a central learning outcome (LO).
- Learning outcomes were grouped into lessons based on their interrelation, ensuring cohesive instructional design.
- Courses, units, and learning outcomes were mapped to NCERT standards for consistency.

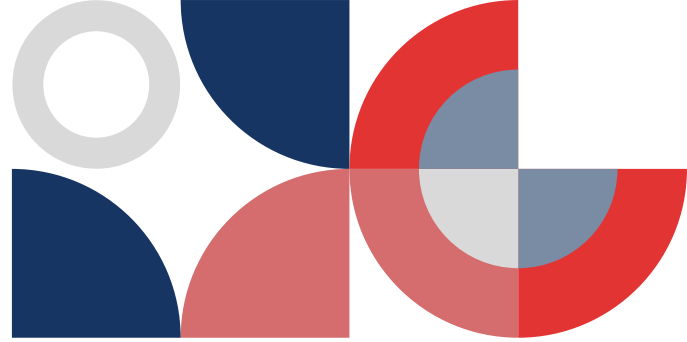
2. Execution

- The mapped LOs, units, and courses underwent peer review for accuracy and alignment
- Legacy content was integrated where applicable, with unmapped LOs prioritized for fresh development.
- For each LO, one or two exercises (with approximately eight questions each) and accompanying videos were developed, reviewed, and finalized for publication.
- Once all the prioritized LOs within a unit were completed, the entire unit was published for access.

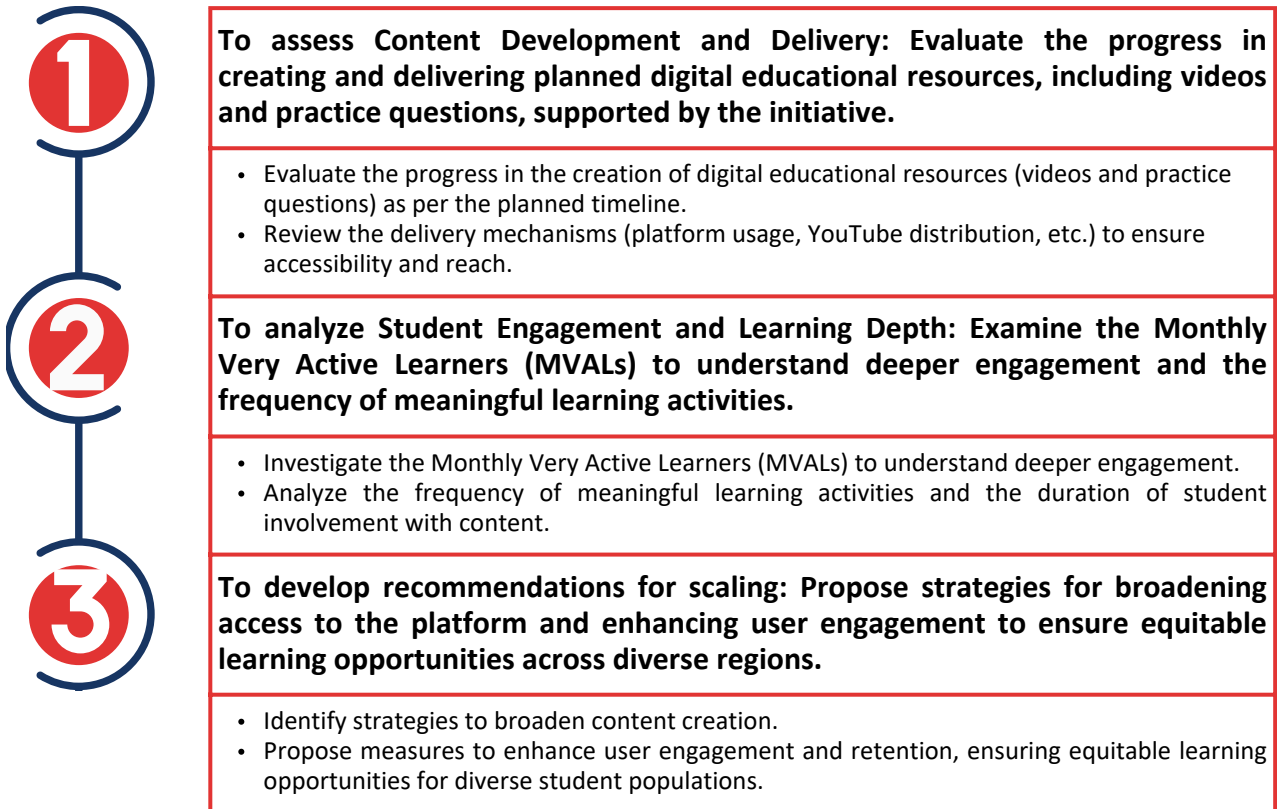
3. Retrospectives

- Post-publication of each unit, the team conducted retrospectives to evaluate challenges, gather feedback, and identify learnings.

This structured approach enabled KAI to create high-quality, NCERT-aligned content that catered to student's academic needs while optimizing the content development process for future projects.



3. Research Objectives



4. Assessment Frameworks

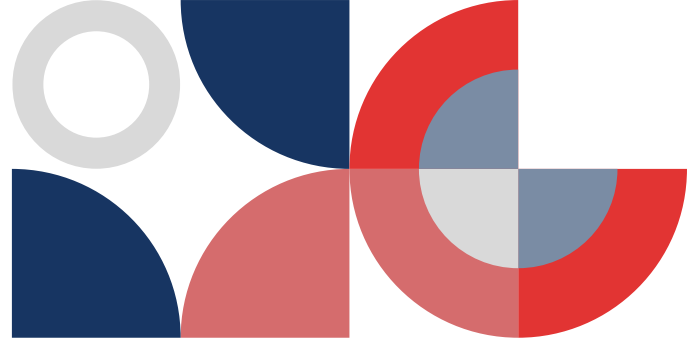
OECD DAC Framework and Kirk Patrik Model were used for assessment.

OECD DAC Framework

The framework helps us to understand efficiency at the project or organization level. The OECD DAC Network on Development Evaluation (EvalNet) has defined six evaluation criteria – **relevance, coherence, effectiveness, efficiency, impact and sustainability**. These criteria provide a normative framework used to determine the merit or worth of an intervention (policy, strategy, programme, project or activity). The OECD DAC framework is ideal for assessing the above study on teacher training and digital integration, as it comprehensively evaluates the program's relevance to educational needs, coherence with policy goals, effectiveness in achieving learning outcomes, efficiency in resource utilization, impact on content creation and student outcomes, and sustainability for long-term scaling across diverse settings.



Figure 1: OECD DAC model



Kirk Patrick Model

First developed by Donald Kirkpatrick in 1959, the Kirkpatrick model has four levels of evaluation is a widely recognized framework for evaluating the effectiveness of training and skill upgradation projects.

Level 1: Reaction: At this level, we assess content creators’ and management team’s satisfaction with training, tools, and resources.

Level 2: Learning: During this level, the knowledge upgradation, and upskilling that trainers have gained by the content creators team.

Level 3: Behaviour: Examines how the participants have applied their learnings to product development.

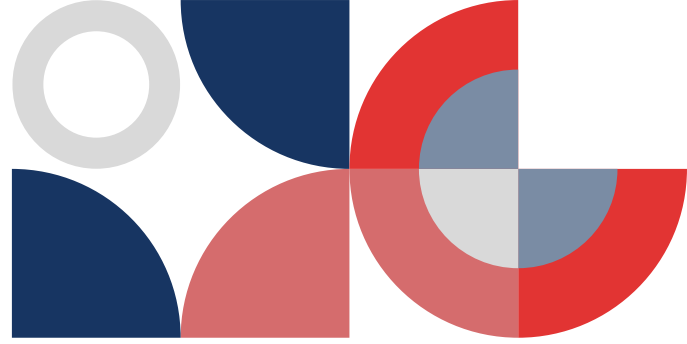
Level 4: Results: At this stage, we assess how the project has contributed to the overall development of the product/innovations (Kurt S, 2018)

4.1. Assessment Indicators

Objectives	Theoretical frameworks	Indicators
To assess Content Development and Delivery.	OECD DAC Framework (Effectiveness & Efficiency)	<ul style="list-style-type: none"> Number of NCERT-aligned videos and questions developed. Peer-review completion rates for content. Average time spent creating and publishing content. Ratio of planned vs. delivered resources. Quality of contents created based on expert review and student feedback.
	OECD DAC Framework (Relevance)	<ul style="list-style-type: none"> Percentage of learning outcomes covered per curriculum. Contents from 9-12 covered under the program.
	Level 1 : Reaction Level 2: Learning	<ul style="list-style-type: none"> Learnings that content developers have had through the training program. Usage of the learnings from the training to the content creation.
To analyze Student Engagement and Learning Depth:	OECD DAC Framework (Effectiveness) & (Sustainability)	<ul style="list-style-type: none"> Number of Monthly Very Active Learners (MVALs). Frequency of engagement with interactive elements (e.g., quizzes). Retention rates of active users.
To develop recommendations for scaling	Level 4: Results	<ul style="list-style-type: none"> Effectiveness of the process
	OECD DAC Framework (Sustainability)	<ul style="list-style-type: none"> Localization of the content to Indian context. Coherence with the state syllabus in those regions. Identification of barriers to scalability and proposed solutions Feedback from students, teachers, and stakeholders on content quality and accessibility

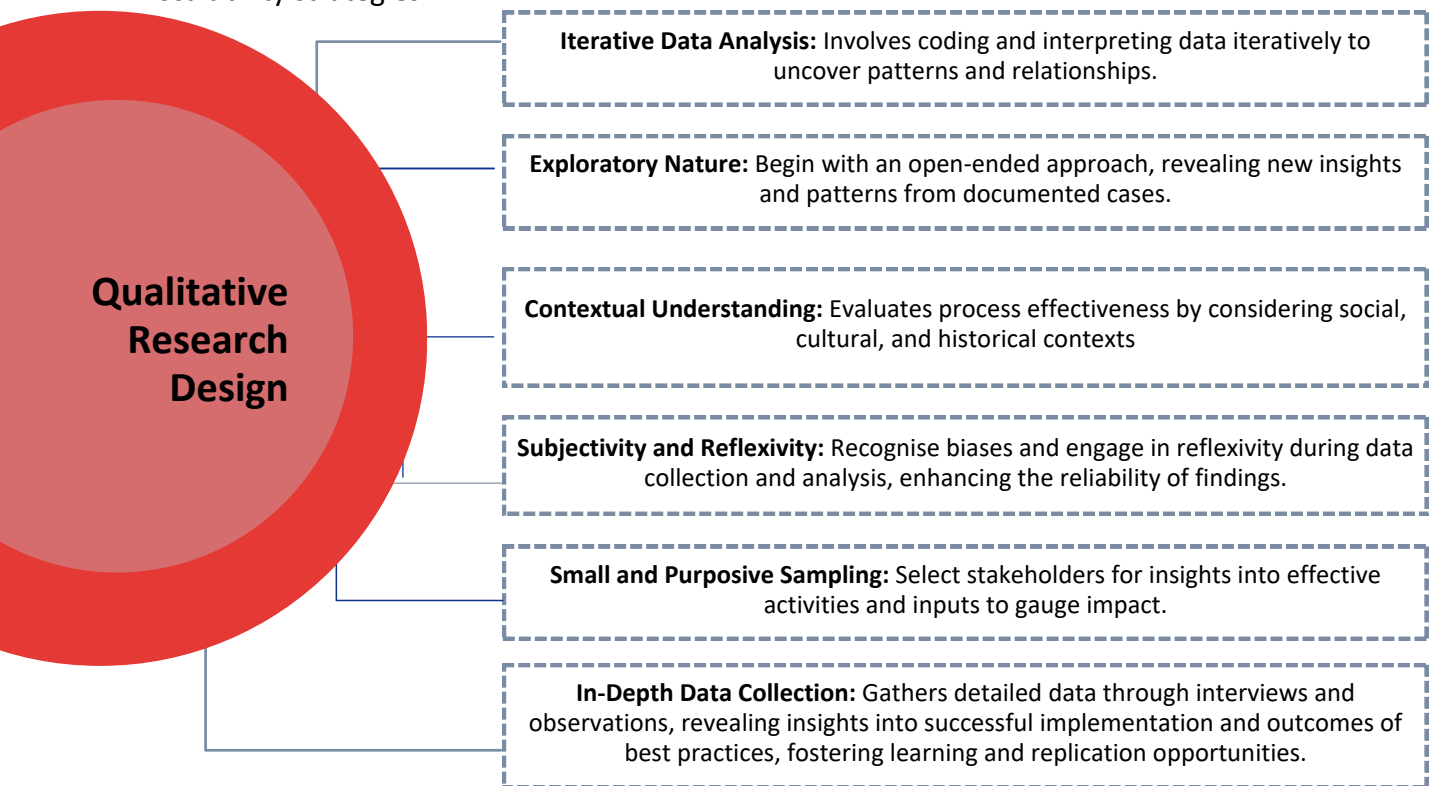


Chapter-2
Approach and Methodology



5. Methodology

Qualitative research provides in-depth insights into complex phenomena and the lived experiences of individuals involved in an intervention. This study employed qualitative methods to assess content development, delivery mechanisms, platform reach, student engagement, and scalability strategies.

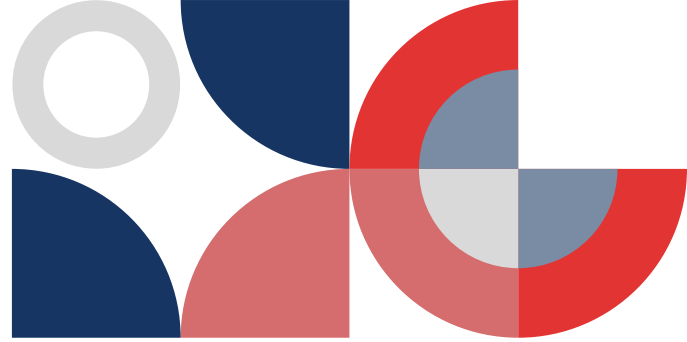


Key indicators for this qualitative study, included educational resources developed, MALs, and MVALs engagement trends, measured outcomes. In-depth interviews with content creators and management teams provided insights into successes, challenges, and overall impact, while data triangulation ensured a thorough analysis of the implementation process.

5.1. Study Design

A qualitative approach was chosen for data collection to gain deeper insights into the activities, outputs, and outcomes of the intervention. Qualitative methods allow for a rich understanding of complex phenomena and help in constructing a comprehensive narrative of the implementation process and its impacts. During qualitative data collection, respondents were interviewed to explore their experiences with the intervention, identify any significant changes resulting from the intervention, and assess the potential utility of the intervention for similar scenarios in the future.

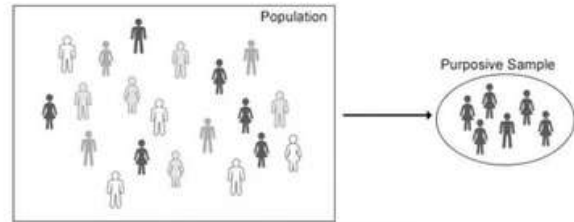
Data collection was conducted remotely, with the sample plan finalized after discussions with KMBL and Khan Academy. A qualitative approach ensured a holistic impact assessment, involving content creators and management. Secondary data on Monthly Active Learners (MALs), Monthly Very Active Learners (MVALs), and Total Learning Time (TLT) for 2022-23 were analyzed to identify peak engagement. Triangulation validated and enhanced data credibility.



5.2. Sampling Plan

Purposive sampling was used, with the intent to include all the important stakeholders whose input would provide richness to the study. It is an appropriate method to use if there are only limited number of primary data sources who can contribute to the study. As the respondents comprised of content creators and management team, the sample was selected as per the criteria.

Figure 2: Purposive sampling



Source: Statistical Aid, 2020.

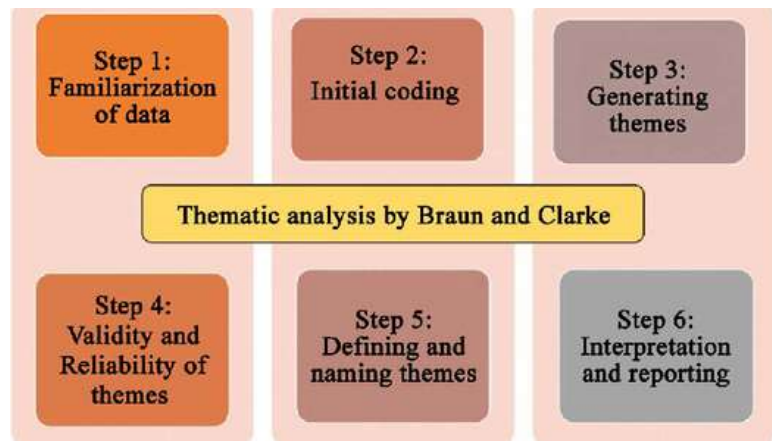
Table 1: Sample size distribution

Name of the Stakeholders	Sample Size	Tool for Data Collection
Content Creation Team	7 IDI	In-Depth Interviews
Management Team	1 KII	Key Informant Interview

5.3. Data Analysis

Thematic analysis was conducted to identify patterns and themes in qualitative data, with codes and themes developed inductively. Software like ATLAS.ti ensured accurate analysis.

Figure 3: Steps of thematic analysis



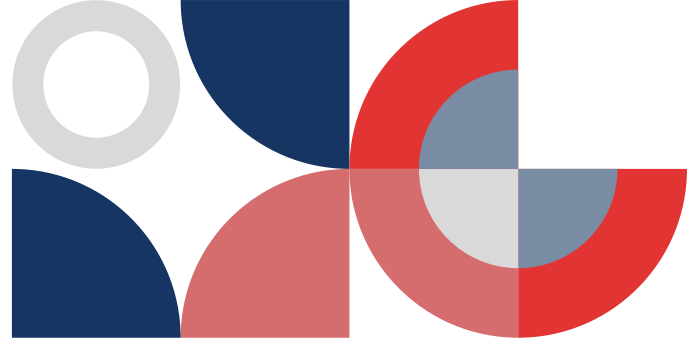
Source: Braun and Clarke, 2006

5.4. Data Quality Assurance, Validation and Analysis

Strict data protocols ensured accuracy, consistency, and completeness.

5.5. Ethical Concerns


In-depth and Key Informant interviews were conducted with the KAI content and management teams. Participants were informed of the study's purpose, objectives, and data use. Participation was voluntary, with verbal consent obtained. ImpactDash followed UNICEF's 2021 Ethical Standards.



5.6. Limitations

This study encountered several challenges that impacted the research process. One significant limitation was the difficulty in securing the involvement of the desired number of stakeholders, which constrained the breadth of perspectives. Additionally, some stakeholders available for interviews were not directly involved in the program under study, potentially limiting the relevance of their insights. There was also a risk of biased or incomplete data, as participants might have felt hesitant to share candid feedback due to the recording of interviews.

To address these challenges, mitigation strategies were employed. Comprehensive data collection tools were designed to capture maximum relevant information. Feedback from stakeholders, rooted in their experience working under the same guidelines and principles, was included, alongside an assessment of their current work to identify areas for program improvement. Ethical considerations, including ensuring participant anonymity, were prioritized to encourage honest and complete responses, reducing the risk of bias in the data. Despite these efforts, the limitations underline the complexity of gathering diverse and unbiased stakeholder perspectives.



**EMPOWERING
250,000+ STUDENTS
IN 2,500+
GOVERNMENT
SCHOOLS WITH STEM
CONTENT.**

6.1. Demographic Details

The majority (5 out of 8) between 30–35 years. This suggests a relatively young and mid-career team, likely bringing energy and fresh ideas to content creation while maintaining a mix of experience.

29–45 years

is the age-range of the respondents who were part of content team and management.

The team has seen consistent expansion, with members joining every year since 2021. The addition of roles like Localization Specialists (2023) and Biotechnology-focused creators (2024) reflects ongoing efforts to diversify content and improve regional outreach.

All stakeholders possess advanced degrees in relevant fields, with a strong emphasis on STEM qualifications such as Physics, Engineering, and Renewable Energies. This aligns seamlessly with Khan Academy's focus on delivering high-quality STEM education. Higher degrees from prestigious institutions like IIT Hyderabad, IIT Roorkee, and BITS Pilani reflect the team's subject matter expertise and technical proficiency. Additionally, the inclusion of a PGDM in Marketing and Operations among Localisation Specialists demonstrates a broader skillset, supporting program outreach and effective localisation.

In terms of roles and contributions, the "Head of Content, India" provides strategic leadership, ensuring alignment with Khan Academy's mission and objectives. The majority of stakeholders (seven out of eight) are dedicated to content creation or localization, underscoring the team's focus on producing high-quality and culturally relevant educational materials. Specialised roles, such as "Math Content Expert" and "Physics Content Creator," highlight a clear division of labor and subject-specific expertise, ensuring depth and precision in the content offered.

The team blends academic excellence with practical skills, combining STEM expertise for quality content and marketing/localization for effective outreach. Steady growth reflects stability and commitment to development.

6.2. Program Alignment and Perception

Alignment with National Policies

The program's content strongly aligns with NCERT standards and the National Education Policy (NEP) 2020, emphasising conceptual understanding over rote learning. Stakeholders, including content creators and management teams, acknowledge the alignment as a critical factor in achieving national educational goals.

Stakeholder Perceptions: Management and content creators expressed high satisfaction with the program's alignment with organisational and educational objectives.

The focus was 100% coverage of physics, chemistry, and biology content as outlined by NCERT books, which changed somewhat during COVID-19 as some content was removed. The goal was to align with the current version of NCERT and have around 500 videos and 5,600 questions, with an NPS greater than 75%.

-Management Team



We appreciate Kotak's support over the years. Because of them, we built a very strong base from grades 9-12 in physics, chemistry, math, and biology.

-Management Team





NEP 2020's shift was away from memorization toward deep conceptual understanding, which closely aligns with Khan Academy's approach. Our videos focus on particular concepts and strive to build deep intuition. Anyone can derive an equation, but can you make that equation talk to you?



-Content Creator

6.3. Content Development and Delivery

6.3.1. Alignment with National Policies

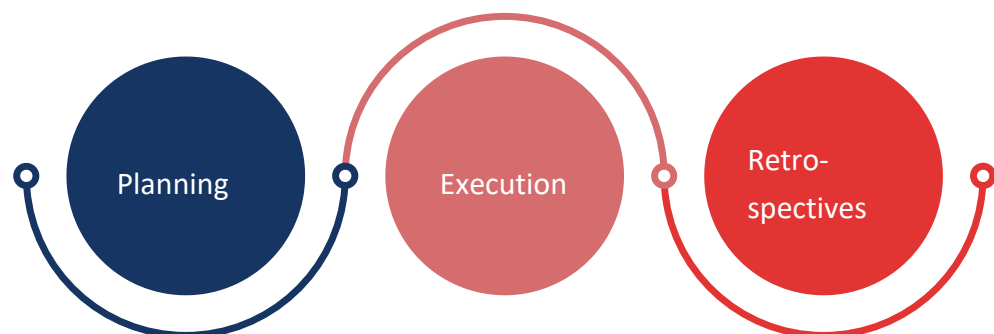
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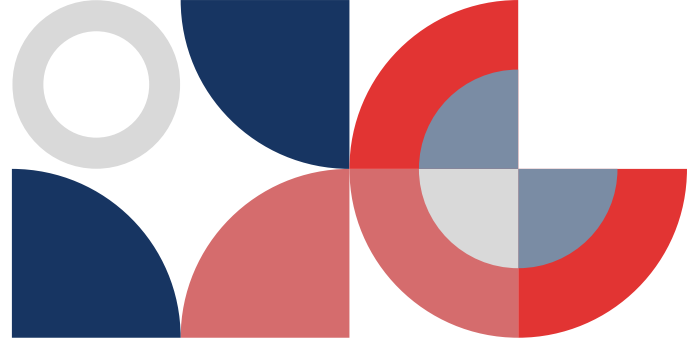
6.3.2. Methodologies and Processes

Khan Academy's curriculum is systematically developed and regularly updated to align with the learning objectives outlined by the National Council of Educational Research and Training (NCERT). Chapter and unit names are carefully matched with those in NCERT textbooks, and the difficulty levels of questions are calibrated to reflect the standards suggested in the textbooks. The content development process begins with a comprehensive review of NCERT textbooks to identify the required learning objectives, concepts, and skills. These elements are then broken down into the smallest measurable units, forming the basis for the creation of targeted exercises. Each exercise is paired with instructional videos to support learners in mastering the concepts effectively.

Content creation follows a structured three-phase process comprising:



In the planning phase, lessons are mapped to NCERT learning outcomes (LOs) to ensure alignment with curricular goals. Peer reviews are embedded at every stage of the process to maintain high standards of accuracy, coherence, and quality, ensuring the content is both effective and reliable. This systematic approach enables the development of resources that meet the diverse needs of learners while adhering to NCERT guidelines.



Legacy content is integrated into new materials, focusing on addressing learning gaps. The team evaluate each content piece to determine if it aligns with the learning objectives.

They employ a **binary approach** - if the content align, they utilize it. For exercises, they adjust by modifying or reducing the number of problems to ensure alignment. With videos, they maintain strict binary decision-making - a video either mapped directly to the learning objective or it didn't qualify for use.

6.3.3. Methodologies and Processes

IT AIMED TO PRODUCE 500
VIDEOS

IT PRODUCED
355 VIDEOS

5600
QUESTIONS



2500
QUESTIONS

The STEM program successfully achieved 100% coverage of science subjects for grades 9–12 by employing a systematic methodology that deconstructed complex learning objectives into granular skills. This approach ensured the comprehensive and effective coverage of science curricula, aligning with targeted educational outcomes.

From June 2020 to June 2024, we created about 355 videos and around 2,500 questions.

-Content Creator



For science, completion is 100%.

-Content Creator



If an objective is understanding Mendel's law of dominance and segregation, we break it down into smaller objectives: one exercise purely on Mendel's experiments, one on monohybrid cross

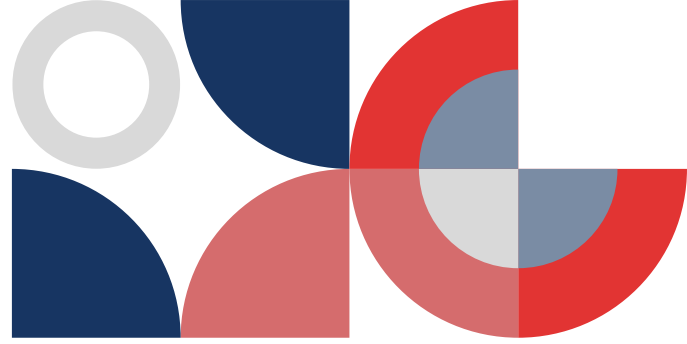
-Content Creator



Content Creation Process:

- Methodical Skill Breakdown
 - Detailed Mapping: Breaking NCERT curriculum into smallest skill units
- Systematic Approach:
 - Identify learning outcomes
 - Break into granular skills
 - Create exercises for each skill
 - Develop supporting instructional videos

Progress tracking is managed through a system where managers set monthly and quarterly targets, and team members record productivity in Google Sheets. Timeline and productivity are reviewed in team meetings as needed. The process is influenced by factors such as technical aspects (e.g., website changes), review requirements, implementation time, topic complexity, and grade-level considerations, all of which impact content creation pace and efficiency.



Steps	Video Creation	Exercise Creation
Time Spent	1.5–2.5 days per video	1.5–2 days
Grade-wise Output	20 videos per month (Grades 6-10)	
	10–15 videos per month (Grades 11-12)	
Content Length	6–8 minutes (Grades 6-10)	Each exercise includes 8–12 questions.
	10–12 minutes (Grades 11–12)	

To create different type of content - if it's 6th to 10th grade video, it could take around five to six hours, and for 11th and 12th grade, I'm talking about math since I'm a math content expert, it takes around eight to nine hours.



-Content creator

6.3.4. Quality Assurance

The multi-layered review system, including peer and expert evaluations, ensured rigorous quality control and comprises of following steps:

- 01 Comprehensive Onboarding:** Extensive training on content principles
- 02 Peer Review:** Objective rubrics for consistent evaluation
- 03 Ongoing Coaching:** Managers guide content creators for 3-4 months
- 04 Following established guidelines** and implementation of feedback

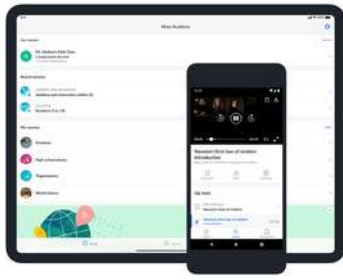
Quality assurance happens through thorough onboarding of new content creators, teaching Khan content principles derived from multimedia research. Creators practice extensively before publishing content. Even after onboarding, managers coach them for 3-4 months on each video. We also have a peer review process with rubrics to keep reviews objective.*



-Content Creator

6.3.5. Effectiveness of Delivery Mechanism

The project team implemented a structured and methodical tracking system to monitor progress effectively. Weekly targets were set for exercises, videos, and unit planning, supported by the maintenance of detailed tracking sheets. These sheets systematically recorded the attainment of targets while providing comprehensive rationales for instances of meeting, surpassing, or underachieving planned objectives. Additionally, regular weekly meetings were conducted to evaluate progress in relation to the established goals, fostering continuous alignment, accountability, and adaptive planning.



The Khan Academy platform serves as the primary platform for content delivery.

6.3.6. Technological Strategies

Khan Academy employs a comprehensive suite of digital tools to support content creation and ensure effective technology integration:

- **Sketchboard:** Facilitates whiteboard-style instructional design.
- **Camtasia:** Enables advanced video editing and animation.
- **Screen Pal:** Used for seamless screen recording.
- **Microsoft PowerPoint:** Assists in presentation development and animation.
- **Canva:** Provides graphic design capabilities for visual content enhancement.
- **PhET Simulations:** Integrates interactive learning experiences.
- **Animation Capabilities:** Utilized within Camtasia and PowerPoint to enhance visual appeal.
- **ChatGPT:** Supports research and content ideation processes.

This strategic integration of technology ensures high-quality, engaging, and interactive educational resources.

We align with NEP, 2020 very well. Points 23 and 24 focus on technology integration and online digital education. The government emphasizes using online tools, and we are an online-first platform where students have their own IDs with data available on their actual usage and mastery.



Our main community engagement happens through YouTube.



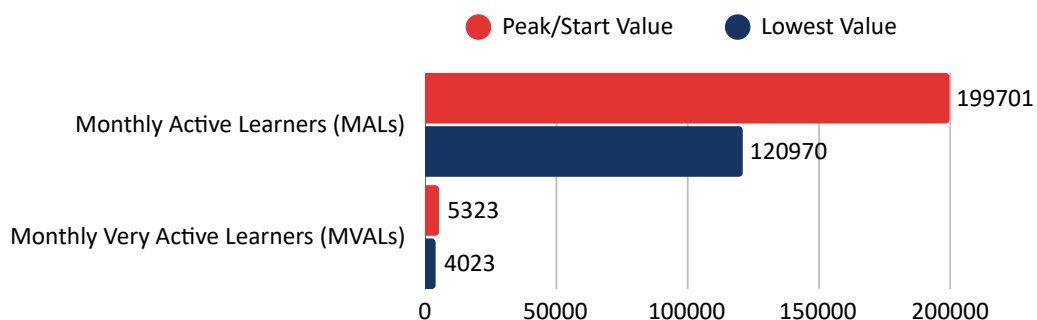
-Management Team

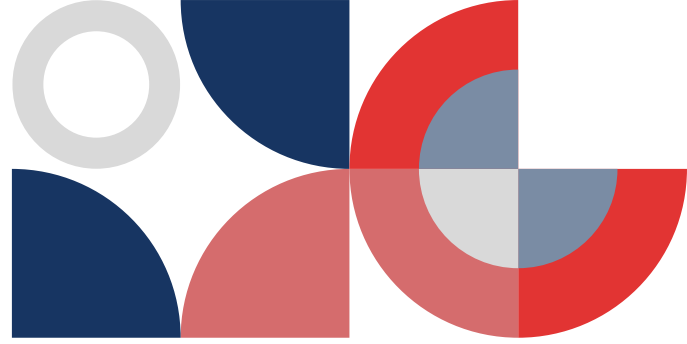
-Management Team

6.4. Student Engagement and Learning Outcomes

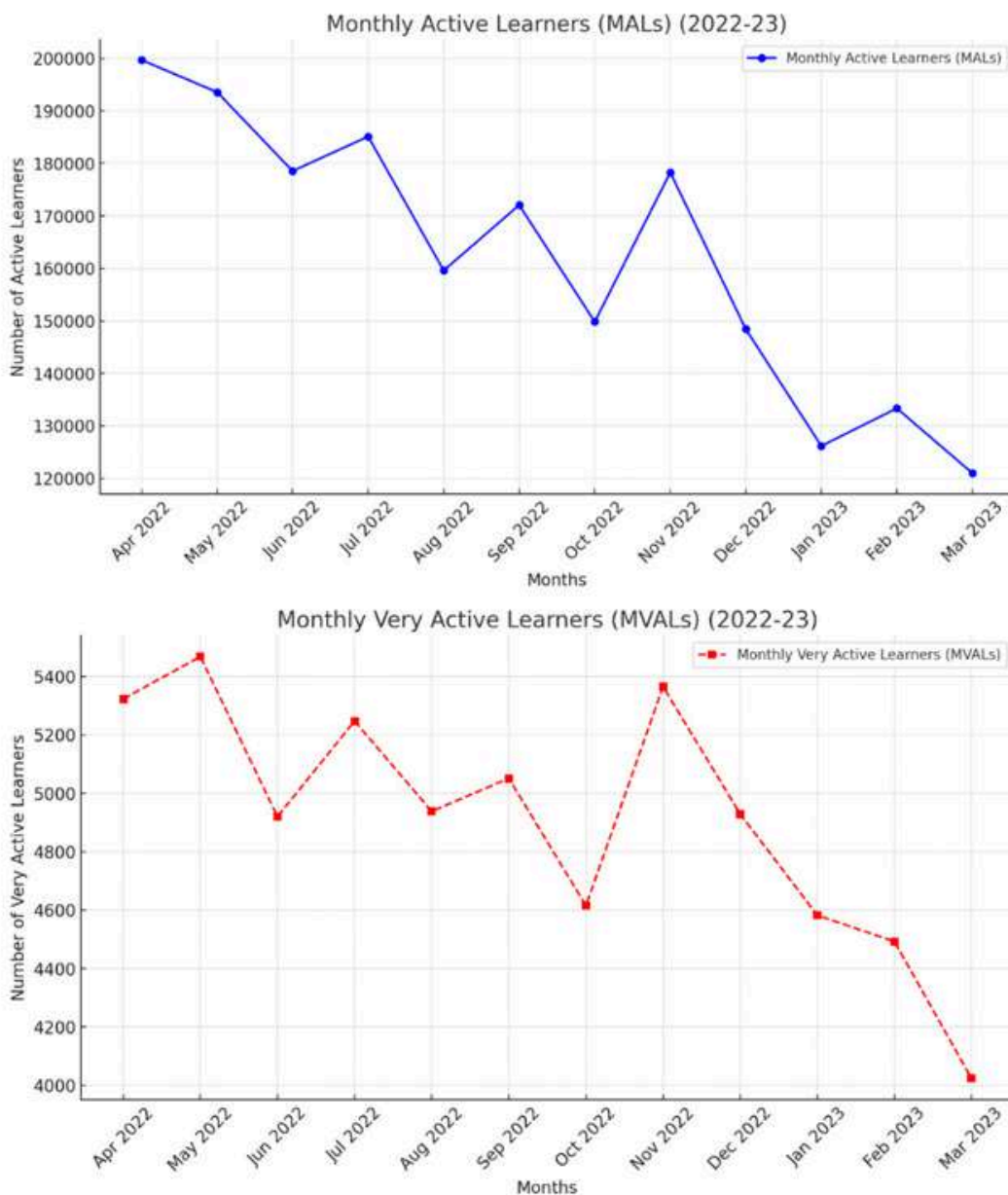
Student engagement was systematically analyzed using three key metrics:

Monthly Very Active Learners (MVALs)—students who spent at least 120 minutes on the platform in a given month; **Monthly Active Learners (MALs)**—students who completed at least one learning activity (exercise or video) during the month; and **Total Learning Time (TLT)**. These indicators offer valuable insights into the depth and frequency of interaction with STEM content, helping to understand learner behavior and the extent of platform utilization.

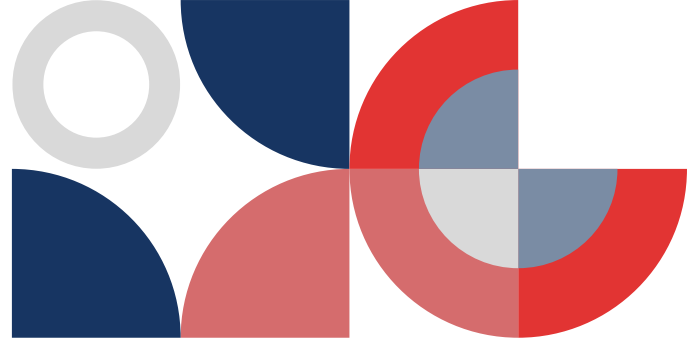




The analysis of learner engagement metrics reveals distinct patterns over the observed period. Monthly Active Learners (MALs) peaked at 199,701 in April 2022 but experienced a gradual decline, reaching a low of 120,970 in March 2023. This decline suggests that seasonal factors, such as holidays and examination schedules, significantly influenced engagement levels. Similarly, Monthly Very Active Learners (MVALs) started at 5,323 in April 2022 and showed notable peaks in May (5,468) and November (5,365), before decreasing to 4,023 by March 2023. These peaks likely correspond to periods of heightened academic activity, indicating that learners actively engaged with STEM content during specific intervals. Overall, the data underscores the impact of external academic cycles on engagement trends.



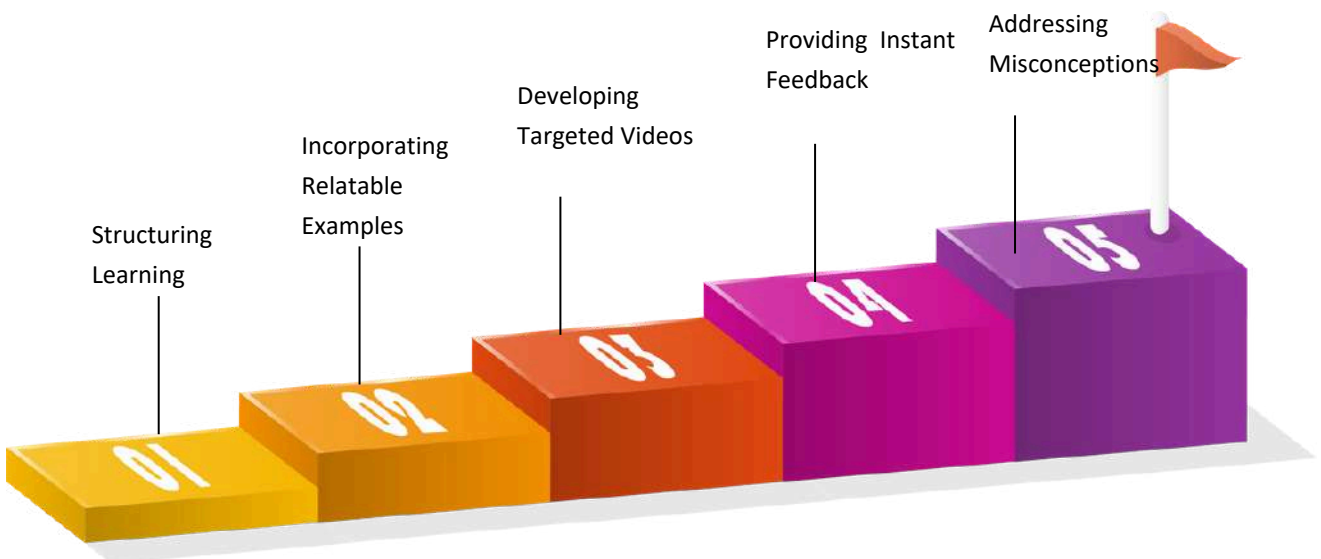
*The above graph does not represent the seasonal fluctuations.



6.5. Pedagogical Approach

The program implemented a structured progression model, advancing students from "Not Started" to "Mastered," fostering deep conceptual understanding. Students' comprehension is evaluated through a mastery-based progression system, whereby advancement to subsequent levels within each unit is contingent upon demonstrating mastery of the current concepts, in alignment with Khan Academy's core principle of mastery before progression.

Khan Academy's effective pedagogical approaches for STEM content focus on several **key strategies**:



1. Complex concepts are explained using real-world examples.
2. Begins with relatable examples and foundational concepts, progressing to abstract topics.
3. Videos reinforce and support exercise content.
4. Exercises offer immediate hints and explanations.
5. Common misconceptions are directly addressed for better understanding.

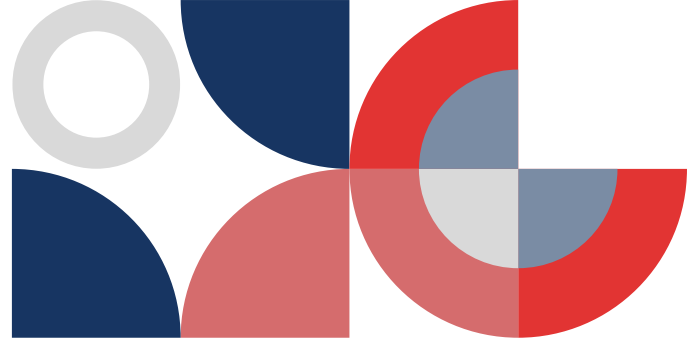
In our exercises, we have hint rationals which is one of Khan Academy's USPs. When students solve questions, if they're confused or hit the wrong answer, they get to know why that option is wrong. If they're not able to solve a particular question, they get step-by-step hints.



- Content creator



Total Learning Time (TLT) mirrored MVAL trends, peaking at 3,708,875 minutes in May and dropping to 2,709,615 minutes in March, indicating higher early-mid academic engagement. Engagement is also tracked via YouTube watch time, platform usage, and exercise interactions.



6.5.1 Mastery-Based Assessment of Learning Outcomes

Learning outcomes are assessed by measuring student achievement of objectives through mastery levels: "Not Started," "Attempted," "Familiar," "Proficient," and "Mastered," based on exercise and unit test performance.

Mastery Level	Criteria for Progression
Not Started	No attempts made
Attempted	< 70% correct in exercises or unit tests
Familiar	70-99% correct in exercises or unit tests
Proficient	100% correct on exercises or unit tests
Mastered	Demonstrated proficiency in unit tests or assessments

In addition to mastery level assessments, repeated attempt tracking, which monitors how frequently students retry exercises or revisit topics, provides valuable insights into student persistence and engagement. Data derived from platforms, such as total learning time, video drop-off points, and recurring errors, contribute to refining the curriculum. Analyzing the skills with which students experience the most difficulty, coupled with feedback from both students and teachers, further facilitates the design of targeted interventions aimed at addressing specific learning challenges.

Khan Academy can access metrics like student time on skills or exercises, total learning time, and YouTube engagement. The data team analyzes repeat attempts, tracking peaks and drops in question repeats.



Students progress through different levels.....Teachers can track where students are on particular skills and assign more practice materials if needed.

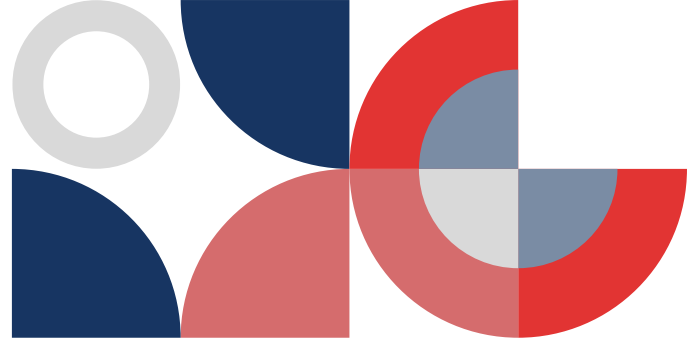


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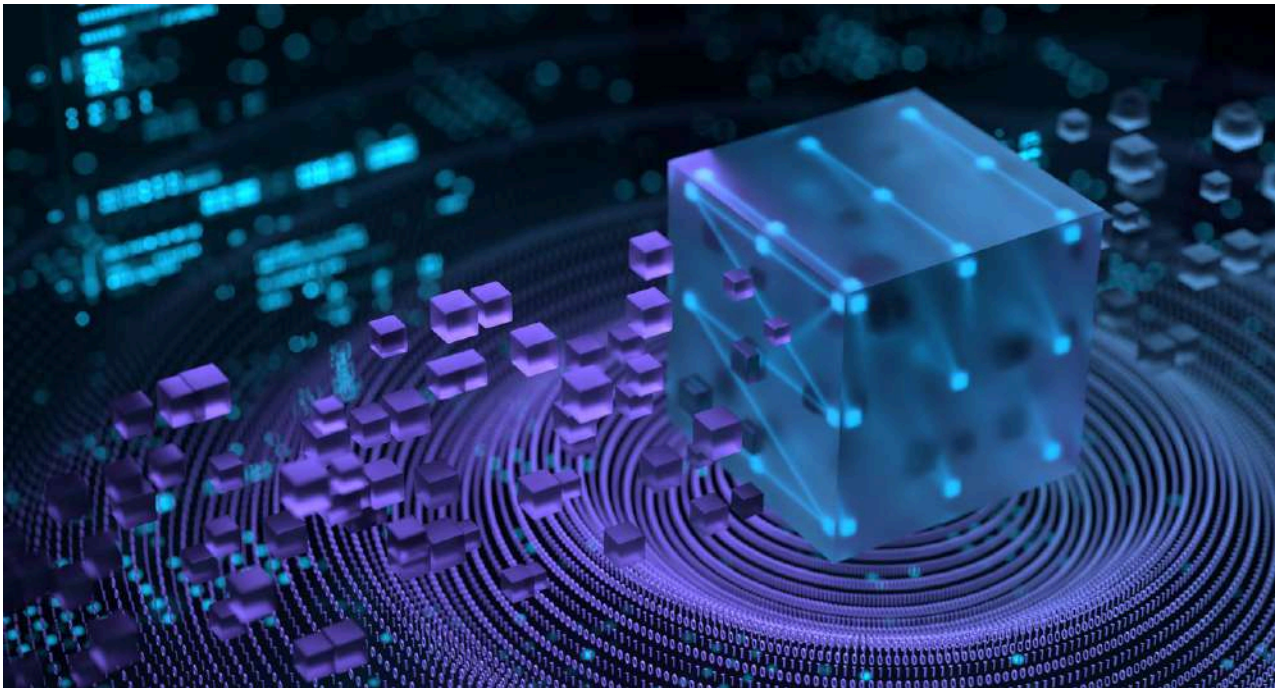
-Content Creator

6.5.2. Findings of the feedback on science content received in December, 24- January, 2025

The feedback on Khan Academy's science content is overwhelmingly positive, with 63.20% of users rating it a '10' (Very likely to recommend). A significant number also gave ratings of '9' (14.14%) and '8' (13.33%). Lower ratings (7 and below) were minimal, indicating overall high satisfaction and a strong likelihood of recommendation.



The feedback reveals key areas of focus for Khan Academy's science content. Content quality is highly praised, with 787 mentions, indicating strong approval from users. However, many respondents (479 mentions) suggested expanding the range of topics covered in science. The platform also enjoys a broad geographical reach, with feedback coming from 463 unique cities. There is a notable demand for more languages and accessibility improvements (150 mentions). Additionally, specific subject requests (86 mentions) point to a focus on biology, chemistry, and physics, while teaching style received mixed feedback, with 37 mentions appreciating the methods used by the educators.



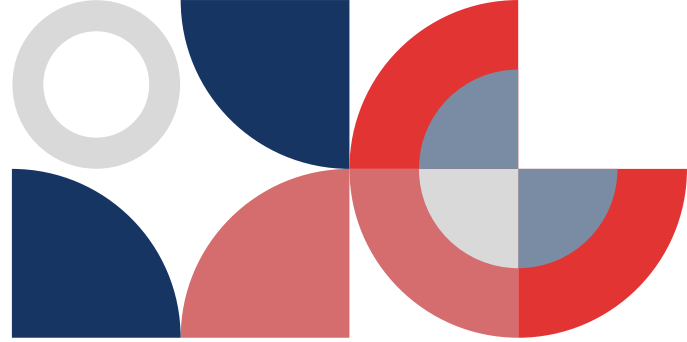
6.6. Content Localisation and Cultural Adaptation

Khan Academy's approach to content localisation and cultural adaptation plays a pivotal role in enhancing both the quality and delivery of its educational materials. This process operates on multiple levels to foster student engagement. The strategy highlights that effective localisation transcends mere translation, concentrating on two primary aspects:



Cultural Contextualization

- Content is adapted to reflect local cultural nuances.
- Examples are customized for regional relevance.
- Learning materials incorporate culturally specific references.



2

Interactive Engagement

- Exercise design includes interactive elements
- Regional examples are integrated into practice problems

The team's experience illustrates that students engage more deeply with learning materials when they are presented with familiar contexts and culturally relevant examples. This comprehensive approach to localization has been effective in sustaining consistent student engagement, as evidenced by the activity metrics.

It's been great. Unlike coaching institutes where marks were the focus, Khan Academy emphasizes conceptual understanding and addresses misconceptions. It fosters a love for content creation and teaching.

-Content Creator

We ensure naming uses names people can relate to and contexts that are familiar. We've changed legacy content that used examples like skateboarding or dollar signs that many couldn't relate to. We try to contextualise content so it's culturally relevant, using Indian scenarios and ensuring students see familiar cultural references in their learning material.

-Content Creator

7. Feedback Mechanism

Stakeholder feedback is central to the program's improvement, with multiple channels for gathering input from students, educators, and content reviewers. Educator feedback is incorporated into each update cycle.

Our main community engagement happens through YouTube. We create revision packages based on feedback, which I demonstrated this morning. When we create content for school systems like UP or Maharashtra, we make it freely available on YouTube as well. We also get feedback from our state systems, but for general 9-12 science in English, YouTube is our primary feedback channel since we don't have a specific state or school system focused solely on that.

-Management Team

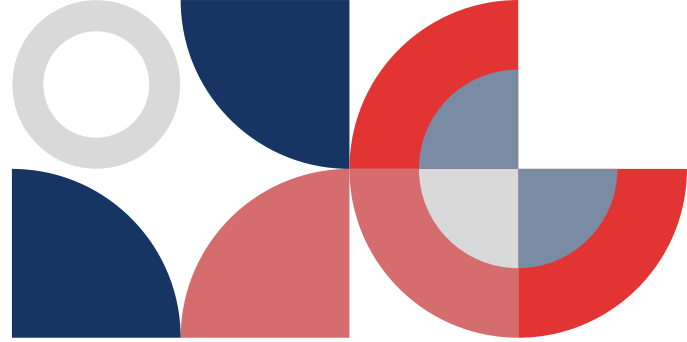
We get qualitative feedback through comments, NPS surveys, and direct platform feedback. Users can comment below every video. Students often compare our free content favorably against paid resources.

-Content Creator

Feedback from workshops, surveys, and YouTube helps refine our content. For example, contextual relevance was improved by using examples relatable to students' cultural backgrounds.

-Content Creator

Post-publication retrospectives also facilitated gap identification and content improvement, fostering innovation. The program's continuous improvement framework, driven by evaluation, stakeholder input, and data, ensured content relevance and effectiveness.



We conduct user tests and engage with teachers to understand their needs before curating content. A common feedback is difficulty understanding Sal Khan's accent, leading to an ongoing project to refine videos. Communication occurs via WhatsApp groups, phone calls, and direct messages.



-Content Creator

We had meetings with teachers in Lucknow last year. Based on their feedback, we implemented changes such as including both English and Hindi terms in brackets for scientific concepts in higher grades, making the content more accessible.



-Content Creator

8. Scaling Strategies

Khan Academy's program scaling is primarily focused on fostering state-level partnerships and ensuring effective bureaucratic coordination. The scaling process follows a momentum-driven approach, where successful implementation in one state serves as a catalyst for adoption in other states. Key strategies for scaling include:

- 01 Increased localization efforts
- 02 Successful creation of vernacular content
- 03 Ability to form new state partnerships
- 04 Adaptability to evolving syllabi

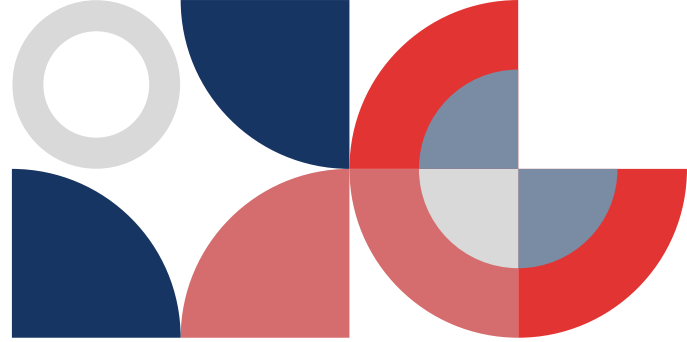
Khan Academy focuses on competency-based learning, with recommendations for aligning content with the National Curriculum Framework (NCF) and developing exercises targeting specific competencies. This approach emphasizes skill development over basic topic coverage.

The program's effectiveness is notably demonstrated in its ability to reach remote communities, aligning with the core mission of providing universal access to education. Teacher feedback and inputs from educators are systematically integrated into content creation, ensuring relevance and alignment with educational needs. By leveraging robust governmental partnerships and structured feedback mechanisms, the initiative sustains its commitment to delivering comprehensive educational coverage.

Aligning with competency-based framework is important. There's increasing focus on NCF to ensure each lesson and exercise addresses specific competencies rather than just covering topics. This involves creating exercises at different levels of Bloom's taxonomy.



-Content Creator



9. Challenges

Key scaling challenges in the implementation of Khan Academy's educational initiatives include bureaucratic integration, relationship management, and infrastructure-related issues. The primary challenge lies in creating and maintaining effective working relationships between Khan Academy's dynamic operational model and established governmental bureaucratic systems. **Bureaucratic integration** presents speed mismatches between Khan Academy's operational pace and government processes, requiring alignment with official systems and procedures. Relationship management is impacted by the **frequent transfer of government officers**, which disrupts established partnerships and continuity.

The **implementation cycle** also poses challenges, particularly in maintaining smooth content delivery, coordinating effective feedback collection, and harmonising bureaucratic processes with Khan Academy's operational model. Infrastructure challenges further complicate scalability, with **inconsistent device access across schools** and varying levels of technological infrastructure between institutions. **Internet connectivity** remains a major concern, as reliable internet access is essential for continuous online learning. Additionally, equipment disparities, such as uneven distribution of classroom technology, create barriers to equitable access. These technological and infrastructure gaps hinder the ability to provide all students with equal opportunities for engaging with educational resources.

The main challenge is device availability and continuous internet connection in schools. Infrastructure varies significantly between schools - some have televisions in classrooms, others don't. This affects equitable access for all students.



-Content Creator

When school syllabi change, we probably need a more formal process where as soon as changes happen, we get notification of what the changes are and what needs to be done. We could improve upon that because the frequency of changes is high.



-Content Creator

The main challenge lies in aligning our product with bureaucratic and government systems, where efficiency differences exist. Frequent officer transfers disrupt established relationships, impacting implementation. For content delivery and feedback to reach students, the entire cycle must function smoothly. The key challenge is ensuring effective collaboration between bureaucracy and Khan Academy.

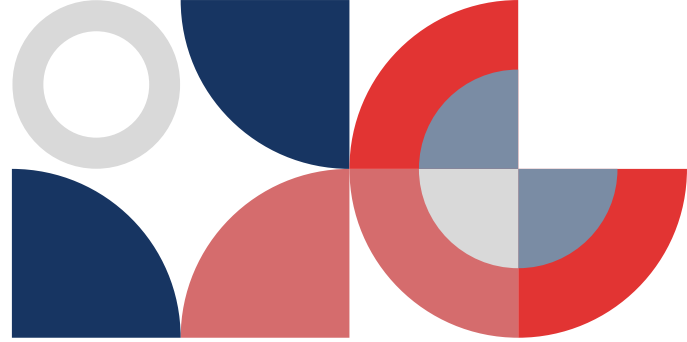


-Content Creator

We should quickly adapt to policy changes, experiment with pedagogical tools, and raise awareness about the platform through events like Math Olympiads.



-Content Creator



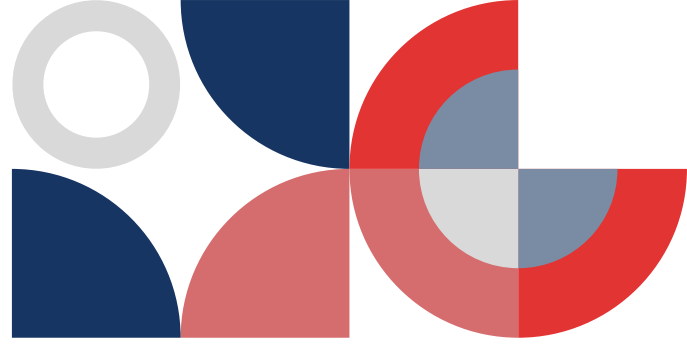
10. Benchmarking

Category	Khan Academy	Competitors (Byju's, Vedantu, Diksha, Toppr)	Opportunities for Improvement
Accessibility	Offers free access to NCERT-aligned STEM resources for all users	Subscription-based models (Byju's, Vedantu) limit access; Diksha offers free resources for specific states and subjects	Expanding partnerships with government bodies to offer broader access, especially in rural areas; increase visibility in remote regions
Localized Content	Focuses primarily on STEM content with a nonprofit ethos, available in multiple regional languages	Diksha also emphasizes regional languages, but Byju's and Vedantu primarily provide content in English	Broaden content offerings in regional languages for wider access, especially for non-STEM subjects
Technology Integration	Utilizes interactive exercises, diagnostic tools, and self-paced learning modules to aid understanding	Byju's and Toppr leverage advanced AI, gamification, and personalized learning pathways to increase student engagement	Further enhancement of gamified learning experiences and the inclusion of AI-driven personalized learning features
Broader Subject Coverage	Primarily focuses on STEM subjects, including mathematics, science, and coding	Byju's and Toppr provide a wide range of subjects, including humanities, arts, and preparation for competitive exams like JEE and NEET	Expanding Khan Academy's subject offerings beyond STEM could help broaden its audience and support students in all areas of study
State Partnerships	KA have active partnerships involving formal integration with state curricula for multiple Indian states and a national-level school system*	Diksha works directly with state education boards to ensure content is fully integrated with local curricula	Strengthening collaborations with state education boards, similar to Diksha's model, could increase adoption and reach in government-run schools

*However, the project under review was not directly under a state program but was intended to serve as a base for any future content creation to enable KA to cater to specific state needs.



Chapter-4
Recommendation and Conclusion



11. Recommendations

1. Expand Content and Coverage:

Increase funding for localized content creation and expand educational offerings to include arts, humanities, and vocational education. Tailor content for competitive exams and support multi-language translations to ensure equitable access for diverse regions and communities.

2. Strengthen Partnerships:

Collaborate with state governments, local NGOs, and education boards to expand the program's reach, particularly in rural areas. Facilitate teacher training workshops in partnership with education boards to enhance effective use of digital tools.

3. Enhance Engagement and Gamification:

Introduce gamified features such as badges, leaderboards, and rewards to increase student motivation and engagement. Develop adaptive assessments to cater to individual learning speeds and styles, ensuring personalized learning experiences.

4. Monitoring, Evaluation, and Analytics:

Establish robust monitoring tools to assess long-term student performance and engagement. Conduct independent evaluations and leverage advanced analytics and AI to generate personalized learning paths, providing real-time feedback to students.

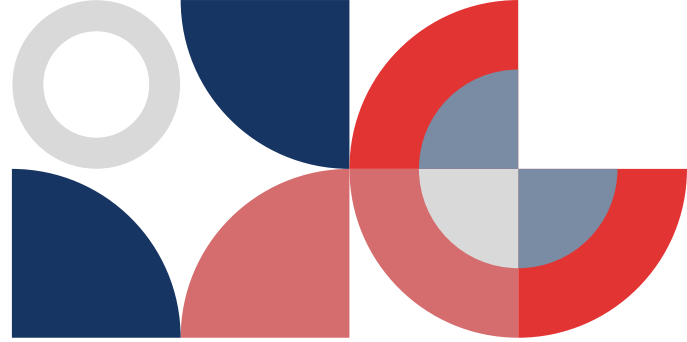
5. Increase Visibility and Scalability:

Organize events, webinars, and promotional campaigns to raise awareness of the program's benefits. Highlight success stories and invest in infrastructure to support program scalability. Build teams for content localization and regional outreach to ensure effective expansion.

12. Conclusion

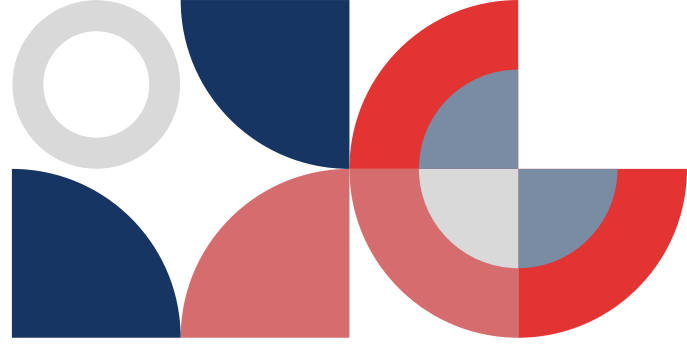
The "Enhancing Content & Accessibility to Quality Education: Science Content Acceleration" initiative, supported by Kotak Mahindra Bank Limited (KMBL) and Khan Academy, has significantly advanced STEM education in India by providing free, high-quality, and regionally adapted content to government schools. Aligned with the National Education Policy (NEP) 2020, the program integrates localization, scalability, real-time analytics, and strategic partnerships to address learning disparities effectively. Continuous refinement through feedback mechanisms has established it as a model for equitable education.

Future investments in gamification, AI-driven adaptive learning, and regional collaborations will further expand its reach. By broadening subject coverage and deepening stakeholder partnerships, the initiative can set new benchmarks for inclusive education. Through this collaboration, KMBL and Khan Academy have built a scalable and sustainable model, equipping students with essential skills for future challenges while shaping India's educational landscape.



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Abbreviations

- AI- Artificial Intelligence
- ASER- Annual Status of Education Report
- CSR- Corporate Social Responsibility
- KA- Khan Academy India
- KMBL- Kotak Mahindra Bank Limited
- LO- Learning Outcomes
- MAL- Monthly Active Learner
- MVAL- Monthly Very Active Learner
- NCERT- National Council of Educational Research and Training
- NCF- National Curriculum Framework
- NEP- National Education Policy
- OECD- Organisation for Economic Co-operation and Development
- TLT- Total Learning Time
- UNESCO- United Nations Educational, Scientific and Cultural Organization
- UNICEF- United Nations Children's Fund

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- Table 1: Sample size distribution

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