

Effect of Multimedia on Learning History among Secondary Students

¹Dr. K.Nachimuthu, ² P.Sasi

¹ Professor & Head, Research Scholar Department of Education, Periyar University, Salem, Tamil Nadu, India.

Abstract

The multimedia package prepared by the investigator was entitled, Cultural Traditions of Tamil Nadu. The content comprised of, India experienced an early development of Cultures and civilizations. The earliest age in history is called Old Stone Age or Paleolithic. This period is divided into Lower, Middle, and Upper Paleo-lithic cultures. The diverse cultures and languages of India reveal the complex processes related with Indian history. Between teaching and learning, technology acts as a bridge the gaps between them. In Indian history, past events are needs to teach using innovative methods. The text, video, audio, and animations are enclosed to form multimedia components to enrich the student's knowledge. The investigators select 50 students from the ninth standard of Government high schools of Attur District in Tamil Nadu State and experiment. Both genders were taken and divided to control and experimental groups. The Control group was treated by the normal classroom method and the experimental group was treated by the multimedia method. After data analysis, the investigators found out that, multimedia teaching in History was more effective than the normal one. The results are revealed that the multimedia package has a positive impact on History teaching.

Keywords: Multimedia, History Learning, Secondary Level, Animation, a Ninth Standard

Introduction

Technologies help teachers to prepare their history students to face the real world. It enables History students to access up-to-date information more quickly and easily. Classroom technology has transformed teachers into encouragers and advisers. Indeed, Multimedia leads to develop multi-sensory experiences to the students and it helps to mastery of the secondary level of Botany units (Nachimuthu, 2018). A multimedia package provides a range of sensory stimuli. The multimedia package was more effective than classroom teaching was found out by Vijayakumari (2011) and done in Biology subject at higher secondary level in Tamil Nadu. Likewise, the investigators had done this research on History at the ninth standard level.

Design of the Study

The investigators adopted a method of control and experimental group design in this study. One hundred and twenty ninth standard students as a sample from Six secondary schools in the Salem District of Tamil Nadu State of India and each school consists of Twenty students. Multimedia on 'Cultural Traditions of Tamil Nadu' was developed by the investigators. An achievement test was developed based on the guidelines of Bloom (1956) which was validated by the experts. The pre-test

was conducted with 120 ninth-standard students initially. The students were divided into two groups namely, the control and experimental groups. A traditional approach was treated for the control group and the experimental group was adopted with multimedia. The investigator clarified their queries if any, raised by the students during the experimentation phase. Learners were provided a congenial atmosphere for the experimentation. Soon after the experiment was over, the post-test was conducted for all the 120 students.

Development of Multimedia

Considering the objectives and hypotheses, and having exposure to Educational Technology, has developed and validated multimedia for learning History based on the ninth standard syllabus and the unit of 'Cultural Traditions of Tamil Nadu'. To prepare the multimedia, the investigator followed the five phases of the ADDIE model (analysis, design, development, implementation, and evaluation). The multimedia is explained with suitable graphics, animations. The instructional strategies will be chalked out in such a way that learners never lose interest. It presents the multimedia in a simple text with visuals and with relevant supportive headings as a Homepage related to the Cultural traditions of Tamil Nadu with the catering of multi-sensory experiences.

In the present study, the investigator decided to develop multimedia in Adobe Premiere Software based on the objectives. At this stage, the subtopics were formed and appropriate images, animations, and videos were collected. The topic "Early Tamil Society and Culture" from Lesson III and that units covered in Quarterly Portions of Tamil Nadu State Board in English Medium page numbers 44-65 was selected the topic and it is relevant to the ninth standard students and it suitable time in their curriculum.

According to Wang et al., (2003), a model of Multimedia was developed in such a way by using the above software which contains the Menus like, Homepage, Introduction, Key concepts, Examples, and Assignment. The script was carefully planned and prepared to adhere to the norms. The audio part of the script contains the matter that has to be orally explained as the sound effect. The visual part of the script shows all shots that will explain the processes involved in the selected topic. The PowerPoint slides are prepared a script with visuals and explanations which actualize the development of multimedia. Then the same was converted as a video file in the multimedia package which the first column contains the objectives part, the second one was the 'Cultural Traditions of Tamil Nadu' concepts with its videos, and the third one was the interactive questioning part which contains MCQ with 'right' or wrong responses of branched programming. In total fifty-five minutes running the multimedia package in History subject prepared for this study.

A good design of multimedia is necessary to follow the steps of multimedia development. The steps involved in developing the script are, mastering the subject, arrangement of the sentences, rearranging the work, drafting the full script with visual illustrations and added voice.

With the help of technical experts in the Computer Center, the editing was done by the investigators. The video coverage of the topic 'Cultural Traditions of Tamil Nadu' was done by the programmer. The multimedia package contains text, images, video, and animations. The investigator

prepared the video and animation to explain the concept according to the instructional objectives, and carefully edited it.

Results and Discussion

An achievement questionnaire was also prepared by the investigator related to the learning unit part and that was found out with face validity and reliability (0.86). It consists of 50 questions with Yes or No type in learning History. There is also a multimedia package that was prepared and stored in a single file as 'Cultural Traditions of Tamil Nadu'. The collected data were analyzed and interpreted with mean, standard deviation, and 't' test. The statistical treatment was given to test the hypothesis and to find out that, there is no significant mean difference in the achievement of History between the group taught through multimedia package material and the group taught through lecture method of teaching. The table-1 illustrates the analysis of pre and post-tests of control and experimental groups.

Table 1. Analysis on Pre and Post-Tests of Control and Experimental Group

Analysis	Group	N	Mean	S.D	't' value	p-value
Control	Pre-test	60	10.26	1.68	0.709 @	0.2396
	Post-test	60	10.44	1.02		
Experimental	Pre-test	60	10.40	2.66	4.023 *	0.00004
	Post-test	60	08.56	2.34		
Pre-Test	Control	60	10.26	1.68	0.345 @	0.3653
	Experimental	60	10.40	2.66		
Post-Test	Control	60	10.44	1.02	5.705 *	0.00001
	Experimental	60	08.56	2.34		

(@=No significant level, * =Significant at 0.05 level)

From the table-1, it can be found, in the control group of pre and post-tests mean scores of multimedia are 10.26 and 10.44 respectively. Likewise, the test's control group standard deviations are 1.68 and 1.02 respectively. The table concluded that the calculated 't' value of 0.71 is lesser than the table value indicates the acceptance of the hypothesis. For the pre and post-tests of the experimental group mean scores of multimedia are 10.40 and 8.56 respectively. Likewise, the experimental group standard deviations are 2.66 and 2.34 respectively. The table concluded that the calculated 't' value 4.02 is greater than the table value indicates the rejection of the hypothesis.

As per the table-1, that students in their pre-test performance which show the equivalence of both the groups in their entry behavior as far as their performance in history learning was concerned, both the control and experimental group do not differ. For the post-tests of control and an experimental group of multimedia package learning in history, concluded that the calculated 't' value 5.71 is greater than the table value indicates the rejection of the hypothesis-1. Hence it is concluded that there is a significant difference between post-tests of the control and experimental group. The experimental group's performances of mean scores are more than control group indicates their learning level in History. From these two results, it is inferred that multimedia package integration into history learning

was found effective.

As per hypothesis-2, 'There is no significant difference between the multimedia package learning in history concerning their experimental and retention tests wise' analyzed in the following table-2.

Table 2. Analysis on Experimental Group Post-test Score and Retention Test Score

Exptl. Group	N	Mean	S.D	't' value	p-Value
Experimental Score	60	8.56	2.34	2.679 *	0.0041
Retention Score	60	7.42	2.32		

(* =Significant at 0.05 level)

For the post-test of the experimental and the retention group of multimedia, the package means scores are 8.56 and 7.42 respectively. Likewise, the experimental and the retention group standard deviations are 2.34 and 2.32 respectively. The table concluded that the calculated 't' value of 2.68 is greater than the table value indicates the rejection of the hypothesis. Hence it is concluded that there is a significant difference between the post-tests experimental group and the retention group.

Conclusion

School education should make skillful and effective students (Selinger, 2004). They should give sufficient learning experience to the students and training and need to teachers handling technology equipment. They should conduct special programs on preparing a multimedia package for social sciences for all medium students and teachers. Anurag Saxena (2011) explains the multimedia products are more effective in classroom situations that contain music, information, and images with accurate texts. For the multimedia package development aspect each one is used to develop the following phases of the ADDIE model viz., analysis, design, development, implementation, and evaluation (Prensky, 2006). A digital text and images designed for display on web pages which is suitable for a particular audience are called a 'multimedia package'. E-learning is a process and a multimedia package is a product.

With multimedia package materials, the learner and teacher will facilitate a learning environment (Cady et al., 2011). The virtual realities like new methods are innovative which were attracted by students and teachers like multimedia and e-content method of teaching (Nachimuthu et al., 2019). This experimental study proved that the multimedia package enhances the achievement of the ninth-standard students in History classrooms. It is observed that the ninth standard students' academic achievement on 'Cultural Traditions of Tamil Nadu' had improved learning significantly when compared to traditional instruction.

With the visual help that PowerPoint provides, it is easier to set a theme and reassure that the performance of the presentation is running smoothly. Also, by the variety of tools offered, the presenter can decide which part of the presentation is worth focusing on (Senthilkumar, 2017). This can be facilitating students to master the concept of their subject at their own pace, which also demands that teachers create such Electronic learning digital applications that can be used in their institutions and to

enable students to access them in their leisure time.

The application of the multimedia package in the teaching-learning process will have a significant impact. As technology becomes user-friendly the creation of multimedia packages by the teaching community will be much easier. The multimedia package is user-friendly interface; meaningful and ease of use; interactivity; self-paced interaction and cost-effectiveness with greater efficiency.

Bibliography

- Anita Rastogi & Babita Parashar (2009). Effectiveness of e-Content in learning concept and Teaching skills, Indian Journal of Teacher Education, ANWESHIKA, NCTE, New Delhi, 6(2), 57-74.
- Anurag Saxena. (2011). Pedagogical Designs for Generation of Contents for the Community, Community Development Theme, Indira Gandhi National Open University Publications, New Delhi. 01-03.
- Cady, J., Kristin, T., & Rearden. (2011). E-Learning Environments for Math and Science Teachers, Journal of curriculum and instruction, 5(1), 17-33.
- Champoux, J. E. (2005). Comparative analyses of live-action and animated film remake scenes, Educational Media International, 42(2), 133–155.
- Mayer, Richard, E. (2012). Multimedia Learning, Cambridge University Press, Second Edition, New York, 126-130.
- Nachimuthu, K. (2015). Impact of Multimedia effect on Science Classrooms, APH Publishing Corporation, New Delhi, Journal of Education in Twenty-First Century, 2(1), 274-280.
- Nachimuthu, K.(2018). The Effectiveness of e-Content in Botany, International Journal of Research in Humanities, Arts & Literature, 6(9), 251-256.
- Nachimuthu, K. & Revathi, A & (2019). The need of Virtual Reality to enrich Teacher Education, Shanlax International Journal of Arts, Science and Humanities, April-2019, 6(4), 14-21.
- Prensky, M. (2006). Don't bother me Mom-I'm learning, St. Paul, MN: Paragon House, Minnesota USA., 14-18.
- Selinger, M (2004). Cultural and Pedagogical Implications of a Global e-learning Programme, Cambridge Journal of Education, 34(2), 213- 229.
- Senthilkumar, N.(2017). Functional brain correlates of risk for major depression in children and young adults, International Journal of Engineering Technologies and Management Research, 4(11), 25-35.
- Vijayakumari, G. (2011). Role of Educational Games improves meaningful learning, I-Manager Pub, Journal of Educational Technology, 8(2), 08-11.
- Wang, J & Hartley, K. (2003). Video Technology as a support for teacher education reform, Journal of Technology and Teacher Education, 11(1), 105–138.
- Singh, Shiba, and Apurva Srivastava. "Effectiveness of Multimedia Presentation on Achievement of B. Ed Students." IMPACT: International Journal of Research in Humanities, Arts and Literature (IMPACT: IJRHAL) 6.5 (2018) 421-428
- Kumar, R. Pranava. "The Need for Innovative Tools in Multimedia Approach to Reach the Unreached In

- Social Awareness Programs." *International Journal of Communication and Media Studies (IJCMS)* 9.2 (2019) 37-50
- Gueaieb, Wail, Sasha Milyakina, and Zul Aizam. "Multimedia Management in the World of English Erudition." *BEST: International Journal of Humanities, Arts, Medicine and Sciences (BEST: IJHAMS)* 3.11 (2015) 17-22
- Loke, K. B., and X. L. So. "Awareness of Seafaring Career among Secondary Students in Peninsular Malaysia." *International Journal of Business and General Management (IJBGM)* 8.1 (2019) 19-26
- Chan, Hoi Wing. "Participating in Extra-Curricular Activities and Fostering Greater learner Autonomy Among Highly Proficient Secondary students In Hong Kong." *International Journal of Educational Science and Research (IJESR)* 8.2 (2018): 33-40.
- Venkataraman, S., and S. Manivannan. "Mental Depression of Higher Secondary Students." *International Journal of Environment, Ecology, Family and Urban Studies (IJEEFUS)* 8.3 (2018): 51-60.