**Use of AI in Education System**

Rupkatha Ray

8/10/23

*Abstract*

The growing synergy between eLearning companies and AI-based learning apps is thoroughly examined in this paper, shedding light on its profound influence on the educational scene. It examines the development of eLearning businesses and the crucial impact artificial intelligence (AI) has played in altering the learning paradigm.These apps use sophisticated algorithms to identify each student's individual learning style, strengths, and weaknesses, enabling customized pace and content.Additionally, by offering affordable, adaptable, and inclusive learning opportunities that prepare students for a technologically advanced future labor market, they democratize education. The paper illustrates the influence of AI on learning results, engagement, and the whole educational process through a rigorous analysis of real-world implementations and success stories. It talks about how a more productive and inclusive learning ecosystem is being facilitated by AI's capacity to comprehend and respond to specific learner demands. The research also discusses the challenges and ethical issues surrounding the use of AI in education, placing a focus on data protection, fairness, and responsible algorithms.

**1.Problem statement**

The basic issues with traditional educational institutions that are driving the development of eLearning businesses and AI-based learning apps. Traditional methods frequently struggle with poor personalisation, out-of-date teaching methods, limited accessibility, and rising expenses, which pose obstacles to successful learning. Furthermore, traditional curriculum fall short in addressing the new skills and abilities that the changing work market requires. By democratizing access, boosting personalisation, fostering engagement, and coordinating learning with requirements of the digital era, these technologies aim to change education by solving the serious flaws of conventional education.

**2.Market/Customer/Business need Assessment**

The traditional teaching approach has long been used in educational institutions. The traditional paradigm, in which fifty pupils are being taught by one teacher at once, is one that most of us are familiar with. Nobody has any idea how well those fifty students are able to comprehend the lecture or even if they are paying attention. Today, it's not thought that this method of instruction is extremely effective. Students now have access to modern technology that greatly improves how well they absorb and remember knowledge. Therefore, it is necessary for educational institutions to adapt their teaching strategies. Online learning, also known as eLearning, is a well-liked substitute for traditional education. The most important component of the online education paradigm, whether it is superior to traditional education or not, is up for debate. In essence, the online education model seeks to improve upon the drawbacks of the conventional educational system while simultaneously adding new advantages. In a traditional educational setting, pupils sit through protracted lectures, take notes, and frequently rely on rote memorization. There is little to no room for in-depth discussion in the classroom as a result. On the other hand, online education promotes peer-to-peer communication and involvement in class activities. With a variety of online study resources at their disposal, students may interact with their course material and learn new information in a much more interesting way.

Corona induced severe disruption the world over shut an unprecedented 1.4 billon students out of their schools. Schools were closed and children were confined to their houses. The need to shift to an alternate mode of education became necessary. But that alternative was not at all accessible to all. Children belonging to the poorer sections of the society were not able to arrange the smart phones ,computers or get internet access for online learning and thus were forced to drop out of their schools.

The urgent need to address serious issues in the conventional educational system is what has sparked the development of eLearning businesses and AI-based learning apps. Traditional education frequently suffers from poor accessibility, outmoded teaching methods, insufficient personalisation, rising expenses, and inadequate preparing for the growing demands of the job market for digital skills and adaptability. These ongoing problems have given rise to a compelling problem statement: the need to revolutionize education by using technology to make learning more open, engaging, personalized, and in line with the needs of the digital age. This will ultimately close access gaps and improve educational outcomes for students from all backgrounds and abilities.

**3. Target specification**

The goal of eLearning startups and AI-based learning apps is to develop a flexible educational platform that is available to students of all ages and educational backgrounds. The emphasis is on providing a tailored learning experience with AI algorithms that change to accommodate different learning preferences and styles. A wide variety of top-notch educational content should be available on the platform, along with interactive courses, real-time assessments, progress monitoring, and other features. Critical elements include data security, an easy-to-use user interface, scalability to handle an expanding user population, and interaction with well-known educational systems. Furthermore, to guarantee the platform's endurance and influence in the always changing world of education technology, a sustainable monetization plan that strikes a balance between accessibility and income creation is crucial. The objective is to offer reasonable pricing structures, cultivate a robust user community, and guarantee educational excellence and accessibility.

The obvious benefits of e-learning solutions include:

1)safety training procedures;

2)gamification to increase engagement levels;

3)the ability to cover all groups of learners, including physically impaired students who cannot attend;

4)better knowledge and skills assessment;

5)programs tailored to learners’ needs;

6)progress assessment and reporting;

7)the option to track students’ behavior patterns.

**4. External searches**

The sources I have used as reference for analyzing the need of use of eLearning businesses and AI-based learning apps are:

1. <https://praadisedu.com/blog/online-education-vs-traditional-education>
2. <https://edly.io/blog/3-types-of-elearning-business-models/>
3. <https://timesofindia.indiatimes.com/education/online-schooling/changes-in-education-system-after-covid-19-pandemic/articleshow/90825692.cms>
4. <https://builtin.com/artificial-intelligence/machine-learning-in-education>
5. <https://educationaltechnologyjournal.springeropen.com/articles/10.1186/s41239-020-00193-3>
6. <https://www.thefamiliar.tech/case-study/online-education-product-design-and-prototype>

**4.1 BENCHMARKING**

Several eLearning startups and learning apps utilize AI models to enhance the learning experience some of the noteable examples are:

**1) ScribeSense:**

AI is used by ScribeSense to help teachers efficiently grade handwritten work. It converts handwritten responses into digital format, enabling automated grading, in-depth analysis of student performance, and real-time feedback. In addition to saving teachers time, this provides insightful data that may be used to customize teaching tactics for improved learning outcomes.

**2)** **Duolingo**:

The widely used language learning platform Duolingo uses AI algorithms to customize the learning processes for users. Duolingo creates activities and quizzes that are specifically tailored to each learner's progress, preferences, and competence levels in order to effectively improve language skills. Another popular application, Grammarly, uses AI to offer in-the-moment grammatical and writing advice, making it a vital resource for professionals, authors, and students alike. With the aid of its sophisticated algorithms, individuals can increase the clarity and correctness of their writing. These AI-based educational solutions serve as an example of how technology may meet specific demands and significantly improve learning across a range of subject areas.

**3) MATHia :**

Carnegie Learning's MATHia, an AI-powered math learning platform. By adjusting to the abilities and learning preferences of the student, it offers a personalized learning experience. The software makes adjustments to the difficulty and material based on student interactions and progress using AI. This focused method guarantees that students receive the appropriate amount of difficulty and assistance, encouraging a deeper comprehension of mathematical ideas.

**4)Cognii:**

Cognii develops AI-powered virtual learning assistants. Their products include automated grading, feedback, and natural language processing for educational content.

**5)Thinkster Math:**

Thinkster Math employs AI to provide personalized math tutoring. It adapts to a student's learning style, pace, and strengths to create a customized learning path.

**6)Querium:**

Querium's AI-driven platform offers personalized, on-demand math tutoring. It assesses students' understanding and provides targeted help to improve their skills.

**7)Squirrel AI:**

Squirrel AI is an adaptive learning platform that utilizes AI to personalize learning paths and adapt to each student's needs, optimizing the learning process.

**8)Coursera:**

Coursera integrates AI to offer personalized course recommendations based on a user's interests and learning history, enhancing the learning journey.

**9)Scribe:**

Scribe uses AI to provide real-time captioning and transcription services during online classes, making education more accessible to individuals with hearing impairments.

**10)Osmo:**

Osmo combines physical objects with AI technology to create interactive educational experiences for young learners, promoting creativity and critical thinking

**11)Riid Labs**

Applying AI and machine learning technology to education, Riiid Labs provides students with what it calls an “Exponential Learning Experience.” The company’s platform collects data by delivering micro-interval assessments and monitoring testing behaviors. Then it uses its AI Tutor and AI Coach to deliver in-depth guidance and timely encouragement, making sure students stay engaged and retain information during the learning process.

**12)Course Hero**

Serving as a hub for instructors and students, Course Hero is an online learning platform that offers study guides, practice problems, lecture notes, step-by-step solutions and other e-learning resources. The platform runs on Amazon Machine Learning, which enables students and teachers to navigate Course Hero’s wealth of materials and select the resources related to the topics they’re most interested in.

**13)Querium Corporation**

For those who find math and science to be the most challenging subjects, Querium has developed a digital learning solution. Students who work on Querium’s platform can leverage StepWise AI, which functions as a master tutor that is available 24/7 and provides instant insights into errors made and potential next steps students can take. Rather than continue down an incorrect path, students can quickly recognize their mistakes and make adjustments.

**14)Robolink**

Younger students looking to explore advanced topics like AI can satisfy their desire to learn with Robolink’s robotics kits. The company designs accessible kits with the goal of providing interactive experiences for curious minds. Robolink’s line of products includes Zumi, a self-driving car kit that allows students to engage with AI and machine learning principles by studying car sensors, writing Python code and more.

**15)Quizlet**

Quizlet is an online studying tool that lets users create quizzes, flashcards and diagrams — or use pre-existing ones. Employing statistics and machine learning, the company leverages its data on users and user content to discover how students can study more effectively. One solution that has resulted from this research is the Learning Assistant Platform, which detects terms that students struggle with and prioritizes them in future study sessions.

**16)Century Tech**

Every student navigates a unique learning path, so CENTURY takes this reality into account with its learning platform. Students begin by completing diagnostic assessments, which reveal learning gaps and areas where students can most improve. CENTURY’s AI-powered features then recommend topics that each student needs the most help with while reintroducing content at timely intervals to ensure students don’t forget what they’ve already learned.

All of these and many more AI-driven solutions exemplify the integration of technology to provide personalized, efficient, and adaptive learning experiences for students. They demonstrate the potential to revolutionize learning by personalizing instruction, improving efficiency, and optimizing educational outcomes.

**4.2 Applicable Patents**

**Patent-1 Online education system and method**

<https://patents.google.com/patent/US20020146674A1/en>

**Patent-2 Systems and methods for ai-based student tutoring**

<https://patents.google.com/patent/US20180096619A1/en>

**Patent-3 Systems and methods for ai-based student tutoring**

<https://patents.google.com/patent/US20060166174A1/en>

**4.3 Applicable Constraints**

The development and deployment of AI-based learning apps and e-learning businesses is hampered by a variety of issues. Assuring data privacy and security, adhering to strict standards, and protecting user information are some important constraints. Another crucial limitation is the ethical usage of AI, which calls for impartial algorithms, fairness, and transparency to promote a diverse learning environment. It can be difficult to match technology compatibility across a range of devices and connectivity levels with enjoyable user experiences. The intricacy is further increased by the need to handle resource constraints while sustaining monetization techniques for long-term profitability. The development roadmap is shaped by these restrictions as a whole, emphasizing a holistic approach to provide efficient, secure, and morally sound educational solutions. When developing eLearning startups and AI-based learning apps, several constraints need to be considered to ensure the effectiveness, scalability, and ethical use of the technology, some of them are :

**1)Data Privacy and Security:**

A crucial restriction is adhering to data privacy regulations and establishing strong security measures to safeguard user data from unwanted access, breaches, or abuse. It's crucial to adhere to laws like COPPA, HIPAA, and the GDPR.

**2)Ethical AI Use:**

Observing moral principles in the creation and application of AI, such as justice, openness, and responsibility. preventing biases in algorithms and making sure AI is only used to improve education, not to harm or discriminate.

**3)Content Quality and Accuracy**:

Ensuring that the instructional material made available through the app is accurate, trustworthy, and adheres to academic standards. examining the content's quality to ensure a fulfilling educational experience.

**4)Accessibility and Inclusivity:**

By adhering to accessibility guidelines (such as WCAG), the software will be made accessible to persons with disabilities. ensuring the availability of functionality like keyboard navigation, alternative text, and screen readers.

**5)Bandwidth and Connectivity:**

Acknowledging that not all users will have high-speed internet access and customizing the software to function effectively under various bandwidth constraints to ensure accessibility for everyone.

**6)Technological Compatibility:**

Maximizing reach and usability for a varied user base by taking into account the app's compatibility with a range of devices, operating systems, and browsers.

**7)User Experience and Engagement:**

Keeping learners interested without overwhelming them requires balancing compelling features with the need for simplicity and ease of usage.

**8)Monetization Sustainability:**

Achieving balance between offering a worthwhile, cost-free educational service and making money using long-term monetization strategies to ensure sustainability and expansion.

**9)Regulatory Compliance:**

Adhering to educational and industry-specific rules, standards, and licensing requirements, which may change depending on a region's geography and degree of education.

**10)Feedback and Iteration:**

Iterating on the app frequently to address problems, incorporate user feedback, and meet changing user needs are crucial for long-term success and user pleasure.

**11)Resource Limitations:**

Managing resource limitations, such as time, money, and development talent, to make sure that the app's development and deployment stay within realistic bounds without sacrificing quality.

Addressing these constraints ensures that eLearning startups and AI-based learning apps deliver a secure, ethical, and effective learning experience to a broad and diverse user base.

**4.4 Applicable Regulations**

eLearning startups and AI-based learning apps need to adhere to several regulations to ensure legal compliance, user data protection, and ethical use of technology. Here are some key regulations:

**1)General Data Protection Regulation (GDPR):**

GDPR imposes strict data privacy and protection standards for eLearning platforms that handle user data from the European Union (EU), requiring express user consent for data use, data breach notifications, and the right to be forgotten.

**2)Children's Online Privacy Protection Act (COPPA):**

COPPA imposes stringent privacy and consent regulations, making parental consent necessary for data collection and usage on platforms aimed at children under 13 in the United States.

**3)Family Educational Rights and Privacy Act (FERPA):**

FERPA, which is applicable in the US, protects student privacy by limiting the disclosure of their educational data without permission. If they handle student data from educational institutions, eLearning platforms must abide by the regulations.

**4)California Consumer Privacy Act (CCPA):**

The CCPA is relevant for eLearning firms based in California or providing services to residents of California since it gives users control over their personal information and places duties on data protection and transparency.

**5)Americans with Disabilities Act (ADA):**

Requires eLearning platforms to ensure accessibility for individuals with disabilities, ensuring that educational content and platforms are usable by all, regardless of disability.

**6)Section 508 of the Rehabilitation Act:**

Requires U.S. federal agencies to make their electronic and information technologies, including eLearning platforms utilized in educational institutions, accessible to people with disabilities.

**7)Telecommunications Act 1996 (Section 255):**

Requires telecommunication products and services, including eLearning technologies, to be accessible to individuals with disabilities, promoting inclusivity and equal access.

**8)Content Licensing and Intellectual Property Laws:**

To prevent intellectual property infringement and legal conflicts relating to the use and distribution of educational information, compliance with copyright laws and license agreements is essential.

**9)Consumer Protection Laws:**

Compliance with local consumer protection legislation to guarantee honest company operations, open terms of service, and the defense of consumer rights.

**10)Education-Specific Regulations:**

Depending on the region, there might be specific regulations related to educational content, accreditation, or certification that eLearning startups need to comply with.

**5. Buisness model**

There are 3 most common and successful eLearning business models

Compliance with these regulations is fundamental for eLearning startups and AI-based learning apps to operate lawfully, prioritize user data privacy, ensure inclusivity, and maintain ethical standards in the rapidly evolving landscape of educational technology.

#### 1. Night School Model

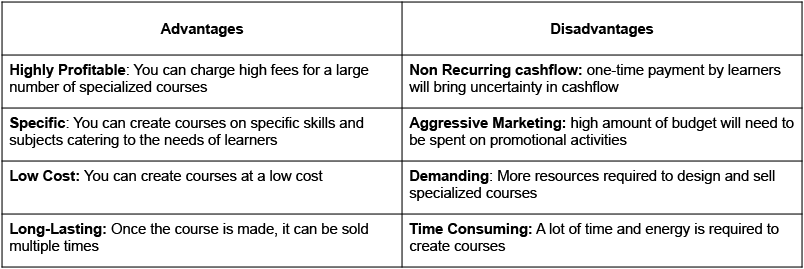
The term night school model came up from the concept of skill-based classes. It is a classical business model where a learner pays a one-time fee to access the course content. Courses under this business model follow a fixed framework that includes learning modules, assessments, quizzes, or examinations to test the learner. So, for example, if we are interested in learning [Tableau](https://www.tableau.com/), then we can follow the below steps:

* Search the course on an eLearning platform such as Udemy or Coursera
* Enroll by paying a nominal fee
* Access the course content
* Pass the quiz and complete the course

The night school model is most suitable for learners seeking a specific skill or learning a particular subject or a language. Most eLearning businesses adopt this model as it is a suitable alternative to physical classroom learning. This eLearning business model can be helpful for new businesses who are looking to generate cash flow by the subscriptions and sale of courses. Moreover, It is also a suitable model for businesses with high-priced courses.

However, this model has some downsides as well. The learner would only pay the course fees once and might not reinvest in your eLearning business again. In addition, if we want to focus on multiple topics, you will have to make separate courses for each of them since learners seek specific courses; hence, it is time-consuming.

There are some pros and cons of the night school model that are displayed in the table below:



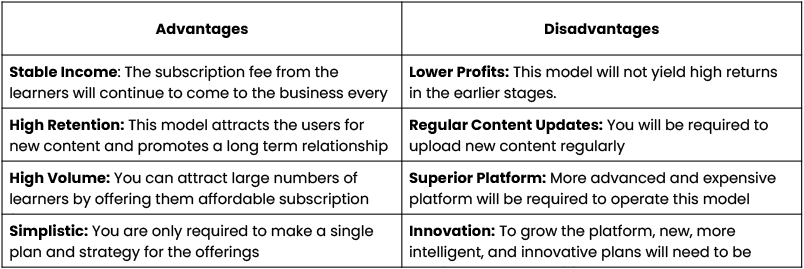
#### 2. Academy Model

The academy model is subscription-based, where the eLearning platform operates as a virtual school. An academy eLearning business model encourages students to learn and develop multiple skills and provides an extensive library of courses, videos, and other learning materials. The academy model also provides numerous features for the learners, such as live question-and-answer sessions, support groups, and one-to-one sessions with the instructors.

This model creates a long-term relationship between the platform and the learners. It is suitable for creators, fitness enthusiasts, sports fanatics, and professionals in their respective fields. The academy model covers broad topics and then covers each area in detail, attracting learners looking to learn multiple skills.

For example, we want to learn about graphic designing in an [eLearning platform](https://edly.io/). The academy model would provide information about different tools and software such as Photoshop, Indesign, Illustrator, and other Adobe software.

One of the plus points of this model is the constant inflow of subscription fees from the subscribed learners. Moreover, you can earn more in the future with the increase in the number of subscribers without additional effort to create more content. The pros and cons of this model are listed in the table below:



#### 3. Combined Model

A combined model is the integration of the “Night School Model” and “Academy Model.” This model offers both subscription-based offers as well as stand-alone courses with one-time fees. This model is suitable for those students who are willing to pay extra for additional course material or courses that can help them improve their academics and skills.

**4.Donations and grants**

A non-profit organization manages the online education offering and receives donations and grants for continuous funding. If sufficient funds are obtained, an endowment might be created. Funds are used to provide revenue to content creators and the content and course administration (if included) is provided at no charge to students. In some cases, content creators volunteer their contributions for no compensation. These donations might be more in the form of corporate or foundation sponsorship, where the sponsor might be acknowledged in course materials or receive other benefits. Unlike the “Governmental or foundation sponsorship” model, here the education provider retains control of the endeavour; however, significant donors might exert influence on the future direction of the offering

. Examples of this business model: Khan Academy; Wikibooks; OpenStax; WGBH sponsorship by Biogen Foundation; MIT OpenCourseWare

**5.Online program of traditional institution**

This model is the online courses division of a traditional university, where a traditional face-to-face educational institution establishes and administers an online education program that provides an online outlet for its educational materials and programs. Funding is obtained through various means including general institutional resources (free to students), student tuition, or dedicated donations

. Examples of this business model: MIT OpenCourseWare, university online offerings, libraries

**6.Community-based production**

Members of a community of practice or interest group create materials for each other’s use. This can also be called a “prosumer” model Examples of this business model: Wikipedia; WikiEducator; Phil Preprints

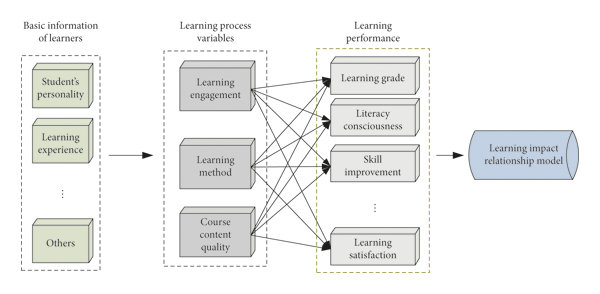
**6. Final Product Prototype**

The final prototype for AI-based Learning Apps depends on the type of content learners will interact with, and how they will interact with it.

Key decisions we make during the prototyping phase include::

* **Your Learning Management System (LMS).**  Online needs a platform, and our choice of LMS will be the most consequential in determining how we want learners to experience our course. Taking time to determine our needs, research the market, and fine one that checks all the right boxes is very crucial.
* **Interactions.** How are learners engaging with our content? Do we plan to include any interactive functionality? What will the lesson flow look like?
* **Layout.** How will we use headers, images, and other design elements to structure our course? Do these features create order and hierarchy in our layout?
* **Motivations.** Do learners want to keep using our course? Does the system prompt and encourage them to keep going? This is one of the more overlooked aspects of prototyping..
* **Assessment criteria.** Does our course give immediate feedback? Does it allow learners to re-take a test or practice a scenario multiple times? Do our tests come at a point in the course where learners will feel comfortable taking them, or do they interrupt the flow of the lesson?

We can begin building our prototypes in whatever medium feels most comfortable to us—including pen and paper. As we develop our ideas, move toward an interactive digital medium that lets you test out your ideas. This could be anything from PowerPoint to your LMS itself.



Our epidemic prediction application's final product prototype is an exciting step towards realizing a proactive global health safeguard. This abstract prototype showcases the essential functionalities and capabilities of our system, providing a glimpse of what the final product will offer:

**1.User Interface (UI):**

The UI encompasses the dashboard, course catalog, navigation menus, and interactive elements that provide a visually appealing and user-friendly experience.

**2.User Authentication & Authorization:**

Handles user login, registration, and authentication mechanisms, ensuring secure access to the platform and personalized experiences based on user roles.

**3.Database Management:**

Centralized database storing user profiles, course information, progress tracking, and other essential data for the platform's functionality.

**4.Content Management System (CMS):**

Manages creation, organization, and delivery of educational content, including multimedia materials, assessments, quizzes, and learning resources.

**5.Learning Path & Progress Tracker:**

Algorithms and modules for designing personalized learning paths based on user preferences and tracking their progress within courses and modules.

**6.Real-time Communication:**

Facilitates live discussions, video conferencing, and interactive sessions among learners, **instructors, and peers for effective collaboration and engagement.**

**7.Assessment & Evaluation Engine:**

Enables the creation and administration of quizzes, assignments, and exams, providing immediate feedback and assessment to learners.

**8.Notification & Alerting System:**

Sends notifications and alerts to users for course updates, deadlines, announcements, and other important information.

**9.Search & Recommendation System:**

Incorporates algorithms for efficient content search and personalized recommendations based on user behavior, preferences, and historical data.

**10.Payment Gateway & Subscription Management:**

Handles secure transactions, subscription management, and billing for premium features or courses.

**11.Integration with Third-party Tools:**

Allows seamless integration with external tools like learning management systems (LMS), video conferencing software, and other educational applications for enhanced functionality.

This schematic diagram provides a high-level overview of the online learning platform's architecture, showcasing the essential components and their interactions to achieve the desired educational experience. Further detailed design and development would involve refining each component and ensuring seamless integration for a functional prototype.

The following is an example of e-learning platform named EduGenius which uses AI to offer learning oppurtunities to all the students

:

Product Name: EduGenius

Product Overview:

A cutting-edge eLearning platform called EduGenius uses cutting-edge AI algorithms to offer tailored and interesting learning opportunities for students of all ages. The website provides a wide variety of courses, interactive lessons, and quizzes on many different topics, assuring a well-rounded educational experience.

Key Features:

Personalized Learning Paths:

AI is used by EduGenius to comprehend each student's learning preferences, style, and performance history. The technology creates a personalized learning route for each user based on this data, maximizing their learning results.

Adaptive Quizzes and Assessments:

Based on the user's current level of learning, AI generates quizzes and evaluations that dynamically reinforce topics and adjust difficulty levels to challenge the student appropriately.

Interactive Video Lectures:

Interactive elements like quizzes, polls, and in-video dialogues improve learning and keep students interested.

Real-time Progress Tracking:

The platform offers real-time progress tracking, enabling instructors and students to keep track of each student's performance, growth areas, and overall course progress.

Intelligent Content Recommendations:

AI algorithms analyze user behavior and preferences to suggest additional courses, modules, or activities that align with the learner's interests and objectives.

Collaborative Learning Spaces:

Dedicated online forums for group projects, cooperative conversations, and peer-to-peer learning that promote community and improve cooperation abilities.

Accessibility Features:

Screen reader compatibility and text-to-speech functionality are only a couple of the features the platform offers to make sure it is useable by people with impairments.

Secure Data Handling:

Robust data encryption, secure login protocols, and adherence to data privacy regulations to ensure the protection of user data and privacy.

Gamification and Rewards:

Students are motivated, active involvement is encouraged, and general engagement is improved with the use of gamified components, accomplishment badges, and awards.

Monetization Strategy:

EduGenius has a freemium business strategy, giving users limited access to advanced capabilities while providing basic features for free. Full access to all services, exclusive content, and priority customer assistance are provided through premium subscription tiers, assuring sustainability and income generation for the firm.

With its AI-powered personalized learning method and wide range of features, EduGenius aspires to transform the eLearning industry by giving students a rich and engaging platform to attain academic brilliance and realize their full potential..

**Financial Modeling**

To design a linear financial model for total profit in the context of AI in e-learning platforms and online education, we can use the equation

y=mx(t)+c, where:

y is the total profit.

m is the pricing.

x(t) is the total sales (market as a function of time).

c is the production and maintenance cost for the market product.

Now, let's break down the components:

Total Sales (x(t)):

Total sales represent the market demand for the AI-powered e-learning platform. This can be influenced by various factors such as marketing efforts, product features, and overall market trends. You might use historical data and market research to estimate the function x(t) over time.

Pricing (m):

Pricing is the amount charged for each unit of the product. This can be influenced by factors like competition, perceived value, and production costs. You can set a fixed price or a dynamic pricing strategy based on market conditions.

Production and Maintenance Cost (c):

Production and maintenance costs include the expenses associated with creating and maintaining the e-learning platform. This can include development costs, server maintenance, software updates, and other operational expenses.

Now, let's put it all together:

y=mx(t)+c

Here's how you might interpret and use this model:

Total Profit (y):

The total profit is calculated as the product of the pricing (m) and the total sales (

x(t)), plus the production and maintenance cost (c).

This profit model assumes a linear relationship between sales and profit.

Keep in mind that this is a simplified linear model, and real-world scenarios may involve more complexity. Adjustments and refinements to the model may be necessary based on additional factors, market dynamics, and feedback.

Let's consider some examples to illustrate the linear financial model in the context of AI in e-learning platforms and online education:

Total Sales (x(t)):

Assume

x(t) is a linear function of time, representing the growth in the number of users of the e-learning platform. For example,

x(t)=a⋅t+b, where

a and b are constants, and t is time.

Pricing (m):

Let's say you decide to charge $50 per user per month for your e-learning platform.

Production and Maintenance Cost (c):

Assume your fixed production and maintenance cost is $10,000 per month.

Now, you can use the model y=mx(t)+c to calculate the total profit:=50+10000

y=50⋅(a⋅t+b)+10,000

This is a simple linear model, and you might adjust it based on more specific data and factors. For instance:

You could refine the pricing strategy based on competitor pricing or customer willingness to pay.

The production and maintenance cost might vary depending on the scale of the platform, technological advancements, and other operational factors.

The linear growth assumption for total sales might be adjusted based on market saturation or seasonal trends.

In practice, you would gather real-world data, possibly use regression analysis to estimate parameters, and continuously refine the model based on actual performance and market feedback. This is a starting point that can be adapted to the specific circumstances of the e-learning platform you're working with.

**7. CONCLUSION**

It is essential to use eLearning companies and AI-based learning tools since they democratize and modernize education. With the help of these technologies, anyone with access to the internet can receive a high-quality education regardless of location or means. By customizing information and pacing to each learner's needs, AI integration ensures personalized learning experiences and dramatically improves comprehension and retention. Additionally, they enable ongoing skill improvement, which is essential in a labor market that is constantly changing. By transforming education, these technologies give students the skills they need to succeed in the current digital era, resulting in a more educated, competent, and adaptive global populace