

# Efficacy of Cloud Computing Instructional Strategies in Enhancing Performance of B.Ed (Technology) Students in English Language in Sri Lanka

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## Abstract

The instructional strategies of Cloud Computing in Education have multifarious benefits to both teachers and students. They can employ Cloud Computing as a means of storing and sharing information valuable for teaching and learning and also for management. The major objective of the study was to assess the influence of Cloud Computing in Education in improving English among B.Ed students. In this study, 30 B.Ed bottom level performers were selected as sample by using purposive sampling technique. It was an experimental study with Single Group Pretest-Treatment-Posttest design. For implement in Cloud Computing Instructional Strategies, a Cloud Computing Based Instructional Package consisting of English language enhancement activities was developed and used as intervention. From the analysis of data by using "t" test, it was found that the Cloud Computing in Education has significantly enhanced English language of the B.Ed students in reading, speaking, listening and writing skills

**Keywords:** Efficacy; Cloud Computing; Strategies; English Language; B.Ed Students.

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## Introduction

Education plays a significant role in contributing to the economic growth of a country. Practices in education got reshaped with the advent of technology to suit the need present demands in education (Jazeel,2016). Mode of Classroom teaching got changed and that students have become more technology oriented. It is true that it has become necessary to change the mode of leaning teaching process on a par with the change of technology and its uses. One of the latest technologies used nowadays is Cloud Computing. By sharing Information Communication services in the cloud, educational institutions can outsource

noncore services and better concentrate on offering students, teachers, faculty, and staff the essential tools to help them succeed in leaning teaching process.

In Sri Lanka, students are encouraged to continue their study in schools. The various schemes make the students reach to the schools and colleges despite of lack of facilities, good teachers, lack of latest books and laboratory facilities. This situation seriously affects their studies most. One of the biggest challenges the government faces in providing education is the lack of infrastructure in schools and the maintenance of them. They spend a whipping amount of money on purchasing of a wide range of hardware and software requirements for leaning.

There comes Cloud Computing in Education which can help provide solutions to the above issues. It's a network of computing resources located just about anywhere that can be shared. By implementing cloud computing technology it is possible to improve leaning teaching process and manage the educational institutions easily

with a centralized system where all activities can be monitored from each and every aspect. It can also help gain quality education to every student without worrying for the infrastructure issue.

Cloud computing is an extension of the concept of distributed computing which is the process of running a program or application over many computers connected by a network. The Internet makes this process easily achievable even for the general user. It is Internet-based computing in which shared resources, software and information are delivered as a service that computers or mobile devices can access on demand. It is already used extensively in education and Google Apps, YouTube, Twitter and Drop box are cases in point.

Cloud computing in Education enables the users to control and access data via the Internet. All users of the institution are connected to the cloud. Separate login is provided for all the users for their respective work. Teachers can upload their class tutorials, assignments, and test papers on the cloud server which students will be able to access all the teaching material provided by the teachers via Internet using computers and other electronic devices both at home and college.

Given the trend of the use of technology in education, majority of educational services will be hosted in the cloud and the educational institutions will no longer host their own data centers with expensive hardware, power bills, staff salaries and computing. This will not only make it possible for students to use online teaching materials during class but they will also be able to access these materials at home, using them to prepare for and review their lessons. The use of cloud computing systems will reduce the cost of operation as the servers and learning materials are shared with other colleges.

A review of related literature indicates that there is only little studies found in the area of cloud computing in education. These studies did not specify the cloud computing instructional strategies in Sri Lankan context. Therefore, this study is an attempt to fill this gap and that the problem of the study is stated as "Efficacy of Cloud Computing Instructional Strategies in Enhancing Performance of B.Ed (Technology) Students in English Language in Sri Lanka"

#### *Objective of the Study*

To find out the effectiveness of Cloud Computing Instructional Strategies in enhancing English language among the B.Ed (Technology) students in Sri Lanka

#### *Specific Objectives of the Study*

1. To assess the effectiveness of Cloud Computing Based Instructional Package in enhancing writing skill in English among the B.Ed students
2. To assess the effectiveness of Cloud Computing Based Instructional Package in enhancing reading skill among the B.Ed students
3. To assess the effectiveness of Cloud Computing Based Instructional Package in enhancing speaking skill in English among the B.Ed students
4. To assess the effectiveness of Cloud Computing Based Instructional Package in enhancing listening skill among the B.Ed students

#### *Procedure for Investigation*

##### *Method of the Study*

The investigator used an experimental study adopting single group experimental design (pre-test treatment post-test) in this study.

##### *Population of the Study*

The population of the study constituted all the B.Ed (Technology) students studying in the Department of Education and Training, University of Vocational Technology, Ratmalana

##### *Sample of the Study*

For this study, a sample of 30 bottom level performers of students in English was selected by using purposive sampling technique from among B. Ed students.

##### *Tools for the Study*

1. Diagnostic Test (Achievement Test) for identifying the difficulties in leaning language skills and selecting sample for the study. This test consists of items evaluating the four skills of language.
2. Scale for validating Cloud Computing Enriched Instructional Package developed by the investigator.
3. Pre, post, and progressive tests (Parallel Achievement Tests) for assessing the effectiveness of Cloud Computing Instructional Strategies in enhancing of English by implementing the

##### *Intervention of the Study*

The Cloud Computing Enriched Instructional Package was used as intervention strategies to implement Cloud Computing Instructional Strategies. The Package consist of a series of

activities in English for enhancing all the four language skills with the support of cloud computing instructional strategies. The package was validated by two experts, Prof. P. Prema and Prof. S. Subbiah by using a validation Scale developed by the researcher.

*Procedure for the Study*

In this study, before the implementation of the package, a validated pre-test was administered for assessing the competency level of the sample in English. Then, the validated Cloud Computing Enriched Instructional Package was implemented for a period of 06 months. The modules in the package were implemented one after the other. While implementing the Cloud Computing Enabled Instructional Package, a progressive

test was administered after 03 months from the implementation of the package.

After completing the implementation of the package, a post-test was administered assessing the competency level of the sample in these skills: reading and writing.

The scores obtained by the sample of the study were analyzed by employing the following statistical techniques, Test of Significance - 't' test.

**Analyses Of Data**

*Research Hypothesis:*

There exists significant difference in mean scores of pretest and posttest in enhancing the performance of B.Ed (Technology) students in English.

From the table it may be inferred that, since the

**Table 1:** mean scores of pretest and posttest in enhancing the performance of B.Ed (Technology) students in English.

S. No.	Performance Test	N	Mean	Standard Deviation	't' value	Level of Significance
1	Pre-Test	30	32.2	5.16	7.2	Significant at 0.01 level
2	Post-Test	30	62.7	7.51		

**Table 2:** Mean Scores of Pretest and Posttest in Enhancing Performance of B.Ed (Technology) Students with Regard to Reading Skill.

S. No.	Performance Test	N	Mean	Standard Deviation	't' value	Level of Significance
1	Pre-Test	30	26.4	3.20	7.40	Significant at 0.01 level
2	Post-Test	30	66.8	3.10		

value obtained 7.20 is more than the table value 2.89 the difference in performance between the Pre-Test and Post-Test is significant at 0.01 level. Thus, the hypothesis of the Study has been confirmed. Thus, the Cloud Computing Enriched Instructional Approaches have enhanced the English language of the B.Ed students in Sri Lanka.

*Research Hypothesis:*

There exists significant difference in mean scores of pretest and posttest in enhancing the performance of B.Ed (Technology) students with respect to reading skill.

From the table it may be inferred that, since the value obtained is 7.40 more than the table value 2.89 the difference in performance between the Pre-Test and Post-Test is significant at 0.01 level. Thus, the hypothesis of the Study has been confirmed. Thus, the Cloud Computing Enriched Instructional Approaches have enhanced the reading skill in English among B.Ed students in Sri Lanka.

*Research Hypothesis:*

There exists significant difference in mean scores of pretest and posttest in enhancing the

performance of B.Ed (Technology) students with respect to writing skill.

From the table it may be inferred that, since the value obtained is 6.3 more than the table value 2.89 the difference in performance between the Pre-Test and Post-Test is significant at 0.01 level. Thus, the hypothesis of the Study has been confirmed. Thus, the Cloud Computing Enriched Instructional Approaches have enhanced the writing skill in English among B.Ed students in Sri Lanka.

*Research Hypothesis:*

There exists significant difference in mean scores of pretest and posttest in enhancing the performance of B.Ed (Technology) students with respect to speaking skill.

From the table it may be inferred that, since the value obtained is 4.12 more than the table value 2.89 the difference in performance between the Pre-Test and Post-Test is significant at 0.01 level. Thus, the hypothesis of the Study has been confirmed. Thus, the Cloud Computing Enriched Instructional Approaches have enhanced the speaking skill in English among B.Ed students in Sri Lanka.

*Research Hypothesis:*

There exists significant difference in mean scores of pretest and posttest in enhancing the

performance of B.Ed (Technology) students with respect to listening skill.

From the table it may be inferred that, since the

**Table 3:** Mean Scores of Pretest and Posttest in Enhancing Performance of B.Ed (Technology) Students with Regard to Reading Skill.

Sl. No.	Performance Test	N	Mean	Standard Deviation	't' value	Level of Significance
1	Pre-Test	30	32.2	4.2	6.3	Significant at 0.01 level
2	Post-Test	30	65.3	6.4		

**Table 4:** Mean Scores of Pretest and Posttest in Enhancing Performance of B.Ed (Technology) Students with Regard to Speaking Skill.

Sl. No.	Performance Test	N	Mean	Standard Deviation	't' value	Level of Significance
1	Pre-Test	30	32.2	4.2	6.3	Significant at 0.01 level
2	Post-Test	30	65.3	6.4		

**Table 5:** Mean Scores of Pretest and Posttest in Enhancing Performance of B.Ed (Technology) Students with Regard to Listening Skill.

Sl. No.	Performance Test	N	Mean	Standard Deviation	't' value	Level of Significance
1	Pre-Test	30	46.3	2.1	5.32	Significant at 0.01 level
2	Post-Test	30	66.8	3.2		

value obtained is 5.32 more than the table value 2.89 the difference in performance between the Pre-Test and Post-Test is significant at 0.01 level. Thus, the hypothesis of the Study has been confirmed. Thus, the Cloud Computing Enriched Instructional Approaches have enhanced the listening skill in English among B.Ed students in Sri Lanka.

## Discussion

From the analyses of the findings, it is revealed that the Cloud Computing Instructional Strategies have significantly enhanced the performance of B.Ed students in English in Sri Lanka.

The results of the study carried out by Jazeel et al., (2012) showed that the ICT-Assisted Learning Approaches were more effective than conventional methods. Similarly, Geetha et al. (2012) concluded that multi-media based approaches were more effective than conventional methods in developing written English for slow learners. The present study has highlighted the same results through Cloud Computing Enriched Instructional Package implemented.

In other studies, Bartscher et al. (2001), Bassett et al (2001), and Harrington et al. (1998) designed intervention programmes to improve the components of writing skills through remedial

packages. They found the remedial programs enhanced the spelling, grammar, punctuation, and vocabulary of the students. Similarly, Naeem (2007) found that 'A Suggested Call Program to Develop EFL College Learners' improved the components of writing mechanics (punctuation, capitalization and spelling) among college learners. The present study strengthens the findings of these studies in developing English through the intervention of Cloud Computing Enriched Package.

On the other hand, Yunus et al. (2013) recommends that the uses of ICT for teaching ESL is very low and that most of the teachers are still using the conventional methods in English classes. This implies that most teachers are not aware of the benefits of using Cloud Computing in their classes. To give awareness to the teachers, in this study, the appropriate Cloud Computing applications have been better utilized for improving the low performers in the English test.

From the review of many investigations, it was inferred that Cloud Computing in Education is mostly applied at the secondary level, college level and also in university level for not only teaching English, but also for teaching other subjects such as Maths, Science. This strategy has not been employed at the undergraduate level. Hence, the investigator experimented this new strategy in the B.Ed level and found that the performance of English was improved.



By and large, the various previous studies have strengthened the findings of the present study and vice-versa. Hence, this is an important attempt in use of modern technology in teaching of English.

### Conclusion

The cloud allows us to access our work anywhere, anytime and share it with anyone. It frees us from needing a particular machine to access a file or an application. The following conclusions have been made from the analyses of the results of the study.

The study carried out on Sri Lankan B.Ed students to find out the influence of Cloud Computing Enriched Instructional Approaches is an effort in improving English. This kind of innovative intervention will bring a revolution in language teaching and get rid of the hindrances for learning English.

Most B.Ed students face a lot of difficulties in English. Specifically they make more errors in these skills. The chances for committing these errors could have been attributed to due to the lack of opportunities provided to them for doing enough activities in their previous classes.

By using the Cloud Computing Enriched Instructional Approaches, these difficulties can be minimized. The reading, speaking, listening and writing skills of all the students can be enhanced further. Even the writing of bottom performers can be enhanced.

The influence of instructional strategies for English is improved when the instructional techniques and approaches are mingled with appropriate Cloud Computing applications to meet learning objectives in the classroom. It may be due to their multi-sensory nature of instructions.

The method of mingling instructional strategies with suitable Cloud Computing applications instead of conventional teaching methods can also help the students learn the difficult concepts in English grammar easily. The students can share their activities with others easily. This motivates the students to use cloud for their learning.

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