SMART INDIA HACKATHON 2024

TITLE PAGE

- **Problem Statement ID** – 1615
- **Problem Statement Title**- Learner's Dashboard for enhancing skills
- **Theme**- Smart Education
- **PS Category**- Software
- **Team ID**-
- **Team Name** - Reality Forge

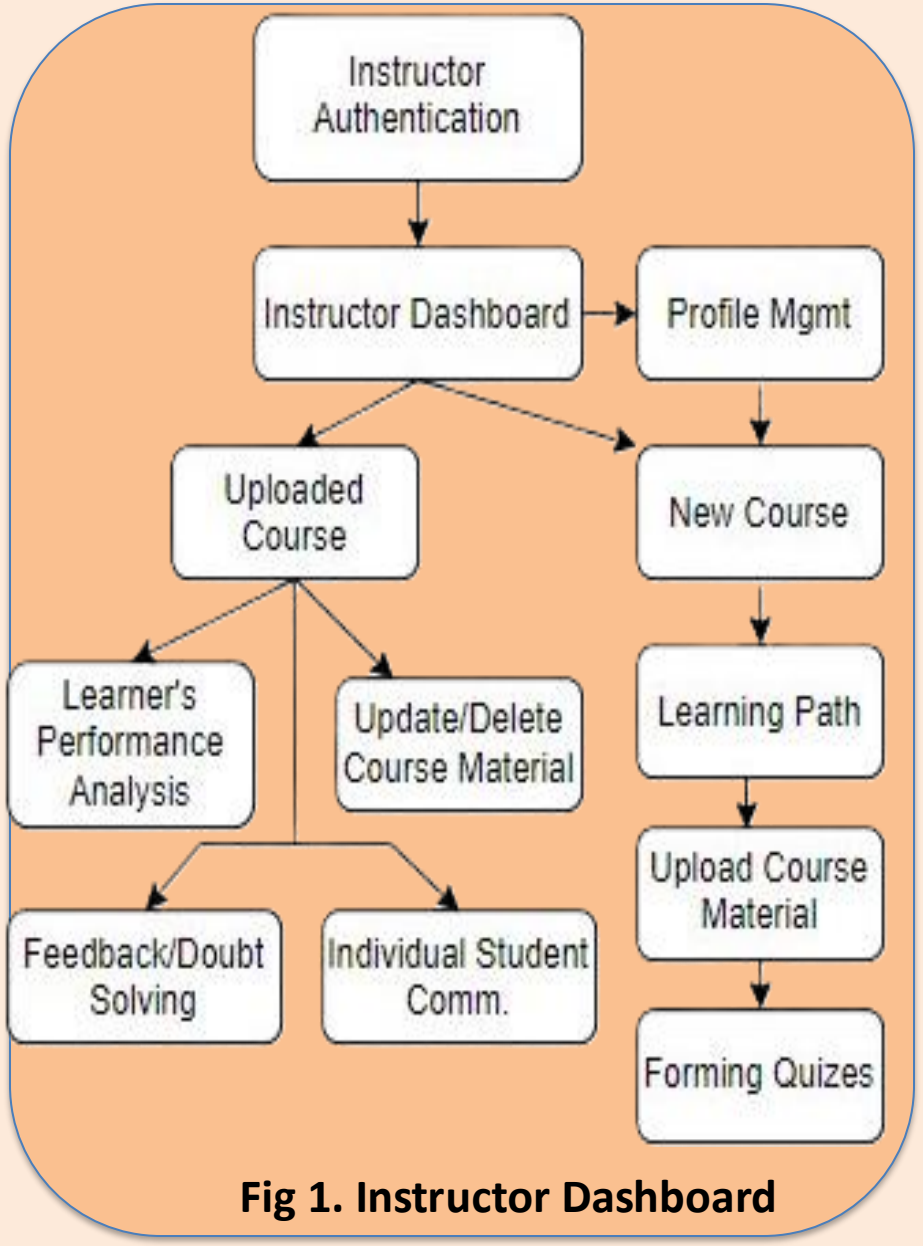

Fig 1. Instructor Dashboard

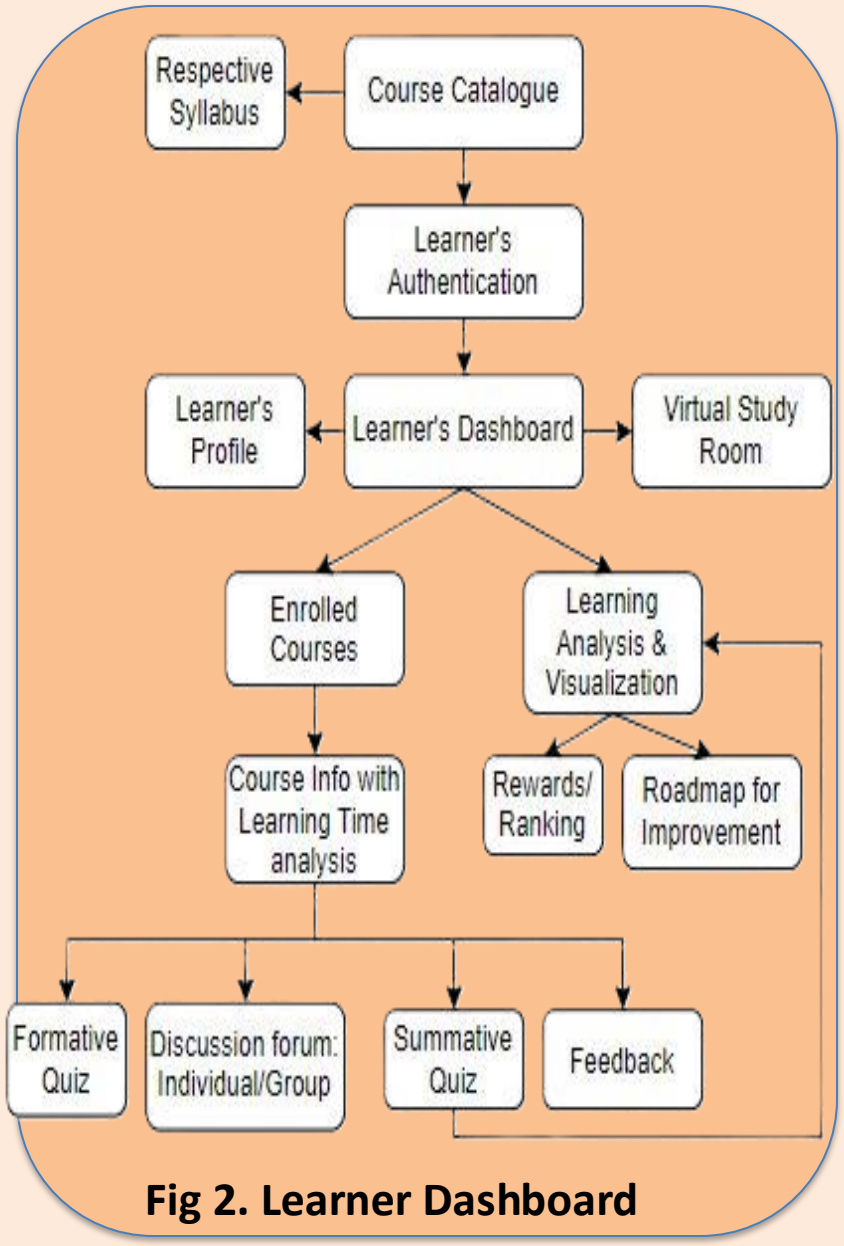

Fig 2. Learner Dashboard

Learning Path Dashboard for Enhancing Skills

❖ Proposed Solution

Detailed Explanation:

1. **Authentication**: Instructors would be registered after verification by admin. User-authentications: *Instructor, Learner, Admin.*
2. **User-friendly Dashboards**: Accessibility to features in dashboards would be ***easy and fast***. Reduced Latency, Ensures user-engagement.
3. **Innovative Learning Path**: Equipped with *easy resource management* and ***progress tracking functionalities***. Ensures ***learner's engagement*** and ***skill enhancement***.
4. **Formative & Summative Assessments**: Manual or ***Automated*** generation. Associated with respective ***Learning Objectives***(WHY) and *Skills*(WHAT to be learnt). Designed to ensure ***perfect skill-learning***.
5. **Robust Learning Analysis**: 2 types: ***Skill Based & Performance Based***. Skill Based: Checks for correct depiction of associated skills. Performance based: Analysis of performance during course and SA.
6. **Individual/Group Doubt Solving**: Individual doubt solving with course instructor and group discussion forums to ensure complete learning.
7. **Virtual Study Rooms**: Ensures ***peer learning***, on-spot concept discussion for ***deeper understanding***.
8. **Rewards**: ***Badges*** after course completion and ***overall ranking***.

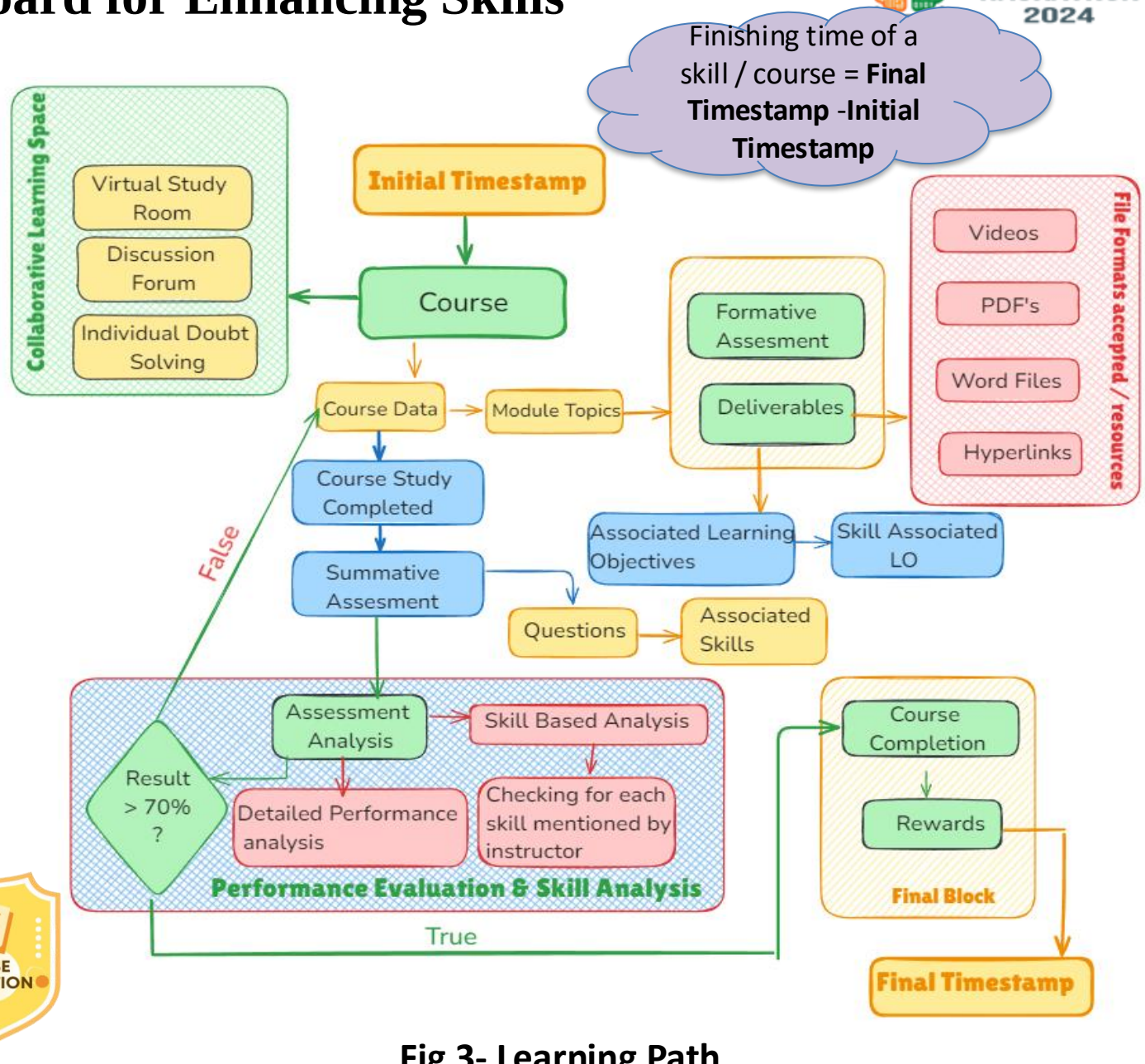

Fig 3- Learning Path

Innovation/ Show Stoppers :-

- ❑ Robust Learning Path
- ❑ Virtual Study Room
- ❑ Automated Quiz Generation
- ❑ Adaptable to Both Offline and Online teaching

Fig 4- Course Completion Badge

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TECHNICAL APPROACH

Programming Languages/ Frameworks

- HTML
- CSS
- Java Script
- React
- Tailwind CSS
- Node.js
- Firebase
- GraphQL
- Gemini API

Methodology

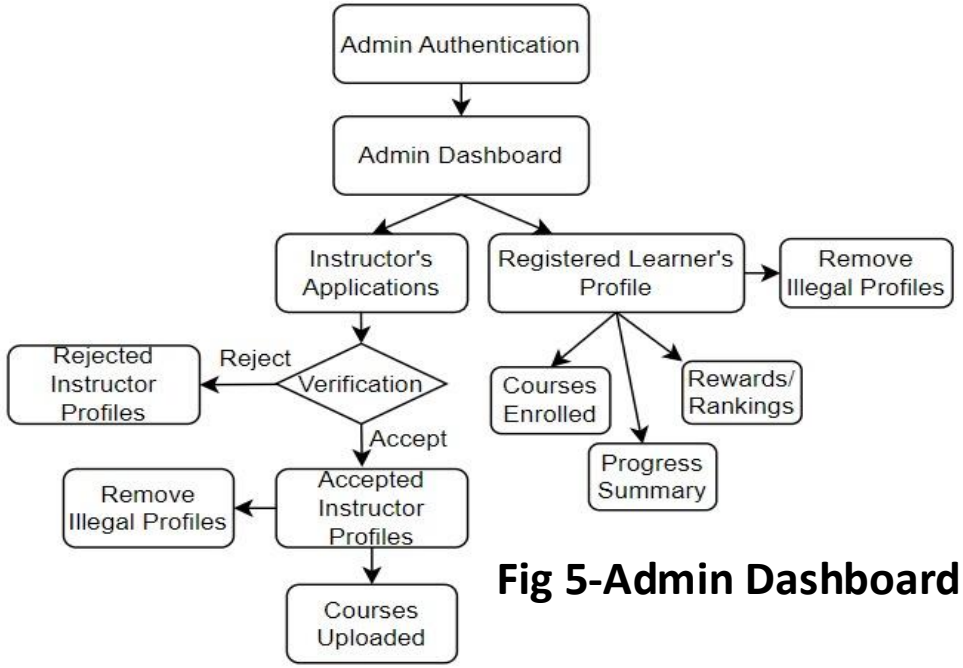

Fig 5-Admin Dashboard

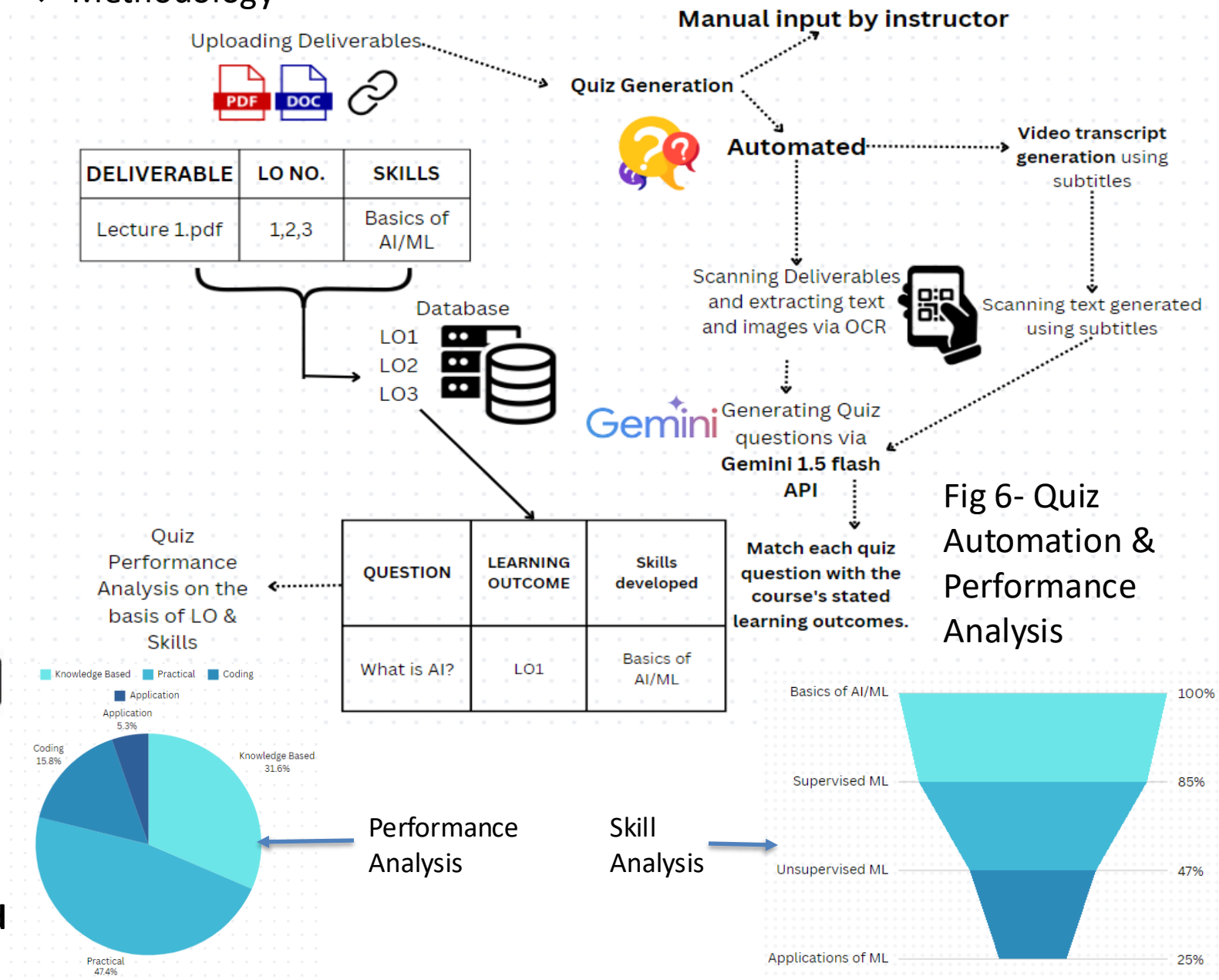

Fig 6- Quiz Automation & Performance Analysis

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FEASIBILITY AND VIABILITY

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Analysis of the feasibility of the idea

- The project utilizes existing technologies like LMS, UX design, and AI analytics, making it technically feasible.
- Integrating educational resources (PDFs, videos, quizzes) into a single platform is achievable with current frameworks.

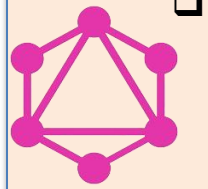
- The virtual study room and discussion forum support modern trends in collaborative and remote learning, enhancing its practicality.

Potential Challenges and Risks

- **Integration of Various Tools:** Integrating diverse formats (PDFs, videos, quizzes) and ensuring seamless functionality across all features can be complex.
- **Data Interaction Complexity and Performance Constraints :** Due to the vast amount of data interactions, querying and fetching data can become complex, leading to potential performance constraints and difficulties in managing the data efficiently.
- **Consistency in Quality:** Ensuring consistent quality across the different learning resources and assessments can be difficult, especially when content is generated by multiple instructors.

Strategies for Overcoming These Challenges

- **Modular Development Approach:** Develop the platform in modular phases, starting with the most critical features (e.g., course creation, assessment tools) to ensure that each component is thoroughly tested before full integration.



- **Optimizing Data Interactions:** Implementing GraphQL enhances data interaction by enabling precise queries, reducing server load, and preventing over-fetching.
- **Content Quality Standards:** Establish clear guidelines for content creation to maintain consistency and quality. Regular reviews and updates can ensure that the content remains relevant and effective.

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IMPACT AND BENEFITS

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The room concept allows students to **collaborate in real-time**, fostering a sense of community and teamwork.

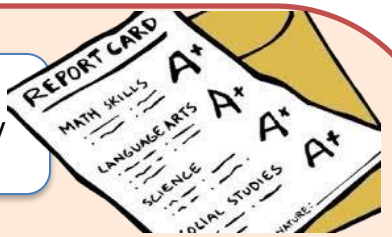
Instructors can easily upload and **manage educational resources** in various formats (PDFs, videos, hyperlinks), streamlining the learning process

The platform allows instructors to create **tailored learning paths** for students, ensuring that educational content is personalized to meet individual needs

Detailed tracking of students' reading statistics and **time spent** on various topics provides valuable insights into their learning progress, also area for special focus

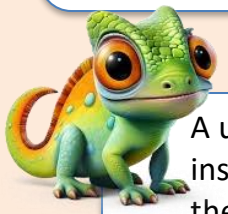
The platform's adherence to **UX principles** ensures a seamless and intuitive user experience

Personalized learning paths and progress tracking lead to **better educational results** by addressing individual student needs



Gamification and interactive elements **boost student engagement and motivation**, leading to higher participation rates and improved performance.

By providing detailed progress reports, instructors can **allocate resources more effectively**, ensuring that students receive the support they need to succeed.



A user-friendly interface ensures that both instructors and students can **quickly adapt** to the platform, reducing barriers to effective learning.

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RESEARCH AND REFERENCES

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References :-

- **Edureka -** https://www.edureka.co/
- **Udemy -** https://www.udemy.com/
- **BYJU's** https://byjus.com/
- **Modal Learning -** https://www.modallearning.com/

Student's Dashboard

Instructor's Dashboard

Design: https://drive.google.com/file/d/1Y-2aoxDow0iLW7xJXRpxVB8TiEEA2d2M/view?usp=sharing