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EFFECT OF ONLINE ENGLISH RESOURCES ON ACADEMIC ACHIEVEMENT AT SECONDARY LEVEL

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ABSTRACT

Progress in this world can be made by raising quality of education. Academic activities are shifted to online resources which are the only tools for students to continue their educational process. Government of Pakistan has taken an initiative to raise the standards of education by introducing the use of technology in the government institutions of Islamabad. The objective of this study was to find the effect of online English resources on academic achievement at secondary level. A quasi-experimental design was used. The design of study was pre-test, post-test, non-equivalent control group in which two groups were selected, one was controlled group and other was experimental group. Experimental group was given a treatment of six weeks by using technology which included multimedia, videos in English and Urdu languages, quizzes, and games. Convenience sampling technique was used for the selection of sample. A sample of 60 students of grade 10 was selected. Each class of experimental group and controlled group comprised of 30 students. English was selected as a subject of study. Instrument used for collection of data was pre-test and post-test. Same test was used for pre-test and post-test. The test was validated by the experts of Allama Iqbal Open University Islamabad, Pakistan. The reliability of test was determined by Kuder Richardson's (KR-21) formula. The research tool was pilot tested on random population other than sample of study. Kuder Richardson's value calculated by using SPSS was 0.748. The results of experiment showed that the mean scores of students in post-test which were taught by using technology were significantly higher than those taught by using traditional method. Adequate access to technology should be provided to teachers and students. Proper training and refresher courses of teachers should be organized time to time. It was recommended that for educational purposes technology should be used at government level in all government institutions in an effective way.

Keywords: Online English resources, academic achievement, secondary level.

Introduction

With advancement of Information Technology, the world has become a global village. According to Dludla (2016) half of the population in the world has been using internet, which is about 3.5 billion people. This century is regarded as an era of technology because it has brought revolutionary changes in every field of life like medicine, engineering, telecommunication, and business. No one can deny its importance in the field of education too. For the development and progress of society, the education is very essential. To make progress in this world the quality of education must be raised. E-learning is an emerging concept in education. Education has shifted from board to multimedia system (Ahmed & Ahmed, 2020). The use of technology in education has completely revolutionized the way of learning process as well as teaching methodologies. Textbooks are now being digitalized by making the knowledge assessable, searchable, and

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reachable only through a few computer commands. Student's evaluation process has undergone significant changes which not only reduce the teacher's effort but also analyze the student's progress statistically and then adopt the teaching strategy according to the student's response and performance. In this rapid growth of computer age, the interest of students cannot be captured only by using traditional lecture method of education. Students learn more in less time by using technology (Carstens & Mallon, 2021).

The closure of schools and staying at home has affected the learning process of students. Technology is the only tool which can replace the school. In this tough time, online resources are good supplement for our students to continue their educational process in a smooth way. Different countries have adopted various technologies in education sector according to their requirements, culture, and level of teaching and student's expertise. In Pakistan, many schools are finding it difficult to adopt the technology due to various reasons which include lack of teachers training and motivation. The integration of technology can make traditional methods much more effective as well as interesting. Involvement of Information Technology in traditional method does not eliminate the significance and the need of teachers. It just changes the role of teachers from instructor to facilitator. Students still need to be guided but the source of knowledge does not remain the teacher and the outdated curriculum. This technique not only creates interest of students in a topic but also save the time of students in getting right and up to date knowledge about the topic.

Statement of Research Problem

The commonly used method for teaching in Pakistan is lecture method. It is found that students are passive in this learning style. Now-a-days online technology is used for many educational purposes because it makes the work of students and teachers easier and is less time consuming. According to Ahmad (2020) the teachers in Pakistan avoid using technology due to lack of training. Teachers mostly focus on rote memorization of students for good results in exams. Students cram the topics to get good marks or to pass the exams without having understanding about topic (Ahmad, 2020). There had been dire need to blend technology in an effective way with traditional method of teaching. In government institutions of Pakistan, the use of technology is very rare so there is a need to transform digital education and to enable the student at secondary level to study according to their personal needs. To improve the conceptual learning of students, different innovative and appropriate technologies might be used. This research was conducted to explore the effects of online English resources on academic achievement at secondary level in schools of Islamabad.

Delimitations

This study was delimited to:

- Female students of class 10 under Federal Board Institutions using technology in their schools at secondary level.
- Topics selected for the purpose of research were "Quadratic Equation" and "Matrices and Determinant". Due to time constraint, it is not possible for

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researcher to cover the whole content of book so two chapters which were from chap 5 and 6 of textbook were delimited for the purpose of research.

- Lessons, quizzes, videos, and games given on online website which were align with Federal Board syllabus were used for treatment.
- Technology used for the purpose of research comprised of multimedia, laptop, and clickers. Technology was used at least twice a week.
- Experimental class was selected conveniently keeping in view the availability and willingness of the head of institution. The timetable of researcher and school was not disturbed.
- Online English resources like online videos, online quizzes and online games were used.

Objectives of the Research

This research was conducted to achieve following objectives:

1. To find out the effect of online English resources on Knowledge of students at Secondary Level.
2. To find out the effect of online English resources on Comprehension of students at Secondary Level.
3. To find out the effect of online English resources on Application of students at Secondary Level.

Research Hypotheses

Hypotheses are used for testing purpose. After the collection of data these are accepted or rejected. Null hypotheses are as important as alternate hypotheses because the directions are unknown unless we analyse the data. Null hypothesis is very useful to conclude the relation between two phenomena. We state null hypotheses as the way things currently exist (Sapkota, 2021). To achieve the above-mentioned objectives following hypotheses of research were formulated

H_{01}: There is no significant difference between mean scores of experimental group and control group on academic achievement in knowledge of students at secondary level.
H_1: There is significant difference between mean scores of experimental group and control group on academic achievement in knowledge of students at secondary level.
H_{02}: There is no significant difference between mean scores of experimental group and control group on academic achievement in comprehension of students at secondary level.
H_2: There is significant difference between mean scores of experimental group and control group on academic achievement in comprehension of students at secondary level.
H_{03}: There is no significant difference between mean scores of experimental group and control group on academic achievement in application of students at secondary level.
H_3: There is significant difference between mean scores of experimental group and control group on academic achievement in application of students at secondary level.

Significance of the Study

1. Online technologies are being used in many countries. The current study may prove helpful for policy makers and curriculum developers to introduce the use of

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technology in educational institutions at secondary level. The current study may be helpful for policymakers and curriculum developers to introduce the content using technology in curriculum at secondary level and may enhance their understanding of how to improve this content to make it more practical for student in future. Guidelines may be taken from the results of study in policy making. Ministry of education and federal Directorate of Education may contribute fundamentally towards the use of technology at secondary level.

2. Federal Directorate of Education should collaborate with teachers training department and supplementary readymade material and training materials for teachers may be prepared and teachers training workshops may be organised on this theme. Moreover, school administration and schoolteachers may also seek guidance from this study to improve their performance in using English technology in better way. The goal of this study is to introduce English technology in school settings. It is also significant for teachers because teachers use online resources to increase the motivational level and interest of students. The results of the study would be beneficial for English teachers, students of Federal Board and parents. The results of the study would assist teachers and students, about the usefulness of online system.
3. The results would be beneficent for making improvements in the education system too. In the field of teaching and studying English this study would bring positive change and is also beneficent for researchers. Other research can be conducted on implementation of technology, issues in implementation of technology in our educational setup, problems faced by teachers and institution using technology. Before the implementation of technology and the use of theses online lectures in other schools at large scale, it is better to conduct research on a sample of students to get the drawback and feedback of students to make improvement in developed lectures and in the use of this system. If it is implemented in many schools at large scale then it would become difficult to make changes in the system and to remove the hurdles faced by the teachers, institutions, and students. Online quizzes help the teachers to take and check the test of many students at a time. The results compiled by computers are more accurate and reliable. Teachers can keep the record of many tests at the same place easily.

Literature Review

The report of European commission 2013 showed that Norway was one of those countries where most online educational system was used. The government of Norway spent 60 % more money on each student of upper secondary education than the other countries in the Organization for Economic Co-operation and Development (OECD). But the performance of students in English and science was not much better than any of OECD. One to one laptop program was started for the upper secondary education in Norway. Research was conducted by

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university students to analyze the effects of this program. The results showed that no significant effects of online resources were found on the academic performance of students. The Program for International Student Assessment (PISA) was conducted in seventy countries. The results of program showed that the students of those countries which invested large revenue on Information and Communications Technology (ICT) did not perform well than the students of other countries Al-Hariri, M., & Al-Hattami, A. (2017). According to Cuncic, A. (2021) presentation skills were of great importance in science education. The traditional classroom settings fell short if the number of students in class exceeded.

According to Tso the use of blended mode was a better option. In article, the blended learning was implemented to teach the presentation skills of university students. The researcher shared the presentation skills by using video lectures assessed with online learning and gave the comparison of blended mode with traditional way of teaching. According to researcher the facial expressions and vocal skills could not be properly observed in classrooms with large number of students. But using videos this effect could be minimized. The freeze and replay functions helped learner to watch the demonstration closely Cuncic, A. (2021). According to Fabian, K., Topping, K. J., & Barron, I. G. (2018) blended online learning was the prominent variation in blended learning. Face to face learning could be enhanced by adding the blend of synchronous learning with asynchronous learning. Synchronous learning could be added through web conferencing. Appropriate software, proper training and technical support was required for effective blended online course. Online activities should be affordable and under the capacities of instructor. Activities should satisfy the needs and preferences of learners Fabian, K., Topping, K. J., & Barron, I. G. (2018).

Skills like ICTs, information processing skills and critical thinking are necessary for the students of present century. These skills and competencies would be added in students through integrating online resources in the learning of students. Young people use the online resources in responsive and sensitive way. Technology should be used to motivate them to use it for learning purpose. Balance should be kept in textual and visual learning material according to the age and needs of learners. Professional and creative teacher motivated the student according to the individual characters of students. He suggested interesting and challenging activities to his students to increase the level of their learning. Adequate academic policies should be made by the government the use of technology resources in the field of education Basri, W. S., Alandejani, J. A., & Almadani, F. M. (2018). To search a topic effectively is a big challenge for students. Students mostly did not know how to appropriately access the internet source, and about the authentication of source. Interpretation of any online source was also a big problem for students Basri, W. S., Alandejani, J. A., & Almadani, F. M. (2018).

Research was conducted by Dludla, N. (2016) in Turkey on a controlled group and experimental group of grade 6 students in 2014/15. According to him effective learning outcomes on the academic achievement were obtained through the blend of different online learning. The experimental group was taught by using blend of online web technologies like

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video conferencing, discussion blogs and learning management system. Controlled group was taught by using traditional method of teaching. The researcher had to select the content effectively from curriculum because to design the effective course the proportion of methods and techniques used should be of great importance Dludla, N. (2016). According to Fabian, K., Topping, K. J., & Barron, I. G. (2018) implementation of new technology was a challenging task because of limited resources of early adopters. According to Pierce, D. (2017) there should be flexibility in learning. Students had access to full time, part time online learning. Spreadsheets and graphs could be created to analyze the English data of lab work. Proper instructions about safe online technology usage and its ethics were not given to teachers Pierce, D. (2017).

Malaysian ministry of higher education introduced online learning in their teaching and learning process. They designed online learning program for less proficient students like students who were less motivated, hesitated students and students who faced difficulty in learning with online technology. The learning styles of students were identified and then a supportive learning system was created using online technology. Students with low qualification and repeaters had given one semester to boost their program. The findings of the research showed that average proficient students could quickly adopted online learning approach. Their motivational level increased. They became caring and helpful towards other students. A good learning system provide many opportunities to students. Online learning modules provided easy access to the course material, provide instant feedback and helpful environment Lynch, M. (2017).

No one can progress at the same rate until they learn all the content. Before going to the new instructional material student got support and time, they need to become proficient in academic content. The implementation plan for using online technology should be developed effectively because it built the path before passing through it. Budget, resources, use of space and time are the key elements while developing framework Malik, M. Z. (2020). According to a report by Michael & Susan Dell Foundation majority of the teachers reported that they and their students faced many problems with online learning. Those issues were like technical issues, connectivity issues, software problems and insufficient bandwidth for running those programs. Many coordinators and teams of online learning sites provided help to administration and teachers Malik, M. Z. (2020). According to Grieve, D. (2018) if any institution adopted any new technology positive results would not emerge out immediately. Teachers and decision makers must be prepared to spend appropriate time and money to get the better results. It was difficult for educators to know that use of online technology had positive impact on the achievement of student Cuncic, A. (2021).

Method and Procedure

The details regarding method and procedure are as under:

Design

The experimental method comprised of different designs. Quasi-Experimental, non-equivalent controlled group design was used in this research. One class was selected as

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controlled group and other class as experimental group. Controlled group was given lectures by traditional method while experimental group was given online lectures. Total experimental period was 6 weeks in which 40 minutes were allocated for teaching session. Same pre-test and post-test of both the classes were taken based on results of post-test, the difference between the improvement of both groups was checked.

Sample

The sample of study was selected by convenience sampling technique. The researcher took Islamabad Model School for Girls (VI-X), Islamabad to conduct this study. The researcher selected this school due to the ease of using technology and ease of permission to conduct this research from concerned authorities of school. The researcher did not disturb the timetable of respective school so a class of 30 students was selected as experimental group for the purpose of this research.

Instrument

The instrument used for the collection of data was pretest and posttest. Quasi experimental design enabled researcher to explain the findings of results with accuracy. The researcher drew useful consequences for pedagogy (Thomas, 2021). The achievement test was developed comprised of questions and MCQs from textbook to measure the academic achievement in math. Same pre-test and post-test were used to get meaningful results to compare the results before and after treatment to find the effect of online English resources on academic achievement. The achievement was in the form of scores obtained in the context of assessment of knowledge, comprehension, and application. Pre-test and post-test selected for the purpose of this research was same.

The experimental group was taught by using technology. Online quizzes, games, and videos in both Urdu and English languages were used to deliver the lecture to experimental class. Controlled group was taught by traditional method of teaching i.e., lecture method. The timetable of respective school was not disturbed by researcher. A class of 30 students was selected as experimental group for conducting the research. The academic qualification and previous examination results of school of both the teachers were almost same.

This research was conducted to explore the effect of independent variable i.e., technology on dependent variable academic achievement. Academic achievement was in term of knowledge, comprehension, and application. Test comprised of fourteen MCQs with four options each and seven solution base questions to measure knowledge, comprehension, and application. Test comprised of 35 marks, 10 marks for measuring knowledge, 10 marks for comprehension and 15 marks were allocated for application.

Data Analysis

In this chapter complete descriptive analysis with inferential statistics of hypothesis are stated. Descriptive analysis of scores of pre-tests and post-test taken for this research purpose and inferential statistics related to hypothesis are presented. Analysis of hypothesis presented in Chapter 1 are stated in this chapter. SPSS (Statistical Package for Social

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Sciences) was used for statistical analysis of data. To test null hypothesis paired sample t-test was used with 5 % level of significance.

This chapter describes complete analysis of pre-test and post-test scores of controlled and experimental groups. The data of this research was analyzed in the following ways:

- Comparison of pre-test scores of controlled and experimental groups.
- Overall comparison of pre-test and post-test scores of controlled and experimental groups in academic achievement.
- Comparison of pre-test and post-test scores of controlled and experimental groups in knowledge.
- Comparison of post-test scores of controlled and experimental groups in knowledge.
- Comparison of pre-test and post-test scores of controlled and experimental groups in comprehension.
- Comparison of post-test scores of controlled and experimental groups in comprehension.
- Comparison of pre-test and post-test scores of controlled and experimental groups in application.
- Comparison of post-test scores of controlled and experimental groups in application.

4.1 Comparison of pre-test scores of controlled and experimental groups

Table 4.1

Pre-test comparison of experimental and control groups

Groups	Mean (pre-test)	SD (pre-test)	*df*
Control	10.37	3.74	58
Experimental	10.33	3.89	

An independent sample t-test in table 4.1 shows that there is a little difference between pre-test scores of experimental and controlled groups. The pre-test scores of control group are (M = 10.37, S.D = 3.74) and of experimental group are (M = 10.33, S.D = 3.89).

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4.2 Overall Comparison of Pre-test and Post-test Scores of Both Groups

The overall comparison of mean scores of controlled group and experimental group is shown in table 4.2

Table 4.2

Overall Comparison of Mean Scores of Academic Achievement from Pre-test to Post-test of Control and Experimental Groups

Group	Variables	Mean (Pre-Test)	S.D (Pre-Test)	Mean (Post-test)	S. D. (post-test)	Mean difference	t-value	df	Sig. (2-tailed)
Control (N=30)	Knowledge	3.47	1.50	4.17	1.32	0.70	2.17	29	0.038
	Comprehension	3.63	1.50	4.43	1.87	0.80	2.15	29	0.040
	Application	3.27	2.35	4.50	3.46	1.23	2.60	29	0.014
Total		10.37	3.74	13.10	4.96	2.73	3.44	29	0.002
Experimental (N=30)	Knowledge	3.57	1.48	6.30	1.56	2.73	6.68	29	0.000
	Comprehension	1.87	1.48	6.73	1.86	4.87	12.33	29	0.000
	Application	4.90	3.21	9.63	3.87	4.73	4.99	29	0.000

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Total	10.33	3.89	22.67	5.70	12.33	9.34	29	0.000

Table 4.2 shows comparison of mean scores, standard deviation and gain scores of experimental group and controlled group. The result of the table shows that controlled group had improved significantly in knowledge, comprehension, and application. In the comparison of both groups, experimental group showed more significant improvement. Mean difference of experimental and controlled group shows that mean scores of experimental groups were high than that of controlled group.

Findings

From the analysis of data following findings were observed

1. It has been found from the results of study that the effect of online English resources on academic achievement in English has remarkable difference in the mean post-test scores of students in knowledge. Moreover, it has been found that mean post-test scores of experimental group are significantly better as compared to the mean scores of controlled group in knowledge of students at secondary level.
2. It has been found from the results of study that the effect of online English resources on academic achievement in English has remarkable difference in the mean post-test scores of students in comprehension. Moreover, it has been found that mean post test scores of experimental group are significantly better as compared to the mean scores of controlled group in comprehension of students at secondary level.
3. It has been found from the results of study that the effect of online English resources on academic achievement in English has remarkable difference in the mean post-test scores of students in application. Moreover, it has been found that mean post test scores of experimental group are significantly better as compared to the mean scores of controlled group in application of students at secondary level.

Conclusions

Conclusions made from the findings of research and from the analysis of data are as follows.

It is concluded that English program should be balanced. Such technologies and strategies should be use in English classrooms that strengthen teaching and learning. Having access to technology is not sufficient. Teachers and curriculum play vital role in using technological tools. Curriculum developers and teachers should be knowledgeable, well skilled and decision makes. They can determine when and how they effectively use technology to enhance the learning of students appropriately. Technology has positive effect on the academic achievement of students so improvements should be made in the use of technology at secondary level.

Recommendations

The following suggestions were made in the light of the findings and conclusions of this study.

1. This study reveals that for the effective use of technology teachers and students should be provided adequate access to instructional technology like different classroom hardware and different handheld devices which includes English application and software.
2. Federal Directorate of Education should collaborate with teachers training department and supplementary readymade material and training materials for teachers may be prepared and teachers training workshops may be organised on this theme.
3. Research should be conducted to find the effect of online resources on geometrical concepts.
4. The present study was conducted on secondary level. Further studies may further be carried out to middle and primary level after making changes.
5. The study may be replicated to find the effect of technology on higher level of affective domain i.e., analysis, synthesis, and evaluation.
6. Educational and professional development programmed of teachers should be continuously updated be providing adequate training, so they have adequate knowledge about technology and applications that support learning.
7. Curriculum developers and teachers should be knowledgeable, well skilled and decision makers. They can determine when and how they effectively use technology to enhance the learning of students appropriately.
8. Refresher courses for English teachers must be organized periodically by Federal Directorate of Education so knowledge of teachers get updated with time to time.
9. Government should take measures to build simple technology which students from low-income household and low-resourced schools can easily use to continue learning during this period and to take action to provide availably of data for educational purpose. Current online educational system is not enough to improve academic achievement of students. It is recommended that online technology should be improved, for example, mobile phone or offline videos should be introduced. Such offline apps should be used that facilitate students without the use of internet.
10. It is advised that online education support students by providing additional opportunities of learning. Online learning enhances motivation level of students, flourish students thinking abilities, support student's problem-solving skills, and enhance student's creativity so technology should be included in educational institutions.
11. It is recommended that research should be conducted on the challenges faced by the teachers and students in the use technology.

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