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Evaluation of E-Content as Pedagogical Tool

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Abstract

Present study was conducted for the development and evaluation of e-content as a pedagogical tool. E-content was developed on behaviorist theory of learning. The study is experimental in nature. Thus, two group static design was adopted to carry out the experiment. The students of 10+2 of Sacred Heart Sen. Sec. School Barnala were considered as the sample. 50 students was selected by using non-probability technique of sampling i.e., purposive sampling. The sample was equally divided into two groups (25 each) i.e. Control and Experimental. Control (Group-1) and Experimental Group (Group-2). To equalize the achievement level of the student's their achievement in previous classes was considered. To make the equalization more valid, both the groups were taught with conventional method of teaching keeping the conditions equal and an achievement test was applied and scores of both were analyzed. In the experiment, the control group was taught through traditional method of teaching whereas the experimental group was taught by using e-content. An achievement test questionnaire was developed by the investigator to evaluate and applied to find out the efficacy of the e-content and learning objectives. For the purpose of drawing out the results the investigator used statistical techniques like t-tests, mean and standard deviation. It is indicated by the data that students who were treated through E-content answered more questions correctly in the post-test than students in either group who were taught with conventional method. So there exists significant difference in the achievement of control group and experimental group. This was concluded that achievement of students who were taught with e-content was higher than the students who were taught without e-content. This reflects the positive effect of e-content.

Keywords: Learning, E-Content, Achievement

Introduction

Education being one of the fundamental elements in globalizing and developing the world, there is even much greater need of new scientific method of teaching and learning in the field of education. Presently, every country in the world are scientifically and technologically competitive. By the beginning of new millennium, Information and Communication technology became one of the leading programs in the World. ICT has topped the world's most leading industries in commercial field. In all kinds of industries, government or private entrepreneurs ICT has created vacant for many job-seekers. So, the education by virtue has to advance and manipulate in every aspect to meet present needs and desire of the ever growing society. Development of e-content in every discipline aim sat meeting human desire at this present world.

E-learning is commonly referred to the intentional use of networked information and communications technology in teaching and learning. A number of other terms are also used to describe this mode of teaching and learning like online learning, virtual learning, distributed learning, network and web-based learning. The term e-learning comprises a lot more than online learning, virtual learning, distributed learning, networked or web-based learning. As the letter "e" in e-learning stands for the word "electronic", e-learning would incorporate all educational activities that are carried out by individuals or groups working online or offline, and synchronously or asynchronously via networked or Standalone computers and other electronic devices. These various types or modalities of e-learning activity are presented as (1) Individualized self-paced e-learning online (2) Individualized self-paced e-learning offline (3) Group-based e-learning synchronization and (4) Group-based e-learning asychronization. E-learning is flexible and can be customized to meet the individual needs

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needs of the learners.

Collaboration of technology in curriculum has potential to extend learning beyond the classroom and necessitate the development of new knowledge and skills. E-content is defined as the use of the new technologies or applications in the service of learning or learner support. It is important because e-content can make a significant difference to how learners learn, how quickly they master s skill, how easy it is to study, and equally important is how much pupils enjoy learning. These complex set of technologies can make different kinds of impact on the experience of learning. Culturally, students are comfortable with e-learning methods, as they are similar to the forms of information search and communications methods they use in various parts of the lives. Intellectually, e-content offers a new mode of engagement with ideas via both material and social interactivity online.

The fundamental obstacle to the growth and effectiveness of e-learning is lack of access to the appropriate content. Poor or insufficient technological approach cannot be helpful to the teacher and the learners. The most important is that there should be quality technology supported content which is accessible to the teachers as well as learners. E-content helpsthe teacher in making their teaching effective and the learner also get benefitted as they get multi-sensory experience. Multi-sensory experiences can be provided to students in learning through e-content. Today that classroom learning is regarded as effective which helps learners to apply in life what they learn in classroom. E-content is one of the suitable and effective sources for this purpose. Hence, it can be said that e-content will play major role in shaping future classroom.

Linda (2007) pointed out that E-content reduces the time hugely by allowing teachers to easily share their course curriculums online. It also showed that as a result of e-content, many experience dramatic increase in performance by the school goers as well as distance learners.

Eisa et. al. (2007) examined student's attitude towards E-learning in Kuwait Higher Education. The survey was conducted in teaching year 2006/7 in both the private and public sector. The findings of the study revealed that the students in both sectors were keen to use E-learning and there were some significant differences between male and female students in their attitudes to the use of e-learning material.

Diana (2004) carried out a case study on E-learning in higher Education with an ostensible aim to use e-learning to improve the quality of the learning for the students. The study revealed e-learning could be more useful in improving the quality of the learning and must built the means for e-learning to evolve mature as a part of educational change process.

Bates (2001), Benjamin (2007), Dash (2007), Graf and List (2002), Itamar (2008), Mohanty (2008), Naidu (2006) supported the concepetual framework of e-content and e-learning. Researches explored that e-content and e-learning contribute significantly in teaching-learning process as well as in self-learning.

Objectives
1. To develop e-content on identified modules.
2. To find out the effectiveness of developed e-content in terms of student achievement.

3. To develop a comprehensive achievement test to measure effectiveness.

Research Questions
1. Will it be appropriate to teach educational psychology through electronic resources?
2. How effective can be the teaching through e-content.

Delimitation
The purpose of the delimitation of the problem is to refrain from biases and achieve the set goals of the study. Hence, the present study was delimited to the modules as given below:
1. Process of Learning
2. Theory of Classical Conditioning

Method and Procedure
Present study was experimental in nature. Two Group staticdesign was followed to carry out the study. The module was prepared in consultation with the experts in the field of Psychology. E-content was developed in creative form using images, power point presentations, graphics and animations. The module of 20 minutes of duration was prepared using multimedia techniques like Flash, Dreamweaver and Aftereffects. Besides this the present study of E-content's effectiveness was evaluated through achievement test and feedbacks from the experts.

Two group static design was be used. The students of 10+2 of Sacred Heart Sen. Sec. School Barnala were considered as sample.50 students were selected by using non-probability technique of sampling *i.e.,* purposive sampling. The sample was divided into two groups (25 each) *i.e.* Control and Experimental. Due care was taken while selecting the students as the part of sample and while dividing the students into groups, so that the average level of academic achievement of both the groups should of same level.To enable the investigator to acquire the groups of same ability achievement of students in 10th and 10+1 were considered. Summary of analyzed data of previous achievement of students was given in table no. 3.1.

Table :3.1
Mean And Variance in Previous Achievement of Students

	Group-A	Group-B
Mean	65.9	65.3
N	25	25

It is evident from the table 3.1 that the mean score for group A was 65.9 and group B was 65.3 respectively. Hence, the ability of the two groups was confirmed to be of equivalent ability as no significant difference has been noted, which indicated the fair division of the sample. To make the division more reliable, both the groups were taught with conventional method. For this purpose controlled group and the experimental group was taught with conventional method and environmental conditions kept similar. Data of both the groups were analysed and given in table 3.2 as under.

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Table : 3.2
Significance of Difference Between Mean of Scores on Achievement Test

Group	N	Mean	Variance	df	t-value	Level of Significance
A	25	14.14	2.8	48	0.12	P>0.05 (Not Significant)
B	25	14.29	2.79			

From the above table it has been found out that the mean score of controlled group and experimental group on the pre-test was 14.14 and 14.29 respectively. Standard deviation of controlled group and experimental group has been found to be 2.8 and 2.79 respectively. The computed t-value being 0.12 has been found out to be insignificant at both the levels of significance indicating that there is no significant difference in the achievement of controlled group and the experimental group. So, the division of group for administering post-test was assumed valid and relevant as per the requirement of the study.

Tools

1. To develop e-content software i.e. Adobe Flash, Adobe After Effects, Macromedia Dreamweaver, MS PowerPoint, MS Word were used. For audio and video recording dvcam-PD170 was used.
2. To study the efficacy of e-content, an achievement test was developed by the investigator.

Development of E-Content

For the development and evaluation of e-content following procedure was followed:

1. E-content was prepared with reference to the present syllabus of psychology for 10+2.
2. Audio Script for modules was written in consultation with experts.
3. Animations were created.
4. After video and audio recording of each module, editing was done.
5. Hyperlinks were established to link the animation with the content matter.
6. Evaluation of e-content by experts was done.

After developing e-content, a lesson was planned for two groups of students. The controlled group was taught with lecture method while experimental group was taught by using the developed e-content. Thus the treatment was given to the experimental group only. An achievement test was developed and applied to find out the efficacy of the e-content and learning objectives. Results of both groups on post test were compared and analysed statistically by using mean, SD and t-test.

Results

To measure the effectiveness of the e-content a multiple choice questionnaire was developed by the investigator. The test questions was designed to assess overall effectiveness of the e-content developed. A post-test was administered for both the group to study the comparison of E-content developed in the form of audio-visual aids and Conventional Teaching-Learning Method i.e. lecture method. Data collected were analysed with the help of computing t-value as given below.

Table-3.3
Difference between Achievement Scores of Controlled and Experimental Group in Post-test

Group	N	Mean	Variance	Df	t-value	Level of Significance
Control Group	25	13.23	4.54	48	9.41	P>0.01 (Significant)
Experimental Group	25	18.79	1.58			

From the table 3.3 it is observed that the mean difference between controlled and experimental group in post-test was 13.23 and 18.79 with variance of 4.54 and 1.58 respectively. Different treatment was given to the groups. Group-A (Controlled) was taught through conventional method and Group-B (Experimental), was treated with new method of teaching i.e. using e-content in the form of audio-visual aids. The test was administered having same amount of questions, with equal time duration, and by same teacher. Collected data were tabulated and analysed. In order to find out the existence of significant differences of the two groups, a statistical technique (t-test) needs to be employed. The computed t-value being 9.41has been found to be significant at 0.01 level of significance indicating that there exists significant difference in the achievement of controlled group and experimental group on post-test.

Conclusions

The Development and Evaluation of E-content on Behaviourist Theory of Learning illustrates the different features of the classical conditioning theory form of audio-visual by adding animations that could be used as an instructional tool by students and other teaching professionals. To know the effectiveness of the developed e-content on the topic Behaviourist theory i.e., Theory of Classical Conditioning, the controlled group was taught through conventional method and experimental group taught with the help of e-content. Post-test was taken on both the groups and on the basis of the results following conclusion has been drawn:

Students who were treated through E-content answered more questions correctly in the post-test than students in either group who were taught with conventional method. So there exists significant difference in the achievement of control group and experimental group. This was concluded that achievement of students who were taught with e-content was higher than the students who were taught without e-content. This reflects the positive effect of e-content.

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