AI IN EDUCATION

SCH 261: Engineering Project Management

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BACKGROUND AND BUSINESS OPPORTUNITY

Artificial Intelligence is an incredible tool that can be of great use to everyone including students. However, in the hands of students it can become a double-edged weapon as it can help them learn better or it can decrease their overall educational benefit if it is abused. Unfortunately, it would be impossible to restrict the usage of AI among students as it is getting increasingly popular and is publicly available for everyone. However, we can ensure that students make the best use of AI by providing customized educational models that focus on ensuring proper understanding of the concepts and providing guidance to reach the solution as opposed to providing direct solutions right away.

OBJECTIVES OF THE PROJECT

1. Providing educational models of artificial intelligence to schools, universities, or even self-learners.
2. Optimizing the usage of AI in education allows students to make use of AI without decreasing their educational experience.
3. Allow the AI model to provide students with educational methods suited for their needs based on the VARK learning styles

PROJECT CONSTRAINTS

Scope

The scope of the project will be providing educational AI models for both schools and universities. It will first start with a select group of educational institutions then gradually expand into other institutions.

Risks

The first risk we could face would be resistance from administrators of the targeted institutions by rejecting the idea of standardizing AI as a part of education.

The second risk would be the acceptance of students for our models as they could feel that the standard models provide much more direct and easier solutions for their problems.

Another risk we could face would be the compatibility of the models with various types of institutions and various curriculums as well as teaching methods. (private, public, international, etc...)

The final risk we could face would be the inaccuracy of the model itself. As AI models could sometimes mislead or provide inaccurate information we would need to minimize that as much as possible as to not confuse students.

Communication Plan

The communication plan will focus on showing the benefits of our models to the administration of the targeted educational institutions. We will communicate exactly what we expect, which is a partial transition of students who use AI to fully plagiarize assignments, projects, or even exams to an alternative model where the model helps them reach the solutions without directly giving them the solutions. We will communicate the risks as well as test and present the accuracy of the AI in solving problems as to not incorrectly guide the students to an incorrect solution.

Resources

Since we are developing an educational model, we will require educational experts as well as experienced developers. Through close collaboration between these 2 groups, we will develop the most suitable model we can. Then we will require servers to host our model from which will also require a maintenance team. Finally, we will require a marketing team with sufficient knowledge in AI, education, and communication with students to advocate for our model. The marketing team could have people experienced in each of these individually or people with moderate experience in each of these things.

RISK MANAGEMENT

We have already identified the major risks in the previous section however we haven't yet developed a plan to deal with them.

Resistance from Educators

To face the risk of resistance from administration we will develop a strong marketing team and strategy to meet with the administrators and highlight the benefits of our model. We will also provide a demo of the model for the directors and instructors within the institution prior to any agreements to allow them to see its benefits.

Student Preferences

To deal with the risk of students still preferring AI we would hold sessions on the institution campus instructing students on how to use the model properly for maximum benefit as well as discuss why it would be better to use the educational model instead of using standard models. To help us in communicating with the youth we could collaborate with any of the popular tech gurus to give a talk about our model within these sessions. To further motivate students to use the educational model AI we could provide an incentive for using it through a rewards program (For each problem or usage of the educational model you would gain X points which you could then trade for minor gifts)

Compatibility With Educational Systems

To ensure compatibility among the various educational systems we would hire various educational experts from different systems to provide us with different perspectives on problems. We will also

thoroughly test it for each system with questions and problems from the respective syllabus of each system.

Model Accuracy

Finally, to deal with the risk of inaccuracy, in addition to working hard on developing an accurate model and ensuring that it has high enough accuracy before releasing, we will provide the student with a reference to the resources from which the model has generated its response to allow them to personally go and check its accuracy. We will also add an option to allow the student to report an incorrect response which will then be reviewed by our educational experts and if found to be incorrect will be sent to the engineers to help them with increasing the model accuracy.

Of course, all these risks will need to be continuously reviewed and monitored as well as adjust the plan for dealing with them accordingly.

PROJECT COST MANAGEMENT

Cost Estimation

To manage the costs, we will first need to estimate them. To do that we must first determine how much each of our major activities will cost. We have a total of 250 million EGP at our disposal, however most of the prices we can find online for activities will be in dollars. We will calculate in terms of dollars and then convert to EGP to ensure that we aren't over budget.

- Surveys and Research ~ 150,000$
- Model Development ~ 800,000$
- Launch Preparation ~ 250,000$
- Launch ~ 150,000$
- Expansion ~ 50,000$
- Marketing ~ 50,000$
- Employees ~ 1,500,000$
    - Salaries: 800,000$
    - Employee Satisfaction: 200,000$
    - Hiring: 100,000$
    - Manager Salaries: 200,000$
    - Miscellaneous: 200,000$
- Legal Requirements, Taxes, etc, ~ 100,000$
- Rent ~ 50,000$

Total:3,100,000$ ~ 160,000,000

Salary Breakdown

36 Engineers for Model Development and Database maintenance ~ 9600$*36

24 Expert Educators (Freelance) ~ 2400$*24

20 Instructional Designers ~ 8400$*20

20 Marketing ~ 6000$*20

10 Human Resources~ 4800$*10

5 Legal ~ 4800$*5

5 Finance ~ 4800$*5

Budget Determination

Our total budget will be approximately 160,000,000, which is less than our given budget. We will add to that budget a contingency reserve of 40,000,000 and the remaining 50,000,000 will be a management reserve.

Cost Control

We will implement measures to track costs and ensure that we do not go over budget.

We will conduct biweekly budget reviews to ensure that each department is not spending more than its allocated budget.

If a department is found to be going over budget, we will review their spendings and adjust the budget plan accordingly.

ACTIVITIES

Planning

1. Conduct surveys among students to determine their usage of AI
2. Conduct surveys among instructors to determine their stance on AI usage in education
3. Conduct surveys with expert educators to determine current issues with standard AI models in education
4. Research existing educational AI tools to identify market gaps
5. Create a detailed plan for expected AI features

Team Development

6. Hire expert educators
7. Hire AI engineers
8. Hire Instructional Designers
9. Gather a team of managers to lead each respective team.
10. Conduct sessions among team members to gain a better understanding of what each team will be responsible for and how each team can help the other team reach their respective goals

Development

11. Develop AI prototype
12. Gather a database of educational content for different subjects and levels
13. Design realistic test case scenarios
14. Work on flaws identified by expert educators
15. Develop feedback channel for communication with testers
16. Begin testing internally with the help of expert educators on shortlisted educational systems and identifying major issues
17. Work on fixing identified issues and resend models to internal expert educators for testing
18. Final testing for selected educational systems by educators

Pre-Launch Planning

19. Hire marketing team
20. Shortlist educational systems and institutions to assign institution partners
21. Create documentation and user guides for both teachers and students
22. Conduct demo meetings with shortlisted institutions

First Launch

23. Release testing for instructors within first institution
24. Receive and fix feedback from instructors within first institution
25. Official release of model for students
26. Host sessions in the first institution introducing the model as well as its benefits.

Expansion

27. Begin contacting more institutions for release of our model in their schools.
28. Contact tech content creators to set up talks by them about our model in our partner institutions
29. Host talks by tech partners.
30. Conduct rewards program
31. Develop models to provide support for more educational systems.

PRECEDENCE TABLE

Task ID	Task Description	Estimated Duration (Days)	Preceding Task(s)	Task ID	Task Description	Estimated Duration (Days)	Preceding Task(s)
A	Conduct surveys among students	15	-	Q	Fix issues and resend models to internal educators	30	P
B	Conduct surveys among instructors	15	-	R	Conduct final testing with selected educational systems	15	Q
C	Conduct surveys with expert educators	20	-	S	Hire marketing team	20	E
D	Research existing educational AI tools	20	A, B, C	T	Shortlist educational systems for institution partners	30	R
E	Create a detailed plan for expected AI features	20	A, B, C, D	U	Create documentation and user guides	20	R
F	Hire expert educators	25	E	V	Conduct demo meetings with shortlisted institutions	20	S,T,U
G	Hire AI engineers	25	E	W	Release testing for instructors in the first institution	25	V
H	Hire Instructional Designers	25	E	X	Receive and fix feedback from instructors	20	W
I	Gather a team of managers	10	E	Y	Official release of model for students	15	X
J	Conduct sessions among team members	15	F, G, H, I	Z	Host sessions introducing the model	10	Y
K	Develop AI prototype	90	J	AA	Begin contacting more institutions	20	Y
L	Gather a database of educational content	60	J	AB	Contact tech content creators	15	Y
M	Design realistic test case scenarios	30	J	AC	Host talks by tech partners	10	AB
N	Work on flaws identified by expert educators	40	K, L, M	AD	Conduct rewards program	20	Y
O	Develop feedback channel for communication with testers	20	K				
P	Begin testing internally with expert educators	20	N,O				

LOGICAL FRAMEWORK MATRIX

	Indicators	Means of Verification	Assumptions
Goal	Optimize the usage of AI in education by transitioning students from using traditional AI models to educational AI models focused on ensuring their understanding and prioritizing critical thinking and concepts over providing direct solutions.	Increased adaptation among students for educational AI models.	Educational Institutions will be open to the idea of adapting AI within their educational system and students will be open to using an educational model of AI as opposed to the standard model.
Purpose	To Develop and provide academic institutions with an educational model to address the current issues that arise from AI usage by students while still allowing students to make use of AI technology	Successfully Developing and Launching Model Acquiring at least 5 partner institutions by the end of the 14-month period	Institutions and testers will continuously provide us with feedback for our model to help increase its accuracy. Institutions will be willing to collaborate with us and promote our model to students.
Outcomes	Model is developed and undergoes multiple testing phases before release Several academic partners are acquired and are all collaborative with our goal Awareness of our model increases, and it becomes increasingly popular among students	The model is fully functional and undergoes multiple reviews from the feedback of testers Feedback is provided from instructors within the institution Students start increasingly using our model and it spreads through word of mouth	Academic institutions continuously provide us with feedback regarding the model including any difficulties faced Academic Institutions promote our model to sister schools increasing awareness Students are accepting of our model and are satisfied with its performance
Outputs	Analysis of Survey Results Research showing gaps and downsides of AI in education Teams of Academic Experts and AI experts are developed AI Model is developed and refined according to feedback	Gathered enough survey responses Research was consistent with survey data Have a fully ready-functioning team before developing a prototype Model goes multiple reviews after prototype	People were interested enough in our goal to fill in a survey Research was conducted in a smooth manner with no points of controversy Adequately skilled team members and leaders were found Enough feedback is provided

PROJECT KPIS

KPI	Verification Method	Measurement Parameters
Team Formation	Human Resources Reports	90% Attendance rate for all employees in onboarding sessions
Prototype Testing	Test Reports	Over 200+ test usages for each educational system
Adaptation Rate	Agreements with partner Institutions:	5 Institutions within 14 months
Model Usage	Verified Student Accounts	50% of students within partner institutions have accounts
Engagement	System	Average weekly Usage time of 4 Hours Per Week
Student Performance	Institution Feedback	20% Improvement in scores of users
User Satisfaction	Net Promoter Score (NPS)	A NPS of 7 or more
Educator Satisfaction	Institution Feedback	An overall satisfaction rating of 80% or more
Model Development	Internal Progress Reports	First prototype submitted within 4 months of start date
Feedback Resolution	Feedback Reports	Feedback resolution rate of 90%