ORIGINAL RESEARCH PAPER

Engineering

DESIGN & DEVELOPMENT OF E-TUTOR MODEL FOR SLOW LEARNERS

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ABSTRACT

Education system is an important pillar for the growth of country in terms of social, economical and political. Students are getting education in different streams through institutes and universities. An academic system has to set quality standards with teaching learning resources for quality based education. These protocols will help to explore opportunities for employability. Teaching-learning pedagogy must include the use of ICT, E-learning, social networking, etc. for creating surroundings and interest of the students in respective subjects. But the students in the class are having different level of understanding like fast and slow learners. A teacher has to identify their level and teach accordingly by using extra classes or tutorial classes. So, the present study proposes an E-tutor model which may be useful for learners and teachers.

INTRODUCTION:

Education is a backbone for the growth of any country. Educational institutes are imparting the knowledge through school, college or university in different faculties like agriculture, science, biotechnology, computers, information technology, engineering, commerce, arts, and professional degree programme like MCA (Master of Computer Applications). Computer & ICT gives job opportunities almost in all fields and sectors. Hence, there is need of skilled manpower to meet these requirements. These institutes has to focus on academic system , its challenges and find out relative solutions to be used in teaching-learning pedagogy which will help to provide good training to the students for better outcomes.

According to Glenn E. Shelbeeker "Learning theories need to specify the kinds of pre-requisite skills, learning style, the relevance of learning to learn, skills on knowledge specifically related to a given learning task". [1] Learning theories defines the framework for learning and its related process. It includes the study of various theories like cognitive, behavioral, constructive or modern techniques. Each theory having its own importance in the related type of problem. Education helps to improve level of skills, knowledge, confidence, self motivation, etc. All these factors are essential for getting good opportunities and success in the related field.

Effective teaching-learning process includes major components i.e. student, instructor, content, method and technology. Institutes have to design and develop an effective teaching-learning pedagogy for quality based education by including core components and recent trends and technology. Use of E-learning, online exam, Internet, Multimedia, E-communication, smart phones, etc. may be useful to enhance the quality of educational systems.

In the class students are varied from each other in terms of grasping power, memory, confidence and other essential attributes which are useful to uplift their abilities. But teacher has to train all the students equally. Some student learns the topic in first attempt called as fast learners. Those who need some extra coaching called as slow learners. These slow learners can be grouped accordingly and given the training separately. This concept is called as Tutorial classes.

But now days we are using ICT trends in education. So, through the use of E-Tutorial concept extra training i.e. Tutorial classes can be arranged for the slow learners. In this study, a web based model i.e. E-Tutorial is designed and developed by using ASP.NET & MySQL programming tools. The proposed model includes facilities for the students to download eBooks, video lectures, notes, assignments, exams and results etc. This model is applicable for students and teachers. Teachers can upload related lecture videos, notes, assignment, etc through their personal login id and communicate the alerts to the students and arrange the extra or tutorial classes accordingly.

According Clark "Students gain significant learning benefits when learning from audio/video instruments as opposed to conventional instruction. Similarly, Schramm (1977) suggested that learning is influenced more by the content and instructional strategy in the learning materials than by the type of technology used to delivered instruction".[2] Use of multimedia makes teaching and learning process more interesting and effective. Multimedia is an integration of text, video, graphics, animation, motion video through computer hardware and software for education and other purposes.

According Khan "Online instructions as innovative approach for delivering instruction to a remote audience using the web as the medium". [3] Designing E-contents i.e. Online Exam, E-learning, E-Tutoring, etc is a complex concept which includes different theories, tools and techniques.

According to Berge's classification (1995) the roles of an online tutor involve four main aspects:
1) Technical: technological support 2) Managerial: task or targets 3) Pedagogical: Academic issues 4) Social: interaction between users. E-tutoring is an activity to teach online or e-tutorial to the students. It is a student or learner supportive tool which provides online facilities for teaching-learning process to teachers as well as students effectively. In tutorial classes teacher gives training to the students face to face but in E-tutorial term teacher and student is not physically face each other rather they communicate through E-tutor model with the help of internet. Teacher guide the student thorough asynchronous method.

Objectives:
1) To design & develop E-tutor model for slow learner.
2) To assess the students performance through the proposed model.
3) To evaluate the model through feedback of the MCA students and teachers.

Scope & Limitations:
The present study will help teacher to identify the learner type as fast or slow from the entire class. This model may be useful to students of MCA (Master of Computer Applications) and teachers in their academics. Through this E-tutor model teacher can provide assignments, and other related training to the fast, slow or poor students of the class by making their relative groups. At the same time students will be able to refer, download and get training from the subject teacher. A teacher can include this proposed model in teaching-learning pedagogy. The present study is limited to MCA students only of West Khandesh Region, Maharashtra.

Research Methodology:
In the present study, there are two type of respondents are used student and teacher. As a sample units only AICTE approved institutes/colleges from Khandesh Region (Jalgaon, Dhule, Nandurbar districts) of Maharashtra state are considered. Sampling is done in two stages. In the first stage institutes are

selected by using purposive sampling technique. In the second stage students and teachers are selected by using simple random sampling technique. E-tutor model has been designed and developed by using ASP.NET, MySQL programming tools. The model is demonstrated to the respondents for feedback through questionnaire. Data has been analyzed by using quantitative analysis technique in MS-Excel tool.

Table 1: "Units and Sample Size

S no.	Unit Name	Student		Teacher	
		Size	Selected	Size	Selected
1)	W.K.B.S.M. Dr. Suryakanta R. Ajmera MCA College for Women, Deopur, Dhule.	148	20	9	3
2)	R.C. Patel Institute of Technology, Shirpur, Dhule	180	20	9	3
3)	Department of Computer Science, North Maharashtra University, Jalgaon.	180	20	9	3
4)	K.C.E.S. Institute of Management & Research, Jalgaon.	180	20	9	3
Total:	688	80	36	12	

Data Analysis & Interpretations: Primary data has been collected through feedback questionnaire from students and teachers and tabulated in the tables for analysis purpose by using quantitative measures.

Table 2: "Respondent Details

Details of Respondent	Students		Teacher	
	Male	Female	Male	Female
Total :	34	46	5	7
Per % :	42.50	57.50	41.67	58.33
Out of :	80		12	

The above table no.2 shows complete count of the respondents. Out of 80 students 46 i.e. 75.50% are female and 32 i.e. 42.50% are male. From teachers category 7 i.e. 58.33 are female and 5 i.e. 41.67 are male. Hence, in both categories females are in majority.

Table 3 :"Students Feedback : Parameter ratings useful for Learning

Rate yourself on the following parameters on the scale of 5 to 0		Total	Per%
1	Understanding topic in first attempt in the class	195	48.75
2	Rate your listening abilities	184	46.00
3	Pre-requisite knowledge of the topic	151	37.75
4	Confidence level	181	45.25
5	Presentation Skills	164	41.00
6	Readings	197	49.25
7	Writing abilities	201	50.25
8	Memory	189	47.25
9	Span of attention	200	50.00
10	Logical Abilities	204	51.00
Total :		1866	46.65
Out of Total Score :		4000	

In the above table no. 3 , the students have given their opinion about different skills required for learning. Ratings have been scored in the range of 5 to 0 scaling. Each parameters max score is 80 respondent x 5 max scaling = 400. Hence, 10 parameters x 400 = 4000 is maximum score. Above numbers shows that approximately 50% respondents are lagging in various learning skills i.e. understanding topics in first attempt, listening abilities, confidence, reading, presentation, logical skills, poor memory, attention time , pre-requisite knowledge of the topic, etc.

Table 4: "Student Feedback: About extra/tutorial classes

Question		Response	
Do you find the need of extra or tutorial classes?		Yes	No
		53	27
Per % :		66.25	33.75
Out of :		80	

The above given table no. 4 describes that majority of the students 53 i.e. 66.25% requires extra or tutorial classes remaining 27 i.e. 33.75% denied for the same.

Table 5: "Student Feedback: About proposed E-Tutor Model

Rate proposed E-Tutorial model on various facts on the scale of 5 to 0		Total	Per %
1	User Friendliness	300	75.00
2	Support of subject contents : assignments, notes, etc.	284	71.00
3	SMS or Alerts from Teacher for Tutorial classes	343	85.75
4	Availability of Subject Videos	263	65.75
5	Online exam for Subject Evaluation	305	76.25
6	Download facility : E-books, Question Banks	293	73.25
Total :		1788	74.50
Out of Score :		2400	

Table no. 5 gives the opinion about proposed E-tutor model which is used by the students. The majority of the respondents have rated all the option above 70%. It means that students are satisfied with all the facilities given in the model.

Table 6: "Teachers Feedback: Need of Tutorial classes for Slow Learners

Do you find any need of tutorial classes for slow learners and club them into group?		Total	Per %
Answer	Yes	12	100%
	No	0	0
Total :		12	

Above displayed table no. 6 describes that , all the teachers have agreed upon a need of tutorial classes for slow learners where they can re-teach the subject topic by clubbing then into groups.

Table 7: "Teachers Feedback: Usefulness of E-tutor Model for Slow Learner"

Do you find that developed E-tutor model is helpful for slow learner students?		Total	Per %
Answer	Fully Agree	8	66.67
	Agree	4	33.33
	Neutral	0	0.00
	Not agree	0	0.00
Total :		12	

The above table no. 7 shows opinion E-tutor models usefulness for slow learner students and it is agreed by all the teachers.

Table 8: "Teachers Feedback: Importance of E-tutor Model for Teaching-learning pedagogy

Do you agree that proposed E-tutor model is useful in teaching-learning pedagogy?		Total	Per %
Answer	Fully Agree	10	83.33
	Agree	2	16.67
	Not agree	0	0.00
Total :		12	

Table no. 8 explains the majority of teachers are agreed that E-tutor model is important in teaching-learning pedagogy.

CONCLUSION:
In the present study E-tutor model is developed and presented before the slow learners. In this model teacher can upload the assignments, notes, updates, video lectures, notices, books, online exam, etc. for the slow learners. Teacher has to identify slow learner students from the entire class and arrange extra classes through proposed model. Slow learners are identified on certain parameters like memory, understanding of the topic, skills, confidence, etc. Students are able to download subject material through their respective user id and assess themselves through online MCQs exam. In the present study it is found that some students need extra attention and classes. E-tutor tool is very useful for slow learners in teaching-learning process. It helps to make slow learner to take more interest in the subject, confident and understandable.

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