

Impact of Problem-Based Learning Method in the Subject English: A Teaching Approach

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ABSTRACT

The present study was designed to see the effect of Problem Based Learning Working out on the student's performance in the subject of English in terms of school context. Thirty students each were selected in the experimental and control group whose participants and their parents gave their consent to participate in the study and those whose parents did not give consent were assigned to the experimental group and control group respectively. Pre-test Post-test treatment design was applied and the observations were analyzed with the help of analysis of Covariance and found a significant improvement in the participant's scores of the Experimental group who were exposed to problem-based learning method than the control group Participants and confirmed the effectiveness of Problem Based Learning method.

INTRODUCTION

It is undeniable that the work of today's teachers requires a broad set of disciplines. To reach all students, you need to be able to adapt your teaching methods to suit their learning abilities. Teaching methods change and are challenged, and new methods are proposed as the pendulum oscillates between operant conditions and constructivist educational theories.

Again, part of the learning process revolves around the teacher, and students are only passive recipients of the information. In the student-centered learning process, the teacher is simply the assistant or guide and center of the modern education system. In active learning, learners learn at their own pace (Orhan and Rukhan, 2007). The idea that many adults come up with when thinking about their educational experiences is traditional guidance. Traditional guidelines were implicitly identical when defined simply as "lecturing and questioning methods" (Sangur and Tekkaya, 2006). Teachers provide information to students, including concepts, facts, terms, and diagrams. Class time is lecture-based and includes notes, usually using a blackboard or whiteboard. In a classroom manner, students are asked to answer questions asked by the teacher (Sangur and Tekkaya, 2006).

Definitions of problem learning vary widely due to differences in practice. According to Gijbels (2005), a key characteristic of problem-based learning is presenting students with “difficult problems” to initiate the learning process. Problem-based learning transforms students from passive information listeners to active free tutorials and problem solvers. It also shifts the emphasis of educational programs from education to education. This allows students to gain new knowledge without ever feeling bored when faced with a problem they need to solve.

Problem-based learning has a positive impact on several other traits, such as problem-solving, information acquisition and sharing of information with others, group work, and communication. Further problem solving is a deliberate and serious action that involves the use of several new methods, higher-level thinking, and systematically planned steps to achieve a set goal. The main purpose of this learning model is to obtain such information based on facts (Yuzhi, 2003; Mangle 2008). Furthermore, it has been argued that problem learning increases students' motivation to learn (Albanese and Mitchell 1993) and allows them to develop much more positive approaches to learning. Moust (2005) noted that problem learning studies have shown that problem learning has a positive effect on learning as well as learning outcomes.

The position of English in the curriculum at the elementary level does not seem to have received much attention in Govt. schools. Some states teach English from the first grade, while others teach it later. Dua (1994) states that the sooner a child becomes familiar with a language, the faster it learns to use it. Because everyone needs to speak English, it's best for children to start at a very young age, when there are no significant differences in language learning. Most children in our primary schools are not completely fluent in English or are exposed to very limited amounts of English, and there is irreversible impairment of students' ability to acquire English during a critical period or 5-6 years of language learning. Neha (2015) supports the fact that traditional education systems influence English language learning. It requires four skills: Learning, Speaking, Reading and Writing (LSRW). Students have been taught only reading and writing for a long time, and their listening and speaking skills have been ignored and neglected.

This is just as important as the other two skills. Learning is the only basic skill you can speak of. Language learning is only possible through active listening. These days, learning or teaching English is mainly about exams. The actual exam process is entirely about writing skills or memory tests. In general, English is taught and studied as one of the exam subjects. Teachers who teach English have always been under pressure from social and institutional authorities to complete their curriculum so that most students pass exams with good rates. The main concern of students is also getting grades to pass the exam. The use of modern and advanced technologies in the language learning process also affects language

acquisition, such as computer and Internet use, PowerPoint presentations, radio, TV, etc. (Bhushan R, 2011).

But it is still heartbreaking to know that Govt. school students lack the technical equipment such as language labs and sometimes even chalk, rags and blackboards. Problem-solving is an educational method that can be used to fulfil the educational role of learning basic facts, concepts and procedures, and goals for problem-solving (Wilson, 1993). Bretons (2010) argues that problem-based learning is superior to lectures in terms of students' perceptions of acquired and retained knowledge, problem-solving skills, and assessments.

Thus, the discussion above demonstrates, clearly, the importance of problem methods in the learning process for student learning outcomes. Therefore, this study aimed to investigate the effect of problem-based learning on student achievement in the subject of English in the school context with the following objectives and hypotheses.

OBJECTIVES

1. To study the difference between the participants of the experimental group and control in the subject English of their class on the Student Outcomes Questionnaire after the intervention.
2. To study the difference between the participants of the experimental group and control group on the subject of English in the final school examination of their class after the intervention.

HYPOTHESES

1. There would be a significant difference between the participants of the experimental group and the control group on their post-test scores in the Learning Outcomes Questionnaire of the subject English of their class after the intervention.

2. There would be a significant difference between the participants of the experimental group and control group on the post-test scores in the subject English of their class in their final examination of school.

METHODOLOGY

The following methodology was adopted to meet the objectives of the study:

Design of the study

In the present study, Pre-Test and Post Test Treatment Design was used to study the effect of Problem-based learning on students' performance in a school context, using the Experimental group and Control group.

Table-1

Design to See the Difference between the Performance of the Participants of the experimental group and control group on the Student Outcomes questionnaire of the subject English of their class after the intervention.

Group	Pre-test	Post-test
Experimental group	30	30
Control group	30	30

Table-2

Design to study the difference between the performance of the Participants of the experimental group and control group in the subject English of their class in the Final School examination after the intervention.

Group	Pre-test	Post-test
Experimental group	30	30
Control group	30	30

VARIABLES:

The present study involves the following variables:

Independent variable

- Problem-based learning

Dependent variables

- Student's performance in student's outcome questionnaire in the subject English of their class
- Students' Performance in the subject English of their class in their final school examination of the school.

PARTICIPANTS

In the first stage, 7th-grade students of Sr. Sec. School Sanjauli who gave their consent to participate in the study, sought parental consent to participate the study. After that, the students were divided into sections. Section A and Section B. Students who have parental consent to participate in the study were subjected to

Section "B", i.e., the experimental group was set to 30 people, and the group without parental consent was defined as section A, that is, the control group of 30 people. In section A, a regular teacher attended, the class and in section B, the experimenter herself attended, the class and the problem-based learning method was introduced for one year.

PROCEDURE

The first step was to have a healthy conversation and discussion with the students to get to know their opinions, problems, and other factors, as English seemed so difficult. With these factors in mind, strategies, tools and modules have been developed. Intervention in the experimental group.

In the second phase of the study, students in the experimental group, Section B, faced the experimenter in a problem-based learning manner during normal school operations, while the control group, Section A, used the same traditional method. Was executed. One year classroom system. The school's regular timetable hasn't changed.

4.2 TOOLS OF THE STUDY

In the present study, the following tools were administered to record the observations of the participants.

➤ **Student outcome Questionnaire**

To assess the participants before and after the intervention, a questionnaire in the context of standard 7 students' accepted learning outcome levels to test their "knowledge of English topics, especially the grammar part" (Part of speech, noun, adjective, article, verb, tense, composition and sentence: types and parts) was developed and tested.

➤ **Final school examination result**

In addition, the scores of subjects in the first term school examination were used as the pre-test scores, and the scores of the subject's English test in the second term school examination were used as the post-test.

Problem-based Learning Method (A Brief):

➤ **Problem-Based learning method Modules**

Problem-Based learning method modules have been developed on the 7th Standard English Language Curriculum of Government. Schools of H.P.

RESULTS AND DISCUSSION

1. Effect of Problem-Based Learning on the Students' Performance in the subject English of their class in terms of Students Outcome Questionnaire (SOQ).

To apply analysis of covariance on the pre-test and post-test scores of the participants, certain assumptions to be satisfied first, to test the control on the independent variable i.e., pre-test score of the participants and homogeneity of regression in the experimental group and control group and hence, the details are:

Table 1.1

The F Value Table shows the difference between the scores of the participants of the Experimental and Control Group in their Pre-Test Scores in SOQ.

source	Sum of squares	df	Means square	F Value
GROUPS (Pre-Test scores)	1.06	1	1.06	.025
Error	2450.53	58	42.25	
Total	17430.00	60		

Table 1.1 showed the F value of .025 which is not significant at a .05 level of significance indicating no significant difference between the participants of the experimental and control group on their pre-test scores i.e., the independent variables and covariate i.e., the outcome are not different across the group and satisfied the assumption to apply Analysis of Covariance.

Table 1.2

The F Value Table, shows the difference between the participants of the Experimental and Control Group, to Test the Homogeneity of Regression.

source	Sum of squares	df	Means square	F value
GROUPS*(Pre-Test scores)	44.43	1	44.43	1.22
Error	2033.48	56	36.31	
Total	43081.00	60		

Secondly, to test the assumption of homogeneity of regression, the result of the analysis showed the F value of 1.22 which is non-significant at a .05 level of significance indicating no difference between the subject effect on group time pre-test and thus satisfied the assumption of homogeneity of regression to qualify to apply analysis of covariance on the dependent variable i.e., Post-test scores of the participants with the covariate independent variable (See Table 1.2).

Table 1.3

The F Value Table shows the difference between the participants of the Experimental and Control Group in their Post-Test scores on SOQ after the intervention.

source	Sum of squares	df	Mean square	F value
GROUPS (Post-Test scores)	3709.52	1	3709.52	101.75
error	2077.91	57	36.45	
total	43081.00	60		

After applying analysis of covariance to test the significant difference between the experimental group and control group on the dependent variable i.e., post-test scores of the participants, the F value came out to be ($F = 101.75^{**}p < .01$) significant at a .01 level of significance (see Table 1.3) and the mean values of post-test scores of experimental group ($M=32.43$) and control group ($M=16.86$) revealing the significant rise (See Table 1.4) on the performance of experimental group participants than the control group. Hence **Hypothesis No 1** that is, “**There would be a significant difference between the participants of experimental group and control group on their post-test scores in the ‘Students Outcome Questionnaire of the subject English of their class is stand confirmed and accepted.**”

Table 1.4

Mean value table of Experimental and Control group based on student outcome in the subject English in their Post Test Scores after the intervention.

Mean Values (Post Test)	
Experimental Group	Control Group
32.43	16.86

Students' activities during the implementation of the Problem-Based Learning process such as reading, filtering and evaluating various sources of information, assessing other's opinions from different perspectives, applying abstract concepts to real situations, finding solutions to problems in groups it has made students more active and attentive towards their learning (Wood D. F. 2003). Further, Coe. and Jasien P. G. (1999) suggested that student activity in Problem-Based Learning provides a great opportunity for them to maintain their knowledge over the long term.

Walker & Lofton (2003) found that student's willingness to learn increased and their attitudes improved positively by benefiting from the problem-based learning model in teaching subject matters of analytic chemistry courses to students. Ram (1999) concluded that there were positive progressions in students' attitudes towards the mentioned course at the end of his study. Besides this study, students expressed that

they found the opportunity to see practical fields of fundamental chemistry knowledge by transferring this knowledge to problems in daily life. The West Africa Examination Chief Examiner report 2015 – 2017 reported that the persistent decline in students' performance in science was a result of a lack of resources such as teaching aids and a lack of content knowledge by teachers. Other factors include large class sizes, materials for the practical lesson, and ineffective teaching methods (Okeke, 2011). The results of the present study do find support for the earlier work done on Problem-Based Learning. Various researchers have reported successful implementation of the Problem-Based Learning program in classroom settings, and students' problem-solving skills and thinking abilities were improved (Aidoo, Boateng, Kissi and Ofori, 2016). Zhou, Huang and Tian (2013) concluded that task-based learning improves students' analytic skills and ability to personalized learning and hence, the required result.

2. The Effect of Problem-Based Learning on Student's Performance in the subject English in their class after the intervention in their Final school examination

To satisfy the assumption of the “control” on the independent variable i.e., pre-test score of students' performance in the experimental group and control group analysis of covariance was applied to see the difference between pre-test scores in the experimental group and control group and the F value came out to be insignificant (F = 1.273) at .05 level of significance indicating no significant difference between the participants of the experimental and control group on their pre-test scores(See Table 2.1).

Table-2.1

The F Value Table shows the difference between the participants of the Experimental and Control Group in their Pre-Test Scores in the subject English of their class.

Source	Sum of Squares	df	Means Square	F value
GROUPS(Pre Test scores)	633.750	1	633.75	1.273
Error	28863.900	58	497.65	
Total	154533.00	60		

Further, To test the assumption of homogeneity of regression, the result in table 5.5 showed the F value 1.470 again non-significant at a .05 level of significance indicating no difference in the between-subjects effects on group time pre-test and thus satisfied the assumption of homogeneity of regression to qualify for analysis of covariance to test the significant difference between experimental and control group on the dependent variable i.e., a post-test score of the participants in the subject English See Table 2.2).

Table-2.2

The F Value Table shows the difference between the participants of the Experimental and Control Group, to Test the Homogeneity of Regression.

Source	Sum of Squares	df	Means square	F value
GROUPS*(Pre Test scores)	84.682	1	84.682	1.470
Error	3226.396	56	57.614	
Total	185569.000	60		

After applying the Analysis of covariance to test the significant difference between the experimental group and control group on the dependent variable i.e., post-test scores of the participants, the F value came out to be significant ($F= 24.412$ $p<.01$) (See Table 2.3). The mean values of post-test scores of the experimental group ($M=59.90$) and the control group ($M=46.06$) reveal a significant improvement in the performance of the participants of the experimental group than the performance of the participants of the control group (See Table 2.4) revealing a significant improvement in the performance of the children in the experimental group.

Hence Hypothesis no 2 i.e., There would be a significant difference between the experimental group and control group on the post-test scores of participants of the experimental and control group in their final school examination is stand confirmed and accepted.

Table-2.3

The F Value Table shows the difference between the participants of the Experimental and Control Group in the Post-Test scores in their final school examination.

Source	Sum of Squares	df	Means square	F value
GROUPS (POST-TEST SCORES)	1418.052	1	1418.052	24.412
Error	3311.078	57	58.089	
Total	185569.000	60		

Table 2.4

Mean value table of Experimental and Control group based on final exam performance in the subject English of their class after the intervention.

Mean Values (Post Test)	
Experimental Group	Control Group
59.90	46.06

The results of the present study do find support in the work of earlier studies in the field. Gallagher and Stepien (1995) compared student scores in a Problem-Based American studies course with those of students in a traditional class. The Problem-Based Learning students scored higher on a multiple-choice test than traditionally instructed students. According to Boaler (1997), students that enrolled in problem-based learning attained higher grades in national examinations in the UK and a significant number of three times students taught through a Problem-Based school passed the national standardized examination than traditional school students. These findings confirmed that problem-based learning has a significant impact on students' problem-solving skills and attitudes towards learning.

In an action research study with gifted high school students, students tended to retain information presented in Problem-Based Learning units better than information from traditional units Dods (1997). Aaron, Crocket, Morrish, Basualdo, Kovithavongs, Mielke and Cook (1998) found higher examination scores in students who enrolled in Problem-Based Learning class as compared to the traditional method and recommended that the type of questions asked should relate to the concept and have dispersed knowledge. Gallagher, Stepien, Sher and Workman (1995) reported that Problem-Based Learning was successful in teaching ecosystems in fifth-grade science and had higher performance in the test results as compared to traditional instruction. Ljung and Blackwell (1996) found a positive transfer of knowledge after enrolling in a combination of the problem-based and traditional model programs. According to Boaler (1997), students that enrolled in problem-based learning attained higher grades in national examinations in the UK and a significant number of three times students taught through a Problem-Based school passed the national standardized examination than traditional school students. These findings confirmed that problem-based learning has a significant impact on students' problem-solving skills and attitudes towards learning.

Thus, the result of the present study clearly showed a significant improvement in the participants of the experimental group in their subject English of their class in terms of the Student Outcome Questionnaire and final school examination of the school that participated in the Problem-Based Learning Program in the experimental group than the control group.

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