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EFFECTIVENESS OF PROBLEM BASED LEARNING APPROACH IN TEACHING ECONOMICS

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ABSTRACT

The major objective of the present investigation was to examine the effectiveness of Problem-based learning approach in teaching economics at secondary level. Single group experimental research design was employed. Purposive random sampling technique was employed to select sample for the present investigation. Total 680 students of secondary schools affiliated to CBSE wereselected. Self-developed Achievement test in economics and self-constructed Opinionnaire based on different theoretical and practical aspects of Problem-based learning was used to assess the learning outcomes of students. Research findings indicated that significant improvement was observed in achievement scores of students when they were treated through problem-based learning. A high percentage of students harmonized that PBL is an effective learning approach to enhance the knowledge and understanding of content in economics and it also encourages the learners to explore content related to economic concepts by using different online and offline modes.

Keywords: *Problem-Based Learning, Achievement, Economics*

Introduction

Economics studies the human activities and behavior concerned with wealth, money, trade, and growth-oriented activities of the nation and world. Economics belongs to the family of social sciences, and like any science, it is based on reasoning and systematic analysis of various economic theories. The study of economics is vital because it is concerned with economic and non-economic activities of human behaviour. It provides information about different means of income-generation, banking processes, consumer behaviour, the economic condition of the country, and the role of international monetary institutions for the welfare of the country. Forsythe (2002) argued, "Many students of economics including those specialising in the subject at single or joint honours level, experience difficulty with method of economics, particularly in relating abstract concepts, diagrams, and models to real world economic issues and problems." The teaching of economics opens the gates for various occupations and develops an emphatic attitude towards various economic issues as compared to other subjects of humanities stream. Considering all these perspectives, it is summated that teaching and learning of economics are highly significant in modern times. Maxwell, Mergendoller, and Bellisimo (2005) suggested the implementation of Problem-based learning in teaching of microeconomics and macroeconomics as it increased the level of learning and achievement of students. Finkelstein, Hanson, Hirschman, and Huang (2010) viewed, "Problem-based instruction allows the students to get involved in a set of student-driven investigations of the analytic challenges presented by the complex case studies at the centre of the curriculum" and suggested that Problem-based learning significantly affects the content knowledge, problem-solving skills, and learning outcomes of the students.

Problem-Based Learning

As a pedagogical approach, Problem-based learning has been widely used in all disciplines of school and higher education. Poikela and Poikela (1997) and Nummenmaa and Virtanen (2002) observed that PBL has become the subject of research during the last few years in the various

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fields of education including humanities, health education, and vocational education. The concept of PBL was originated with the progressive education movement during the 1930s especially to John Dewey's credence that teachers should teach students according to their instincts and enable them to construct ideas. Originally, PBL was evolved to train doctors and to solve problems related to the medical field. The foremost application of the PBL was in the field of medicine during the 1960s. Howard Barrows, a renowned physician and medical educator at McMaster University, Canada, introduced problem-based learning approach medical discipline.

Barrows (1985) stated that the principal motive of introducing the PBL approach was to familiarize the students with knowledge, to enable them to apply knowledge effectively, to develop the skills to extend their knowledge, and reflect upon it. Thinkers like Norman and Schmidt (1992) spotlighted the significance of PBL and stated, "PBL is most well-known for its use of problems as the starting point of learning." An ill structured Problem is basis of PBL because it is presented at the initiation of the teaching-learning process. To start the teaching-learning process with the use of an ill-structured and real-life based problem will inspire the learners and it will positively affect the persistence, and autonomous motivation of the learners. In line with this idea, Barrows (1985) stated that "In PBL, instruction begins with the problem to be solved rather than content to be mastered." Dewey (1938) described the problem as, "Unclear situation or phenomenon in need of explanation." Problem-based learning allows the students to learn in a constructive learning environment.

PBL provides challenging tasks to students related to different ill-structured problems. Students are required to identify their learning needs (what they already know about the problem and what they required to know more about the problem), investigate the problems and give solution to the problems.

The present study was undertaken to investigate the effectiveness of Problem-based learning approach in teaching microeconomics to secondary school students.

Research Questions

1. How is achievement in economics of XI grade students affected by Problem based learning?
2. How does Problem-based learning affect the knowledge, understanding, and learning experiences of learners?

Methodology

Research Design

The present investigation was experimental in nature as it intended to investigate the effect of Problem-based learning approach in teaching economics. Single group post-test experimental research design was employed. An experiment was conducted for a period of three months. After experimentation, the responses of students were recorded on an Opinionnaire and the collected responses were analysed by employing percentage analysis.

Participants and Sampling Technique

Purposive random sampling technique was employed used to selectthe sample for the present investigation and total 680 students of XI grade studying in secondary schools of Amritsar District, Punjab (India) were selected.

Measures

- **Achievement Test in Economics**was employed to measure the learning outcomes of students at Pretest stage and Posttest stage of experimentation. The reliability of the achievement test was established by using the test-retest (stability) and split-half (Internal consistency) method which came out to be 0.91 and 0.83 respectively.
- **A self-constructed opinionnaire** was employed and it was constructed by considering theoretical perspectives and practical aspects of PBL approach. The opinionnaire consisted of 20 items. All the test items were based on the 4-point Likert scale. Likert scale is unidimensional in nature and ideally a good scale for researchers to get specific responses.

Analysis and Interpretation

The responses of the students about their

experiences in learning through problem-based learning approach were analysed by employing Percentage analysis.

The dimension-wise and statement-wise analysis is discussed as follows:

Dimension-I: Learner

Table 1
Showing Responses of Students (Learner)

Sr. No.	Statement	% of Responses (N=243)			
		SD	D	A	SA
1.	PBL Approach develops confidence and independent learning skills in me.	3.7	5.43	56.37	34.56
2.	PBL provides opportunities to me to work in collaboration with peer-group.	2.88	11.93	43.20	41.97
3.	PBL develops subject-specific and transferable skills in me.	2.05	9.05	48.55	40.32

From Table 1, it is summated that 56.37% and 34.56% of students are agreed that implementation of PBL Approach in teaching-learning process enhances their level of confidence and develops various independent learning skills among them. 43.20% and 41.97% of the students are agreed to the statement that PBL provides them different opportunities to learn through collaborative activities. Only 2.88% of students were dissatisfied with the opinion that PBL is a beneficial approach to develop collaborative skills among the students.

Gorden, Roger, Comfort, and McGee (2001) and Rokhmawati, Djatmika, and Wardana (2016) also reportedthat majority of students (94%) agreed that PBL made them responsible and they preferred learning through PBL only. Maghfiroh and Mulyani (2018) expressed that PBL enabled the students to reflect upon their learning needs and to solve the problems by their creative thinking skills.

Dimension-II: Knowledge of content

Table 2
Responses of Students (Knowledge of Content)

Sr. No.	Statement	% of Responses (N=243)			
		SD	D	A	SA
1.	PBL is an effective learning approach to enhance my knowledge.	4.93	6.58	50.20	38.27
2.	PBL develops greater knowledge, retention, and recall skills in me.	3.70	7.81	47.73	40.74
3.	PBL enables me to construct new knowledge based on previous knowledge.	2.46	4.11	58.84	34.56

It is apparent from Table 2 that 38.27% of students are strongly agreed and 50.20% of students are agreed to the statement that implementation of PBL approach enhanced their subject as well as general knowledge. 47.73% and 40.74% of students agreed that learning through PBL approach enhanced their retention and recall skills. Only 3.70% of students have been disagreed with the statement. 58.84% and 34.56% of students are also agreed to the idea that PBL provides opportunities to construct new knowledge based on their previous experiences and a very low percentage of students 2.46% have difference of opinions.

Gorden, Rogers, Comfort, and McGee (2001), and Sungur, Tekkaya, Geban (2006) also reported that 94.3% have shown their agreement with the viewpoint that PBL enabled them to evaluate and assess new knowledge and information. Eze, Ezenwafor, and Ifeoma (2016) also found that PBL improved the retention skills of the students. The research conducted by Aliyu, Fung, Abdullah, and Hoon (2016) supported that PBL helped the students to acquire new knowledge relevant to their learning.

Dimension-III: Understanding of Content

Table 3
Percentage of Responses of Students Towards PBL Approach

Sr. No.	Statement	% of Responses (N=243)			
		SD	D	A	SA
1.	PBL helps in understanding conceptual framework of the topic.	3.29	7.81	54.73	34.15
2.	PBL helps me to discover new things for in-depth understanding of a concept.	2.46	6.99	48.97	41.56
3.	PBL enables me to apply general principles to other concepts.	3.70	9.44	46.50	40.32
4.	PBL enables me to exhibit stronger application skills.	5.43	3.29	50.61	40.74

It is evident from Table 3 that 34.15% of students are strongly agreed to the viewpoint that PBL is an efficacious approach to understand the basic concepts of a subject. 41.56% of students strongly admitted that PBL motivates them to explore various sources related to content. 40.32% of students are strongly agreed and 46.50% of students admit that PBL enable them to apply principles of the subject to other subjects of the curriculum. Very few students (3.73%) have shown difference of opinion compared to the students who had shown their accordance.

The findings are in consonance with the results unveiled by Aliyu, Fung, Abdullah, and Hoon (2016). They revealed that PBL increased the awareness and understanding of concepts of students. Ferreira and Trudel (2012) pointed out that most of the students agreed that PBL made them responsible for their learning and 42% of students had shown their accordance to the viewpoint that PBL enabled them to suggest reasons and solutions to the problems. Polanco, Calderon, and Delgado (2003) explored that PBL was an efficacious approach to improve the understanding of the concepts.

Dimension-IV: Learning Environment

Table 4
Responses of Students (Learning Environment)

Sr. No.	Statement	% of Responses (N=243)			
		SD	D	A	SA
1.	PBL provides opportunities to me to examine the problems from different perspectives.	4.11	5.43	48.55	41.97
2.	PBL classroom environment motivates me to learn.	2.05	7.40	49.79	40.74
3.	I experience challenging and activating learning environment in PBL.	3.70	8.64	45.67	41.97
4.	PBL provides an organized learning environment.	5.76	6.58	51.44	36.21

From Table 4, it is observed that 41.97% of students are strongly agreed and 48.55% of students admit that PBL provides nurturing and rich learning environment.40.74% of students have expressed their firm opinion in the favour of PBL and 49.79% of students accept that learning environment in PBL encourages them to examine the ill-structured problems from different perspectives. PBL is based on ill-structured problems that challenges the thinking of students and encouraged them to find relevant solution to the problems by applying their different metacognitive abilities. From Table 4, it is also evidentthat 36.21% and 51.44% of students accepted that organized content and learning environment is experienced by them in PBL classroom settings. A very low percentage of students (5.76%) are strongly disagreed that the PBL provides organized and challenging learning environment to students.

Khoshnevisasl et.al. (2014) expressed that 88% of participants had shown their acquiescence to the viewpoint that PBL motivated them to learn. Witte and Rogge (2016) found that PBL, students experienced a challenging environment and they rated the PBL course more positively on maximum test items. Students in PBL considered the learning environment more enjoyable and they were satisfied with teaching and classroom climate.

Dimension-V: Learning Experiences

Table 5
Responses of Students (Learning Experiences)

Sr. No.	Statement	% of Responses (N=243)			
		SD	D	A	SA
1.	PBL motivates me to share my opinions and learning experiences with peer-group.	5.43	7.81	45.67	41.15
2.	PBL provides positive learning experiences in the classroom.	4.93	5.43	47.32	42.38
3.	PBL encourages involvement of learners in teaching learning process.	4.93	6.99	47.73	40.32
4.	PBL provides more opportunities to interact with the class.	3.29	9.05	48.14	39.50

It is observed from the above Tablethat 41.15% of students strongly admit and 45.67 % of students agree that PBL motivates them to share and thoughts, ideas, and learning issues with their peer-group. 42.38% are strongly agreed and 47.32% of students admit that PBL encourages the students involve themselves in their various activities associated with the problem.39.50% of students (in case of strongly agreed) and 48.14 % of students (agree) expressed that PBL encouraged them to interact with all the members of the class through discussion.The findings of present study are in tune with the preceding studies. Abanikannda (2016) inferred that students feel comfortable in working with their classmates and PBL provided opportunities to interact with the group. 79.6% of students indicated that PBL developed confidence among them to identify the problems and eagerness to find solution to the problem. Almulla (2020) explored that 77.2% of respondents agreed that PBL enhanced engagement of the students in learning activities. 84% of participants showed their consensus that PBL allowed them to interact with group members and develops their communication skills and 98% opined that PBL was successful method of teaching to increase the desire of students in learning process.

Conclusion

In nutshell, it is summated that PBL develops different skills including independent learning skills, problem-solving skills, and collaborative learning skills among the students.Implementation of PBL strategy in classrooms enhances knowledge and retention skills of learners and provides opportunities to construct new knowledge based on their previous experiences. PBL helps them to gain deep understanding of a concept and they become proficient in applying general principles to solve the ill-structured and real-life based economic problems. PBL provides nurturing, organized and motivating learning environment. PBL is based on ill-structured problems that challenges the thinking of students and encourage them to find relevant solution to the problems by applying their different Metacognitive abilities. PBL motivates them to share and thoughts, ideas, and learning issues with their peer-group and provides opportunities to involve themselves in their various activities associated with solution to the problem. Students had also expressed that PBL encourages them to interact with all the members of the class through discussion.

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