ADDIE MODEL PREPARED BY STUDENT TEACHERS IN ECONOMICS FOR THE STUDENTS OF STD. IX

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Abstract

When e-learning is reshaping the educational landscape of the world, an essential condition for effective practices of digital age pedagogy is that there must be access to high quality, culturally relevant content in digital forms. This research is undertaken to create digital quality, culturally relevant storyboards for developing e-content. Student teachers were trained in the development of storyboard for creating e-content for Economics subject of standard IX syllabus of SSC board by using ADDIE model. This training was given to 14 student teachers of Pillai College of Education and Research, New Panvel. The prepared modules were implemented on 150 IX STD. students. E-content was found to be more influential in student success than the traditional method. The analyses in the present study have shown that there was a significant difference in the post-test score of control and experimental group. Students, in general, showed a very positive attitude towards e-content. They agreed that e-content was a very good technique for learning and found it very beneficiary.

Introduction

Learning and teaching in a digital age are being profoundly altered by the potential of technology. Supporting learning in the digital age looks at devising innovative methods to utilize ICT in education for maximalist inclusion of learners accompanied by a reformed pedagogy that frames quality in the learning activity by raising the interest and involvement of the students in learner centered approaches. When e-learning is reshaping the educational landscape of the world, an essential condition for effective practices of digital age pedagogy is that there must be

access to high quality, culturally relevant content in digital forms. This research is undertaken to create digital quality, culturally relevant content in the form of e-content. The use of multimedia e-content makes difficult concepts come alive. Multimedia can be seen as an effective instructional tool for delivering information to users. In the process of developing a techno-pedagogy for the learners, the first issue to be addressed is the development of content. Sub-committee of Central Advisory Board of Education on Information and Communication Technology in school education has recommended that the "process of outsourcing of digital content and resources should be discouraged by states and emphasis should be on the "need for development of e-content by the states through their own pools of teachers and teacher educators." This becomes the need of the day. The current practice of teacher education, technology is taught in isolation from the study of specialization, educational theories and educational practices as well. This situation will hinder the development of competence for prospective teachers in developing digital content for students. With the recognition of problem with existing pre-service teacher education, the researcher decided to train Student teachers in the development of multimedia e-content by using ADDIE model.

Review of literature

Kumar, S. (2013) did a descriptive research on design and development of national digital repository system for health information in India. Bhatt, A. (2011) developed computer assisted instruction in physics of standard XII. Jeyamani P. (1991) studied effectiveness of simulation model of teaching through computer assisted instruction package in physics Sindhi N.O. (1996) constructed multimedia package for the teaching of physics in standard XI. Meera S. (2000) studied relative effectiveness among different modes of computer based instruction in relation to students' personality traits. Dalwadi, N. (2001) developed computer assisted instruction in science for the standard IX for the unit "light". Alesander, N. (2013) prepared and validated multimedia packages in the teaching of science to hearing impaired students of secondary schools. John. K.K. (2010) prepared and tested learning modules in environmental science at higher secondary schools. Brawley (1974) conducted an experiment to evaluate the multi-media instructional modules to teach time-telling to retarded, children. The findings revealed that the experimental group made significant gains over the control group. Tse-Kian and Mai (2004)

discussed the incorporation of multimedia into the tutor's instructional process which should result in a union between the educational content and the multimedia technology.

Objectives:

1. To train the student teachers in developing multimedia e-content using ADDIE model.

2. To develop ADDIE model based multimedia e-content for IX standard Economics syllabus of SSC board by student teachers.

3. To study the effectiveness of multimedia e-content among IX STD students on the basis of gender

Scope and delimitation: This training was given to 14 student teachers of Pillai College of Education and Research, New Panvel. Training will cover the development of multimedia e-content for economics subject of standard IX syllabus of SSC board. The prepared modules were implemented on 150 IX STD. students.

Methodology and plan of work

Research Method: Single group pre-test post-test experimental design was used.

Sample: 24 student teachers would be the sample for this study. They were divided into 6 groups of 4 each. Multimedia e-content was tried out on 100 students of IX standard.

Tools: following tools was prepared

1. Plan of training in multimedia e-content
2. Preparation of modules in multimedia e-content by the student teachers
3. Personal information of students
4. Achievement test in Economics
5. Reflections in the form of journaling by student teachers w.r.t. training

Plan of work for Training of B.Ed. student teachers for development of multimedia e-content

Phase I: Pre-planning: Establishing the team

- Teams were chosen on the basis of following factors: Content matter Knowledge and adequate Knowledge of computers.

- **Skills audit:** A brief skill audit was done to assess the existing skills and expertise of team and identify any expertise is needed. The gaps were filled by faculty, contracting out certain tasks.

- Fourteen students were divided into four groups of 3, 3, 4, and 4 each. These groups were distributed chapters of economics.
- Team was given orientation about instructional design.

Learning through blog

Blog was created. Blog on instructional design include menus such as learning theories, instructional strategies, samples of e-content, storyboard, Models of instructional design. Student teacher could go through blog and watch simple videos to learn theory related to instructional design. Online classroom was created to interact with students online. Researcher shared information, given assignment through Edmodo.

Phase II: Content development

The multimedia e-content was developed based on ADDIE model.

1. Analysis: The researcher made the design of the course. The student teachers formulated the objectives for the e-content of each topic. They did content analysis for the unit in which they were preparing module.

Analysis is done to do need analysis, audience analysis, content analysis and structure analysis. Learners were analysed by collecting data. Interest, learning styles, their intelligence, anxiety level towards economics, attitude towards economics was studied. For this purpose questionnaires were given, (See the appendices) data was collected and analysed. Experiences of practice teaching by student teachers enabled them to analyse the need of their learners.

1. 8.21 % of the students have high attitude towards Economics, 78.36 % students have average attitude towards Economics and 12.69 % students have low attitude towards Economics. Most of the students have average attitude towards Economics whereas very few students have high level of attitude towards Economics.

2. 72.93 % of the students have high anxiety towards Economics, 23.30 % students have average anxiety towards economics and 3.75 % students have low anxiety towards economics. Most of the students have high anxiety towards Economics whereas very few students have low anxiety.

3. 60.45% students have linguistic intelligence to much extent

4. Maximum student fall under the category of Intra Personal Intelligence with an observation of 86.57% too much extent.

5. Minimum percentage (57.46%) students possess Spatial Intelligence to much extent.

2. DESIGN:

For each module following plan was prepared:

- Goal of the instruction in general term.

- Specific learning objectives for the students

- The instructional strategies

- Instructional activities needed to achieve objectives

- Sequence of instructions

- Visuals, videos, audio, scenario needed.

- Assessment strategies they will use.

- Assignments

- References

- Preparing storyboard

  While preparing storyboard following steps were followed:

- Instructional strategies were decided

- Organization of learning activities

- Chunking learning activities into smaller pieces

- Sequencing the content in logical order

- Scaffold the learning experiences

- Use relevant real world learning experiences

- Using multimedia approach

- Assignments were prepared

- Concept map, mind map, crossword, quizzes were designed

3. DEVELOP

Develop the module based on above mentioned information. Development includes the following: Video recording, Integrating images, video clips, Editing

4. IMPLEMENTATION

The module of the e-content designed tried before presenting it to the target group. During this time the student teachers have an opportunity to review the whole thing. They can modify the

programme to duet the time frame and the audience. Tryout gives an opportunity to re edit and re sequence the program and to make last minute addition and deletion to improve e-content.

5. EVALUATION

Pretest and post test was conducted to study the effectiveness of the modules.

Phase III: Reflections through Journaling

Student teachers were asked to write reflections in diaries throughout their training. These reflections were qualitatively assessed.

Analysis of data

Quantitative as well as qualitative data analysis was done. First of all, experimental and control group were given pretest. The e-content is implemented on experimental group. The control group was taught by using traditional face to face mode. After 3 days of implementation, both experimental and control group were given posttest.

The scores of pretest and posttest were obtained and analyzed using statistical test. i.e. t test.

Pre-test and post-test scores of control group and experimental group

Pre-test Scores of control group and experimental group						Post-test scores of Control group and Experimental group					
Group	N	Mean	SD	t value	LS	Group	N	Mean	SD	t value	LS
Control group	61	8.38	4.06	1.89	N.S.	Control group	61	12.24	6.22	6.83	0.01
Experimental group	61	8.90	2.78			Experimental group	61	20.80	6.64		

Mean, standard deviations and t-value for pre-test scores in Economics were calculated. The mean score for the experimental group was 8.90, while that of the control group was 8.38. A t-test for independent samples was carried out to test whether the experimental and the control groups differed significantly on pre-test achievement in Economics. Non-significant differences were found with t=1.89 at 0.05 level. As there were no significant differences on the pre-test, it can be assumed that the two groups started out with equivalent means.

Mean, SD and t-value for post-test scores were calculated. Mean of post-test scores of experimental group was higher (20.80) than that of control group (12.24). The t-value calculated for post-test scores revealed that control and experimental group differed significantly with t=6.83 at 0.01 levels.

Post-test scores of control group and experimental group with respect to gender

Control						Experimental					
Gender	**N**	**Mean**	**SD**	**t-value**	**LS**	**Gender**	**N**	**Mean**	**SD**	**t- value**	**LS**
Boys	32	13.10	5.64	1.32	N.S	Boys	30	20.88	6.32	0.097	N.S
Girls	29	11.42	6.79			Girls	31	20.72	7.40		

The mean, SD and t-values of post-test scores of boys and girls for the control and experimental groups were calculated. Result shows that mean scores of girls (11.42) in the control group are lower than those of boys (13.10). In the experimental group, mean of post-test scores of both boys and girls are 20.88 and 20.72 respectively. The t-value was calculated for post-test scores of control group (1.32) and experimental group (0.097) with respect to gender. It did not differ significantly even at 0.05 levels.

The students in the experimental group answered reflection questions on their experience in learning with the help of e-content at the end of the treatment period.

Students replied that concepts were clear through this method of teaching. E-content helped them to better understanding and the ability to answer questions easily, assisted them in summarizing the learned material, and helped them to retain the learned concept for a longer time. This e–learning helped to promote the attitude towards Economics education. 73.47% students said that e-content should be used to teach most of the topics in Economics and 54.32% said that it should be applied in other subjects also.

DISCUSSION

According to the achievement points obtained at the end of the study, e-content was found to be more influential in student success than the traditional method. The analyses in the present study have shown that there was a significant difference in the post-test score of control and experimental group at 0.01 levels. More specifically, experimental group has higher mean score than that of control group. Further analysis investigated the significant difference of post-test score with respect to gender. There was no significant difference of post-test score of control and experimental group with respect to gender.

Other questions in the attitude scale elicited student's attitude towards e-content. Students, in general, showed a very positive attitude towards e-content. They agreed that e-content was a very good technique for learning and found it very beneficiary. These students suggested that e-content helped them summarize and organize new information, retain information longer and

simplify their learning tasks. Thus, it could be of great help to students to develop and use metacognitive skills, which resulted in better achievement.

Conclusion:

The development of the multimedia e-content of Economics was the result of the joint effort between the teacher educators and the student teachers. The student teachers was appeared engaged in training which will make these future teacher competent enough, digitally skilled enough to face the challenges of inculcating 21 century skills among their students.

E-content was found to be more influential in student success than the traditional method. The analyses in the present study have shown that there was a significant difference in the post-test score of control and experimental group at 0.01 levels. More specifically, experimental group has higher mean score than that of control group. Further analysis investigated the significant difference of post-test score with respect to gender. There was no significant difference of post-test score of control and experimental group with respect to gender.

5.8 RECOMMENDATIONS

- Teachers should be given training for developing e-content so that they can develop the content suitable to students' need.
- E-content development should be a part of pre-service and in-service training.
- Teacher should try to modify the available content to make it more effective as per students' need.
- Teachers should be made aware about the open educational resources so that they can use the available resources, modify and create new.

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