

## **Second language learners' achievement in literature through problem-based learning method**

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*Abstract: Teaching literature to L2 learners demands methodological training and innovative strategies to bring effectiveness in learning. Problem based instructional strategy is being widely used to determine its impact on learner's achievement, retention, attitude etc. This paper explores the impact of Problem based learning method (PBLM) and Traditional lecture method on achievement of L2 learners in the learning of literature at grade XII in Pakistan. An experiment was conducted on 67 students, 34 for control group and 33 for experimental group, of Federal Government postgraduate college H-8 Islamabad. Pre-test and post-test design was used to compare students' achievement. Grade-XII English book was selected for lessons to be taught by PBLM and traditional lecture method. The pre-test and post-test was administered according to the paper pattern of Federal Board of Intermediate and Secondary Education Islamabad. The collected data was analyzed statistically. The results showed that there was a significant difference between the achievement score of experimental group and that of the control group. The result also showed that Problem based learning method was more effective in enhancing achievement level of the students and helpful for teaching literature to L2 learners. It was recommended that PBLM may be adopted for literature teaching at XII grade level.*

*Keywords: second language acquisition, literature learning, problem-based learning, achievement in L2*

### **I. Introduction.**

Twenty first century is looked upon as the age of global changes and challenges in every sphere of life, particularly in the arena educational system of a country. The emerging paradigms of telecommunication and digital technology are broadly influencing upon the teaching learning process all over the world. The rapidly changing present world demands people to be multi-tasked, equipped with the skills of collaboration and flexibility, and have the ability to process information. Problem solving, goal setting, and creative thinking are considered specific skills required for the twenty first century workforce. For Jeffrey and Woods (2003, p.122) education needs to foster creativity that is to encourage flexibility, innovation and, "positive identities."

Similarly Albrecht (2002) regards training of human brain for better creative products as the need of the time. The situation justifies the need for education to be reconstructed, theory to be redesigned, and strategies to be reconsidered. In this regard Feden and Vogel (2003, p.16) are of the opinion that "we have a new set of lenses through which we can view teaching and

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learning. They are provided by cognitive psychology.” Thus teachers need to update their knowledge of cognitive psychology and receive necessary training in cognitive teaching methods. They need to re-orient their teacher- centered classrooms to student- centered and give students their legitimate autonomy. Students need to be engaged in practical projects, active manipulation of material, processing information, asking questions, making queries, solving open-ended problems, and generating their responses rather than giving right answers.

Duch (2001) lists five characteristics of good PBL problems:

1. An effective problem must engage student’s interest and motivate them to probe for deeper understanding of the concepts being introduced.
2. Good problems require students to make decisions or judgments based on facts, information, logic, or rationalization.
3. Cooperation from all members of the team should be necessary to effectively work through a problem.
4. The initial questions in the problem should have one or more of the following characteristics so that all students in the groups are initially drawn into a discussion of the topic: (a) the questions should be open-ended, not limited to one correct answer; (b) the questions should be connected to previously learned knowledge; and (c) they should incorporate controversial issues that will elicit diverse opinions.
5. The content objectives of the course should be incorporated into the problems and the questions should challenge students to develop higher order thinking skills such as analysis, synthesis, and evaluation.

Camp (1996) suggested that the “pure problem based learning” involves active learning, problem centered, student centered, integrated, collaborative, interdisciplinary, makes use of small groups and operates in clinical settings. According to Torp (1995) problem based learning is an instructional approach built around an ill-structured problem which is messy and complex in nature; requires inquiry, information gathering, and reflection; is changing and tentative; and has no simple, fixed, formulaic, “right” solution.

Stepien (1993), Duch (1995) and Edens (2000) stated three basic stages of problem based learning that is, confronting and defining the problem; accessing and investigation; and synthesis and performance.

Jones (1996) describe that the most decisive aspect of PBIS is the development of appropriate questions. He further emphasized the importance of appropriate assessment of the performance of students. According to him the academic achievement of the students in lecture-based instructional strategy is assessed through standardized test but in PBIS more appropriate assessment methods and techniques like written exams, practical exams, self assessment, structuring of concept maps and oral presentations are required. According to Norman and Schmidt (2000) PBIS program improved the motivation of the students. Vernon and Blake (1993) found that the students demonstrated more satisfaction to their educational achievements when they are practiced with PBIS. Problem-based instructional strategy (PBIS) enhances relocation of concepts to new problems, concept assimilation, inherent interest in learning, and learning skills (Schmidt, 2000).

Dods (1997) studied the effectiveness of PBIS in elevating acquisition of knowledge. He selected 30 students from biochemistry course at the Illinois Mathematical and Science Academy. The content of this course was covered through PBIS, lecture method and an amalgamation of both the PBIS and lecture method. Data were collected by using pre-test and

post-test to examine the student's depth of understanding. It was found that although content was delivered easily through lecture method but PBIS is more effective in promoting complete understanding of the key concepts of biochemistry content.

In Pakistani universities and colleges, it is observed that the teaching/learning situation of literature has not significantly changed. Majority of the teachers are committed to traditional methods of teaching literature. The traditional methods of teaching require teachers of literature to impart a vast amount of information to students who are expected to accumulate the imparted information and reproduce accurately in examination. There is hardly any research and effort to apply cognitive teaching strategies and techniques to teach literature in order to develop students' thinking and other cognitive processes such as perception, memory, retrieval and transference. As a result, though students successfully get a degree at the end of the courses, they remain unable to process and manipulate information, synthesize and evaluate ideas, make connection between classroom learning and the practical world outside, or generate personal and innovative ideas.

Several studies on problem-based learning method have proved that the students showed better performance in problem based learning settings. Albanese, M., and Mitchell (1993) investigated the overall effects of problem-based instruction. The question guiding this meta-analysis was "What does literature tell us about outcomes and implementation issues related to problem-based instruction". Similarly, Johnson, E. Herd, S. Andrewartha, K. (2002) in their study "Introducing problem-based learning into a traditional lecture course" assess student satisfaction in a course that used a combined problem-based learning and lecture format.

Breton (1996) conducted a study which analyzed two different teaching methods in an accounting theory class. Two classes of students, one traditional and one PBL were compared to determine differences in knowledge acquisition and aptitude for problem solving. The present study was conducted in Pakistani context where the culture of PBL is not common in schools and colleges.

## **II. Purpose of Study.**

The purpose of this study was to investigate the effects of the Problem based learning method of teaching on achievement of grade XII College students in English Text-book.

### **Research Questions**

The following research questions were designed:

- i) Is there any significant difference between the achievement of students who got and did not get the Problem based method of teaching according to their pre test and post test results.
- ii) Is there any significant difference between the achievement of High achievers who got and did not get the problem based method of teaching according to their pre test and post test results.
- iii) Is there any significant difference between the achievement of Low achievers who got and did not get the problem-based method of teaching according to their pre test and post test results.

### III. Methodology.

The sample of this study consisted of 67 male students of grade XII of Govt. Federal Government Postgraduate College, Islamabad, Pakistan. As the college was a public sector institution located in capital, students from various socio-economic backgrounds from different parts of the country were eligible to join it. The students had a very rare experience to be taught by problem based learning method because almost all the public sector educational institutions used lecture method of teaching. The students were between the age of 17 to 19 and have completed their English text-book. Sample students were divided into two groups i.e. control group and experimental group. Control group comprised of 34 students and Experimental group of 33 on non-equivalent basis. The class sections were allotted randomly to control and experimental groups. To measure the achievement level of students, two different types of tests were developed by the researcher which were administered after validation. For this purpose twelve lesson plans of English text book were selected. The students of experimental group were involved in different activities and problems. After collecting the data, the responses were scored; means and t-values were calculated for determining the significance. A quasi-experimental research design (Pretest-Posttest Non-equivalent Group Design) was employed to measure differences in Achievement. In this design, subjects were randomly assigned to experimental and control groups.

On this pre-testing the students were divided into two groups' i.e. experimental groups and control groups. The experimental group was taught through problem based learning method while the control group was taught through traditional method. Their level of achievement in PBL after grouping was measured as usually measured in the pre-testing. The test for achievement was conceptual in nature. These scores were used as post-test scores. Twelve lessons were taught in the pre-testing and similarly 12 lessons were taught in the post testing. But these lessons were different from the pre-test.

The split half method (odd-even) was used to test the reliability of post-test scores obtained by the students who formed the sample of the study. The coefficient of reliability was determined through the use of Spearman Brown Prophecy formula estimating reliability from the comparable values of the post- test. It was found to be .79.

### IV. Analysis of Data.

The data collected through achievement tests which were conceptual in nature, were statistically analyzed. A pretest and posttest on English text-book was constructed and administered. The analysis and presentation of data are given below:

#### Hypothesis # 1

There is no significant difference between the Achievement of control group and experimental group on pre-test.

**Table 1. Calculation of t-test.**

Group	N	$\bar{X}$	SD	t-value
Control	34	9.59	6.106	0.008
Experimental	33	9.58	6.515	

P > 0.05; df = 65

Referring to Table 1, “t” with  $df = 65$  and  $\alpha = 0.05$  we found that the tabulated value of  $t = 2.000$  is greater than the calculated value of  $t = 0.008$ .

**Conclusion:** The null hypothesis is therefore up held. It is concluded that there is no significant difference between the mean scores of achievement of control group and experimental group on pre-test.

**Hypothesis #2**

There is no significant difference between the achievement of high achievers of control group and experimental group on pre-test.

**Table 2. Calculation of t-test.**

Group	N	$\bar{X}$	SD	t-value
Control	11	16.64	4.249	0.490
Experimental	11	17.45	3.560	

$P > 0.05$ ;  $df = 20$

Referring to Table 2, “t” with  $df = 20$  and  $\alpha = 0.05$  we found that the tabulated value of  $t = 2.086$  is greater than the calculated value of  $t = 0.490$ .

**Conclusion:** The null hypothesis is therefore up held. It is concluded that there is no significant difference between the mean scores of achievement of high achievers of control group and experimental group on pre-test.

**Hypothesis # 3**

There is no significant difference between the achievement of low achievers of control group and experimental group on pre-test.

**Table 3. Calculation of t-test.**

Group	N	$\bar{X}$	SD	t-value
Control	11	3.27	2.149	0.337
Experimental	11	3.00	1.612	

$P > 0.05$ ;  $df = 20$

Referring to Table 3, “t” with  $df = 20$  and  $\alpha = 0.05$  we found that the tabulated value of  $t = 2.086$  is greater than the calculated value of  $t = 0.337$

**Conclusion:** The null hypothesis is therefore upheld. It is concluded that there is no significant difference between the mean scores of achievement of low achievers of control group and experimental group on pre-test.

**Hypothesis # 4**

There is no significant difference between the achievement of the control group and experimental group on post-test.

**Table 4. Calculation of t-test.**

Group	N	$\bar{X}$	SD	t-value
Control	34	10.26	5.869	8.850
Experimental	33	24.18	6.971	

P > 0.05; df = 65

Referring to table 4, “t” with df = 65 and  $\alpha = 0.05$  we found that the tabulated value of t = 2.000 is smaller than the calculated value of t = 8.850.

**Conclusion:** The null hypothesis is therefore rejected. It is concluded that there is a significant difference between the mean scores of achievement of control group and experimental group on post-test.

**Hypothesis # 5**

There is no significant difference between the achievement of high achievers of control group and experimental group on post-test.

**Table 5. Calculation of t-test.**

Group	N	$\bar{X}$	SD	t-value
Control	11	17.18	3.842	7.907
Experimental	11	32.45	5.126	

P > 0.05; df = 20

Referring to table 5, “t” with df = 20 and  $\alpha = 0.05$  we found that the tabulated value of t = 2.086 is smaller than the calculated value of t = 7.907

**Conclusion:** The null hypothesis is therefore rejected. It is concluded that there is a significant difference between the mean scores of achievement of high achievers of control group and experimental group on post-test.

**Hypothesis # 6**

There is no significant difference between the achievement of low achievers of control group and experimental group on post-test.

**Table 6. Calculation of t-test.**

Group	N	$\bar{X}$	SD	t-value
Control	11	4.36	1.963	15.551
Experimental	11	17.91	2.119	

P > 0.05; df = 20

Referring to table 6, “t” with df = 20 and  $\alpha = 0.05$  we found that the tabulated value of t = 2.086 is smaller than the calculated value of t = 15.551.

**Conclusion:** The null hypothesis is therefore rejected. It is concluded that there is a significant difference between the mean scores of achievement of low achievers of control group and experimental group on post-test.

## V. Results and Discussion.

The experimental study was conducted to examine the level of achievement of two groups through traditional method and problem based learning method. Results in pretest indicated that there was no significant difference between the achievement scores of the control group and the experimental group. It does make clear that the traditional teaching method is prevalent and modern techniques of teaching literature are not applied. When compared with the results in posttest, it is clear that the students perform better when taught through PBLM and it helps students develop the abilities of analysis, synthesis and evaluation as the items of achievement test were based on these measures. Both the high achievers and low achievers of experimental group showed significant difference in the mean score of achievement on posttest that signifies the effectiveness of PBLM in comparison with traditional method. It also makes clear that the existing methods of teaching literature are not based on modern cognitive approach like problem solving skill and it also shows that teachers are not trained to teach literature through modern instructional techniques. So the students of experimental group showed significant better performance when compared with control group on scores of posttest.

## VI. Recommendations.

1. Problem based learning methodology may be used for better achievement.
2. Conceptual learning may be improved through Problem solving instructional strategy.
3. Teachers may use PBL for fostering higher order thinking skills.

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