

Effects of Problem-Based Learning on the Language
Acquisition, Language Retention and Critical Thinking
Ability of Undergraduate Students of social Sciences

By

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ABSTRACT

The Effects of Problem Based Learning on Language Acquisition, Language Retention and Critical Thinking Ability of Undergraduate Students of Social Sciences

Problem Based Learning is an instructional method that demonstrates the idea of learning through problem. The present study aims to evaluate the use of Problem Based Learning in knowledge acquisition and knowledge retention. The study also aims to investigate that how Problem Based Learning affects the critical thinking ability of the BS students.

The target population for this study was the undergraduate students of Al Raza Science College. The sample consisted of 16 students in the Problem Based Learning treatment group who were further divided into group of four each. The data was obtained through placement test, participant observation, class presentations and reports. In the end, feedback survey and focus group study were administered to know the effectiveness of the Problem Based Learning on student's achievement and performance skills in knowledge acquisition, knowledge retention and critical thinking ability.

The the data of four weeks was analyzed using statistical test. ANOVA was applied on the data to compare the performance, motivation, feedback of the students within the group and between the groups. Placement test, class observation, focus group data and open-ended questions of feedback questionnaire were analyzed qualitatively. The results revealed that the use of Problem Based Learning proved to be very effective for knowledge acquisition, knowledge retention and critical thinking ability of the students. Results and student's reflection showed that the rate of knowledge retention is effective in PBL students. They owned the information they had collected and used critical thinking ability that enabled them to have better retention rate. This clearly shows that the students improved their ability of using relevant information, accurate vocabulary, correct sentence structure and proper organization of information in their written reports.

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DEDICATION

I dedicated this thesis

To

My Parents who brought me on the earth

And

To

My Supervisor

Mam Faiza Mushtaq, who enabled me to fly up into the sky

I also dedicate this study

to

My Cute Flower

Muzammil Malik

CHAPTER 1

INTRODUCTION

1.1 Introduction

Significant changes in language teaching methods, especially English instruction in Pakistan, have been observed since the 20th century. Language classrooms have evolved considerably over time, unlike other subjects such as mathematics and natural or geographical sciences. This research evaluates how problem-based learning is utilized in acquiring and retaining knowledge. It seeks to investigate the influence of problem-based learning on the critical thinking abilities of undergraduate students. The chapter examines the importance of the English language in Pakistan and analyzes the current educational landscape at the undergraduate level. It also explores language policies from Pakistan's establishment to present times, discusses a problem statement, outlines study objectives, describes methodologies used, and provides definitions for key terms while acknowledging assumptions and limitations associated with this study.

1.2 Importance of English Language in Pakistan

Before 1947, Pakistan was under British control. English held a prestigious position in society as the language of the rulers and those in power, including administration, judiciary, military, and commerce. Proficiency in English was seen as a guarantee for good job opportunities and a promising future in pre-partition United India, contributing to its widespread adoption across different social strata. According to Gu & Benson 2014; Hsu 2015; and Tan 2015, English has gained status as a worldwide language and has been officially embraced as the medium of instruction in numerous esteemed institutions. The learning of English begins at an early stage, extending through to higher education, and has become a fundamental component of Pakistan's educational curriculum. For many years, it has been recognized that English holds the position of an international language. (Brown, 2002; Gu & Benson, 2014; Hsu, 2015; Kachru, 1992; Muthanna & Miao, 2015; Steed & canter, 2014; Widdowson, 1994).

1.3 Present Educational Environment

The academic progress of undergraduate students has been observed to show a lack of

motivation and decreased educational accomplishments. This is evident in reduced concentration, high dropout rates, and low graduation rates (Lesko & Fernandez, 1989; Finn & Rock, 1997; Modell & Elder, 2002). Students with disengaged behaviors and insufficient focus tend to demonstrate poor academic performance leading to college attrition at the end (Finn & Rock, 1997; Modell & Elder, 2002). According to linguistic researchers, student motivation is influenced by two primary factors: boredom with studying or viewing education as a grade competition where they seek minimal effort for achievement (Burkett, 2002; Pope, 2002). This shift in trends on a macro level poses significant concern.

The rapid and significant changes in the global market are transforming the entire landscape. Nowadays, there is a demand for knowledgeable and skilled workers who can integrate new, updated information with their existing expertise, think critically, analyze effectively, and resolve challenges using optimal resources (Fredricks, Blumenfeld, & Paris, 2004). In today's educational environment, there is a clear separation between school students and undergraduate or bachelor's degree students (Ryan & Powelson, 1991).

The authors argue that the current educational environment for young students is artificial and disconnected from natural learning methods. It focuses on acquiring skills without immediate application or meaning, emphasizing future benefits. Learning has become a competitive pursuit with an individual focus, prioritizing evaluation based on undisclosed criteria and valuing high grades over collaborative knowledge-sharing among peers. In 1938, John Dewey presented two influential perspectives on student motivation and structuring the educational process. One viewpoint emphasizes skills acquisition from the environment and promotes rewards to encourage academic success, highlighting the vital role of teachers in motivating students.

Motivation is believed to be inherent in students and can be nurtured through education. Teachers are seen as playing a crucial role in fostering academic interests, according to the Organismic perspective (Ryan & Powelson, 1991). This viewpoint suggests that students have an innate inclination to absorb new information, explore unfamiliar areas of knowledge, and adopt prevalent practices and values (Ryan & Powelson, 1991). Students spend significant time in school, so integrating their tendencies with environmental factors is crucial for better learning outcomes.

Leadership engages students in acquiring and applying new skills, while interaction among environmental, personal, and behavioral factors influences learners' behavior in educational settings.

1.4 Language Policies in Pakistan

Pakistan's history of colonial rule led to a debate over whether to adopt English or Bangla as the language of the newly formed country. Instead, Urdu was given priority due to its emotional significance for those in power, while English remained privileged as the official language. The initial educational conference recommended adopting Urdu as Pakistan's lingua franca. At the first constituent assembly session, it was proposed that members could use either Urdu or English during proceedings. Policymakers faced a challenge in selecting a medium of instruction: English, the language of the colonial rulers, or Urdu, the common language. Bangla was also considered due to its majority usage. Ultimately, Urdu was chosen and became symbolic during Pakistan's formation. English continued to hold power and played a crucial role in Pakistan's education system despite opposition from some scholars (Siddiqui, 2016).

English is undeniably important in the modern world, especially for students from economically disadvantaged backgrounds. Its presence in Pakistan has been consistent since the country's inception. The education policy of 1947 favored Urdu for the general population and English for the elites. Under General Zia-ul-Haq in 1977, there was a shift towards the "Islamization" of language with exams mandated to be conducted in Urdu while English remained a compulsory subject up to grade 4. English became a mandatory subject from grade 1 in 1989. The introduction of parallel education systems in 1998 had lasting effects on the language landscape of Pakistan. A "white paper" issued in 2007 mandated English as a subject from grade 1, with Math and Science being taught in English starting from grade 6. Subsequently, in 2009, it was announced that Science and Math would also be taught in English from grades four to five.

1.5 Problem Based Learning

Problem-based Learning is an instructional approach that fosters a proactive learning environment and helps students develop essential time management and problem-solving skills, as well as the ability to access and assess various technological and

informational resources. This method enhances critical thinking, promotes mutual respect, nurtures communication skills, fosters teamwork spirit, and elevates interpersonal abilities. Furthermore, PBL cultivates a heightened interest in the subject matter or course being studied and empowers students to work together effectively towards shared objectives while monitoring comprehension (Galand, Bentein, Bourgeois & Frenay, 2003; Karabulut, 2002; Paris & Paris, 2001).

Problem-Based Learning involves working on real-world, complex problems without a single correct solution. It aims to stimulate critical thinking and analytical skills by drawing on students' previous experiences. In PBL classrooms, students reflect on their knowledge, formulate hypotheses, gather necessary information to investigate the hypotheses, collaborate within groups to find optimal solutions, and present conclusions. The instructor supports students in reaching conclusions by guiding and monitoring their progress within each group during Problem-Based Learning classes (McKeachie, 2002). In this manner, educators act as facilitators while students take on the role of proactive learners and critical thinkers (Torp & Sage, 2002).

Problem-based learning programs encourage students to acquire knowledge in a way that is directly relevant and applicable to real-world scenarios. This approach enhances motivation and critical thinking skills, as students train themselves in a self-regulated learning environment by finding strategic solutions to real-world problems (Torp & Sage, 2002). Addressing real-world problems allows students to relate their learning to the world around them and recognize the practical relevance of the subject matter (Uyeda, Madden, Brigham, Luft & washburne 2002; Plucker & Nowak, 1999; Levin, 2001; Gordon et al., 2001). The use of ill-structured problems in guiding students toward learning creates high expectations for instructors to support learners and help them navigate problem investigation, determine which information is relevant, and develop skills for analyzing information (Chin & Chia, 2005).

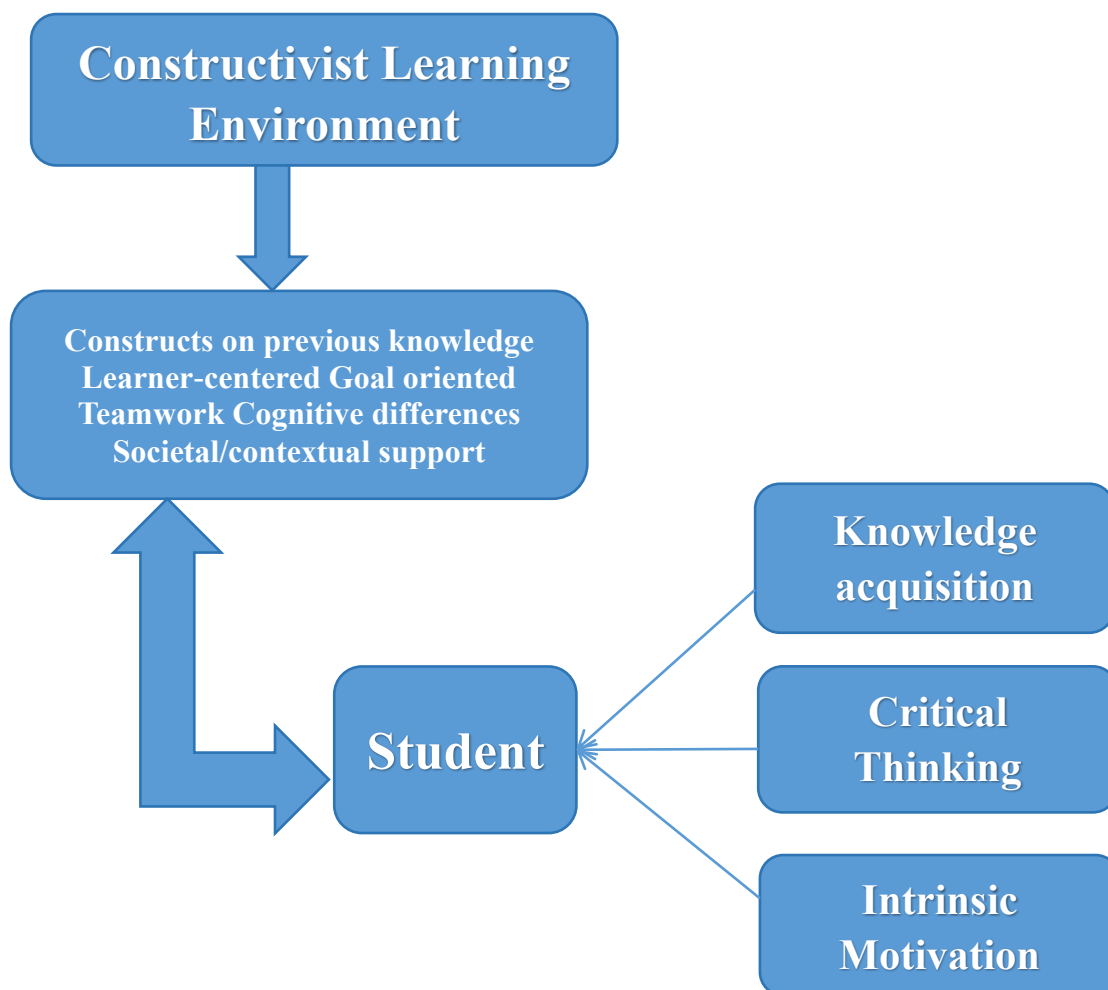


Figure1: Theoretical Framework

1.6 Statement of the Problem

Morgan and Rudd in 2005, discussed that leadership demand increases due to baby boomer retirements. Educators face challenges motivating students to acquire new skills and navigate demanding learning environments. A new approach is needed to support marginalized students' educational goals, emphasizing creative teaching methods for academic content and skill development. These strategies aim to facilitate learning and practical application of skills in future situations. Research explores adapting problem-based learning for elementary and high school settings (Achilles & Hoover, 1996; Gallagher, Stepian, Sher, & Workman, 1995; Gordon, Rogers, Comfort, Gavula, & Mcgee, 2001; McBroom & McBroom, 2001; Sage, 1996; Savoie & Hughs, 1994; West, 1992).

Previous research has shown that students encountered challenges, misunderstandings, and disarray in their understanding of Linguistics, a complex field filled with abstract

concepts that are often challenging to grasp, internalize, and retain (Lewis & Leech, 2004; Lewis & Wood-Robinson, 2000; Knippers, Waorlo & Boersma, 2005). Ausubel (1963) has proposed that students should independently explore abstract concepts to achieve meaningful learning, which can be facilitated through their own experiences with concrete problem-solving. While a limited number of empirical studies have examined the use of Problem-Based Learning in undergraduate education, further research is necessary to uncover its impact on language acquisition, knowledge retention, critical thinking abilities, and related factors such as presentation skills and motivation (Sage, 1996; Savery, 2006).

Previous studies mainly focused on the effectiveness of Problem-Based Learning compared to other methods, with little attention given to its impact on language acquisition, retention, and critical thinking. This study emphasizes the importance of students' knowledge, performance skills, reasoning abilities, and learning approach in assessing PBL's effectiveness on student performance. The findings are crucial for determining PBL's suitability for undergraduate students and its efficacy concerning learning and critical thinking skills.

1.7 Purpose of the Study

The study aimed to evaluate the efficacy of Problem-Based Learning in improving language acquisition and retention for undergraduate students at universities. It also sought to investigate how Problem-Based Learning affects critical thinking skills, such as resource management, acquiring new information (including specific vocabulary and terminology), appropriate expression, language use, and understanding complex systems.

Primary Objectives:

1. To investigate the impact of PBL on undergraduate students' language proficiency in reading, writing, speaking, and listening.
2. To examine the effectiveness of PBL in developing critical thinking, problem-solving, and collaboration skills among undergraduate students.
3. To analyze the relationship between PBL and language acquisition motivation, anxiety, and self-efficacy.

Specific Objectives:

1. To compare language acquisition outcomes between PBL and traditional teaching methods.
2. To identify the most effective PBL strategies for enhancing language skills.
3. To explore the role of teacher guidance and feedback in PBL-based language learning.
4. To examine the impact of PBL on students' language learning strategies and behaviors.
5. To investigate the potential benefits of PBL for students with diverse language learning backgrounds and abilities.

1.8 Research questions

The research focuses on exploring the impact of Problem-Based Learning on knowledge acquisition, retention, and critical thinking skills in English Language Teaching. The main question driving this investigation is:

- 1) How does problem-based learning influence the acquisition and retention of knowledge and the development of critical thinking skills in language learners?

The specific research inquiries will help uncover the characteristics and methods used by instructors and researchers, contributing to the implementation of Problem Based Learning in teaching.

- I. How do instructional approaches (problem-based learning and teacher-guided learning) impact critical thinking skills, resource management, information acquisition, and utilization, as well as comprehension of complex systems?

- II. To what degree does project-based learning support students in developing independence and proficiency as learners?

The study will analyze and verify research questions using specified research tools.

1.9 Functional definitions of relevant terms

Amotivation:

The concept of motivation is when an individual feels a lack of drive from intrinsic or extrinsic factors, leading to a sense of inadequacy and lack of influence over their actions and results (Deci & Ryan, 1985).

Constructivism:

Constructivism is a theoretical model of learning that asserts that human learning is constructed by the individual. It emphasizes the idea that new knowledge builds upon prior knowledge and highlights the active nature of human learning (Hoover, 2003).

Critical Thinking:

Critical thinking is a rigorously controlled approach that involves conceptualizing, connecting, examining, and assessing information. It can be fostered through interpretation, analysis, suggestion, or communication and serves as a foundation for learners to have confidence and take action. Critical thinking is rooted in universal values such as precision, clarity, accuracy, reliability, and thoroughness(scriven & Paul, 1992) ·

Extrinsic Motivation:

When an individual engages in an activity primarily to achieve a specific outcome rather than for the inherent enjoyment of the activity itself, it is known as Extrinsic Motivation. This type of motivation can be self-imposed or guided by external influences. Extrinsic motivation encompasses four categories: (a) external, (b) introjected, (c) identified, and (d) integrated regulation (Deci 1975; Vallerand & Bissonnette, 1992).

Intrinsic Motivation:

Intrinsic motivation refers to a person engaging in activities for their satisfaction, doing so willingly and without any external inducement or pressure. The driving force behind these actions is the joy and fulfillment they bring, rather than material rewards or limitations (Deci, 1975).

Instructional objectives:

The instructor establishes the target behavior for the learner to attain, which are referred to as instructional goals.

Instructional strategy:

A technique by which the teacher presents information to steer students toward achieving the educational goals (Bott, 1998).

Knowledge acquisition:

When knowledge is acquired through instruction, the effectiveness of this process depends on the student's ability to recall information and align with pre-established learning objectives. Acquisition of knowledge should go beyond simple memorization, involving specific vocabulary in controlled scenarios at the end of each week (such as presentations or role-playing exercises).

Knowledge retention:

Acquiring knowledge leads to retention, which is the maintenance of information over time. The level of retained content indicates the extent to which learners have grasped the information. In this study, knowledge retention refers to the change in scores achieved during a presentation.

Problem-based learning:

Problem-based learning is a teaching approach where students develop self-directed learning skills by collaboratively exploring real-world inquiries to find solutions. These approaches can be utilized in two different manners:

- (1) to stimulate students' inquisitiveness
- (2) facilitate their learning of course content.

Problem-Based Learning encourages learners to think critically, analyze problems, identify appropriate resources, and effectively utilize them (Dutch, 2006).

Problem-solving approach:

Problem-solving methods also represent a teaching approach comprising six distinct steps.

- 1) Enhance the approach's appeal;
- 2) Define collective goals;
- 3) Identify key inquiries to address;
- 4) Outline the issue at hand;
- 5) Validate potential remedies through practical implementation; and
- 6) Assess the suggested resolutions (Newcomb, McCracken, & Warmbrod, 1993).

Self-efficacy:

The learner's perceived capacity and competence to acquire knowledge and execute tasks related to specific chosen areas (Bandura, 1993, 1997).

Social cognitive theory:

Social Cognitive theory is rooted in the principles of social learning theory, serving as one of its offshoots. Human behavior is characterized as multifaceted and dynamic, resulting from the interplay between individual factors and the environment (Bandura, 1977; 1986; 1989) .

Social cognitivism:

Human learning often occurs through observation of others' actions. Social cognitivism is based on this concept, emphasizing the significance of human thought processes in understanding individual personalities.

There are five primary principles of social cognitive theory. This includes:

- I. Observing others leads to knowledge acquisition.
- II. Learning is an individualized process, with the potential to either influence or not impact behavior.
- III. People behave in specific ways to achieve their goals.
- IV. Behavior is self-directed.
- V. Reinforcement and punishment impact behavior and learning processes with unforeseeable indirect effects (Ormod, 2003)

Teacher-guided learning:

When the educator oversees the learning process, it is known as teacher-guided learning. This approach involves employing a four-step method that includes:

- I. To establish the set.
- II. To convey the goals of the learning process.
- III. Guide the students
- IV. Methodically check the understanding.

1.10 Scope of the present study

Since 1960, scholars have been comparing Problem-Based Learning and teacher-guided learning in various countries. Concerns about pedagogical approaches, teaching methods, and language policies are prevalent in South Asian nations. There is a decline in teaching practices due to resource misuse and low motivation among instructors and learners. In Pakistan, English remains an official language despite

Urdu being the national language. The prevalent use of teacher-guided instruction and mini-lectures has limited the adoption of Problem-Based Learning and Task-Based Learning in English language teaching. This study aims to propose practical solutions for improving second language acquisition by integrating cognitive techniques with pedagogical strategies.

A successful instructor engages and encourages students to participate actively, motivating them to become active participants rather than passive listeners. Techniques like Problem-Based Learning inspire students to seek additional knowledge and information, recommended for language teachers. The research aims to assist educators in enhancing their teaching methodologies for more innovative instructional sessions.

The study investigates students' access to resources for research, along with teacher training for implementing Problem-Based Learning and other methods. It aims to assist teachers in enhancing English language teaching sessions and empowering students in language learning, critical thinking, and knowledge retention.

1.11 Contribution of Research

Here's a potential contribution of research on the effects of Problem-Based Learning (PBL) on language acquisition abilities in undergraduate students: I'm

1. Improved Language Education: The study's findings can inform language teaching methodologies, enhancing language acquisition outcomes for undergraduate students.
2. Enhanced Critical Thinking: PBL's emphasis on critical thinking, problem-solving, and collaboration can develop essential skills for the workforce.
3. Increased Global Competitiveness: Effective language skills are crucial for global communication and collaboration, contributing to economic growth and cultural exchange.
4. Better Preparation for Real-World Challenges: PBL's real-world applications can prepare students for complex, interdisciplinary problems.
5. Inclusive Education: PBL can accommodate diverse learning styles, promoting inclusivity and equity in education.

1.13 Limitations of the study

Motivating students proved challenging due to their lack of inclination for activities without apparent rewards. To address this, research sessions were organized with certificates for participation and refreshments on alternate days. Implementing PBL in developing countries like Pakistan was demanding and time-consuming due to a lack of suitable materials, leading to the need to create content using personal and internet-based resources. This included seeking real-life documentaries, interviews, and videos for presentations, which were often scarce or required online payment - posing challenges due to currency conversion rates.

The interruption of electrical power posed a challenge during data gathering on sweltering summer days. Students' motivation to learn was affected by the intense heat, which was addressed by supplying cold drinks and using electricity inverters as an alternative power source. However, challenges persisted during presentation sessions due to cost constraints and lack of multimedia support from inverters. The investigation lasted four weeks due to time constraints. During data collection, student attentiveness fluctuated due to mid-term exams. While twenty-two initially volunteered, only sixteen remained engaged throughout the process. After a placement test, students expressed apprehension about gathering and researching their data as well as uncertainty about the research topic or content. Understanding the teacher's role as a facilitator was challenging because it was completely new to me. As a result, I focused only on materials that matched the subject matter, socioeconomic status, and curriculum. The content is designed for high school students of all grades but may be too difficult for younger learners both psychologically and cognitively.

The extent of the study constrained my focus to just one class. Time and financial constraints prevented an in-depth exploration of other aspects associated with Problem Based Learning. Despite these limitations, I aim for the research to effectively convey a more refined message to the reader.

1.14 Assumptions

The research is grounded on specific assumptions that must be delineated to uphold the validity of the study. Firstly, it is presupposed that the selected instructor had sufficient expertise in the instructional approach to effectively facilitate this

investigation. The instructor ensured consistent implementation of behavioral interventions as outlined and maximized group distinctions. Additionally, students actively participated in data collection, displaying a high level of dedication and effort by completing all instruments to provide accurate responses. The planning and execution of data collection, information gathering, and survey administration were meticulously considered to enhance outcomes for the proposed study. Despite recognizing limitations within the study, this rigorous methodology is deemed exceptionally beneficial within this dissertation context. Furthermore, there are expectations that this study will open up new perspectives in language teaching research.

1.15 A compendium of the following chapters

Chapter one presents an overview of the current study, while chapter two examines prior research in the field and outlines the conceptual framework for this study. Additionally, it explores other factors influencing language acquisition, including motivation. Chapter 3 delves into the methodology used for research, presenting an overview of the research methods employed in a triangulation study. The chapter thoroughly explores the reliability and validity of research findings, effectively communicating the intricacies of research design. Chapter four presents an analysis of the data obtained from classroom observation, surveys, focus group discussions, video recordings, and photographs captured during classroom sessions and presentations. Chapter 5 presents a critical analysis of the research findings, insightful perspectives on the data results, and final recommendations, and addresses subsidiary questions. It also explores other pertinent issues that emerged during the study.

1.16 Summary

The chapter discusses the significance of language learning, memory preservation, and critical thinking through Problem-Based Learning. The basis for the study is established through the statement of the problem, research questions, and scope. Chapter 2 will provide a literature review outlining Problem-Based Learning's principles and its application in education overall as well as specifically in language instruction. It concludes by providing an overview of upcoming chapters.

CHAPTER 2

LITERATURE REVIEW

2.0 Introduction

According to Fosnot (1989, p.5), learning should be understood as an activity carried out by the learner, not something that is imposed on them. This chapter begins with a survey of research on the use of Problem-Based Learning in enhancing knowledge acquisition, retention, and critical thinking skills among BS students at the University. The discussion starts with an exploration of language teaching research to provide a basis for this study. It then delves into language policies in the Pakistani context, followed by an examination of social cognitive theory along with two motivation theories. Next, it focuses on key variables such as Problem-Based Learning, motivation, and critical thinking ability within this study's scope. Subsequently, literature related to Problem-Based Learning and its relevant field is carefully examined before analyzing the impact of training on fostering productive approaches towards implementing and utilizing the Problem-Based Learning approach for language adoption.

2.1 What is Language?

Language is a human activity that facilitates connection through the use of words, serving as a crucial tool for communication. It encompasses various elements such as sounds, speech, vocabulary, expressions, vocalizations and symbolic representations of cultural concepts. Languages serve to convey perspectives, emotions and contextual manifestations through communication channels. Language represents both a powerful means of expression and an avenue for interpersonal interaction.

As interpreted by the scholar Atchison (1998:5), language is utilized to articulate and elucidate human thoughts and feelings through the interconnection of words. In communication, language facilitates the connection between our cognition, emotions, body actions, tone of voice, and symbolic oral expressions that all come together to impart meaning to a message. Put simply; language encompasses spoken words, sounds emitted from the throat, and gestures made with different parts of the body. Language serves as a tool and medium through which messages are created and comprehended through written words that give sense to an expression; also using

vocalizations to convey a message understandable within specific social groups. Aitchison (1998:26) outlined in his research study expounds on Bloch's [and] Trager's theory stating how languages are systematically constructed using traditional sounds bearing symbolic meanings understood by members within a given social community.

Languages are intricately organized to generate coherent communication through words, sentences, and linguistic elements. They serve as a means of expression not only for humans but also for other living beings, like the "languages of dolphins and bees." The sounds produced in languages undergo systematic arrangement to convey meaningful messages.

Human beings claim ownership of languages, viewing them as a unique aspect of human personality and an essential element of human nature (Keesing & Strathern, 1998:26). Some linguistic experts argue that language is merely a result of habitual behavior in humans. Finnegan's work discusses various perspectives on language, including those presented by Elias, who considers it a distinguishing factor between humans and other creatures such as animals. Rosengren further elaborates on this idea by suggesting that our humanity is defined by the presence of language. Additionally, Finch posits that through the adoption and structuring of language, humans have set themselves apart from other forms of life.

Bloomfield (1942:19, as cited in Omaggio, 1986:26) suggests that language acquisition requires frequent repetition and practice. It is commonly recognized that consistent practice results in skill proficiency, which also applies to learning a language. Enhanced exposure to a language promotes deeper comprehension of its use. Written language utilizes characters or symbols, and vocabulary encompasses all words within a specific linguistic framework. The meaningful arrangement of words corresponds with syntax and grammar, while semantics dictates the actual meanings and organization of words.

2.2 Historical Background of Teaching of English Language

In history of English language, British rule era in subcontinent is enriched with a lot of variations and has gained a lot of importance as it was the official language of the ruling communities and so the language use and structure, the tone of speech has a great historical expressions and words embedded in it. The English history from British era has a lot of cultural symbolic expressions also. As it was the official

language so it was adopted, learnt by politicians and elites and was spread to locals as well. The Indian history, the individual with fluent accent and grip in English language was an surety of a bright professional future and secure life. People who know English and had strong fluency in spoken were only people that could communicate and negotiate with Britishers.

In early days of progress of English, Muslims were against this language and they didn't want to adopt it. They perceived it as a language of occupants. With the efforts of Sir Syed Ahmed Khan the Muslims realized that learning English language is important for their survival. Without adopting this language they would never be able to stand strong and progress.

The rapid adoption of English language has made it popular language and is one of the common language that is spoken around the globe. Same in Pakistan, English language has got great progress; it is widely spoken and has also become 2nd official language in Pakistan (Demirel & Duman, 2015; Gu & Benson, 2014; Hsu, 2015; Muthanna & Miao, 2015; Steed & Cantero, 2014; Tan, 2015). It has become a central subject matter for content language in every field most importantly in higher education and in every official representation.

The procedure of English language learning takes a tenure of sixteen years of an individual education starting from the very basic level and continuous to higher secondary education to professional language specializations. All the educational curriculum are designed in English language. Therefore the educational system have designed a medium of teaching English from the very start of school, leading it the college and university level (Demirel & Duman, 2015). As commonly spoken global language English has been accepted as international language (Brown, 2002; Gu & Benson, 2014; Hsu, 2015; Kachru, 1992; Muthanna & Miao, 2015; Steed & canter, 2014; Widdowson, 1994). Many scholars have described English as "the global language," "World Englishes," "English as a universal language," and "English as lingua franca" in their academic writing. These publications seek to showcase the diverse types of English used across the globe.

In 20th century with the changing era there has been a radical change in English Language Teaching (ELT) approaches and methodologies as compared to other fields and disciplines. Like for Maths, Physics and Chemistry and other Science disciplines

the teaching methodologies and pedagogical approaches have remained the same. But for English language the teaching practices and cultures were totally different. Some of the adopted methodologies and approaches are discussed in next section. These approaches can be used in integration or can be adopted individually.

2.2.1 The Grammar Translation Method (GTM)

This approach is also referred to as the traditional method, with the student's native language serving as the medium of instruction. L1 contains a modest mix of the target language. A comprehensive approach to teaching grammar is utilized for instructional purposes. For teaching vocabulary, a detailed word list is provided to language learners. The core purpose of adopting this methodology is text interpretation. Grammar rules are typically learned in a deductive manner, followed by the application of this knowledge through grammar practice and exercises involving translation to and from the target language. The emphasis is placed on sentence structure rather than content.

Speaking and listening skills are often overlooked, with emphasis placed on the translation of classical texts to evaluate knowledge. The communicative aspect of language is not prioritized, leading to little or no focus on pronunciation due to a lack of emphasis on effective listening.

The Grammar Translation Method, highlighted by Lightbown and Spada (2004), based on its extensive and unique approach to exploring grammatical rules and language assessment through interpretation has become the second leading approach for English Language Teaching.

2.2.2 The Direct Method

Represented as the communicated or natural approach of teaching language. This approach to language teaching is adopted as an alternative to the Grammar Translation Method. This teaching approach has a major focus on teaching word pronunciations, so, the teaching methodology is planned with modern techniques of conservation used in context to the language taught. Language is utilized without premeditation, devoid of any need for translation or reliance on one's native tongue. A set of queries about the native language serves as an effective form of activity that is centered around the desired language. The lesson is conducted in the desired language. The direct method employs an inductive approach to teaching grammar. Emphasis is

placed on everyday vocabulary, and visual aids are utilized for this purpose. Furthermore, the direct method also incorporates the culture of the target language as a significant component of language education.

2.2.3 The Audio-Lingual Method

The concept of audio-lingual teaching methodology is deduced from Skinner's Behaviorist Theory. According to this theory concept, students' enforced behavior towards language learning can be acquired. While learning, students are provided with positive feedback for providing accurate responses to their learning, and negative feedback helps students to avoid language errors. Within this approach, the language trainers expect the learners to be accurate imitators of language as taught by their trainers.

The trainer's main focus is on the students' learning and using accurate word pronunciations and the exact adoption and learning of the exact procurement of the speech structure that is used in routine conversations. For an effective comprehension of language and use of words to initiate a conversation, the students are perceived to use the grammatical terms exactly but unfortunately, this approach lacks clarity in grammatical rules. The base of this language teaching approach has similarities to the native language spoken by the students. For training and learning audio-visual tools are also applied.

The audio-lingual method sees language learning as the product of habit development, focusing on repeating, memorizing, and extensive practice. It is stated that the audio-lingual approach is based on behaviorist theory and structural linguistics concepts presented by Lightbown and Spada (2004).

The method emphasizes the cultivation of habits through one-on-one repetitive exercises, memorization, and practice of grammatical structures from each other and within meaningful contexts. Each structure is presented individually with recurrent exercises. Imitation is guided by perception and differentiation. Repetition and memorization also play a significant role in this context (Brooks, 1964:50, cited in Richards and Rogers, 2001). This method of language acquisition entails the development of language skills in a step-by-step manner: improved auditory comprehension for better listening abilities, enhanced speaking proficiency for understanding speech, advanced reading skills for textual interpretation, and refined

writing abilities with proper word usage and grammar implementation. Learners receive thorough instructions and guidance on using language and vocabulary appropriately within specific contexts. Proficiency in language acquisition is achieved through the use of specialized teaching facilities, audio materials, and visual aids to ensure accurate language comprehension.

2.2.4 The “Designer” Methods of 1970s

Noam Chomsky's contributions to linguistics sparked a revolution that shifted the focus of language instructors toward exploring the "deep structure" of language. In contrast, psychologists emphasized the effectiveness of learning processes, leading to the proposal of new strategies. The main emphasis of these approaches was to primarily concentrate on the importance of psychological elements in language acquisition. David Nunan (1989), referred to these methods as "designer" methods, given that they adopted a "one size fits all" approach. The following are two examples of such "designer" methods.

2.2.5 Suggestopedia

In 1979, a Bulgarian educator named Georgi Lozanov proposed this approach. He centered his research on the contemporary comprehension of human brain functioning and effective learning processes. The Lozanov (1978:2), concept was presented in the study of Richards and Rogers (2001), stating that across all aspects of human life suggestology has shown its remarkably beneficial impacts.

According to this methodology, if humans use their mental and inner abilities in the best possible ways then the outcomes could be effective. Lozanov stated that humans have a greater capacity to learn than they can envision. The researcher perceived that humans have three times more efficient and effective capacity to train others in languages compared to any other traditional method. The concept was derived from Soviet Psychological studies on yoga and extrasensory perception. Lozanov and his followers utilized relaxation as a method for absorbing new information. During the initial phase, they assisted learners in achieving a relaxed state and fostering a positive mindset to ensure that learning would be enjoyable and straightforward, instead of tedious and challenging. The instructors introduced new words, acted out various scenarios, provided written passages for reading, and incorporated dramatic elements alongside the backdrop of classical music. The learners were positioned in

comfortable seating arrangements which facilitated their receptiveness to the learning experience.

It is believed that music has the potential to facilitate and sustain personal connections (Gaston, 1968). Undoubtedly, a calm mind leads to open-mindedness and can assist students in feeling more self-assured, adaptable, and responsive. Suggestopedia is beneficial and can be implemented in varying degrees without adhering strictly to all of its principles.

2.2.6 The Silent Way

The quote of Benjamin Franklin, “Tell me and I forget, teach me and I remember, involve me and I learn,” can be interpreted for learning as a dynamic process that relies on active engagement for effective understanding and retention of knowledge. Simply sharing information may not lead to deep learning, but providing clear instructions can aid in knowledge retention. However, true understanding and mastery of the subject only come through active participation in the learning process. Franklin's well-known statement encompasses three key elements that form the foundation of an approach where learning occurs when the learner grasps new concepts rather than solely repeating and memorizing. Problem-solving lies at the heart of education, and the utilization of physical objects facilitates this learning process. This approach was conceived by Caleb Gattegno in 1972 where emphasis highlighted more cognition processes rather than affective ones.

Gattegno (1972), asserted that to achieve independence and autonomy, learners need to collaborate when addressing language challenges. The concept of "silence" is crucial in this context, particularly with the teacher striving to maintain silence as much as possible in the classroom, refraining from explaining everything to the learners.

Learners are encouraged to actively generate language themselves. This method is based on the "building block" approach, where language is imparted through sentences in a specific order. Second language learners differ from first language learners and "are unable to learn another language in the same manner due to their existing knowledge" (Gattegno 1972: 11 as cited in Richards and Rogers, 2001). The silent way faced heavy criticism from the linguist community for its rigidity. It was

deemed un-thoughtful for a language trainer to remain distant, and it did not create an optimal learning environment for the learner.

2.2.7 Communicative Language Teaching (CLT)

Communicative Language Teaching, also known as CLT, is rooted in counseling methods and addresses both personal and linguistic challenges encountered by learners when acquiring a foreign language. Unlike traditional language teaching approaches, CLT treats the learner more like a client than a student. In CLT, the teachers are typically native speakers of the language being learned and emphasize counseling skills over traditional teaching methods. The main goal of CLT is to enhance learners' ability to communicate effectively and use language in appropriate social contexts.

Richards and Rogers (2001:166), propose the idea from Breen and Candlin (1998), that a student's role in language learning acts as a connecting link between the learner and the language learning process. This concept suggests that the teacher serves as a facilitator for students or acts as an active participant in the learning program. According to Richards and Rodgers, three types of materials are recommended for use in CLT:

1. Text-based material
2. Task-based material
3. Realia.

This approach posits its theoretical foundation on the premise that successful language learning involves not merely the acquisition of structural knowledge and language formation, but also the incorporation of purpose and rationale in various communicative contexts. CLT is an educational method that prioritizes the conveyance of meanings while also focusing on the manipulation and application of grammatical structures (Lightbown & Spada, 2004). The language counseling process commences with an assessment of the learner's linguistic confusion and a thorough understanding of their linguistic conflicts. The language counseling process then gradually guides the learner to a level of linguistic proficiency. The language counselor establishes an empathetic and supportive relationship, becoming an additional linguistic role model for the client.

2.3 The Importance of English Language in Pakistan

Rahman (2003), discussed the post-colonial scenario in the subcontinent in his work “Language and Politics in Pakistan”. English holds significance in areas of control and authority, being a widely spoken global language. Abbas (1993), highlighted that this trend contributes to its growth and prominence in Pakistan, emphasizing substantial efforts to enhance its instruction (cited in Rahman: 2003:228).

The Indian subcontinent was under British colonial rule for over two centuries. This situation facilitated widespread access to the English language among the people of the subcontinent, which subsequently became a language of opportunity and progress, particularly in the fields of science and technology. Proficiency in English opens up a vast array of opportunities. There is no doubt that English is the global lingua franca, and it has maintained a prominent position in Pakistan since the country's inception. The Pakistan People's Party, during both its tenures in power, has advocated for the teaching of English in all schools, recognizing that it should not be confined to elite educational institutions but rather accessible to students across the educational spectrum. The very first Pakistan People's Party Government order (No. F.3-4/85-Eng of 2 May 1989) declared: (cited in Rehman: 2003:243).

The decision has been made to offer the choice of using English as the language of instruction for all subjects starting from class 1. Additionally, it has been determined that in schools where Urdu or an approved provincial language is used as the medium of instruction, English will be taught as a supplementary language beginning from class 1. The significance of the English language is apparent as it holds great importance in various competitive and entrance exams such as GRE, GMAT, MCAT, CSS, PMS, PCS, and GAT1. Furthermore, English is utilized as the language of law and constitution. In Pakistan, it is extensively employed in commercial and trade operations, aiding not only local businesses but also connecting to global markets through international commercial transactions.

The Government of Pakistan has recently recognized the importance of English by declaring it as the official language alongside Urdu, which remains the national language (Tribune, July 29, 2015). The use of English is mandated in courts, judiciary, and banks, with Urdu being considered a secondary language for business purposes. Additionally, the government has made it compulsory for all public sector schools to

use English as the medium of instruction at the primary level according to their education policy (Daily Jang, October 6, 2004). Most private school sectors in Pakistan have also adopted this policy. The public's strong preference for the English language has led to a high demand for enrollment in English-medium schools. Despite criticisms from politicians, leaders, and language advocates about using English as the solution to national issues, they also enroll their children in these schools with the belief that it will enhance their prospects for a successful future. Consequently, many schools across the country use English as either the primary or secondary medium of instruction.

The English language serves as a tool for shaping our perspective, offering numerous opportunities for those who are adept in its usage. These include the ability to compare foreign writers' theories with our ideas and to share our concepts with an international audience. By utilizing English effectively, we can gain insights from others' experiences while critically evaluating rationality and rejecting unfounded beliefs. It also provides a means to broaden our worldview and promote our spiritual heritage globally.

Graddol (2006), states that the current number of English language learners as non-native speakers is estimated at one billion, and this figure is expected to double by 2020. The significant increase in the number of learners highlights the crucial importance of learning English. However, it is essential for learning not to be limited to traditional methods such as lectures, textbooks, and handouts. Learners should have the freedom to engage in their learning process within their respective professional areas of interest. To cultivate more proficient learners, it is necessary to employ effective instructional procedures. According to Nunan (1989:40), tasks should require learners "to speculate on classroom activities corresponding with those required beyond the classroom." Additionally, innovation plays a vital role in motivating learners' progress; without it, any method or pedagogical technique will struggle to meet its objectives. The primary goal of language instruction is to develop the proficiency of learners in a second language or L2. Skinner (1968:17) suggested that technology has been proposed as a tool that supports educators by providing greater clarity on the components they oversee and their influence, leading to enhanced efficiency in their work. This allows them to teach more content in various subjects to a larger number of students.

The integration of pedagogical methods with technology is crucial as it can offer learners a supportive environment, thereby simplifying the learning process. Real-life tasks and simulations can greatly contribute to improving learners' skills. It is a remarkable historical detail that Thomas Edison, the creator of the electric bulb, forecasted in 1920 that there would come a time when motion pictures would supplant textbooks in classrooms (Saettler, 1990). While this has not entirely come to pass, classroom activities now coexist with technology.

2.4 Language Policies in Pakistani scenario

The literature given below demonstrates about the language policies that were formed and practiced in Pakistan in early eras till present date.

2.4.1 Language planning and Language Policy

Policies have a crucial and essential impact on the development and growth of a nation. A policy document consists of principles, directives, guidelines, rules, values, and implementation strategies designed to achieve an intended transformation. This document focuses on three main objectives: recognizing opportunities for enhancement, establishing attainable targets, and developing approaches to reach these goals (Siddiqui, 2016). Accurate and reliable data, as well as engaging with pertinent stakeholders, are important and dominating aspects of the realm of language planning. These elements form the foundation of the entire process.

Failure to engage all stakeholders in consultations or depending on unreliable and unclear data can significantly disrupt the initial stages of the process. The subsequent stage includes making choices about the steps to be taken after identifying areas for improvement and setting goals. At this juncture, decision-makers might occasionally become excessively ambitious and set exceedingly unrealistic expectations. When formulating a policy, it is crucial to take into account the tangible, human, and financial assets required, as well as the schedule for execution. The final stage involves actual implementation, an area where many policies fail due to inadequate execution and poor planning. The process of policy development begins with conception and concludes with implementation; successful execution requires systematic planning and a thorough action plan. This methodical approach includes assigning specific duties to designated organizations within an unambiguous plan that promotes accountability among all parties involved.

Effective coordination across agencies and government departments is essential. Without accountability and seamless collaboration at all levels, it is difficult to expect a successful and advantageous result from policy implementation. Once the policy is put into action, it must not be neglected. Ongoing and meticulous monitoring is crucial to confirm that the policy is being executed as originally planned. A comprehensive assessment report should be shared with all parties involved. Kaplan and Baldauf (1997), researched language planning, characterizing it as the collection of ideas, instructions, rules, values, and efforts intended to bring about a purposeful transformation (cited in Mansoor, 2005). They linked language planning primarily to governmental bodies. However, critics such as (Fishman, 1968 & Jernudd, 1993) have argued that language planning also occurs in other social contexts at a smaller scale (cited in Mansoor, 2005). Das Gupta (1971), defined language planning as addressing linguistic issues of an organized nature typically on a national level (cited in Mansoor, 2005). Although often used interchangeably with language policy, it is considered a distinct academic field. Language policy encompasses regulations regarding the status of languages. According to Powell (1998), the concept of language policy has existed for as long as language itself, while the practice of language planning predates its formal recognition as a distinct academic field. It encompasses deliberate decision-making that can have both favorable and unfavorable outcomes. These decisions may stem from unconscious inclinations or be carried out consciously, under governmental directives, or through private institutional guidance.

2.5 Language in Education Planning

Baldauf and Kaplan (1997), identified six fundamental goals for language in educational planning. This includes:

- Demographics of Students: Identifying the target population - those students who will be undergoing language education. What are their inclinations and driving forces? How do their parents perceive this?
- Ensuring the supply of teachers. Ensuring an adequate supply of teachers is crucial. Determining what is the required number of teachers? and Identifying what are the most effective training methods that are essential considerations also in this endeavor?

- Medium of instruction. The language of instruction, the curriculum, and establishing the timeline and priorities will be determined.
- Methodologies to be employed. Methods to be utilized in addressing the issue of pedagogical approaches and instructional resources.
- Economic and physical resources are required. Identifying the essential economic and physical resources needed to support a language education program.
- The assessment procedure is engaged. To address the matter of evaluation and appraisal.

Pakistan is a nation characterized by its diversity, encompassing various ethnicities, languages, and racial groups among its populace. The country boasts six major languages alongside more than fifty-nine regional dialects. Urdu and English hold prominence in key domains of influence including government, media, judiciary, and education (Rehman, 1996). Despite being the national language, only 7% of the population speaks Urdu; on the other hand, English is utilized as the language for official matters and authoritative purposes.

Language planning and policies represent relatively recent fields that have evolved within the realm of sociolinguistics (Mansoor, 2005:1). Pakistan faces multiple challenges in formulating language-in-education policies due to its diverse cultural landscape, which presents a complex decision-making process regarding the selection of a suitable instructional medium for various ethnic groups. On the contrary, the country's persistent lack of political stability has also been a significant factor preventing any government from taking practical steps in this matter. Ayres (2003:51-52) highlighted this issue by noting that the government has given scant attention to language as a policy, despite Pakistan's rich diversity of languages and ethnicities. As a result of this neglect, society has become a mixture of various cultural groups where certain powerful groups enjoy all the benefits. The language policy in Pakistan is intended to strengthen the state by promoting Urdu as a national language while also aiming to modernize English as an official language.

2.6 Education Policies in Pakistan: The process

Numerous policy papers have been drafted and put forth in the National Assembly of Pakistan. Siddiqui (2016) emphasized that certain policy documents were thorough,

addressing language issues in education, and offering valuable recommendations based on reports such as the 1959 Report on National Education and the 1992 report. A total of nine education policies have been presented in the national assembly to enhance educational policies. Table 1 lists some key education policies from 1947 to the present.

No.	Year	Policy Document
1	1947	Pakistan Educational Conference
2	1959	The Commission on National Education
3	1969	Proposal for a New Educational Policy
4	1970	The New Education Policy
5	1972	The Education Policy 1972-1980
6	1979	National Education Policy and Implementation Program
7	1992	National Education Policy, 1992
8	1998	National Education Policy 1998-2010
9	2009	National education Policy 2009

Table 1: Education Policies of Pakistan

2.6.1 Pakistan Educational Conference, 1947

Pakistan's inaugural policy paper emerged as a report stemming from the Pakistan Educational Conference in 1947. Notably, there was an extended absence of a dedicated state institution or department responsible for planning until the establishment of the Planning Commission in 1955 (Siddiqui, 2016). The Pakistan Educational Conference took place from November 27th to December 1st, 1947. Its primary objective was to establish the future direction of education policy in the country. The conference assembled forty-eight officials, with an additional nine representatives from the education division of the Ministry of Interior. During the event, Mr. Fazal-ul-Rehman, serving as Minister for the Interior, delivered a written message on behalf of Quaid-i-Azam Muhammad Ali Jinnah and presented his speech addressing educational policy within a political context. He emphasized the necessity for reorienting education based on Islamic teachings and also discussed the importance of Urdu in his discourse (Gop2, 1947:11 cited in Siddiqui 2016).

The conference discussions made it increasingly clear that Urdu would be afforded a highly privileged status as the predominant lingua franca of the newly formed state. The quote suggests that Urdu's ability to assimilate words from various languages, its historical ties to Persian, Arabic, Sanskrit, and English, as well as its substantial literary achievements in both prose and poetry present a strong argument for designating it as the primary language of communication in Pakistan. English was viewed as a foreign language, with concerns raised about the negative impact of using an alien language for instruction. However, the undeniable value of English was also acknowledged. The significance of regional languages in the new state of Pakistan was acknowledged, but there was no clear definition of the role of English. Urdu remained the primary language.

2.6.2 Commission on National Education, 1959

The Commission on National Education report extensively addressed the language concerns in Pakistan. It stated (GoP, 1959:289), that Urdu and Bengali had been designated as the national languages of Pakistan, thus negating any further debate about their incorporation into the educational system instead of English. The report suggested a gradual transition towards using national languages over English. Conversations about embracing a language, whether it is Urdu, English, or local dialects, appeared to focus more on persuasive language rather than genuine dedication. According to the GoP (1959:290), it was stated that despite efforts, it would still be vital for young people, both male, and female, to study English as a mandatory subject from class VI through degree level. The commission also estimated that it might take up to fifteen years to fully transition from English as the primary medium of instruction. Despite these projections, the plan for the national language to replace English by 1974 did not materialize.

2.6.3 Proposal for a New Educational Policy, 1969

The 1969 Education policy expressed disapproval of the social division based on language. The policy asserted (GoP, 1969:3): “Using English as the medium of instruction at higher levels not only widens the gap between different social classes but also maintains the privileges of children from affluent families, leading to a significant squandering of human potential”.

In 1954, a policy was recommended to introduce the national language as an official language by 1974, but it did not materialize due to inadequate planning. The 1969 policy proposed changing the medium of instruction from English to national languages at all levels. Additionally, the policy aimed for Urdu to become an official language in West Pakistan and Bengali in East Pakistan by 1974, with both languages being introduced by the central government by 1975 as a result of this determined effort.

2.6.4 The New Education Policy, 1970

The 1970 New Education Policy emphasized the critical importance of language in social, educational, vocational, and political contexts and its role in shaping these spheres. It delved into the theoretical aspect of using Pakistan's mother tongue and established a set of criteria for selecting the medium of instruction. According to this criterion, the chosen language as a medium of instruction should possess certain capabilities:

- To facilitate students' acquisition of knowledge with minimal effort,
- To effectively and objectively convey information,
- To encourage critical and innovative thought.

The committee proposed that the transition from English to national languages for official purposes be examined by setting up a commission. This examination was connected to the shift in the medium of instruction at higher levels and the substitution of English for official use.

2.6.5 Education Policy, 1972-1980

In 1971, Pakistan experienced the loss of East Pakistan where the Bengali language held significant influence. The policy implemented in 1972 signaled a shift in outcomes. It did not delve into detailed discussions on language-related matters nor guide the medium of instruction. Instead, it briefly mentioned the importance of promoting regional languages for national unity, emphasizing the need for people from different regions to familiarize themselves with each other's language, literature, customs, and social norms.

The GoP (1972:15) recommended the creation of a department dedicated to studying the language, literature, and culture of different regions in Pakistan at an undergraduate level. Additionally, it proposed the establishment of a National Institute for Pakistan Studies at Islamabad University for research and postgraduate studies focusing on Pakistani literature and culture. The absence of maintained guidelines for the medium of instruction was surprising, given that it is a significant issue in Pakistan's educational system. Aly (2007:79 cited in Siddiqui, 2016:140) notes that 'the policy overlooked the role of the medium of instruction and did not address language'.

The Constitution of Pakistan 1973 outlines several measures related to language:

- Promotion of Urdu as a national language to strengthen the state
- Establishment of Urdu as the national language, with arrangements for its official use within 15 years from the commencement date
- Utilization of English as an official language to modernize the state
- Permissible use of English for official purposes until replaced by Urdu.

2.6.6 National Policy, 1979

The 1979 national policy, influenced by the military dictator Gen. Zia-ul-Haq, emphasized his cultural, religious, and linguistic preferences. The goal was to incorporate Islamic principles into education and advocate for Urdu as both a national language and the main medium of instruction (GoP, 1979:2). Even schools that taught in English were directed to utilize Urdu as the language of instruction. The policy aimed to get rid of the phrase "English-medium schools" (GoP, 1979:59) and promote Urdu as a representation of the national identity of the Muslim community while viewing English as a reminder of colonial rule. However, this decision was later reversed with English being reinstated as the medium of instruction in English medium schools. Additionally, significant decisions regarding language were made during this period," including:

- English will be a mandatory second language taught in all schools from the sixth grade onwards.
- There will be no new English medium schools established across the country. Curriculum developers and policymakers have the responsibility to guarantee

that content about scientific, professional, and technical topics is presented in the Urdu language.

- The national language will be used as the medium of instruction in schools, with one of the regional languages also being taught starting from the third grade onwards.

The transformation of current English medium schools into Urdu medium ones, allowing teachers to instruct in Urdu, marked a significant and revolutionary shift in Pakistan's linguistic history.

2.6.7 Education Policy, 1992

The 1992 education policy was introduced following a period of military rule. It was unveiled by a civilian government and included provisions for the use of approved provincial languages, the national language, or English as the medium of instruction, based on decisions made by the provinces. Additionally, it recommended English as the medium of instruction for science and technical education at the tertiary level (GoP, 1992:25).

2.6.8 The Education Policy, 1998

The 1998 Education Policy was formulated concerning a section of the Pakistani Constitution emphasizing the advancement of the Arabic language. The focus was on the mandatory instruction of the Holy Quran and Islamiyat, along with promoting and making it easier to learn the Arabic language. Moreover, its goal was to guarantee precise printing and dissemination of the Holy Quran to foster unity and compliance with Islamic ethical principles. The policy also suggested the creation of examination services such as the GRE, TOEFL3, and National Testing Services, which would provide testing opportunities for individuals who are interested two or three times annually.

2.6.9 Education Policy, 2009

The Education Policy of 2009 was initially developed during the tenure of General Pervaiz Musharraf and later revised, approved, and implemented under the People's Party government. In contrast to previous policies, this one prioritized the widespread use of English for global recognition and competition in international markets (GoP, 2009a:27). The policy underscored that proficiency in English contributed to

educational inequality within Pakistan as it became a prerequisite for high-status occupations, leading to a division between those proficient in English and those who were not. Following the 9/11 incident and emphasizing "enlightened moderation," there was a conscious effort by Musharraf's government to enhance Pakistan's international image by promoting early English education while also providing opportunities for children from low socioeconomic backgrounds to learn the language.

In brief, Pakistan grappled with its colonial history and the decision to embrace either English, the language of its imperial rulers, or Bangla, spoken by the majority. However, Urdu emerged as a third alternative due to its strong connection with the people. The role of English was indefinite but it continued to be influential across different periods. As per the 1947 Education policy, Urdu was retained as the medium of instruction for the general population while English was reserved for privileged classes.

The initial education policy was set in 1959 but went unimplemented. In 1973, there was a proposal to make Urdu the official language of Pakistan while giving autonomy to provinces for decision-making. General Zia-ulHaq introduced the incorporation of Arabic as part of the 'Islamization' of language in 1977. English became a mandatory subject up to grade 4, with exams scheduled to be conducted in Urdu by 1989. This period also marked the rise of private English medium schools. By 1989, English became compulsory from class one onwards. Parallel education systems were established in 1998. A 'white paper' issued in 2007 decided that English would be taught from class one and Mathematics and Science would begin from class six using English as the medium for instruction. Finally, it was declared in 2009 that Science and Maths would also be taught in English from grades four to five.

2.7 SOCIAL COGNITIVE THEORY

Bandura (1986), developed the social cognitive theory, which later became a fundamental framework for student learning and performance. This theory offers a modern interpretation of the social learning theory, emphasizing motivational processes that influence learning and performance across cognitive skills, motor skills, strategies, and behavior. Bandura highlighted the importance of self-efficacy as a key factor in connecting motivational processes with self-regulation. While self-efficacy is crucial in problem-based learning, it does not fully capture the intricacies of

motivation. Bandura's focus lies on the stage where learners are confident that their actions will result in desired outcomes (Deci & Ryan, 2000). The focus was also on the fact that self-efficacy theory does not account for the inherent activity of the learner or the innate human drive to enhance and broaden competence. As a result, aspects of motivation such as intrinsic motivation, interjected regulation, and identified regulation were overlooked by self-efficacy theory despite their significant importance. This leads us to organismic social cognitive theory which emphasizes self-determination as a key feature in motivating learners from an organismic perspective. It encompasses the innate human drive for psychological development and seeks to explain individual motivational characteristics. Organismic social cognitive theory is built upon three fundamental assumptions that closely resemble Bandura's theory"

- Mutual influence of personal, behavioral, and environmental elements
- The way an organism perceives motivation.
- Clear and deliberate learning strategies

2.7.1 Reciprocal Interaction among the Three Factors

Organismic social cognitive theory posits that three factors interact reciprocally, such that any change in one factor affects the other two. For example, when a teacher elicits action from a learner or provides information and directs the learner's attention to instructional materials, this influences the behavioral-environmental factor. The teacher serves as an environmental influence on the learner's behavior, which then prompts a reaction from the learner and impacts their cognitive and social factors.

2.7.1.1 Personal Factors

The personal factor related to behavior involves the learner's internal qualities that motivate their actions. Deci & Ryan (1987), suggest that student motivation is rooted in intentionality, with a learner's intentions driving their engagement in specific behaviors. When students endorse these intentions, it is seen as self-determination (Reeve & Jang, 2006). Learners independently regulate their satisfaction levels by monitoring how their autonomy is influenced while working on tasks and putting their abilities into practice within their environment.

2.7.1.2 Behavioral and Environmental Factors

The interaction between personal and environmental factors is examined, where the characteristics of learners prompt a response from the environment. Physical abilities and awareness of personal skills are influential in shaping reactions to the environment. Instructors respond to students based on perceived capacities rather than genuine competence, which contributes to a learner's self-image regarding their competence and connection with others. These responses can be either positive or negative. Developing effective learning skills can enhance skill acquisition, leading to psychological security for the learner according to Ryan and Powelson (1991), allowing them to focus more on tasks. It should be noted that this interaction between factors may not always be balanced. As Pintrich and Schunk, (2002) the key determinants depend on an individual's circumstances.

2.7.2 The Organismic Perception to Motivation

Organismic Perception theory suggests that humans have a natural inclination to unify their psychological aspects into a coherent self-concept and establish connections within broader social structures. This inherent predisposition motivates individuals to develop their skills, participate in activities that resonate with their interests, seek social connection and approval, and apply their interpersonal and psychological encounters. There is an innate drive for people to meet the needs for independence, proficiency, and contentedness. The more they pursue a specific course of action; the more they are presented with opportunities to effectively employ their abilities. This fosters self-determination in learners leading them toward internal regulation resulting in more consistent behavior compared to prior patterns (Deci and Ryan, 2000).

Autonomy refers to "self-governance" and is defined as an individual's ability to regulate their behavior through self-directed action (Ryan and Powelson, 1991). The individual serves as the initiator of their actions in autonomous behavior. Autonomy is fundamental for transforming external directives and guidance into self-managed behavior. Contrary to this, Competence refers to an individual's desire to demonstrate their abilities and achieve success with effectiveness, particularly in demanding situations.

Human beings are naturally equipped with the impressive capacity to improve their abilities beyond their current level, leading to increased confidence and intellectual

development. Rather than being driven by external rewards, competence should be nurtured in settings that promote autonomy.

As highlighted by Ryan and Powelson (1991), the emotional and personal bond between individuals is referred to as relatedness. As social beings, humans rely on support, cooperation, relationships, and community. Relatedness extends beyond simple associations among people; it signifies the ability to nurture a sense of ease, togetherness, and unity with others collectively. Hence, relatedness is crucial in advancing principles and passing on culture from one individual to another.

When an individual consistently encounters overpowering and unwelcoming environments or efforts to regulate their self-expression, it can lead to the substitution of innate processes with defensive or self-preservative actions. This tendency may lead to a diminished regard for others and a heightened focus on oneself, potentially resulting in elevated antisocial conduct. As a result, these external influences fulfill the fundamental requirements of the person concerned.

2.7.3 Explicit Learning

Organismic social cognitive theory underscores the importance of intentional learning. Bandura argues that intentional learning occurs when the learner is not performing at a visible level, and the influence of a role model is pivotal in this context. This role model can take various forms including a person, electronic resource, symbol, or non-human entity, and may also be communicated in written form. When the learner consistently acts with precise timing and this drive prevents them from encountering social embarrassment or adverse outcomes, explicit learning processes increase. Explicit learning aligns with "learning by doing" and enables the learner to gain insights from others' experiences.

According to Pintrich and Schunk (2002), successful actions are preserved while others become unnecessary. Students engage in complex-skill learning, which involves gaining knowledge from both types of learning. The first type focuses solely on observing demonstrations of a skill, allowing learners to acquire some but not all aspects of the skill. The second and most effective type allows students to practice the skills they have learned. According to Pintrich and Schunk (2002), this approach allows the instructor to assess the learner before providing feedback.

2.8 Theoretical Model of Organismic Social Cognitive Theory

Bandura introduced the conceptual model of organismic social cognitive theory, Bandura's triadic reciprocity model (1986). This theory emphasizes three dimensions - personal, behavioral, and environmental features - that impact a learner's interest in learning, engagement, and preferences toward learning outcomes. In Problem-Based Learning, active learning is utilized for knowledge acquisition, while explicit learning is employed for teacher-guided instruction. The study focuses on environmental factors such as task-based or problem-based learning methods and the influence of learners' self-motivation as a personal factor.

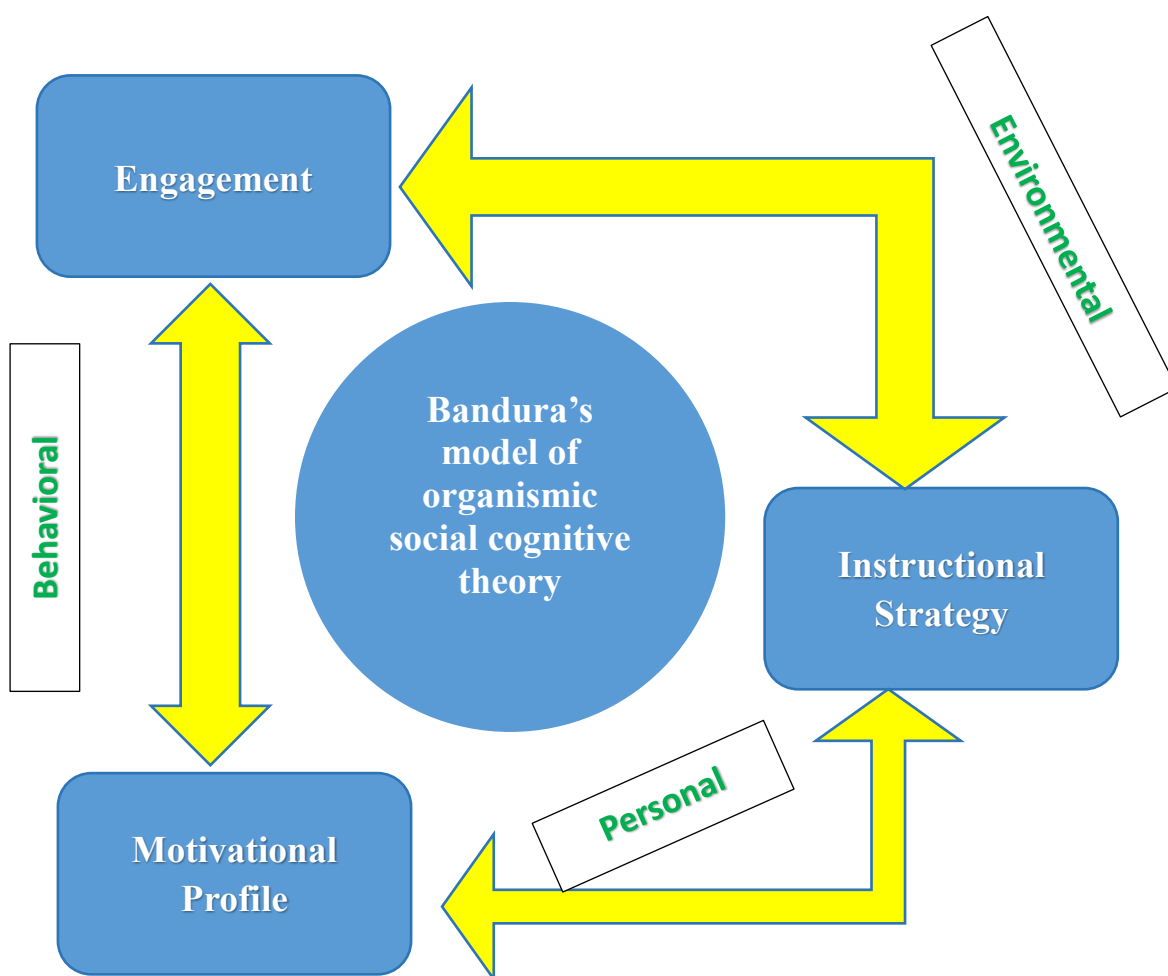


Figure 2 Adapted from Bandura's model of organismic social cognitive theory

2.9 Variables of interest

According to the Longman Dictionary of Applied Linguistics, a variable is a characteristic that causes members of a set or group to differ from one another. This often occurs in the context of testing and statistics. For example, when comparing teaching methods, there may be various factors that can vary:

- The level of interest generated by each.
- The extent to which each method is employed for teaching.
- The complexity involved in using each method.

In this particular investigation, various variables of focus are comprised of

(a) Motivation

(b) Problem-Based Learning,

(c) Teacher-guided learning

(d) Critical thinking ability.

2.9.1 Motivation

Richards, Platt & Weber (1985) the author discussed how motivation plays a crucial role in shaping an individual's willingness to engage in certain activities. In the context of second language (L2) and foreign language learning, motivation has diverse effects on the learning process, manifesting in various forms. The text identifies two distinct types of motivations:

1. Instrumental motivation involves the desire to acquire a new language for practical purposes, such as securing employment, understanding foreign texts, or achieving success in an examination.
2. Integrative motivation refers to the aspiration to learn a new language to engage with individuals from another culture who use it for communication.

The term "motivational profile" refers to the individual elements linked to self-determination, representing an individual's motivation to take action. These elements encompass aspects that play out in cognitive, emotional, and behavioral domains. To comprehend their impact on driving human behavior, it is essential to first establish a clear definition of motivation. The study of motivation has been approached from

various angles since its inception (Vallerand & Bissonette, 1992). Recent years have seen a widely embraced viewpoint that posits behavior as being driven by both intrinsic and extrinsic motives (De Charms, 1968; Deci, 1971, 1975). Deci and Ryan (1985), proposed a third element, known as motivation, to comprehensively comprehend all aspects of human behavior.

2.9.1.1 Intrinsic Motivation Behavior

According to Deci (1971), behaviors driven by personal pleasure and fulfillment of desires are considered intrinsically motivated. These behaviors, also known as intrinsic behaviors, involve engaging in an activity without the expectation of a material reward or external incentive. Learners participate voluntarily to satisfy their inner drive to learn and achieve proficiency in a task, allowing them to experience the joy and satisfaction that comes from self-improvement. This type of motivation is particularly important for fostering long-term engagement and commitment to learning.

2.9.1.2 Extrinsic Motivation Behavior

Extrinsic behaviors, on the other hand, are motivated by external factors. Learners engage in these behaviors as a means to an end rather than deriving internal satisfaction from the task at hand (Deci, 1975). The students engage in behaviors driven by external factors due to a lack of self-motivation and may seek motivation through external influences rather than being internally motivated. Motivation can be fostered through external influences instead of solely relying on internal drive.

2.9.1.3 Types of Extrinsic Motivation Behavior

The theory of intrinsic motivation behavior was proposed by researchers based on the concept that there exist various forms of this type of behavior. Linguists like Deci, Connell & Ryan, 1985; Ryan & Connell, 1989, were the major names who proposed the idea of the existence of several types of extrinsic motivation. According to Vallerand and Bissonette (1992), There are primarily four categories of extrinsic motivation, and these can be organized in a manner that aligns with self-determination. The types are listed as following:

- External
- Introjected

- Identified
- Integrated

When behavior is regulated externally, it is referred to as external regulation. According to Vallerand and Bissonette (1992), this type of motivation is driven by either rewards or the fear of limitations and constraints. For example, a student might regularly complete homework to avoid potential humiliation and embarrassment in class the next day due to lack of preparation. This kind of behavior aims to prevent negative consequences rather than expressing self-determination or genuine interest in the task.

Secondly, Vallerand and Bissonette (1992) the concept of introjected regulation involves individuals regulating their behavior internally by imposing self-imposed rewards or constraints on themselves. For instance, a student may voluntarily answer a teacher's question with the underlying motive that no one else will answer and it would make the teacher feel bad. Despite monitoring their actions internally, the student lacks genuine self-determination, and external factors primarily influence their actions. The final two forms of extrinsic motivation are influenced by external factors, but intrinsic motivation still holds significance while recognizing the importance of external influences.

When a learner values and appreciates certain behaviors, it is referred to as identified regulation. According to Vallerand and Bissonette (1992), this involves making choices based on self-determination. Identified regulation occurs when a student chooses to take advanced courses to improve their grade point average, driven not by a desire to save time or energy but by the inner satisfaction it brings. Since the learner does not feel pressured to complete tasks within specific time frames or score requirements, their behavior is self-determined. The motivation behind this form of regulation is twofold: satisfying the intrinsic thirst for learning while also serving as a means towards achieving an end goal.

Vallerand and Bissonette (1992), proposed that when a behavior aligns with the learner's self-concept, it becomes integrated regulation. For example, a student who prioritizes studying over leisure activities in preparation for exams demonstrates this type of regulation. They hold the belief that good grades are crucial for gaining admission to a reputable college, linking education to future success. This indicates

that their commitment to education is genuine as they integrate behaviors essential for achieving success not only academically but also in other aspects of life. Recent research in motivation introduces motivation as a construct resulting from the lack of connection between learners' behavior and their learning outcomes. Furthermore, such motivational concepts have been extensively studied across various fields within educational psychology and can be seen as fundamental components contributing significantly to students' academic achievements (Deci and Ryan, 1985).

The learner lacks both intrinsic and extrinsic motivation, leading to a lack of interest and feelings of inadequacy. They also feel powerless over their behavior and outcomes. The learner struggles to distinguish between situations with rewards or constraints according to Vallerand & Bissonette (1992). This struggle may ultimately lead them to disengage from the learning process due to an inability to perceive the potential benefits. Additionally, they fail to understand the purpose and responsibility associated with their studies, feeling hopeless about potential rewards. This lack of control is linked to learned helplessness as described by Abramson, Seligman & Teasdale (1978). An examination of motivation becomes crucial when discussing the academic achievements of learners.

Numerous studies have shown a strong link between motivation and a student's perseverance in school. In 1992, Vallerand and Bissonette conducted research suggesting that students who demonstrate determination throughout their studies tend to be more intrinsically motivated compared to those who drop out. Additionally, the study found that female students are generally more integrated, acknowledged, and intrinsically motivated than male students. Their research highlights the importance of perseverance in academic pursuits and sheds light on gender differences in motivation among students. Moreover, these findings provide further support for the hypothesis that self-determined learners tend to demonstrate higher levels of engagement in academic activities and have greater knowledge acquisition. They also possess advanced critical thinking skills compared to those who lack such determination.

2.10 Problem-Based Learning

Problem-based learning is a teaching strategy that originated in technical subjects and has since been adopted in higher education fields such as nursing, dentistry, and agriculture (Boud & Faletti, 1991; Barrows, 1996, 1998; Savery & Duffy, 2001).

McMaster University Medical School played a significant role in laying the foundation for Problem-Based Learning as a reaction to the insufficient knowledge base among medical students, particularly during neurology clinical residencies (Rhem, 1998; Maudsley, 1999). Despite conflicting accounts of its origins from Rhem (1998) and Edweb (2007), and other sources, it is widely recognized that John Dewey's ideas on inquiry training and student apprenticeships are rooted in the history of PBL. According to Rhem (2007) and other researchers, Problem-based Learning involves learners confronting ill-structured problems within contextualized scenarios and striving to find meaningful solutions through active engagement.

Barrows (1998) defined “genuine PBL” as describing and specifying several goals of learning:

1. Obtaining a comprehensive understanding and integration of knowledge from various fields.
2. Cultivating efficient problem-solving skills.
3. Fostering the ability for independent, self-directed learning.
4. Enhancing interpersonal and teamwork capabilities.
5. Nurturing a continuous desire for learning and growth.

To attain these objectives, according to Barrows (1998), Problem-Based Learning should possess specific characteristics:

- Problem-centered: According to Norman and Schmidt (1992), students need exposure to real-life and genuine problems that they may encounter beyond the educational setting.
- Focus on problem-solving: Students employ problem-solving abilities essential in their field. The instructor guides students in effectively developing and utilizing this skill.
- Student-focused: The student assumes responsibility for acquiring skills independently. Instructors should avoid fostering dependence on them.
- Self-directed learning: Self-directed learning necessitates learners to gather current information to solve problems. In this regard, learners cultivate their

research skills, which are essential for continuous professional development and lifelong learning.

- **Reflection:** Learners deepen their understanding by reflecting on the knowledge they have acquired and engaging in group discussions. In these discussions, they ponder over the relevance of previously acquired knowledge to the current issue and consider its essential components. They also examine how the present problem connects with past challenges.

2.11 Constructive Approach for Learning

When utilizing Problem-Based Learning or other instructional approaches, it is crucial for educators to deeply understand and appreciate the teacher's role in facilitating learning. The teacher serves as a facilitator and acts as a starting point for learners' educational journeys. However, learning should be guided rather than strictly instructive. Hmelo-Silver & Barrows (2006), advocate for directing the learning process instead of exclusively providing knowledge, emphasizing the use of open-ended questions to encourage student participation from the outset. By engaging students in this manner, educators can keep them on track while avoiding negative feedback and assuming a collaborative approach with fellow learners.

According to Bridges & Hallinger (1991), this student-centered approach significantly reduces the need for direct teaching and effectively encourages students to take responsibility for their learning, fostering a more independent and motivated academic environment. Problem-based Learning represents the principles of constructivist pedagogy by emphasizing active, experiential learning and student-driven inquiry (Burris, 2005). John Dewey, an influential American philosopher and educator, had a significant impact on education in The United States. His expertise and insights significantly influenced the field of education in the United States. John Dewey is widely recognized as the pioneer of an approach that emphasizes the active construction of knowledge and skills by learners, with all information being contained within these constructed frameworks (Huitt, 2003).

Fennimore and Tinzmann (1990), asserted that there are significant distinctions between a teacher-centered curriculum, which is focused on behavior, and a student-centered curriculum, which is focused on constructivism. The former approach involves teaching skills and knowledge separately, and then connecting them

inductively. The latter approach involves learners finding satisfaction by engaging in tasks that require higher-order thinking abilities and problem-solving skills (Huitt, 2003).

Bruner (1990), proposed three principles of constructivist learning.

1. Teaching should focus on intentionally incorporating a diverse range of experiences, cultures, and viewpoints that will inspire students to eagerly engage in meaningful and dynamic learning.
2. It is crucial for educational instruction to be carefully planned and organized to effectively facilitate student understanding and comprehension.
3. Lessons are thoughtfully structured to go beyond the provided information and address any potential gaps in understanding while promoting deep learning.
4. Constructivism advocates emphasize that teachers and educators should recognize the rich diversity of experiences and knowledge that students bring into the classroom, valuing their unique perspectives.

In the next stage of designing a curriculum, there is a need to focus on designing an educational program that effectively facilitates a connection between new and existing information (Huitt, 2003). Conversely, proponents of behaviorism argue that teachers have the authority to determine what students should learn in terms of knowledge and skills, and subsequently develop the curriculum accordingly. This approach emphasizes the role of teacher-directed instruction in shaping student learning experiences (Huitt, 2003).

2.12 Constructivist Theory and Problem Based Learning

Savery and Duffy (2001), proposed that a Problem-Based Learning environment serves as an exemplary illustration of constructivist theory. In the comparison presented in Table 1, Savery and Duffy's eight principles are contrasted with Barrow's attributes of Problem-Based Learning.

Problem Based	● All learning activities are attached to a larger task. ● Task should be designed in this way that it reveal the density of practice environment ● An authentic task should be designed.
Problem Solving	● Testing of ideas should be supported against alternative views and contexts ● Learning environment should be designed to support and challenge the thinking ability of the learner.
Student centered	● Learner should be supported to develop the responsibility for the task.
Reflection	● Openings should be provided for reflection on both learning procedure and substance.
Self-directed learning	● Learner should be given the ownership of the process under use to develop a solution.

Table 2: Comparison of characteristics of PBL and principles of constructivist theory

2.13 Structure of Problem-Based Learning

Problem-solving strategies operate on various principles, whereas Problem-Based Learning takes a different approach. The primary distinction between the two lies in the problems they address (Newcomb, McCracken, & Warmbrod, 1993). Traditional problem-solving methods involve clearly defined problems with prescribed steps to follow for their resolution. In contrast, problem-based learning involves tackling disorganized, complex, and unstructured problems (Jonassen, 1997). In 2002, Lohman described the characteristics of an ill-structured problem as:

1. The precise nature of the issue is not evident, and the information provided is insufficient to offer a solution.
2. There are multiple approaches available to address this problem, rather than just one single method.
3. The solutions encompass various dimensions, indicating that there exist multiple valid responses.

An unstructured problem is presented to students, requiring them to approach it as they would real-life problems, without any prior preparation (Maxwell, Bellisimo, & Mergendoller, 2001). The teacher or facilitator divides the students into groups of 4-5 members and identifies the learning objectives that guide individual study. Learners need to distinguish between what they know and what they don't know. They are

encouraged to seek relevant information from sources other than their textbooks (White, 1996). After acquiring skills and gathering information, these are processed and applied to solving the problem. An important aspect of Problem-Based Learning is that students' knowledge and skills are evaluated during the learning process. Finally, students merge this new knowledge with their existing understanding.

Numerous theoretical and conceptual frameworks exist for teaching with PBL. While most of these models follow similar processes, they vary in the level of detail provided for each step. For this study, Arends' (2004), model was chosen, which outlines five key steps in using PBL (refer to Table 2). According to Arends, the learning process begins with introducing the problem to students and forming groups. Following group formation, facilitation of the problem-solving process occurs before concluding with guiding students through discussion and expression.

Phase	Teacher's Behavior
Orient students to the problem	Go over the objectives of the lesson, describes important logistical requirements, and motivates students to engage in self-selected problem-solving activity.
Organize students for study	Help students define and organize study tasks related to the problem.
Assist independent group investigation	Encourage students to gather appropriate information, conduct experiments, and search for explanations and solutions.
Develop and present artifacts and exhibits	Assist student in planning and preparing appropriate artifacts such as reports, videos, and models and helps them share their work with others.
Analyze and evaluate the problem-solving process	Teacher helps students to reflect on their investigations and the processes they used.

Table 3: Arends' Problem Based Learning Model

Arends' theoretical framework provides a structured approach that guides problem-solving and progresses toward the student's conclusion. This framework is applicable in higher education settings, but can also be utilized at the secondary level.

2.15 Educational Outcomes of Problem-Based Learning

PBL's most notable aspect is its cross-disciplinary nature. In Problem-Based Learning, students explore various perspectives to find answers and solutions with multiple

possibilities. This mirrors real-life scenarios where individuals identify problems, work towards solutions, and generate a range of possible outcomes. It challenges students to surpass the competencies outlined in specific skill areas by integrating written, oral, technical, logical, social, and analytical skills into their problem-solving processes while fostering collaboration and critical thinking among peers. Putnam (2001), highlighted the importance of this type of learning, stressing that it focuses on developing meta-cognitive skills. This encourages students to delve into higher-order thinking beyond basic knowledge and understanding levels. A study with similar findings was conducted by Vernon and Blake in 1993 through a comprehensive meta-analysis. The researchers identified several distinct attributes that set PBL students apart from those undergoing performance-based assessment. However, the studies did not employ randomization, leading the researcher to refrain from conclusively attributing these differences solely to program designs or instructional methods.

Gordon, Rogers, Comfort, and McGee (2001), in their study, investigated the impact of PBL on urban secondary school students in 6th, 7th, and 8th grades. Half of the students were exposed to PBL. The researchers found that many of the students failed to perform according to the set standards as they ranked below average but demonstrated strong performance in response to academic tests related to PBL. They observed significant improvements in behavior and academic achievements, particularly in science scores. Herman and Knobloch (2004), also studied the effects of PBL on knowledge acquisition, retention, and student motivation. Their research concluded that PBL led to enhanced success rates for students as well as improved understanding of knowledge and motivation levels; although results were mixed regarding knowledge retention.

In 2005, Burris conducted a research project to investigate the influence of critical thinking abilities and subject knowledge on high school students studying agriculture. The study utilized a guided individual research approach, in which students were given a specific question to investigate and were required to locate the answer from a designated reference text. Students were provided with a set of problems to solve independently while the teacher played the role of facilitator. The findings suggested that students performed well in critical thinking ability when working under directed study. Although there was some variation in the statistical results, according to Burris there was no significant practical difference. Ultimately, it was concluded that

problem-based learning is highly effective for achieving educational objectives and can be assessed at higher levels of cognition. There is also an indication that an instrument measuring problem-solving ability may serve as a more suitable data collection tool.

2.16 Critical Thinking

Advocates of critical thinking have long been championing its importance. In 1992, a report titled “Learning and Living: A Blueprint for High Performance” emphasized the significance of critical thinking as a necessary skill for all workers to adapt to an ever-changing work environment and contribute effectively to their organizations. It identified key workplace skills including resource management, effective collaboration, information acquisition and utilization, and adaptability to different technologies (the Secretary’s Commission on Achieving Necessary Skills). These reports underscored the crucial role of critical thinking in achieving success in the global market.

The role of the educational system in developing students' critical thinking skills is significant. For a long time, there has been a lack of agreement among language experts about the central definition of critical thinking, which was mainly linked to literature (Giancarlo & Facione, 2001). Various definitions have contributed to determining critical thinking skills. Alfaro-LeFevre (1985), defined critical thinking as an ongoing, purposeful form of reasoning aimed at making evidence-based decisions rather than relying solely on speculation. Critical thinkers can analyze and evaluate information in a systematic way to arrive at well-informed conclusions. Paul and Elder (2007), elaborated that critical thinking is self-directed, disciplined, motivated by an inner drive for improvement, and requires rigorous adherence to high standards along with mindful application. It involves the skillful analysis of complex issues through careful reasoning. Several researchers have categorized critical thinking as a cognitive skill set (Beyer, 1987; Bryne & Johnstone, 1987; Frye et al., 1999; Burris, 2005). Beyer (1987), outlined a set of cognitive skills necessary for effective critical thinking.

These abilities are:

- To differentiate between empirical facts that can be verified through observation and value claims based on personal beliefs or preferences.

- To effectively extract relevant information, claims, and reasons while filtering out the irrelevant.
- To thoroughly establish whether the statement is factually accurate and supported by evidence.
- To identify and analyze the claims and arguments that are unclear and vague.
- To discover the assumptions that are often left unspoken and unnoticed.
- To take notice of the prejudices that exist.
- To uncover and analyze logical contradictions through the application of reason and critical thinking.
- To effectively establish and support the factual strength of an argument, it is crucial to provide clear evidence and logical reasoning.

Some scholars have linked critical thinking to cognitive abilities, while others have connected it with higher-level thinking. Additionally, they have utilized Bloom's Taxonomy of Education Objectives as a framework for examining this type of cognitive skill and its application in educational settings (Burden & Byrd, 1994; Whittington, Stup, Bish, & Allen, 1997). Bloom et al (1956), outlined the six stages of cognition that formed part of Bloom's Taxonomy of Education Objectives: Knowledge, Comprehension, Application, Synthesis, Analysis, and Evaluation. Bloom et al (1956), define knowledge as the activation of specific information, procedures, models, or structures in the mind. Comprehension is an individual's capacity to grasp information so that it can be utilized when needed without impacting their understanding of other material. It involves absorbing and integrating new information into existing mental frameworks.

Miller's (1990), study described knowledge and comprehension as two types of lower-level thinking. The other four levels are generally considered forms of higher-order thinking, according to Bloom et al (1956). The application involves applying thought and ideas more specifically while the other three categories; analysis, synthesis, and evaluation are also considered part of higher-order thinking. Analysis is the ability to break down elements into their components in a manner that clarifies the relationship between ideas and identifies patterns and connections. Conversely, Synthesis entails integrating parts to form a whole by combining diverse elements into a coherent

structure. Finally, Evaluation refers to making decisions about the value of material and methods for specific purposes based on well-defined criteria and evidence. Facione (1990), argues that critical thinking, problem-solving, creative thinking, and decision-making are all influenced by cognitive processes. These processes are closely intertwined with higher-level thinking. Likewise, Ennis (1985), stated that critical thinking encompasses a significant amount of higher-order thinking. The Delphi Project, supported by the American Philosophical Association, aimed to foster a robust and vigorous conceptualization of critical thinking (Giancarlo & Facione, 2001).

According to their perspective, critical thinking involves self-regulated judgment that leads to interpretation, analysis, inference and evaluation. Additionally, it also facilitates the reflective examination of evidence, concepts, and context on which the entire judgment is grounded (Facione, 1990, p. 3). For this study, Hmelo-Silver & Barrows' (2006) definition is most appropriate. According to his definition, a cognitive activity involves the assessment of information, assertions, or theories that individuals have presented as accurate. It involves critically examining the meaning of statements, analyzing evidence and logical reasoning, and making conclusions about factual claims. This process entails collecting data from observation, experience, logic, and communication while emphasizing clarity, precision in thought and expression accuracy thoroughness, evidence-backed reasoning, and fairness in judgment.

Mabie and Baker (1996), found in their research that learning activities rooted in experiences can enhance critical thinking skills. Furthermore, a study conducted by Burbach, Matkin, and Fritz (2004), found that the implementation of active-learning methods in a beginner-level leadership course led to enhanced critical thinking abilities as assessed by the WGCTA. Unfortunately, there is currently no established body of knowledge specifying which approach is most efficacious for cultivating these skills.

2.17 A Brief History of problem Based Learning

Problem-based learning is an instructional approach that requires students to engage in collaborative problem-solving to facilitate their learning. In this method, learners work together to identify the information needed to address a complex problem, and then apply independent and self-directed learning to solve it. The teacher acts as a

facilitator rather than a knowledge provider, guiding the process of acquisition and application of knowledge. The characteristics of 21st-century learners such as independence, multitasking, collaboration skills, and tech-savviness necessitate the adoption of student-centered approaches like PBL by teachers.

About a century ago, John Dewey (1938), stated that schools should resemble life itself rather than simply preparing students for it. The medical education system has also adopted this approach by integrating Problem-Based Learning, which was introduced by Howard Barrow and colleagues at McMaster University's Faculty of Medicine in 1969 (Albanese and Mitchell, 1993; Vernon and Blake, 1993). According to Barrows (1980), learning occurs as students work towards understanding and solving problems encountered during the learning process. This does not exclude other teaching methods such as lectures, labs, or experiments; instead, students initially engage with problems before incorporating additional curriculum inputs. Task completion within problem-based learning may vary from traditional procedures. It is important to note that problem-based learning has existed since the arrival of humanity on Earth in various forms related to addressing fundamental issues like food security, shelter provision, and survival tactics against adversaries or harsh weather conditions. This chapter focuses on specific approaches involving Problem-Based Learning in language acquisition.

Problem-Based Learning involves the use of cognitive and meta-cognitive teaching strategies to link language learning with effective learning techniques. Roschelle (1999), adapted Problem-based Learning from John Dewey's (1929, 1933, 1938), Project Based pedagogy. Problem-based learning in the realm of second language acquisition and instruction prioritizes the practical application of the target language. This approach focuses on real-life situations that require using the language effectively, rather than concentrating solely on predetermined language structures. This approach shares similarities with task-based learning (Ellis, 2003; Skehan, 1998; Willis, 1996), content-based learning (Garner & Borg, 2005; Rodgers, 2006), and project-based learning (Alan & Stoller, 2005; Lee, 2002; Moss & Van Duzer, 1998) but stands out due to its emphasis on solving real-world problems without fixed solutions (Ertmer, et al. 2003). Students engage either individually or in groups to understand specific problems and explore potential solutions

Problem-based learning is a teaching method that draws from research on the acquisition of second languages. It offers guidance for educators and administrators looking to integrate this approach into classes or programs designed for adult ESL learners. Furthermore, it discusses in detail the advantages and challenges of implementing problem-based learning techniques with adult English language learners.

The Problem-Based Learning method was developed to actively involve and inspire learners, helping them appreciate the significance of their studies in the context of future responsibilities. It aims to provide sustained support and motivation for learning, emphasizing the importance of responsible and professional attitudes. Barr and Tagg (1995), propose the transition to Problem-Based Learning represents a move from an instructional-focused approach to one centered on the learner, emphasizing what the student is acquiring rather than what the instructor is imparting. Lloyd-Jones, Margeston, and Bligh (1998: 494) re-evaluate the "fundamental components of Problem-based Learning". The authors assert that three common elements are evident in the current and recent implementation of Problem-Based Learning: the initial trigger, student learning through researching identified issues, discussing potential solutions, and the application of knowledge to further understand the triggering situation, particularly in the final tutorial. This approach is also relevant as it mirrors real-life problem-solving processes used in professional work and everyday life. It applies knowledge both as a curriculum framework and as a cognitive process by encouraging students to actively engage with problems rather than passively receive information.

Academicians and researchers have been developing this approach for more than 40 years. There have been numerous studies in the field aimed at modifying problem-based learning for application in primary, secondary, and higher education environments (Achilles & Hoover, 1996; Gallagher, Stepian, Sher, & Workman, 1995; Gordon et al., 2001; McBroom & McBroom, 2001; Sage, 1996; Savoie & Hughers, 1994; West, 1992). In general, findings revealed that Problem Based Learning fosters an environment where students actively engage in the learning process, take ownership of their own learning, enhance their skills related to time management, topic description, and identification, access to various resources as well as assessing

the strength and validity of these resources. This approach ultimately leads to a more holistic educational experience for students.

Moreover, numerous research studies have indicated that Problem-Based Learning enhances critical thinking abilities, communication skills, teamwork dynamics, interpersonal capabilities and fosters students' curiosity in the subject area. Additionally, it is suggested that this approach also cultivates a sense of being apprentice scientists among students. Furthermore, Problem-Based Learning prompts students to recognize gaps in their knowledge, align actions and collaborate effectively with others while consistently assessing comprehension and being mindful of objectives (Galand, Bentein, Bourgeois & Frenay, 2003; Karabulut, 2002; Paris & Paris, 2001).

Problem-Based Learning is distinguished from other constructivist methods by its focus on ill-structured problems. These problems are messy, open-ended, and drawn from real-world situations with no single right solution (Jonassen, 2000). This approach encourages students to explore multiple perspectives and develop critical thinking skills as they work towards finding solutions. Students engage in a process of building their knowledge base as they tackle these complex challenges, leading to multiple solutions and varying criteria for evaluation. The approach requires scientific thinking, reasoning, analysis skills, personal judgments based on prior experiences, hypothesis generation to address the problem at hand, and collaborative sharing of ideas among peers to work towards reaching the best solution through testing hypotheses. Ultimately, students summarize their process and present their conclusions after engaging in this method within a Problem-Based Learning classroom setting.

During Problem-Based Learning, educators act as facilitators who assist students in the process and support them in finding resources. In addition to this, teachers should monitor each group's progress, help clarify misunderstandings, and ensure that they stay on track with their learning by providing guidance and additional support as needed (McKeachie, 2002). Therefore, students are active learners who engage in problem-solving activities, while teachers assume the role of guides and facilitators (Torp & Sage, 2002).

Teachers are at the forefront of guiding Generation Z through adolescence, and they acknowledge that this generation has its unique characteristics. An issue arising from the constant access to a vast amount of information is that today's students often seek quick solutions instead of taking the time to work through problems independently, relying on critical thinking skills for deeper understanding. When dealing with intricate tasks, they often prioritize quickness over precision. When confronted with uncertain problems, students are inclined to gain a significant amount of knowledge, apply it effectively, actively oversee their thought process by assessing strategies and monitoring progress, and offer sound arguments for various solutions based on evidence and situations (Shin & McGee, 2003).

John Dewey (1983) highlighted two contrasting perspectives on what motivates learners and emphasized the importance of structuring education according to each viewpoint. One perspective suggests that external factors, such as rewards and incentives, are crucial for motivating students, with teachers providing these extrinsic controls. On the other hand, another perspective proposes that intrinsic motivation stemming from personal interest and satisfaction is more effective in driving student engagement and learning outcomes.

The opposing viewpoint asserts that motivation is intrinsic and must be nurtured within the learning environment by instructors who adhere to an Organismic perspective (Ryan & Powelson, 1991). This approach assumes that the human mind possesses an innate ability to assimilate new information and encourages original thinking. Integrating these inherent tendencies with environmental factors is essential for effective learning, considering that students spend a significant amount of time in school. Leadership skills were also recognized as being immediately beneficial for this purpose within the study's investigation. Moreover, self-motivation and adaptability were identified as key factors contributing to successful student outcomes.

2.18 Conclusion

In recent years, several researchers (Sendaq and Odabas 2009; Iwaoka et al., 2010; Smith, 2015) have discussed the impact of Problem-learning on critical thinking in language learning. However, other studies (Choi, 2004; Sulaiman, 2011; Lee, 2013) have presented less positive results in this area. Despite conflicting findings and ongoing debates about its efficacy, Problem-Based Learning continues to be

embraced as an effective approach for producing skilled graduates in various fields including Engineering and Medicine. This study aims to assess the effectiveness of PBL from both practical and theoretical perspectives for institutions seeking to enhance teaching and learning quality across diverse disciplines.

CHAPTER 3

RESEARCH METHODOLOGY

This chapter provides a concise summary of the key features and relevant aspects of the employed research methods. It clarifies and justifies the methodological approach. Additionally, the chapter examines the research design utilized by the current investigator to address the research question outlined in the introduction. Moreover, it illuminates the pertinent considerations that require careful attention throughout the research endeavor. Lastly, the chapter addresses the issues of reliability and validity concerning both the data and the research design. The chapter offers a comprehensive overview of the methodological foundation and research process, providing readers with a clear understanding of the investigative approach.

Research is an important tool that enables scholars to explore more dimensions of knowledge. The scientific discoveries help the learners to adopt and react to their environment, developing their deep and multi-dimensional understanding of the world. People gain power through research to reach their goals while finding solutions to their disputes because the tools and knowledge it provides help them understand complex situations. This research serves as a basic initiative to add value to this ongoing development process (Mouly 1978, cited in Cohen & Mannion, 1998: 40). The research constitutes a basic initiative to extend the current academic foundation regarding this specific topic.

The research investigates both the practical implementation potential and positive effects of introducing Problem Based Learning to Pakistani English language teaching classrooms. Through this research, it was determined that Problem based learning develops students capacity to deeply learn and develop critical thinking abilities. The mixed approach of qualitative and quantitative data collection through class room observations and surveying the focus groups and also collecting responses through questionnaires, has helped the researcher in collecting complex and detailed reviews of population.

The research examined both the execution and advantages of integrating Problem-Based Learning (PBL) as a teaching approach in language instruction. The study examined how instructors saw PBL techniques and their approaches to implementing

inquiry-based strategies to language education. The research presents an analysis of unexpected obstacles which researchers face during fieldwork together with unexpected difficulties that researchers encounter when working in the field including logistical challenges and participants who do not cooperate and environmental changes within the classroom. The researcher analyzed their personal expectations alongside their assumptions and unanticipated difficulties from this action research project to deliver useful findings for upcoming studies in this area.

3.1 Mixed Method Approach

Research plans function as essential components for conducting research. The structure of research becomes clear through planning which makes it reasonable to state that plans establish research structure. The research objectives together with its nature serve as fundamental elements to select proper research approaches and methodologies (Niglas 2004 as cited in Akmal 2013). Research objectives together with required data points depend specifically on the nature of each investigation. Multiple research methods have gained increasing popularity among researchers throughout the past three decades. Multiple research methods now receive broad recognition as they have developed standardized procedures and terminologies with conceptual frameworks (Tashakkori and Teddlie, 2003). The complexity of social phenomena requires researchers to use multiple research methods as an essential strategy according to Taylor (2006). The mixed methodology approach used in research provides a more extensive explanation of the topic under study. This approach helps the researchers in exploring information to a specific in-need situation from multiple directions that also provide variation in perspectives and provide validation of the information collected through both quantitative and qualitative approaches which was otherwise not possible. Mixed approach studies helps the researchers in reducing biases and providing restricted information, in fact it provides more detailed and reliable results.

The collection of qualitative and quantitative data depends on different foundational theories in addition to distinct knowledge principles and research strategies. Analyzing data through a single technique also provide accurate results but to some extent both the methodologies limit the knowledge gained through results as they cannot provide argumentative conclusions and fail to represent reality based complexities. The quantitative data analysis technique is specialized for showing

causality and qualitative technique provides detailed and multi-dimensional understanding of a situation. These research methods present separate views when used alone to study the research topic. Research becomes more validated and strongly argumentative when data is analyzed through mixed methodologies and situation is interpreted through both quantitation measures and then explained in detail through qualitative measures. Research validity and reliability and generalizability improve when researchers combine methods because they can measure results through multiple sources and perspectives (Tashakkori and Teddlie, 2003). mixed methodologies helps in detailed understanding and provide insightful knowledge of the issue under study. Studies that conduct sophisticated multidimensional research benefit from the mixed-methods approach because it delivers strong results and precise data collection for complex problems (Patton, 2001).

The mixed-methods approach which Patton (1990) introduced as a pioneering work allows researchers to develop mixed-methods research designs that unite qualitative and quantitative methods. The proposed experiential design by Patton (1990) merges qualitative data collection methods with quantitative analysis to generate detailed knowledge about research problems. Researchers suggest philosophical assumptions together with practical considerations need thorough justification when deciding to use a mixed-methods approach. Research has consistently recognized mixed-methods as essential because a single research method lacks sufficient rigor to capture complex details of investigated problems. Triangulation serves as an essential method in mixed-methods research because it involves collecting data through various sources followed by information verification. This methodology combines qualitative with quantitative data to create a comprehensive research understanding which produces superior reliable evidence than mono-method or bi-method approaches according to Heck (2004, p.222). The combination of mixed methods enables researchers to ask well-developed research questions that lead to enhanced rigorous and reliable evidence than mono-method or bi-method approaches. Research findings obtain validity through the combination of multiple research methods which also improves reliability.

Action research integrates multiple investigative strategies to achieve complete understanding of the subject matter. The researcher gains enhanced validity and reliability in their research findings through this multi-dimensional research strategy

that allows analysis of data from multiple qualitative and quantitative methods. Research methods used in combination provide more detailed insights into studied phenomena. For data analysis the researchers use triangulation approach using qualitative and quantitative techniques to get combined and detailed observations.

For the current study, the researcher has used the triangulation methodology because its valid and reliable procedures make it an appropriate method for investigating the impact of PBL on Knowledge acquisition, retention and Critical Thinking. A research design based on triangulation with multiple methods will provide deeper insights into the complete effects that this pedagogical approach has on student learning results.

3.2 Type of Data

The data collection for analyzing the development of PBL and its significant impact on students Knowledge Acquisition and Critical Thinking was done through developed questionnaires from following sources:

- Student placement assessment
- Observation in Class rooms
- Student Document Analysis
- Student feedback
- focus group study

3.3 Study Population

This study investigated the effects of problem-based learning on students at Al-Raza College of Science in Jalalpur Pir Wala. To this end, the researcher spent one month at the college, establishing a specialized class to conduct the assessment. Before forming discussion groups, a placement test was administered to first and second-year students. Despite being enrolled in the same academic program, the participants displayed diverse educational backgrounds and comprehension levels. To foster collaborative abilities, the students were arranged into four-member groups, with the group compositions rotating every week, allowing the students to engage with a variety of team members.

3.4 Research Setting

The current study was conducted on undergraduate science students. The research question examined the effects of Problem-Based Learning (PBL) on knowledge

acquisition, retention, and critical thinking of college students. The impact of Problem-Based Learning on second language learners was also aimed to be investigated. Without developing a robust environment for research, it may become difficult for researchers to select an appropriate approach for conducting research.

3.5 Types of Data Collected

The techniques used for data collection has been described in detail below:

3.5.1 Student Placement Assessment

A thorough placement test was conducted to evaluate the language proficiency across the participants. The researcher analyzed detailed information obtained from individual score reports. The placement assessment was done to obtain thorough data regarding the language proficiency skills of all research participants. The placement assessment test was given to twenty-one students who participated in the study. The assessment evaluated student language proficiency by assessing all their competency including level of vocabulary, grammar knowledge as well as reading comprehension and writing ability and oral communication. The study provided participants with an IELTS test book writing prompt (Appendix A) right before the intervention as they submitted their written responses to trainers for detailed evaluation. The trainers evaluated the respondents vocabulary, the sentence make and structure and the logical arguments developed. Through the evaluation, the researcher have aimed to focus on students vocabulary usage, complexity in making sentence structure and the overall coherence of written responses. The researchers evaluated student use of suitable vocabulary throughout their written work to understand their English language skills and communication abilities.

3.5.2 Student Observation in Class rooms

The most comprehensive and structured method as well is the Classroom observation method; as this method requires to analyze and observe the sensory perceptions of a learning environment for detailed insight and understanding (O'Leary, 2006). The quantitative research approach of classroom observation requires direct observation of specific classroom interactions and events while keeping records of recorded behaviors. The approach requires detailed documentation of observed data by focusing on how often students and the instructor display specific behaviors and their behavioral patterns. The researcher maintains an unbiased position throughout this

method while refraining from joining the observed community. This observation method serves its main goal by enabling observers to experience teaching and learning dynamics directly while collecting detailed empirical evidence about the phenomena.

Researcher participation in classroom observation requires simultaneous involvement in the classroom space and objective observation methods to record data (Asif 2005 a). To collect data effectively through classroom observation the researcher needs to find the right middle ground between insider and outsider involvement. The research process takes significant time and demands from the researcher both emotional dedication and continuous engagement throughout the entire study period. The researcher needs to immerse themselves fully in the classroom yet maintain analytic detachment when observing classrooms. To comprehend classroom dynamics properly the researcher should analyze behavioral patterns while watching student interactions with precise observation techniques. A researcher who assumes dual roles as both participant and observer must display outstanding self-knowledge alongside emotional management to prevent interfering with classroom interactions. The most significant characteristic of this type of research method is that it is time-taking and requires a high level commitment or researcher in order to analyze the collected information for gaining meaningful insights of teaching and learning process.

The current analysis utilized classroom observation as an effective method to track student interactions. For performing this technique the researcher had to participate in all the activities of the research setting to directly obtain data through this method. Observing students proved to be a challenging task because students generally feel uncomfortable when their teacher is present. The student became more vigilant in presence of their teacher. The research selected participants from similar backgrounds and departments to reduce the impact of outsider presence which could create discomfort or disturb the research proceedings. Additionally, the students were familiar with the instructor, which facilitated the collection of unbiased observations. This research method also allows for documenting the learners' moods, attitudes, and ideas towards the given topics. The study found that by establishing rapport and trust with the students, the researcher was able to observe their natural behaviors and interactions more effectively. Furthermore, the detailed documentation of the

observed data provided valuable insights into the teaching and learning dynamics within the classroom setting.

3.5.2.1 Participants unexpected reactions to test

Despite the researchers' institutional affiliation with administering the test procedure, they encountered very unexpected reactions from participants in certain contexts. After presenting the research topic, briefing the participants about its purpose, and requesting volunteers, twenty-four students agreed to take the placement test. However, upon announcing the requirement for regular attendance without any absences, eight students withdrew from the study the very next day, citing a lack of interest. Nevertheless, this attitude did not impede the data collection process, as the study proceeded with the sixteen students who remained highly dedicated and consistent until the final session. The consistency of participants throughout the sessions helped in completing the data collection proceeding.

3.5.3 Student Document Analysis

The term used “document” not only represents a traditional paper based material, in fact its meaning extends to a broad range of objects and tools that can be used as a source of information including photographs, artworks and audiovisual media such as television programs as well as digital files and audio recordings and multiple data-carrying formats. The growing definition of "document" tracks research developments and growing information diversity available to researchers (O’Leary, 2005).

The research method of document analysis requires complete collection followed by detailed examination and strict interrogation leading to deep analysis of various textual materials as primary research data. Various authoritative resources and agenda-driven communications and personal records and multimedia materials and historical texts qualify for this type of analysis. This research method handles existing documents instead of newly written ones so the researcher needs to assess systematically the biases originating from original authors and their perspectives. The research begins through careful planning that includes defining research targets and determining analytic boundaries and creating an organized approach for document examination. The research process moves forward to a detailed search for multiple relevant resources which results in obtaining various materials for complete understanding of the topic. The analysis of the collected information starts from the

detailed evaluation of document in terms of contextual meaning and contextual assumptions that also prevails the biases. This method requires the complete focus and commitment of researcher throughout the process in order to evaluate the assumptions before concluding the analysis. This initial evaluation will help in refining the data and improving it based on the new findings. The researcher achieves appropriate analysis by following a meticulous approach which allows them to produce well-supported conclusions and meaningful insights from the data (O’Leary, 2006).

The research utilized document analysis as its method for data collection and analysis from multiple sources. The research data went beyond scholarly research by including reports and government documents and industry publications. During the final presentation session students conducted thorough research on the provided problem statement and delivered an enthusiastic report of their extensive work. The students selected various methods for their presentations to display their work including multimedia displays and interactive role-playing simulations. Group members implemented several interactive methods during their presentations including real world objects and participant interviews and gallery walks. The students enhanced their arguments by integrating video clips together with audio clips and realistic imagery and musical elements to engage their audience. The groups submitted their presentations both as physical displays and written documents (Appendix C) which received comprehensive evaluation to determine the extent of student subject knowledge acquisition.

3.5.4 Student feedback and Teacher evaluation

The survey technique is a very common method of collecting data and information from the focus group. A series of standardized questions are posed to a sample of individuals using surveys. The questions designed in surveys are supposed to elicit responses with regard to the participants characteristics, attributes, behaviors, attitudes, and perspectives. In this way, the survey process is a systematic approach to 'the process of information gathering' as it gives the researchers a systematic way to collect data from a selected group of people (O’Leary, 2004). Surveys are a non experimental and descriptive research methodology which has a great value where the researcher is making an attempt to gather data on phenomena that cannot be observed directly. In the surveying process, researchers choose their sample carefully and

conduct a study on the sample to gain insight and draw conclusion about the target population. Surveys are a systematic way of collecting data from a representative group of participants to study characteristics, behaviours, attitudes and perspectives that are often not easily accessible through direct observation or other research methods. Busha and Harter (1988) define population as any group of individuals or objects which share at least one common characteristic. More specifically, a population is the whole set of individuals, items or data having a common observable trait from which a sample can be drawn for statistical analysis. In other words, a population represents the comprehensive set of elements that share a particular feature or attribute, and from which researchers can extract a representative sample to study and draw inferences about the larger group.

For the current investigation, a survey was conducted. The data collection tool employed was a questionnaire. All group members filled out the questionnaire to provide feedback. The questionnaire consisted of two parts. The close-ended questions utilized a 5-point rating scale. The scale is depicted as follows:

Scale range	Category
1	Strongly agree
2	Agree
3	No preferences
4	Disagree
5	Strongly disagree

Table 4: Description of Scale for Students Evaluation

The questionnaire consisted of ten close-ended questions that solicited the students' evaluation of the teacher's behavior, grasp of the research methodology, and depth of knowledge about the research topic. The open-ended questions provided an opportunity for the students to share their evaluations, addressing any challenges, difficulties, or interesting incidents they encountered during the data collection process, whether at the individual or group level. The open-ended part of questionnaire examined and provided an insightful knowledge on the level of cohesion practiced by the participant students in their defined groups while performing the research proceedings.

3.5.5 Focus Group Study

In research techniques, a focus group is defined as a small sample of population that has been selected and planned carefully in order to initiate the discussion or debate on the topic under study. The procedure of discussion among the focus group is planned to seek detailed information and a new variation of perceptions developed on the topic being investigated. The focus group formed includes selected participants that are engaged in discussion within a controlled environment on the given topic of discussion. The time span of discussion analysis is set limited to an approximate of two hours so that meaningful information can be obtained and the concentration of participants towards the topic under discussion could also be maintained.

The discussion of the participants is collected and recorded through multimedia tools such as video and audio files. The topic of discussion given to participants is based on the planned theme of research. The purpose of these close group discussion is to get high and detailed insights of people's personal perceptions that are generalized as a majority population point of view, varied conceptions, and a more in-depth understanding of the research topic from the focus group. The discussion proceedings are controlled and monitored by the researcher who acts as a moderator in discussion, mitigating the group interaction and recording the conversations. For conducting the discussion a very friendly environment is maintained so that there will be no disputes raised on disagreements among the group members, allowing them to communicate their perceptions, knowledge, ideas and experiences freely without any fear of being judged or questioned.

Focus groups usually have 7-10 people so that each person has the chance to share his or her view and make some contribution to the discussion. At the same time, the group size should be big enough to give a variety of views and insights. Focus groups can be a valuable research method for researchers to gather additional in-depth information and different perspectives to inform and add to bigger scale studies. Originating in the 1940s, the use of focus groups as a research methodology was pioneered by the Bureau of Applied Social Research at Columbia University mainly in the area of market research where it has been a powerful tool in gaining a deeper understanding of individual attitudes, preferences, and behaviors.

Following the data collection process, the researcher also conducted a focus group discussion to gain additional insights and perspectives on the research topic. The researcher served as the facilitator for this focus group study, guiding the discussion and recording the proceedings. For the focus group, sixteen student participants were divided into two separate groups, with each group comprising eight individuals, allowing for a diversity of viewpoints to be expressed and a deeper understanding to be achieved.

The focus group discussion centered around these questions.

1. What were your thoughts on the topic under discussion (Problem-Based Learning)?
2. What knowledge or skills and key insights did you acquire through this instructional method?
3. To what degree do you anticipate this method being advantageous for your academic pursuits?
4. What obstacles or issues did you confront in the process of data gathering?
5. Did you encounter any difficulties collaborating with other group members during the data-gathering process?
6. How could you incorporate this technique into your academic pursuits?
7. Would you suggest the adoption of this instructional approach in your academic programs?
8. What changes or improvements do you recommend for the Problem-Based Learning sessions?
9. Do you have any recommendations or suggestions to propose?
10. What strategies could be employed to make Problem-Based Learning sessions more engaging, especially within language-focused academic contexts?

3.6 Researcher's Position

The researcher's position and stance are critical factors when undertaking rigorous academic research. Failure to carefully examine one's own biases, backgrounds, assumptions, and overall positionality can significantly increase the risk of errors and flaws infiltrating the research process. This would eventually impact the researcher image of credibility and integrity in proving the authenticity of the research. However,

with a lot of experiments and experts contribution to the field, researchers have been able to pinpoint a considerable handful of worthwhile techniques and strategies that can be applied to counteract possible sources of error and bias, thus improving the research findings in terms of quality, reliability, and credibility. Two major approaches to purposeful meaning making, and analytical reasoning. That is, they involve the researcher carefully looking at, thinking about, and reflecting on their positionality, biases, and assumptions relevant to the research process before and during its actualization. Applying such strategies by researchers would enhance the general quality, reliability and trustworthiness of their research outcomes. Purposeful meaning making encourages researchers to look very carefully at possible influences of their backgrounds, experiences, and worldviews on how they make sense of research data and findings. With analytical reasoning, the researchers are able to analyze and evaluate their self-generated assumptions, biases using theoretical approaches throughout the study, critically reasoned research requires this process to show as immediate as possible. Therefore, through exploiting a combination of these two approaches, researchers are able to address the bias that might contain their own personal biases and work to make their work more objective and credible (Bruce, 2000).

These strategies imply that researchers should establish roles, positionality, and potential biases of the research before starting the real research. After proceeding, the researcher should be reflective on and re-examine the positions and biases as well as assumptions taken. Moreover, they need to stick to the pre-set roles and boundaries as they effectively implement the research otherwise they will be subjected to the personal factors and may not help in obtaining the right results from the research.

The researcher should carefully analyze the positionality and research biases. As a researcher is also a learner while conducting research and data collection so the duality of one's role can bring challenges to evaluation. This is important to ensure that reliable research findings and to reduce potential sources of bias. Researchers must be very aware of how their background, their experiences, their worldview can inform their interpretations of the data in the research but also how it will inform their conclusions that they come up with. By considering his or her positionality actively and responding to it, the researcher can improve the objectivity and credibility of his

or her research, thereby making the work as a whole a better quality and more trustworthy endeavour (Campbell et al., 2006).

The researcher informed the research participants about the researcher's background, education, status and his affiliation to the institution. In addition, the participants were informed of the researcher's position and role during the course of research and informed the purpose of research. This transparency was meant to foster trust leading to rapport with the participants so that they can freely share their views and experiences without hesitation.

3.6.1 Reflectivity and Researchers Positions

The Analytical use of reflexivity has been found to be a valuable and necessary methodological approach for studies using a mixed methods multi strategy research design. In this approach, researchers have an opportunity to critically reexamine the roles, biases and influences on their research through the entire research process, which is critical to ensuring the integrity and validity of the research findings (Pillow, 2003).

Reflexivity facilitates continuity in the focus of the research process on the predetermined objectives in each of the phases of the research process. Reflexivity allows for researchers to look into their own acts, biases and influences that may very well affect the study so that the study remains true to the original aims and intentions. The research outlined these objectives at the outset and such should be adhered to all the time. The principal way in which researchers can keep the research endeavor reflexive is to engage in reflexivity, that is, to continually reflect, scrutinize and re-evaluate their decisions, assumptions and approaches throughout the research endeavor. By engaging in this ongoing self reflection, researchers are able to keep integrity and validity from the study findings by acknowledging and accounting for their position, perspectives and the possible impact on the research process (Keso et al. 2010, P. 66).

Reflexivity also permits researchers to bring to the conscious and to the unconscious thought processes, in the process reapplying and reshaping their role as researchers. The reflexive process can be full of emotions – frustration and anxiety, as well as clarity, inspiration and a greater understanding of one's own biases and perspectives. Through this self reflection researchers will be able to unearth them valuable insights

that will make their research findings more of an integrity and validity. The capacity to question her assumptions, preconditioned beliefs and impressions, is a primary element in preserving the research rigour and its high quality, as well as the ability to keep ensuring its attention while in research, but equally so, while writing. Continuous self-scrutiny is critical, therefore, so the researcher can be certain that the final interpretations and processing of the data are firmly placed on a firm foundation of self awareness of one's own biases, direction, and impact placed upon the research results. This practice of ongoing reflective practice on the part of the researcher keeps the integrity and validity of the study intact while synthesizing the evidence and concluding the insights (Keso et al. 2010 p67). Doing reflexivity allows the researcher to continuously monitor during the research process and at the end, during the conclusion.

The researcher also engaged in critical self reflection during the research process about roles, biases and influence as a participant, researcher and consumer of research. The practice of this introspection was used to cause a change in mindset from the researcher and to remain vigilant and exercising the best due care the best of their capabilities while the knowledge generation process. Going through a continuous self examination enabled the researcher to figure out and counteract their preconceptions, assumptions, and the way they could have an effect on the research findings. Having this ongoing reflection enabled the researcher to carry on maintaining the integrity and validity of the study in acknowledging what their position, perspectives and how they might have influenced the research process and outcomes.

3.6.1 Reflexivity and the researcher's position

Reflexivity has become widely accepted for being a meaningful and useful way of framing such complex, multi-faceted, multi-method research studies. Through this reflective approach, researchers can better scrutinize their own biases, assumptions and ways of seeing which can significantly result in shaping the research process and the research outcome (Pillow, 2003). Reflexivity helps researchers speak about the predetermined research objectives all through the research process. Conceptualized early in the research, these objectives ought to be maintained all through research. Being reflexive is important in a research process because it encourages the researchers to review, and sometimes, to read again critically, their decisions and their choices. The reflective practice prompts the researcher to continually assess what their

own biases, assumption and perspective are that might be affecting the direction of the research process and out comes. Engaging in this self examination allows researchers to better monitor and adjust their approach in order to keep on track with the original research goals and objectives. It calls for reflexivity, making researchers think beyond their own prejudices, observing alternative views and making sense out of them on a consideration that may question the researchers' preconstructions regarding a research area (Keso, P. et al. 2010 P66). Also, reflexivity helps researchers reflect on their conscious and unconsciously based biases and often the opportunity for researchers to redefine and reshape their role as researchers. It is also a process that give emotions like frustration or anxiety, as well as clarity and inspiration at different moments of the research process. This reflective practice can help researchers to reflect on their preconceptions and assumptions and thus work on the research with new perspectives. This results in a more detailed and a more detailed of the subject of the research. Likewise, reflexivity might enable researchers to become more transparent about their own biases or ways in which these could have affected the research processes and the results of the study and enhance the credibility and its trustworthiness (Keso et al. 2010 p.67). Reflexivity thus affords the researcher the chance to maintain alertness and criticality at every stage of the research process as well as when drawing conclusions.

To more critically approach the analysis of this research, some biases, assumptions and preconceptions of the researchers have been closely examined in order to manage any such biases, assumptions and preconceptions which can affect the process and outcome of the research process. The development of this new, more nuanced critical perspective acts as a means of reflection allowing the researcher's preconceptions to be challenged and alternative viewpoints and interpretations to be considered. Through this self examination of the research approach the researcher hoped to more actively monitor and amend the approach so as to bring it into the range of accomplishment in that original research goals and objectives were served more credibly and more trust worthily.

3.7 Researcher Biases

There have been significant studies on researcher bias and prejudice, how research deals with biased approach. Nevertheless, there have been proposed various ways to overcome these biases in order to increase the objectivity and reliability of research

findings. Biases for researcher may start appearing at different stages of research, such as structuring and data collection. For an in depth understanding, it is essential first to be transparent about the limitations, failures and challenges of the study. By being reviewed and evaluated by other researchers, alternative perspectives can occur and biases will be exposed to help mitigate biases. Consulting with other researchers and even doing reflexivity can point at or address the biases. Continuous reflection on the research design and on whether one's background and perspectives have an influence on the research should be practice, as should being open to peer feedback to improve objectivity and reliability.

The research topic had limited sensitivity, reducing the impact of biases. Biases were primarily human. The facilitator maintained neutrality and facilitated PBL sessions to preserve authenticity and objectivity. The diverse student group included individuals with varying skill levels, and those less proficient were evaluated equally, yielding unexpected results that emphasized the importance of an unbiased research approach.

The adopted strategy facilitated student self-learning. Students completed weekly teacher evaluation forms, assessing behavior, methodology, and techniques. They shared experiences throughout the research process. The anonymous feedback form allowed students to provide more genuine and accurate data, as required disclosure could have inhibited their willingness to discuss perceived shortcomings.

3.8 Ethical Considerations

The use of comprehensive and effective strategies of addressing the ethical and moral considerations of the research was made in the study. Participants were very much aware of the aim and aim of the study, and were essentially very clear with their consent. They were photographed and videoed extremely closely. Unambiguous consent was obtained from all the study participants, and the confidentiality was addressed and the participants were assured of anonymity. The researcher was ready to take any steps to address any problems that might have been encountered. Collected data was used only for research purposes and it was not shared or published in any manner that compromises participant privacy. To the extent that information is revealed which can permit participants to be identified, it should be disclosed in such a way as to prevent real rather than hypothetical individuals and events from being specified(Wiles, 2008).

Ethical and moral considerations were taken care of by employing comprehensive strategies in the study, provided informed consent, confidentiality and anonymity to the participants. To verify that the research is ethical, the researcher used various strategies; for instance, secured informed consent, preserved the secret and anonymity of the participants, and yielded to any ethical concerns the participants raised. The research process followed by the researcher was characterized by high degrees of honesty, transparency and integrity so that the research data that was collected was authentic, valid and reliable.

3.9 Research Procedure

Classes served as the platform where volunteers were requested. The placement test required twenty-four students to join and demonstrate their English language competency. The participants read an IELTS practice resource (see Appendix A) containing test material that is recognized globally for English proficiency evaluation. Their task was to extract a paragraph from this resource and complete it. Test scores from the students established their study division and the study focused on vocabulary and sentence structure skills. Eight students withdrew from the study as they learned about the necessity to remain involved in the entire research period. The researcher established four separate groups that included four members each from the sixteen participating volunteers.

The study consists of small student groups each assigned particular roles that the researcher changes every week to let participants share their ideas by working with different classmates. The research begins by selecting participants to join established groups then introducing the assigned topic to the members. The participants start their initial concept generation while reviewing what needs to be accomplished. Students leverage research skills together with existing knowledge to collect applicable data during the second day of the work process. The research participants gather necessary information before preparing a full report which includes both their findings and solutions. Groups from all classes showcase their total documentation through entertaining presentation forms that encompass multimedia technology and role-playing activities combined with visual enhancement tools during the final session.

3.10 Data Collection

For analyzing the PBL effect on knowledge acquisition, retention and critical thinking, the under graduate students were selected as a target population for evaluating the findings of this study. Each student group received an assigned topic for research throughout one week as they performed self-assessment tests at selected PBL stages. Students first examined which information they already knew about the subject. Students accessed multiple sources for gaining deeper knowledge on their subject matter after day one. Students gathered important findings during day four and employed these data to compose an extensive report before they shared it with the class on day five. Student presentations utilized multiple communication platforms including PowerPoint presentations, role-play performances, educational videos in addition to interactive material to deliver their research findings. Students obtained extensive insights into their assigned topics through PBL sessions. The students delivered complete evaluations about teaching quality and educational approach and curriculum assets and drawbacks throughout each weekly session.

Open-ended questions formed part of the study which encouraged students to share both their personal thoughts about the research topic and their individual and group difficulties during the research process. The students had opportunities to submit ideas and feedback that would boost the Problem-Based Learning effectiveness together with showing their newly acquired vocabulary knowledge. At the end of their research the researchers scheduled a focus group discussion to study students' personal experiences and situational awareness regarding Problem-Based Learning. Channeling the students to freely express their ideas during the session allowed researchers to analyze and understand student perspectives about this learning method.

3.11 Data Analysis

Pre-test scores were used to rank the students and have them grouped for targeted PBL instruction. The researcher served as actively and ultimately as an active facilitator in PBL sessions, giving ideas and provides feed ahead of time in the prohibition of teaching or spoon feeding. On the introduction of the topic and completed the final report, the students were observed for four days. For their data, the students reported, presented and simulated. All this information was logged and

analyzed in a detailed way to emerge with insight into the student's work and the delivery.

Responses of participants to the feedback given by the teacher evaluation were collected through administration of weekly surveys under researcher supervision. The survey questions comprised a 5 point Likert scale from 1 ('strongly agree') to 5 ('strongly disagree'). The responses were compiled into Microsoft Excel and the COUNTIF formula used to determine the frequency of responses for each scale point. At two levels: to identify trends on a weekly basis, and to establish participant perceptions overall. Second, focus group discussions were held to generate qualitative data for further insights and context to the quantitative findings.

3.12 Conclusion

This chapter has highlighted the importance of research techniques, more specifically the use of triangulation methodology for understanding the complex issues of PBL. This study had employed several data sources most specifically including PBL classroom sessions from different institutes, practical observations of different participants and evaluation of documents and also included the multiple researcher techniques that helped in analyzing the PBL impact.

In order to obtain the triangulated data coming from multiple sources, document analysis was used by the researchers to conduct the document analysis while questionnaires were used to administer the survey questionnaires to get participants' perceptions of impact of PBL on their knowledge acquisition. Furthermore, the chapter describes the methods used for the data analysis in this highly multifaceted investigation. The researchers used a concurrent triangulation, in which they combined information from various sources at the same time, to adequately solve problem based learning and its influence on students' learning and knowledge. This multi faceted investigation will be discussed in the subsequent chapter which will discuss the data analysis procedures and key findings of this study.

CHAPTER 4

DATA ANALYSIS

4.0 Introduction

This chapter analyzes and interprets the data gathered from groups of undergraduate science college students. Various methods were employed, including placement tests, classroom observations, document analysis, feedback forms, and focus group discussions. The participants comprised 16 selected students who were divided into groups of four after the initial placement test, which was used to assess their knowledge levels. The student groups presented their collected data, which was recorded on video. Written reports submitted by the groups were then analyzed quantitatively. Additionally, feedback forms were filled out by the groups at the end of each week and were analyzed qualitatively. Finally, a focus group study was conducted, and the data from this was also maintained.

4.1 Types of Data

Qualitative and quantitative data are used in this study to understand the research topic as a whole. Qualitative data includes non numerical data, like observations, interviews, detailed descriptions etc, there will be in depth insights on the phenomenon. A good contrasting example has quantitative data, being made up of numerical information, allowing for statistical analysis as well as the explanation of patterns and trends. It has allowed a complete and multi dimensional understanding of the topic in view of its integration with both qualitative and quantitative data. One of the important things the study has learned from depth and nuance of qualitative data and analytical rigor of quantitative methods.

4.2 Data Analysis

The student grouped together had gathered data on the assigned topic over the course of a week. After the presentation of data all the groups had to submit a written report which was analyzed against the four key criteria: accuracy, precision of vocabulary, correctness and clarity in sentence making, relevance of presented information and logical structuring of information provided. The analysis of these four critical pieces

of elements helped the researchers to analyze the quality and effectiveness of a students' data that was presented orally and in written report.

	N	Minimum	Maximum	Mean	Std. Deviation
Accurate vocabulary	16	1.25	3.75	2.5469	.67835
sentence structure	16	2.00	4.50	3.2813	.80039
Relevant information	16	2.50	4.50	3.5937	.57645
organization of information	16	3.00	4.50	3.7812	.46435

Table 5: Description of Language Criteria in Student's Report Descriptive Statistics

In table 1, the data presented consists of 16 documents with a mean score 2.5469 out of 5 showing the scoring of documents was above the average and slightly near to midpoint. The 1.25 and 3.75 score shows the minimum and maximum range of quality of submissions scored by the group. Sentence structure was scored with a mean value of 3.2813 with highest 4.50 and lowest 2.00 scores interpreting that sentence structure was adequate with slight variation in submission. 3.5937 mean score was recorded for the provision of relevant information with 4.50 maximum score and 2.50 minimum score. This indicates that the submissions, on average, included relevant information, but the quality of the content varied considerably. The mean score for the organization of information is 3.7812, with the lowest and highest scores being 3.00 and 4.50, respectively. This suggests that the overall organization of the information presented was generally good, though there was still room for improvement in some cases.

4.2.1 Topic wise Descriptive statistics

Topic		N	Minimum	Maximum	Mean	Std. Deviation
Food Around the world	Accurate vocabulary	4	1.25	2.25	1.8125	.42696
	sentence structure	4	2.00	2.50	2.1875	.23936
	Relevant information	4	2.50	3.00	2.8750	.25000
	organization of information	4	3.00	3.75	3.3125	.37500
Heroes of the world	Accurate vocabulary	4	3.00	3.75	3.3750	.32275
	sentence structure	4	3.50	4.50	4.0000	.40825
	Relevant information	4	3.50	4.00	3.7500	.20412
	organization of information	4	4.00	4.50	4.3750	.25000
Music Around the world	Accurate vocabulary	4	2.00	2.50	2.1875	.23936
	sentence structure	4	2.75	4.00	3.1875	.55434
	Relevant information	4	3.00	4.00	3.5000	.40825
	organization of information	4	3.50	4.00	3.6875	.23936
Wedding Rituals	Accurate vocabulary	4	2.50	3.00	2.8125	.23936
	sentence structure	4	3.50	4.00	3.7500	.28868
	Relevant information	4	4.00	4.50	4.2500	.28868
	organization of information	4	3.50	4.00	3.7500	.20412

Table 6 Topic wise Descriptive statistics

Both, the performance of student on the Food around the World topic and accurate score of vocabulary ranges from 1.25 to 2.25. The mean of the score for the group of 5 students is 1.8125 with the standard deviation of 0.4269 is indicative of the variability of vocabulary usage conducted by the group. The range of performance for sentence structure was quite narrow, as the minimum score was 2.00 and the maximum was at around 2.50. The Food around the World topic, accurate vocabulary

scored 2.1875 with a standard deviation of 0.23936, an indication of relatively consistent performance of the group of 5 students in the use of accurate vocabulary.

In the case of “Food around the World, the students showed relatively consistent performance in using accurate vocabulary. Moreover, the students generally could offer suitable information concerning the matter, having minimum and maximum scores for this matter between 2.50 to approximately 3.00. Overall, the average marks of the group of 5 students in the accurate vocabulary aspect were 2.8750 with a standard deviation of 0.25000 implying overall proficiency in using accurate vocabulary. As for the organizing information for the Food around the World topic, the students also performed well, with a narrow range of result, approximately between 3.00 and about 3.75, and an average of 3.3125 with a standard deviation of 0.37500, which means the information was generally well organized. Regarding the heroes of the world topic, the students did very well in mastering a large vocabulary varying from 3.00 to 3.75 with an average of 3.375 and a standard deviation of 0.32275 that indicate a variability. However, their sentence structure was more or less the same, except for a range from 3.50 to 4.50.

The performance of students on the Heroes of the World topic was quite consistent as indicated by the average score of 4.0000 and the standard deviation of 0.40825. They showed consistent performance with respect to giving correct information on the topic. The minimum marks gained were 3.50 while the maximum marks given approximately 4.00 indicated that the students were able to provide relevant information. In this aspect, the average marks of the group were 3.75 with a standard deviation of 0.20, which shows group’s average proficiency towards meeting the relevant information requirements. The students presented much organizational skill in the Heroes of the World topic and their minimum marks ranged from 4.00 to a maximum of 4.50. From this category, the average marks were 4.3750 and the standard deviation was 0.25000 which means most of the students have performed at a good level of organizing the information related to this topic.

Among the student performance on accurate vocabulary, there is a wide range of data on Music around the World topic with scores changing from 2.00 to 2.50. Meaning, the group average was 2.1875, and standard deviation of 0.23936 was observed. The Music around the World topic has data on sentence structure which shows a large variation of student performance, some on it are weak while others are strong in

sentence structure. For the Music around the World topic, students showed a great variety in their performance in sentence structure, resulting in an average of 3.1875 and a standard deviation of 0.55434. Here, they were able to provide the relevant information more consistently; minimum mark of 3.00, maximum mark about 4.00, average 3.5000, and standard deviation 0.40825, thus they did quite a bit in response to the topic's requirements.

In topic Music Around the World, the organizational skills of students were marked with highest range between 3.50 to 4.00. Average marking of group was 3.6875 with a standard deviation of 0.23936 which shows that among the selected participants majority had the ability to proficiently organize information.

At the end of final week the students skill were again evaluated on the topic Wedding Rituals. The performance was marked on a narrow range of scores between 2.50 to 3.00 with an average mark of 2.8125 and standard deviation 0.23936. This results shows that students command on vocabulary variate but students had an overall proficiency in sentence structuring and making correct sentences. The group obtained average score of 3.75 with SD of 0.29. They also presented the content in a structured and well-organized manner, with an average score of 3.75 and a standard deviation of 0.20 for organization.

4.2.2 Descriptive Statistics of Feedback Forms.

Q1: Does the tutor attend the session as planned?

Response	Frequency	Percent	Cumulative Percent
strongly agree	33	51.6	51.6
Agree	18	28.1	79.7
Disagree	13	20.3	100.0
Total	64	100.0	

Table 7: Descriptive Statistics of Question 1

Table 1 depicts the frequency distribution, which shows that 13 out of the 64 total students, or approximately 20%, disagreed with the statement in Question 1. Additionally, 13% of the students indicated "Agree," while a significant majority of 33 students, or 51.6% of the total, selected "Strongly Agree" for the same Question 1 concerning the planned attendance of a tutor in the session.

Q2: Is the tutor able to assist group focus on learning issues and objectives?

Response	Frequency	Percent	Cumulative Percent
Strongly agree	32	50.0	50.0
Agree	25	39.1	89.1
No preference	7	10.9	100.0
Total	64	100.0	

Table 7.1: Descriptive Statistics of Question 2

The frequency distribution indicates that 32 out of the total 64 students, or 50%, strongly agreed with the statement in Question 2. An additional 25% of students, or 16 individuals, agreed with the Q2 statement. Furthermore, 7 students, or approximately 11% of the total, reported no preference regarding the statement about tutor assistance for the focus group's learning issues and objectives.

Q3: Does the tutor show enthusiasm as a tutor, and assist in creation of comfortable learning climate?

Response	Frequency	Percent	Cumulative Percent
Strongly Agree	29	45.3	45.3
Agree	22	34.4	79.7
No preference	13	20.3	100.0
Total	64	100.0	

Table 7.2: Descriptive Statistics of Question 3

The provided Frequency table shows that out of a total of 64 students surveyed, 29 students, representing 45.3% of the sample, opined Strongly Agree with the statement in Question 3. Additionally, 22% of the students, or 14 individuals, marked Agree, while 13 students, which is 20.3% of the total, indicated No preferences regarding the statement in Question 3 about the tutor's assistance in creating a comfortable learning environment.

Q4: Does the tutor encourage the critical thinking and a through look at available material?

Response	Frequency	Percent	Cumulative Percent	
Strongly Agree	4	6.3	6.3	
Agree	16	25.0	31.3	
No preference	16	25.0	56.3	
Disagree	28	43.8	100.0	
Total	64	100.0		

Table 7.3: Descriptive Statistics of Question 4

The frequency table shows that 18 out of a total of 64 students strongly agreed with the statement in Question 4. Additionally, 32% of the students marked "Agree", 7 students marked "No Preferences", and 7 students marked "Disagree" regarding the statement in Question 4 about the tutor encouraging critical thinking and a thorough examination of the available material. This indicates that a majority of the students were either in agreement or had no strong opinion on the tutor's ability to foster critical thinking and a comprehensive review of the available materials.

Q5: Does the tutor ask non directive challenging questions?

Response	Frequency	Percent	Cumulative Percent	
Strongly Agree	4	6.3	6.3	
Agree	16	25.0	31.3	
No preference	16	25.0	56.3	
Disagree	28	43.8	100.0	
Total	64	100.0		

Table 7.4: Descriptive Statistics of Question 5

This table summarizes the responses of 64 students to the statement in Question 5. Of the total participants, 4 students (6.25%) strongly endorsed the statement, 10 students (15.63%) selected Agree, 16 students (25%) indicated Neutral, and 28 students (43.75%) marked Disagree. The statement concerned the tutor's use of non-directive, challenging questions during the assessment, which was intended to evaluate the

students' critical thinking skills and ability to engage with the material in an active, self-directed manner.

Q6: Does the tutor avoid mini-lecturing?

Response	Frequency	Percent	Cumulative Percent
Strongly Agree	17	26.6	26.6
Agree	28	43.8	70.3
No preference	9	14.1	84.4
Disagree	6	9.4	93.8
Strongly Disagree	4	6.3	100.0
Total	64	100.0	

Table 7.5: Descriptive Statistics of Question 6

This frequency table summarizes the perspectives of 64 students on teachers avoiding the use of mini-recordings. The data reveals that 17 out of the 64 students, or 26.6%, strongly agreed with the statement in Question 6. Additionally, 18 students, or 28% of the total, expressed agreement with the statement. Furthermore, 9 students, or 14.1%, indicated no preference. On the other hand, 6 students, or 9.4%, disagreed with the statement, and 4 students, or 6.3%, strongly disagreed.

Q7: Is the tutor able to direct group to alternate sources of information and learning materials?

Response	Frequency	Percent	Cumulative Percent
Strongly Agree	23	35.9	35.9
Agree	30	46.9	82.8
No preference	8	12.5	95.3
Disagree	3	4.7	100.0
Total	64	100.0	

Table 7.6: Descriptive Statistics of Question 7

The data is further analyzed for frequency distribution in detail which is provided in Table 1. In accordance with the data, it can be seen that 23 out of the 64 students or almost 36 percent students stated that their chosen trainer was skilled in directing the

group to alternate sources for the information and learning materials ‘strongly agree’. As well as this, 30 percent of the surveyed students also chose ‘agree,’ 8 students chose ‘no preference,’ while three students chose ‘disagree’ as their response.

Q8: Does the tutor provide re-direction where necessary?

Response	Frequency	Percent	Cumulative Percent
Strongly Agree	16	25.0	25.0
Agree	35	54.7	79.7
No preference	13	20.3	100.0
Total	64	100.0	

Table 7.7: Descriptive Statistics of Question 8

The frequency distribution detailed in Table 1 illustrates the 64 students' diverse reactions to the statement in Question 8 about the tutor offering necessary guidance. The result shows that out of 64 participants only 16 supported the concept that teachers support is necessary for guidance. Another 35 respondents agreed with the statement, indicating they found the tutor's guidance to be generally helpful. In contrast, 13 students expressed no particular stance, suggesting they were neutral or indifferent towards the tutor's guidance.

Q9: Does the tutor facilitate feedback and evaluation process?

Response	Frequency	Percent	Cumulative Percent
Strongly Agree	23	35.9	35.9
Agree	32	50.0	85.9
No preference	6	9.4	95.3
Disagree	3	4.7	100.0
Total	64	100.0	

Table 7.8: Descriptive Statistics of Question 9

The data presented in the table indicate that 23 out of the 64 students surveyed, which represents over one-third of the participants, strongly agreed with the statement posed in Question 9. Furthermore, 32% of the students expressed agreement with the

statement. However, 6 students, which accounts for a small but notable portion of the sample, selected "No Preference." Additionally, 3 students, a minority of the respondents, disagreed with the statement concerning the tutor's facilitation of the feedback and evaluation process.

Q10: Does the tutor provide timely feedback and complete evaluation?

Response	Frequency	Percent	Cumulative Percent
Strongly Agree	21	32.8	32.8
Agree	26	40.6	73.4
No preference	6	9.4	82.8
Disagree	11	17.2	100.0
Total	64	100.0	

Table 7.9: Descriptive Statistics of Question 10

The results from question 10 of the survey revealed that out of the total 64 students surveyed, 21 students strongly agreed with the statement presented in that particular question. Additionally, 26% of the students marked the "Agree" option, 6 students indicated "No Preference", and 11 students selected "Disagree" in response to the statement concerning the tutor providing timely feedback and comprehensive evaluations to the students.

Descriptive Statistics of Motivation, Methodology and Feedback

	N	Minimum	Maximum	Mean	Std. Deviation
Motivation	64	4	12	7.30	2.005
Methodology	64	4	15	9.13	2.020
Feedback	64	2	8	3.94	1.446

Table 8: Descriptive Statistics of Motivation, Methodology and Feedback

The descriptive statistical analysis of the feedback forms collected from the study participants revealed the following detailed results. The feedback form questions were divided into three main categories: Motivation, Feedback, and Methodology. The mean score for the Motivation section was 7.30, with a minimum score of 4 and a

maximum score of 12, and a standard deviation of 2.005. This indicates that on average, the participants were moderately motivated to engage with the study. The mean score for the Methodology section was 9.13, with a maximum score of 15 and a minimum score of 4, and a standard deviation of 2.020. This suggests that the participants generally viewed the research methodology quite positively overall. There were in total 64 feedback forms that were collected and further were analyzed for this study. And it was found that the feedback section of the survey form scored 3.94 with maximum score range 8 and minimum score range 2 and a standard deviation of 1.466. The scoring is lower and it shows that respondents review where they have provided less positive feedback for the activity conducted.

Relationship between Motivation, methodology, and feedback

	Motivation	Method	feed
Motivation	1		
Methodology	.367**	1	
Feedback	.461**	.389**	1

Table 9: Relationship between Motivation, Methodology, and Feedback

The results mentioned in table 4 shows the relationship developed between the variables Motivation, methodology and feedback. With a correlation of 0.367, the relationship between the variables motivation and methodology is positive and statistically more significant. The results interpret that in teaching if there is an increased use of instructions based techniques, such as teachers use more personalized or customized learning strategies and more engaging ideas that would help students to focus and it will also increase the motivation level of students for learning.

The value 0.461 obtained for the correlation between motivation and feedback is also statistically significant and shows positive relationship between two variables. It shows with increase in motivation there will an enhanced effect on students feedback. It means that when students are highly motivated with some rewards like authority, competitiveness and sense of relevance then they feel highly valued and it ultimately impacts their feedback. When with these powers they feel highly satisfied they provide more positive feedback and their feedback is more contented with positive comments, frequent suggestions and updated reviews and questions. So, if in classroom motivation level is increased it will directly influence the level of feedback

provided. Last, in this table the correlation between methodology and feedback was estimated and was found to be 0.389. This value shows a statistically significant relationship between with a positive impact. This means that with using an improved instructional based teaching methodology in classroom with enhanced integration of new technologies, using integrative teaching methods and using reality based examples and learning then students feel more engaged and satisfied and so do they provide more contended feedback. The feedback obtained are more contended with new perspectives and reviews which shows that through using such teaching techniques students have been empowered with some new insights and knowledge and have developed some more useful perspectives. And so they are more enthusiastic to share their reviews in the feedback.

Co-relation among accurate vocabulary, sentence structure, relevant information and organization of information.

	Accurate vocabulary	sentence structure	Relevant information	organization of information
Accurate vocabulary	1	1	1	1
sentence structure	.780**			
Relevant information	.702**	.734**	1	
organization of information	.775**	.737**	.455	

**P<0.01, P=NS

Table 10: Co-relation among accurate vocabulary, sentence structure, relevant information and organization of information

Table 5 shows the results for correlation of variables Accurate vocabulary, Sentence Structure, Relevant information and Organization of information. The results interpret that all the variables have a positive correlation. The strongest relationship is obtained between the variables Accurate Vocabulary and Sentence Structure with thee scoring value of 0.780. This result shows that when students have gained sufficient command on their vocabulary then they have better skills of sentence making. Correct use of vocabulary and knowledge enhanced vocabulary help the students in expressing their thoughts better in sentence with developing a simple, logical and correct grammatical

structure that not only develops a sense of sentence but also improves the flow of sentence of structure. Further, the relationship between Relevant Information and Accurate Vocabulary also shows a strong positive correlation with a value of 0.702. This value shows that when students have an enhanced accurate vocabulary then they can provide more strong opinions in writing and provide relevant information in their writing. This also shows that when a student has a right command on vocabulary words they deliver more meaningful information that incorporates relevancy to the topic delivered as well as helps them in writing more accurate words to complete a sentence. The strong correlation between Accurate vocabulary and Information Organization with a scored value of 0.775 shows that when students have more enhanced vocabulary they are able to present the given topic or information in a more structured way. The above given positive correlations of variables with Accurate Vocabulary shows the importance of the variable and it also shows that accurate vocabulary plays an important role in constructing a sentence structure, gathering and presenting of relevant information and also organizing information in a logical way.

The results provided above in table shows the most noticeable elements and features that are required to be learnt or get expertise if students are doing academic writing. The correlation coefficient between the variables Sentence structure and Relevant Information with a score of 0.734 shows a strong positive association. This means with constructing sentence structure with right words the presenter would be able to provide the relevant information as well. Furthermore, the table shows a strong positive relationship between information organization and sentence structure with a correlation coefficient value of 0.737 which means that when a writer will develop a correct sentence structure then he or she would be able to provide the information in a very well structured and organized form. This table shows that making a correct sentence structure is also an important element. If a student has learnt to construct a well designed sentence structure they they would be able to represent their ideas and perspectives on a topic of discussion with reference to more relevant information and they would be able to develop the flow of information in a very well organized manner.

The correlation table also shows a strong and positive relationship developed relevant information and organization of information with a score value of 0.455 that shows a strong significant relationship between the variables. The result obtained for this link

portrays that when the presenter of the topic uses the information that is important and logical has more relevancy to the topic of discussion then the presenter or writer would also be able to organize the information in the list of priority of presentation. When the student become more expert in gathering relevant information regarding the topic of discussion they also become capable of organizing the information in series of priorities; such as organizing the information into parts like introductory parts, main parts and conclusive parts so that when the information is delivered it would look more in a flow and order. The relationship between both the variables is strong but is not much stronger as the others. Summing up the correlations result table, it shows that for students the expertise of all these variables is important and in fact if the learners are able to improve in one of these given aspects they would definitely be able to improve in the other ones as well.

4.2.3 Topic wise comparison

ANOVA

		Sum of Squares	df	Mean Square	F	Sig.
Accurate vocabulary	Between Groups	5.699	3	1.900	18.948	.000**
	Within Groups	1.203	12	.100		
	Total	6.902	15			
sentence structure	Between Groups	7.766	3	2.589	16.847	.000**
	Within Groups	1.844	12	.154		
	Total	9.609	15			
Relevant information	Between Groups	3.922	3	1.307	14.765	.000**
	Within Groups	1.062	12	.089		
	Total	4.984	15			
organization of information	Between Groups	2.328	3	.776	10.276	.001**
	Within Groups	.906	12	.076		
	Total	3.234	15			

Table 11: Topic wise Comparison

Analysis of Variance (ANOVA) is a widely used statistical test employed to investigate the existence of significant differences among the means of three or more independent groups. This test is the most appropriate and an influential test as it represents the performing ability of the variables under study like accurate vocabulary,

sentence structure, relevant information and information organization in different dimensions. This test elaborate in detail the variation that occurs among the variables in the same group and between the combinations of variables developed. It helps the research scholars in finding the statistical value of variability obtained among the presented variables.

From table 3, it was found that the variable Accurate Vocabulary shows significant differences when compared both in group and across different sessions. It means that respondents of this study had variation in use of of accurate appropriate vocabulary both when their performance was evaluated together in a group and when they were evaluated in different dimensions. Similarly, the respondents performance for the point of discussion sentence structure was also tested and the ANOVA test has revealed significant variation between and within the groups when recorded through different sessions. This result interprets that the respondents in the study has shown variation in their performances when compared within and between the groups in terms of constructing grammatically correct sentences and developing a sequential flow of a sentence. For relevant information, the statistical results also shows differences within and between the groups of participants across different sessions. These results interpret that the ability of the participants to deliver the information with accurate vocabulary, with correct sentence structure and the relevant information varied significantly within the group and while performing the task on individual bases during the complete sessions. The test result also shows that the performance of participants for the information organization also varied while comparing both with and between the groups recorded during different sessions. Through the above results presented it is clear that participants skill level in organizing the information in a more coherent, logical and prioritized was differ during all the sessions when compared both with and between the groups.

Session comparisons on the basis of Motivation, Methodology and Feedback

ANOVA						
		Sum of Squares	Df	Mean Square	F	Sig.
Motivation	Between Groups	37.172	3	12.391	3.439	.022*
	Within Groups	216.188	60	3.603		
	Total	253.359	63			
Methodology	Between Groups	2.875	3	.958	.226	.878
	Within Groups	254.125	60	4.235		
	Total	257.000	63			
Feedback	Between Groups	8.625	3	2.875	1.401	.251
	Within Groups	123.125	60	2.052		
	Total	131.750	63			

Table 12: Session comparisons on the basis of Motivation, Methodology, and Feedback

Table 7 results are based on the comparison of the factors motivation, methodology and feedback. The results in this table are presented based on the comparison of significant differences of motivation dimensions with and between the groups during different sessions. There were different groups of participants and all have different level of performances that they exhibit during the sessions conducted at various times. This means the level of motivation of the participants in their performance was tested at different levels during different sessions. Moreover, the difference of results were also obtained for the teaching methodology and its impact on performance of participants at different levels within and between the groups during different sessions. The difference in performance regarding the feedback of participants was also tested at different levels in different sessions. This shows that throughout the sessions conducted the participants has showed varied level of motivation for participation and learning. Further during the application of teaching methodologies the participants have reacted differently in each session and the feedback provided every time after the sessions has variation based on the level of motivation and the improvement in teaching methodologies. The most important difference obtained was the level of

performance of participants in the groups. The detailed analysis in the causes of these variations in performance will provide an increased information and suggestions regarding the improvements that could be made in participants group based learning and the expected and real performances obtained.

4.3 Interpretation of Analysis

After the students had presented the collected information, the groups of students wrote reports. Using statistical methods through the SPSS software, these reports were then analyzed thoroughly with respect to the data found in. This statistical analysis was performed to check the trends and patterns that the student groups can provide.

The statistical data analysis of the students is done on the topic wise and the marks obtained by them are gradual upward trend. The students showed lower scores at the beginning of the initial week but showed an outstanding improvement in their performance with time till they had reached levels of marks measured as significantly higher by the end of the period of study. The fact that this positive trajectory presents us with this positive trajectory means that we can surmise that the teaching methods and support that was given to the students were adequate to help them boost up their academic performance.

Statistically, it was also analyzed that correlation between motivation and methodology, motivation and feedback, as well as methodology and feedback is directly proportional. The data specifically indicates that changes in student motivation can positively affect how students are taught and that students with higher considered levels of motivation provide instructors with more effective feedback. Secondly, the analysis shows a strong positive relation between accurate vocabulary, sentence structure, detail of information, and the overall organization of information. Good and accurate vocabulary helps enhance sentence structure, while writing with proper information helps in laying out a work well.

4.4 Qualitative Data Analysis

4.4.1 Analysis of Placement Test

Before getting started with the analysis on actual research base, there was a placement test conducted to assess participants' writing abilities and diagnostic

knowledge. The participants were required to write a convincing essay on the topic 'Some people argue that tourists in foreign countries would better not to pursue the local customs and practices while others believe that primary country should accept and accommodate cultural differences.' This essay task was designed in order to assess the level of critical thinking of the participants, the ways of reflecting upon a complex problem and to have a mind of cognition of participant's conceptions.

After that, the students were tested to find how proficient they were at various basic language skills like a vocabulary, sentence structure, grammar and overall written expression. The objective was to get an overall picture of a student's competences in the core linguistic competences. For the exam, 32 volunteers participated – 20 of whom later went to register for the research class. What I found most interesting about this is that, since they were dealing issues around culture, traditions and travel, there were many assignments that had input from the students personal experiences, using those experiences and drawing on their background and perspective. It was more experiential, grounded than philosophical or theoretical. Around a half of the students had in the possession a rich vocabulary referring to travel and cultural customs subjects. They also showed that they could interact with and discuss such material. Although, there were students who lacked coherence and unity in their written essay as the information displayed was not necessarily organized in a constructive or structured way. In some instances, the text did not have a discernible flow or coherent development, and it might have harmed their capacity to create work of high quality and consistency. With regard to these undergone factors, roll numbers were given each of the given students and places were assigned to them. Only the students did not know that the student with the lowest performance was assigned roll number 1. When the students were subsequently formed into groups, weaker and stronger performers were placed into the same group. The process of placement assessment helped gain a more precise idea of what a student's academic level may be and how capable he is of learning.

4.4.2 Analysis of Class Observation

For class observation, a routine based check on participants attitudes, behaviors and activities was done so that any kind of change occurred could be recorded any change that could develop an insightful turn to the learning could be studied. Firstly, as students were new to this kind of environment and experience so they became

confused and were not focused. They were not clear in their thoughts so they lack motivation to perform the activity and had only 1 thought in their minds: Why are we participating and why should we participate in this experiment? To address this, an orientation session had been pre-planned to satisfy the students' queries, which were subsequently resolved. When students get a detailed information about the study their level of motivation was slightly increased as for now they knew what they were going to do, the basic reason of this research project and the order of occurring of activities. In the first week, the focus of selected students was not much on the activity as it was more like a lecture to them. However, when their expectations were not met, they began to actively engage with the problem-based learning approach, recognizing its benefits for their learning. The role of the tutor was clarified as one of facilitation, rather than direct instruction or "spoon-feeding" the students, which encouraged the students to take a more active and independent role in their learning process.

After the division to groups and allocation of the topic, the students were very enthusiastic. The problem based learning method was eagerly taken up by them and they were an active part in discussions and activities. Such was the case with the problem based learning sessions; motivation and excitement waxed but never waned for the students, and in fact, it became more intense as time passed. As they got to each new week and continued to work towards their assigned topics and worked together on innovative solutions with their peers, their engagement seemed to increase.

There were several challenges to this study as well. Progress was occasionally hindered by technological issues, power outages particularly, some times interfering with the learning experience. Additionally, some students were initially uncomfortable sharing or providing each other with their initial thoughts for various reasons. But by the final week, these students had learned to work together and overcome those first bias to work with people they might not have wanted to opt for collaboration with in the first place. The result of the students' capacity to thrive under deplorable situations and excel in a variety of team environments is an essential talent to learn and use in their future study and career.

The problem based learning sessions made the students to go into extremely deep learning for the assigned topics. For instance, if the topic for the first week was 'Food around the World', the novel and exciting facts spontaneously came forth from the students because they weren't common knowledge amongst many of the class,

including the author. The students' research delved deep into the culinary traditions, cultural significance, and unique ingredients from various regions across the globe. Additionally, the students had created their home roles and worked out their role play and imagined themselves as their characters. The students undertook a real effort to make the presentation interesting, informative and also delivered with the accompanying voice–visual aids, demonstrations that add live learning effect.

4.4.3 Analysis of Feedback Forms

At beginning of the course class, the sixteen students enrolled in the course were given feedback forms to complete to evaluate the students' perspectives on Problem Based Learning. At the end of each weekly sessions students received feedback on the forms and returned it the same day. There was two parts in the questionnaire. This was the first section consisting of questions concerning methodology, motivation, and general feedback and the data were analyzed statistically. The second section involved open ended questions related to personal assessment of the tutor and his comments on sessions. The information from the second section is given below, which discusses students' experiences and perceptions based on Problem Based Learning adopted in the course.

Question 1 was about “How did students found the topic? Does this topic have enough spark to motivate you to conduct research on it?” The students reported that the assigned topics were highly engaging and motivated them to research the subject matter. They learned novel information about various cultural elements such as food, music, weddings, and notable figures from different regions of the world. Additionally, they acquired specialized vocabulary relevant to the topics, such as "cuisine," "broth," and "curries" in the context of "Food around the World." While some students had a personal interest in music, others who were less enthusiastic about the topic still conducted extensive research and uncovered significant new information about the music of diverse regions.research.

The third week had a totally diverse and interesting topic. But for some students (including my own), it could be too broad to cover within a single presentation; and even still they were able to do it. The theme of "heroes we know" served as a very motivating theme because the students got to explore the qualities and stories of their real life inspirational heroes, who include living legends and public figures. Through

their research, the students were able to discover new information about the challenges, problems, triumphs and long lasting impacts these individuals made. It also allowed for one student to have an already substantial knowledge base on the subject, which also gave them the confidence to actually dive deeper and see where they knew what other stories there were about their chosen heroes, but also to share specific little tidbits of their lives and then accomplishments and just give other pieces of information about it. In addition, a couple of students expressed they had been looking forward to a subject that drove motivation and education as well as an opportunity to share how their exceptional love and individual relationship with their favorite people share in their community or world.

In response to Question 2, "What difficulties did you face during the research? Or did anything interesting happen to you on a group level and a personal level?", a student reported encountering various group-level problems. This included difficulties with slide transitions in the initial week due to poor communication among group members. Some group members were uncooperative initially, despite the requirement to work both collaboratively and individually on the project. Another student reflected that they lacked the necessary knowledge and skills to create effective PowerPoint presentations in the early weeks, and instead utilized simpler tools like charts and markers for their presentations. This presented challenges in delivering impactful presentations to the audience.

Some groups encountered various challenges during their presentations. Despite the lack of a mandatory requirement to use PowerPoint, the presentations lacked impact on the audience. Group members experienced difficulties, such as code-switching between languages, getting stuck at certain points in their delivery, and mispronouncing technical terms or vocabulary words. Additionally, power supply issues and corrupted or malfunctioning USBs presented logistical problems for some members, disrupting the flow of their presentations. It was recognised by one student that the nervousness to be heard was probably why they had spoken too loudly in their initial presentations, while a second student struggled with the slow pace of their group members. However, the situation improved in the second week, when the group composition was changed, and less such noncooperative attitudes and problems were reported. While some groups had decided to include role-plays or more interactive elements in their presentations, they were forced to convert their presentations into

standard, more traditional academic ones for undisclosed reasons (perhaps attributed to constraints of time or logistical matters).

Then the following section is made up of feedback. For example, the prompt for question 3 was 'Please give any further suggestions or comments regarding the tutor'. The tutor was a student to highly engaged, the students were energised the students kept reporting. She was motivating to be productive and she was encouraging them to participate in the class. The student pointed out that as the tutor was so enthusiastic and so capable to draw in the students, they kept up a positive, productive learning atmosphere in all of the sessions. The tutor was able to bring the sessions together and create a good learning environment so that the students carry out their research they should be. All necessary materials and support for research and presentation were provided to the students by the tutor. Also, the decision by the tutor to permit the students to form their own group during the first week was a practical approach to inspire the students to cooperate and team up among themselves.

Some topics asked for more in depth discussion so the tutor should not be so strict on time or allow more time when needed, was another student recommendation. The student recommended that the tutor should offer more detailed comments on students' work and presentations, and display multiple methods of presentation to help the learning process. Additionally, the student recommended the tutor introduce the weekly topics with underlying knowledge to ensure all students comprehend the subject, collects personal feedback from every student to judge how interested and keen considerably in the group.

Question 4 asked the student to do the same as the first question at least; to tell what the tutor's main strengths and weaknesses were and then describe the tutor's good attributes. All student presentations sessions were listened carefully by the tutor who checked in with the student that they were taken seriously and that each student has the chance to stand out, the student revealed. Moreover, the tutor had an encouraging and optimistic attitude, that enabled a supportive and collaborative learning environment. In addition, the tutor brought in a great deal of positive energy to the sessions that made the sessions positive and invigorating, making students eager to participate in the learning process.

The tutor kept it out of individual students and instead judged the group in general during the feedback sessions. By using this practice, the tutor could then give the appropriate feedback to the class in a constructive way, pitching it shared learning here. She gave the children so much autonomy in their investigations, that she would only check in without interfering much. This autonomy gave the students the sense of ownership of the learning and the practice of critical thinking. The tutor was reserved and even in appearance, and had never given any credence to reports that were unfounded about any student. The involvement in this was extremely impartial so that the feedback sessions continued to concentrate on the academic progress and performance of the students. She immediately answered all student questions and gave strong commitment to the problem based learning sessions as proven by her commitment to helping the students achieve their learning goals. However, it was noted that there is a limitation whereby there needs to be more time allocated to every single topic because the first week was not sufficient enough to cover the details of the subject matter.

Students gave their suggestions for improving the tutor's performance in the next tutorial session in Question 5. The question prompt was 'What do you expect the tutor is going to do to improve in the next tutorial session?' They also advised that the tutor should be more assertive and more active in the assessment activities. Furthermore, they proposed that students should be granted sufficient time for research and presentations which will help them to prepare and fully participate. Students also recommended the tutor be clear with students' expectations and structure in the assessment, to have a common understanding of the session's objectives and flow.

One student also views the tutor responsible for delivering an adequate learning atmosphere that includes facilities and resources that are appropriate. The tutor should make timely arrangements and give the amount of time for each presentation in order the rates of presentation by each group be equalized. In particular, the tutor should seek qualified classroom space, as well as make available any necessary technology or equipment, and make the presentation schedule available well in advance enough for all the students to prepare adequately. The condition can be made more productive and engaging as the tutor structures and supports a tutorial session.

Constructive feedback and talk about the mistakes done in the session will help the learners to improve and understand about their performance. Other than formal

presentations, the tutor can encourage other instructional methods like role plays, group discussions, or whatever you may think of, since they are bound to increase the students' participation and deepen their learning experience. In addition, the tutor should also adhere to the planned session structure to maintain focus and to make good use of time. Moreover, the tutor should be responsive to students' needs and feedback and adjusting the session plan on the fly, which would help to meet the learning objectives and respond to any emergent problems or student needs. Using these strategies, the tutor develops a learning atmosphere that is more dynamic and supportive, and creates an opportunity for the students to become active in their ongoing learnings and the achievement of the desired learning outcomes.

This, question 6, was focused on the new vocabulary that the students had grasped and learnt in the session. In the question prompt, students were asked to come up with a comprehensive list of all those new terminology and lexical items they had encountered and learned that pertained to the topic they focused on in the week's work by reading and interacting to the presentation materials. It allowed the students to show the thing they have learned new vocabulary, also expanding their knowledge of what they are investigating. "That prompted the question... What is the list of new words that you learned, that relate to the topic this week in research or presentation?"

During the initial week, the topic of "Food around the World" was covered, and in the feedback forms, students provided a comprehensive list of new vocabulary terms they had learned, including stuffed camel, Roghan Josh (a popular Kashmiri curry dish), cuisine (the characteristic style of cooking associated with a particular country or region), Baklava (a rich, sweet pastry made of layers of phyllo dough filled with chopped nuts and soaked in a sweet syrup), tortillas (a thin, round unleavened flatbread made from finely ground maize or wheat flour), and Som Tam (a spicy green papaya salad from Thailand).

In the second week, the students reported learning a lot of new musical terminology regarding the topic of "Music around the World." They were exposed to terms in relation with musical genres and traditions, including the Gharana Revolution in classical music, as well as several instruments like Kazu, Bongo, Santoor, Dholak and Lutes. Apart they even got exposed to many of the broader musical styles such as Reggae, Jazz, Dadra, Thumri, Hardcore Punk, etc. Additionally Timbre and Trombone was explored.

Students were taught about Shinto Weddings, Khumb Vivah, Bal Vivah and the concept of Manglic Dosh in the third week about the Theme Wedding Rituals. Another thing they learned about are the rituals such as Exorcising and the Blackening of the couple, along with other associated words such as Turf, Trojans, and Phoenix. In the last week, the topic was "Heroes we know"; the students met new words, e.g. Sublime, Utopia, Ferociousness and so on.

4.4.4 Analysis of Focus Group Study

A focus group study was conducted, following the completion of the PBL (Problem Based Learning) sessions, in order to scrutinise in depth the students' perceptions, attitudes and opinion towards PBL, the tutor and the overall PBL methodology. In order to make the students feel relaxed and at ease during the evaluation process, the focus group sessions were run by a colleague of the researcher not part of the team that had designed and carried through the PBL. In order to get more in depth discussions and to capture different points of view, the student were split into two groups, each group of 8. In the focus group discussions the data was meticulously recorded using detailed notes taken by the session conductor and a specially dedicated note-keeper.

When in question 1 students were asked about their perceptions of the PBL "How did you find the topic (Problem Based Learning)?", the students initially found it very confusing and unsettling, as they were not provided with the typical lecture-based instruction, handouts, or assigned readings that they were accustomed to in their previous educational experiences. Some students even attempted to avoid the class altogether due to this unfamiliar and unconventional approach, which was a significant departure from their traditional learning environments. However, after the first session and upon forming their small discussion groups, the students were able to contribute their existing knowledge and personal experiences related to the topic of food, which they found enjoyable and engaging. By the end of the PBL sessions, the students felt that this collaborative, student-centered approach had ultimately enabled them to gain a more comprehensive and profound understanding of the subject matter.

Question 2 was focused on what students learned from the employed technique. Students were asked, "What did you learn from this technique?" In response, they reported becoming "autonomous" learners. And they said they learned the knack of

roaming around on their own to find out and get new information — no academic subject or subject in the natural sciences, medicine, law or any other field is foreign or inaccessible to them. By being able to locate, research and find knowledge in different areas of the academic world, these students are finally able to take the reins of their own learning and hence turn into self-driven, lifelong learners. Instructors no longer provide them with everything they need to know, they can independently discover and extend knowledge on their own.

From students, the statement of question 3 was about the usefulness of the PBL approach (selected) used in the problematic structure. PBL (problem-based learning) sessions were thoroughly useful to the students as they helped them to collect the required data and to learn important research skills. By adopting the PBL approach, the students were able to dip themselves into the research problem and actively participate in its subject matter and apply their knowledge on the real-world context. This hands-on learning of the students helped them in picking up data and analyzing them; giving them a better understanding and practice in the research topic and also sharpened their capacity to think critically and solve problems. The PBL helped them to distinguish very relevant and irrelevant data and that not all data collected is appropriate for dissemination. The capability to distinguish the real data points from the data points that were just unimportant started to develop in them, and in this very process they started becoming more skillful in their research and presenting their data more impressively and beneficially. Furthermore, the PBL sessions were also designed to place the students on a wide array of expertise in presenting their research findings through diverse means such as role plays, multimedia presentations, videos, short documentaries, even creative means such as songs. This multifaceted approach to dissemination empowered the students to convey their research in compelling and innovative ways, captivating their audience and ensuring their work had maximum reach and influence.

Question 4 asked about problems faced in the data collection process. The framing of the question was then: "How do you deal with the data role where you're gathering data?" There were many problems faced by students as they collected data raised by them in the responses. Many of the participants were difficult to gather information from, and there was a lack of cooperation from some of them. In addition, students encountered difficulties with the time management since their schedules did not

collaborate to allow for effective data collection. Thus, they also reported to occasionally being handicapped by the unavailability of accurate and appropriate data from primary sources that prevented them from attaining the required information needed for their research. Furthermore, the limited internet connectivity that they had also made it difficult for the students to extensively research online, access appropriate academic databases and materials or communicate effectively with its study participants as well as faculty advisors from afar.

The experience of research team members of student groups carrying out the assessment task was investigated by question 5. The question that was, 'Was there any problem working in the group with other members?' Many students reported that as a group task, members' temperaments sometimes led to challenges. Occasionally, other members were so preoccupied or distracted that they failed to complete their work on time, negatively impacting the group's performance and overall outcome. However, overall, there were relatively few major adjustment issues, as the students were rotated weekly, allowing everyone to collaborate with their peers and gain experience working with different group members.

Question 6 explored how students could integrate the technique examined in the current study into their academic pursuits. The statement of question 6 was "How would you inculcate this technique with your study?" The students remarked that problem-based learning encourages learners to be self-directed and take an active role in their learning. It was likened to a practical life skill that could be valuable in various contexts, not just academic settings. For this reason, PBL should be incorporated to language instruction in order to give students the topic to explore or problem to solve, the autonomy to talk about it, research it, and make them share about the data, videos, songs or any type of related data. The use of this approach enables the students to improve their critical thinking and problem solving skills in tandem with gaining skills in collaboration that are vital in achieving success in both the classroom and outside of it.

Question 7 of the study also asked students on whether they are keen on utilizing this method in their academic programs. The sentence was phrased as: Do you want this approach to be used in your classes? On the other end of the spectrum, the majority of students strongly agreed. This adoption method would benefit students to develop a deeper understanding and appreciation in the subject matter. Furthermore, it would

enhance a decline in language classroom research culture that has taken shape over the past decade. This approach was designed to encourage students to think more critically, to be more active while they encounter course materials, and to learn useful research skills.

In relation to the questions asked in question eight, the student gave their perceptions regarding the particular alterations to the Problem Based Learning (PBL) system. Students found that the current implementation of the PBL approach was executed well. They however found out that PBL sessions had a duration of concern. The students also recommended time per each PBL session should be more than 3 hours. Moreover, in their responses to the question 9 they reflected that technological facilities for the PBL process should be better up to date.

After answering the question 9, that is the question which as asked about students' suggestion for the improvement, the participants said that problem based learning is very effective instructional approach to learn effectively. Students found that with this approach, they can become more active in dealing with course material and improve critical thinking skills. Moreover, the students also felt very proud of completing those hands on data collection because it gave them an opportunity to be part of their learning process and use the theory with a real situation.

Question 10 also dealt with how the Problem-Based Learning (PBL) can be more engaging and attractive for language class students. "What steps should be taken to make PBL sessions more interesting, especially in language class?" was the question asked. Several recommendations were given by the students in response. Taking this into consideration, they also recommended making use of PBL sessions to add more creative and appealing topics to this subject as a means of enhancing its attraction to language classes. In addition, the students recommended that time and technical support be provided to more adequately assist these dynamic and student-centric learning activities. Addressing these factors could help make the PBL more stimulating and effective for the language learners.

4.5 Conclusion

This chapter has reported the findings of the data analysis from the placement test, feedback forms, document analysis, class observation, and focus group discussions regarding students' attitudes toward Problem-Based Learning. The analysis suggests

that Problem-Based Learning can bolster students' language proficiency, enhance their language retention, and improve their critical thinking abilities. Incorporating Problem-Based Learning into language instruction can further enhance student performance, facilitate comprehensive language acquisition, and promote greater learner autonomy. The findings indicate that this pedagogical approach can lead to improved language skills, a deeper understanding of course content, and increased self-directed learning among students. The subsequent chapter will outline the detailed findings and conclusions of the comprehensive study.

The study showed that there was no one single, definite answer to the problem under consideration. The problem had multiple valid solutions rather than the scientists inputting the same sequence of mouse DNA in the same manner resulting in different matches. The data showed there were many pathways to achieve the ultimate goal of uniform, but they ultimately are all leading to the uniform solution. This implies a degree of inequality — the destination can be reached via different route and strategy. The implications are that the problem is complex and there is a need for a more nuanced understanding of which potential solutions can be used.

Most of the students had appreciated that learning complex and hard topics was easier with Problem-Based Learning (PBL). This learning process was often facilitated through collaboration with group members, who could share ideas, discuss different points of view, and capitalize on each other's knowledge. Despite that, some students said they were not solely depending on what their peers would share as far as Texas Instruments: study guide, however, they would still need to synthesize and apply those concepts on their own separately. With the application of PBL approach, more challenging thinking was demanded since the level of superficial knowledge was insufficient to help in PBL project that involve deep thinking. The PBL sessions required more amount of work of students but between their work, students were able to spend more time to seriously examine the problem at hand and acquire a deeper understanding of the subject matter. Moreover, many students appreciated that PBL is hands-on, hands on, and problem solving, making their knowledge easier to recall and apply to actual world situations. In addition, the collaborative and self directed PBL nature also yielded valuable skills such as critical thinking and problem solving, which are recognized as highly valued in academic and professional places.

Formulating the problem statement was the vital moment of the PBL (Problem Based Learning) process, since the facilitator of the process had to do it. The main objective was to precisely formulate the problem statement, upon which all the learning would be based. Multiple methods to gain the required information and data about it were considered: research, asking the subject matter experts, and analyzing the relevant case studies. Several potential solutions were identified, however, what remained the same was the final goal of the PBL process: to produce a complete and appropriate solution to the problem. Through their PBL activities, the learners not only gained the necessary vocabulary and language that they needed, but they also developed a critical thinking, problem solving, and collaborative skills. This type of study. The use of PBL helped the learners to think more creatively and breaking up from traditional paradigms. In addition, it also allowed them to work together in a group setting and improve their social ability. In addition, the PBL activities tended to push introverted students to become less shy and engage with the fellow student.

CHAPTER 5

CONCLUSION

5.0 Introduction

The prior chapter thoroughly detailed the analysis of data collected through a variety of methods, including placement examinations, classroom observations, reports, feedback forms, and focus groups. This chapter will now convey the key findings of this comprehensive investigation into the research questions at hand. This chapter will now explicate the key findings and critical implications that emerged from the comprehensive investigation.

5.1 Findings

This study aimed to investigate the efficacy of Problem-Based Learning in facilitating knowledge acquisition, knowledge retention, and the development of critical thinking skills among college-level students of the English language. The participants were first-year and second-year science students enrolled at Jalalpur College. The researchers employed a combination of class observation, document analysis, questionnaires, and focus group discussions to collect the data.

The primary research question explored in this study is:

1) What impact does problem-based learning have on language learners' knowledge acquisition, knowledge retention, and critical thinking skills?

The secondary research questions examined were:

- I. How do the instructional methodologies influence learners' critical thinking aptitude, resource management proficiency, information acquisition and utilization expertise, and comprehension of intricate systems is examined?
- II. To what extent does problem-based learning (PBL) foster students' development as autonomous and proficient learners?

5.1.1 Primary Research Question

1) What impact does problem-based learning have on language learners' knowledge acquisition, knowledge retention, and critical thinking skills?

The data for this study was collected from a variety of sources, including placement tests, participant observation, document analysis, focus group discussions, and

feedback forms. During the focus group discussions, students expressed that problem-based learning (PBL) was a more thought-provoking and engaging learning method compared to traditional lecture-based approaches. They described PBL as a more rigorous and precise instructional technique that required them to actively engage in critical thinking, collaboration, and problem-solving to work through complex issues. Although some students were initially frustrated by the unequal contributions from group members during PBL activities, many indicated a strong preference for incorporating PBL in the future as it introduced valuable variety and real-world relevance to their learning experience. Students felt that PBL enhanced their ability to apply knowledge and develop problem-solving skills, which would be highly beneficial as they continued their academic studies and prepared for future professional endeavors.

The findings showed that PBL enabled greater content mastery and understandings in the students. PBL was an instructional application where the learner was left for a great degree of autonomy since in order to work through a problem, the students are forced to engage in critical thinking, collaboration, and problem solving to tackle oversized problems. PBL I found brought out that the learners could develop multiple solutions and could cope with a lot of the information needed, thus stimulating critical thinking and problem solving skills in the learners. Moreover, the attention that learners gave to PBL activities resulted in insights and a high degree of real world relevance rather than only textbook knowledge. This helped them to use their knowledge and skill to the next academic and professional opportunities.

Results indicate that PBL students could retain information better in their long term memory due to the learning objective that encouraged their intrinsic motivation to learn and enhance their engagement with the material. The results also showed that PBL students possessed more subject-matter knowledge and were better able to conceptualize ideas. Additionally, the study showed that there could be some realization granted for the students for whom problem based learning was not practiced — suggesting they were better at factual recall and conceptual understanding — but only in a rather superficial way because they could have possibly prioritized memorizing over the development of critical thinking and problem solving abilities.

Many studies using nurses in varied health care environments have also been referenced in the existing literature and these studies found problem based learning to be an educational method that could promote as well as enhance the critical thinking abilities (Amos & White, 1998; Cooke & Moyle, 2002; Williams, Sewell, & Humphrey, 2002). Problem based learning stimulates the students to actively use the material, analyze the problem from different perspectives, and comes with creative solutions, all of which are the basic prerequisite of critical thinking according to the studies. Furthermore, PBL was also found to be a way to promote creativity as well as group work. This approach, which had a problem solving nature, enabled the students to analyse complex problems from a number of different perspectives, and consequently developed their critical thinking, research skills. Secondly, we found that problem-based learning resulted in increased level of motivation of the learners through the inherent self regulation learning approach in problem based learning. It was believed that the reasons for this can be attributed to students' ability to take control of their own learning, and therefore have increased responsibility for their own learning and advancement.

The present study watched students assign topics to "Food Around the World" or "Wedding Rituals"; they researched all the many customs and cultural norms of food and customs of weddings. The results suggested that students' self esteem was elevated during the time of problem based learning as they had a sense of control stemming from what they were able to gather information from. As a result, a higher level of responsibility and professionalism resulted among the students.

Initially, problem based learning (PBL) as an instructional approach did not seem to favor students while in the process of becoming knowledge. Yet, the studies demonstrated that PBL later became a very productive strategy for student motivation to learn new knowledge. The main idea of promoting students to think critically and problem solve is based on the concept that nothing is unknown. Another, PBL provided a bridge between the concept that was taught in the classroom and the use of those same concepts in the real world, and was found to be helpful in improving retention of the material. PBL also further significantly raised students' motivation levels because, with PBL, students would assume control in learning and would feel more responsible for their academic advancement. In general, the investigations

indicated that though PBL brought about early difficulties, it eventually culminated in the development of invaluable critical thinking and problem solving abilities.

In conclusion, based on the present study, it was found that Problem-Based Learning (PBL) is an instructional approach which enables students to learn language skills as well as life skills that are important in mostly real life such as critical thinking, problem solving and effective and effective communication. To capture the student point of view, students who had completed Problem Based Learning (PBL) undertook a process of reflections done through Focus Group Discussions (FGD) and the results suggested that the outcomes varied greatly with the diversity of the students and their cross section of experiences in dealing with the contents of a course through PBL. The study concluded that PBL was a good instructional strategy for student achievement of language skills, including critical thinking, problem solving and communication, in addition to acquiring content knowledge. Although the PBL approach presented its challenges in the sense that the established curriculum had done some, students were able to use the PBL approach to develop these desired skills through active engagement, collaborative learning and application of knowledge to real world problems. Although, many students favoured the more structured and teacher guided approach, with a lot of group work being required to perform in the PBL approach. In particular, the teacher led approach made it clear what they needed to do and the teacher offered direct instruction, whereas PBL is a more independent and collaborative activity.

5.1.2 The secondary research question no 1

Q: How do the instructional approaches including problem-based learning and teacher-guided learning impact the development of students' critical thinking capabilities, resource management skills, information acquisition, and application proficiency, as well as their understanding of complex systems?

Problem-Based Learning, as the name suggests, is a learning approach that centers around the exploration and resolution of complex, real-world problems. In this student-centered pedagogy, learners actively engage in the process of identifying the problem, gathering relevant information, and developing potential solutions. By immersing themselves in authentic, meaningful tasks, students develop critical

thinking, problem-solving, and collaborative skills that are essential for success in academic and professional settings.

It was found in the current study that problem based learning is very efficient in raising students' critical thinking ability. The project provided a means of immersing students in authentic, real world problems which are a key component to essential skills such as problem solving, analysis and a collaborative way of doing business that we, as young people, are uniquely positioned to learn, as well as essential to success in both the academic as well as professional setting. Crafting the problem statement that would serve as a guideline and dare the students was a key turning point for the facilitator in the PBL session. The first one was selecting something that I thought is a real problem in the world, that is a complex problem where students can actually engage in critical thinking and problem solving, something that is within their zone of proximal development, and secondly, it was to get the whole class to work together to solve that problem, with the devices. In a very pragmatic sense, this was a momentous time for the students, who had to handle the gathered information and resources in a way which again seamlessly applied to the problem statement in a logical and strategic way. Students were thus required to undertake higher order thinking skills like analysis, synthesis and evaluation to find potential solutions. Which means that it was such that the students are required to bridge a gap in their knowledge via research that they are required to organize, in order to effectively solve the problem statement. This turned out to be a dynamic and engaging process during which students developed a deep understanding of the subject matter as well as relevant language structures, specific vocabulary, and new information.

It was found in the study was that there were multiple paths to the same end goal, and students could work the problem in different ways and be required to use their critical thinking and problem solving skills. The problem based learning approach proved to be very flexible and adaptable as indicated by this diversity of solutions. For effective learning, the study shows that some students used less desirable ways to achieve their learning goals, using strategies such as engaging in academic dishonesty or plagiarism to do so. It is interesting that, contrary to the optimal learning, these questionable approaches can itself generate some small level of learning. Moreover, it is found that most of the students had little knowledge of the concepts involved beforehand,

perhaps leading the students to employ alternative strategies for their deficient comprehension of the problem-based learning.

The basic assumption of problem based learning is that the students should have some fundamental knowledge about the topic and they should use that knowledge in order to build their understanding in the new concept. This is, of course, an assumption; the idea that learners must have a high level of familiarity with the core principles and concepts in a domain to make them successfully engaged with and able to solve real world problems. It is impossible for students to know, without this foundational knowledge, which information is relevant, which to connect, or what solution to propose. Rather, students can better use critical thinking and problem solving skills when they take what they already know and build upon it to address the tasks at hand to have more meaning and longer term learning.

More guidance was offered at the start, in particular for grasping tough concepts, in the case of younger students such as those who took part in this research. PBL was made to be a more effective learning strategy with this additional support. The main thing the instructor had to consider was to up the balance between lecturing, aimed at helping the learners learn better, and not giving lecture or courses which kill their learning. When it came to being the facilitator, they needed to be aware of that role and guide the students to these resources, clarify misunderstandings, which did not mean just giving them the answers. This is in line with the core principle of PBL, which does not want to give the information directly to the students. This balance with the instructor was tricky — he had to have students be actively in the problem solving process without taking all the credit or help and the scaffolding and support to be provide those that needed it to succeed. Striking this balance would enable the instructor to allow the younger students to develop critical thinking and problem solving skills and for independent learning and exploration. This delicate balance was a major element in how PBL was a successful learning modality for this particular group of students.

Problem based learning enabled acquisition, use and understanding of complex subject matter. Using there classroom discussion, students posed questions to each other, shared what they knew and worked together to solve the problems in the cases. The collaborative nature of this subject helped students learn more about the subject, critical thinking and problem solving skills, which are critical to the academic and

professional success. These discussions were primarily designed as a way through which knowledge could be exchanged and insights given to steer off track groups back on track and back towards the process it is that is part of the problem solving. Combining knowledge and experience to construct more effective solutions, then, students learned through their sharing of findings, approaches and perspectives, but also how others' work identified gaps in students' understanding. Unfortunately, some groups were able to struggle to comprehend the complex systems to focus on them again. Ultimately, in cases of failure to have students generate appropriate discussions, the instructor took the lead by asking questions. This allowed students to reduce their anxiety and re-prioritize in the direction of the more productive aspects of the problem-solving process. However, through the instructor's interventions, the groups stayed engaged and remained on track even in the instances of difficult topic, or system. Overall this proactive facilitation method helped to guide the students through the problem based learning experience.

This paper has come to the conclusion that Problem Based Learning (PBL) can succeed in many different real world contexts. Using problem based learning (PBL) cannot only encourage students to actively engage with complex, real world problem, but can also improve the ability of students' critical thinking, problem solving and ability to collaborate. Using multiple view points so as to analyse situation during learning helps the learners to have a more in depth understanding about the actual situation in question. The use of PBL allowed the investigation of problems in a more critical and deeper way from different angles and helped the learners to understand the intricacies involved comprehensively. The learners were able to have a more nuanced and comprehensive view of the complexities of the different issues by looking at the different standpoints. As a result, it allowed them to develop more well formed and effective solutions.

Occasionally, the PBL approach presented notable challenges. While the collaborative nature of the learning process was generally beneficial, some learners struggled to effectively work together with their group members. At times, certain group members required more time to fully grasp the information or were uncertain about the accuracy of their understanding, which hindered the group's progress. Additionally, uneven participation within the groups and a lack of clear structure sometimes confused the learners, who had to rely heavily on their peers for information and

guidance rather than receiving more direct support from the instructor. These issues highlight the importance of providing appropriate scaffolding and facilitation to ensure the PBL approach is implemented in a way that maximizes the benefits for all learners.

5.1.3 The secondary research question no 2

Q. How does Problem-Based Learning contribute towards the cultivation of students' autonomy and effective learning?

Learning a second or foreign language can be a challenging endeavor. However, it can also be an interesting and rewarding experience, provided that the instruction is delivered effectively and efficiently. Innovative and creative teachers and language trainers consistently employ strategies that motivate their students to acquire the desired knowledge comprehensively. This research has demonstrated that Problem-Based Learning (PBL) was an effective approach, as it possessed the characteristics necessary for engaging students cognitively, behaviorally, and emotionally. PBL actively involves students in the learning process, allowing them to take ownership of their learning and develop crucial problem-solving and critical-thinking skills. By tackling real-world problems, students can apply their knowledge in practical and meaningful ways, enhancing their understanding and retention of the material.

Problem based learning is an approach designed for students for their active and focused participation in collecting and ordering the informative sources of learning. For credibility of the data collected by students, they were provided with some guidelines, links to authentic resources, motivation and support throughout their task so that they can complete the job with confidence and develop their report and present it. This support helps the students both emotionally and professionally, and it helped them in searching and understanding the course more keenly and implement their learnt skills efficaciously. As compared to the placement test, the problem based learning program has enabled the students in performing well and consequently it had a great impact on the course learning. Problem based learning technique has made students self-learners by enabling their problem solving and critical thinking skills being used more frequently and shaping their creative minds.

PBL has developed high cognitive skills in students as it helped them in deep seeking of knowledge, understanding it and testing their abilities in simulation exercises. This

technique helped the students in practically using their skills of critical analysis, rational reasoning and problem solving skills in finding solutions to complex situations and understanding the learning program in detail. Referring to Van Linden and Fertman (1988), the authors discuss key elements of such an intervention that should take into account students' already existing drive for some degree of autonomy, grant them the necessary time to discover themselves, to use crucial cognitive skills, and account for their tendency of unpredictable behavior that could necessitate flexibility in the learning process. Understanding these innate needs and embedding these requirements into the design of leadership training – which are centered around actively learning, ownership of the learning, and empowerment to deal with complex real world challenges.

Problem-Based Learning (PBL) was a successful methodology to students in the content of a dynamic and engaging learning. PBL provided the opportunity to apply leadership theories and principles to real world problems. The application of this approach helped students to develop needed skills of decision making, problem solving and collaboration. PBL also made students develop a sort of independent, active learning in relation to information that they gathered, making grasp of complex systems, and to work with varied technologies. It created this hands on experiential learning which helped in boosting their understanding of subject matter and helping them to reuse in dealing with important situations.

According to PBL students, PBL was much more satisfying as they found it engaging, intellectually challenging, and rewarding as PBL gave them an opportunity to use knowledge to batten situations of real life relevance. PBL is dynamic, student centered, and instructors must be willing and able to teach that way and adapt to the needs and interests of their students. The use of problem based learning helped in developing ideas for innovative lessons and pedagogical strategies so that the students gain some appropriate skills to compete and being more successful in the dynamic global marketplace. Just as the use of technology requires change, so must teaching strategies require change in order to remain relevant and effective according to the ever changing and changing domain of education.

Problem based learning allows students to be active learners thereby making them develop problem solving skills as well as becoming self directed learners. The implementation of this approach provided an opportunity to solve problems within a

self directed learning environment and a broader and more encompassing knowledge scope than traditional mode of teaching. Both learning was highly relevant, applicable and of real world relevance, and dynamic and intellectually demanding for the students. This was a particularly effective approach to engage with subject matter, apply acquired knowledge to complex problem solving, critical thinking and problem solving necessary for achieving future sustainability in the ever dynamic global market.

In 2005, Beers and Bowden studied the effects on knowledge retention of the long term usage of problem based learning. When one year later, one resumed assessments of students who were initially taught using the traditional, lecture based methods versus students who initially took problem based learning, they found that the students who had been taught using problem based learning had scored significantly higher. This implies that these problem solving skills and a deeper understanding that are engendered by problem based learning actually produced more durable and transferrable knowledge that lasted longer.

In the literature, it has been discussed that students' previous knowledge, competence and motivation are related with the student's capacity of absorbing the new knowledge or to increase the skills of critical thinking (Ryan & Deci, 2002; Reeve & Jang, 2006). As compared to learners with less foundational knowledge, lower levels of competence in the subject matter, and lower intrinsic motivation, and knowledge acquisition is better and critical thinking stronger. These factors help determine the success of an implementation of problem based learning and other student center instructional approaches.

Problem based learning (PBL) is currently the most prevalent educational system which is challenging to implement consistently throughout the curriculum. The different disciplines have different requirements, methodologies and content that are to be addressed. However, what PBL aims at is to allow the acquisition of skills and knowledge, the practical realities of how we run the educational set up may differ from the ideal expectations. The feasibility and effectiveness of using PBL in the current educational framework are dependent on consideration of these contextual factors.

5.2 Recommendations

Based on the findings presented in this study, the following key recommendations can be made:

1. The study analysis and deep understanding of the phenomenon has provided us a great insight regarding the integration of Problem based learning approach in language training modules. Using this methodology would definitely provide positive results in their better understanding and learning of language as well as it will help the students in mastering the language proficiently. The problem based learning program most prominently in this study has proved that using this technique students have become more engaged and involved, they have improved their critical thinking skills, and they have also shown their expertise of learning in an collaborative learning environment. All these improvements in students performance will help them positively in language learning. Keeping in view these positive developments in students, teachers will also be motivated to learn the advanced problem based learning techniques in order to teach their students something more meaningful and they would definitely implement those learned techniques into their teaching methodologies so that they can teach enthusiastically and students would be more motivated and will keenly learn the language.

2. PBL is a teaching technique that has this unique characteristic of developing interest of students while keeping the content relevancy intact with the curriculum being taught. This technique involves learning materials that are related to real world issues and reality based complex problems that help the students to connect with the topic of discussion and so they can learn more. While using problem base learning approach teachers should encourage students to discuss and debate the key aspects and issues to highlight the challenging points that are most relevant to problem based learning approach. More importantly, through discussion teachers can explain in detail the problem identification and solving process to students, they can provide necessary guidance on the way they can collect information or necessary resources on specific issue being discuss, and could also provide them their professional assistance in collaborative problem solving. The collaborative group discussions could help students in learning problem solving techniques and in fact it could make problem solving tasks easier for them, it would also help students in improving their mental abilities such as critical analyzing of a situation and rationale thinking. Continuous

use of this learning approach will also help students in developing their in depth knowledge of the topic of discussion and they would also be able to navigate the complex issues or occurrences in problem based learning.

3. The teacher professional grooming and faculty development programs introduced in institutes and through voluntary services prioritize those faculties first who have completed their initial teaching training. These short training programs should be designed with an aim of providing the trainee teachers with enough hands on practical learning experience and practical opportunities to exercise and implement the instruction based teaching techniques, both as a trainee and as a course moderator for students. Before implementing any new technique in classroom more specifically the problem based learning technique it is important that teachers first seek knowledge regarding the topic of discussion, fully plan the course of action, get familiar and comfortable with the teaching process and then should proceed. Using such type of approaches it becomes important for teachers to be capable enough continuously track the students level of learning and deep involvement in understanding the course so that satisfactory and expected results of teaching could be achieved. With the help of strategically implemented and properly planned training curriculum that provide practical exposure to students and increase practical teaching experience of teachers specifically provide them problem solving skills and improve their professional confidence for implementing PBL approaches to their teaching methodologies.

4. When students are given autonomy in tasks and assignments they get more involved in completing the given work. They have positive energies, high level of motivation and enthusiasm that helps them to complete the given task proficiently. In same way, when students are enrolled in some new language based training courses, it is important for the teachers and the trainers to provide them freedom of decision and grant them autonomy to complete the task by developing their own action plans. This helps the students to easily get along the course, get the expertise and language command. This will also be beneficial to the teachers as through this process they would also be able to create a strong relationship with their students and would motivate them to perform well.

5. This student centered approach aimed to provide students the authority to lead and tasks decision helps students grow and also connect with their teachers. The strong connection between teachers and students developed in these language training

programs helps the teachers in developing strong base of their students make them understand the topic of discussion easily. Another importance of using this Autonomy granting behavior also helps in teachers in knowing their students complete skills and weakness and enables them to listen their students ideas, their perspectives and then they can further guide them in leading learning programs. By this autonomy supportive methodology teachers can get more authentic feedback of their students through active their active participation and also helps them in further improving the learning program for a better experience of future students.

6. It is important for the teachers to update their teaching strategies and match the techniques with the interest level of the students. With the improvement in teaching methodologies, there will be enhanced motivation level of students and they will be more involved in the learning process. Organizing interactive sessions, debates, multimedia presentations, teaching through simulations and learning through workshops and practical experience are a few strategies that teachers can use to develop the interest of students and also to develop their better understanding of the phenomenon being taught. These teaching methodologies would also develop the students interest and enthusiasm in learning as they would be encouraged to learn something new on daily basis. Bringing good vibes and fostering a positive learning environment could also improve students intellectual abilities, their curiosity to explore in depth knowledge into the subject being discussed.

7. For enhancing students learning experience and exposure it is important to introduce some variety of exercises and activities for assessment of students learning; such as presentations of learned concepts, case analysis, simulations, projects based assignments, and portfolio management and analysis. These activities will not only enhance the knowledge and expertise but will will also provide students more professional and detailed exposure. It will also be an assessment of students learning ability and their level of knowledge acquisition till the date. Further it these activities also assess the level of skill development, skill improvement and level of critical thinking abilities developed in students through the adoption of this learning approach. These tasks and assignments would also help students in proving their level of understanding through adopting most unique and innovative ways just going beyond the old school methods of testing and examining students through paper system. These assessments will also be beneficial for teachers as they will have a more

detailed reports of their students learning abilities and proficiency acquired through the training.

8. While designing a language course, teachers should develop some assessment plans that would measure the cognitive capabilities of critical thinking, problem solving skills. One of the most common and easy method is to teach through case studies based on real agendas, detailed and comprehensive situations that would provide students the opportunity to practically analyze the situation and implement the knowledge and skills in the best of their ways. These opportunities can polish students skills and also provides them with a self-assessment of their own abilities and skilled areas. And it helps teachers and trainers as well in analyzing the areas where students further need their assistance.

9. Problem based learning is more of student centric learning approach then just a content to be taught with some traditional learning and teaching objectives. So, for designing an outline and curriculum of problem based learning programs their should be collaborative efforts of faculties, curriculum experts and the related disciplines in order to design a multifaceted PBL program. These collaborative efforts would help in exploring more important areas of study not only for students but also for the teachers as it would help them in adding something new and unique to their content that would help the students as well in upgrading their knowledge, skills and abilities.

10. Problem based learning approach is a unique and more beneficial student centered approach that when adopted in institutes would help the students a lot in learning some professional skills. It would help them developing their critical thinking and problem solving abilities as this approach promotes research based learning. Developing expertise in research and critical thinking approaches are unfortunately been lacking in Pakistan's educational culture most specifically. Through introducing PBL methodology in higher education, students will feel motivated as well as more authoritative of their learning as they will be able to gather and explore more information through a self-paced learning approach. This transformation of education system and curriculum with inclusion of research projects and student centered learning approach would definitely enhance the quality of education.

11. For the introduction and implementation of an effective problem based learning curriculum, it is needed that the curriculum design policy should be revised, a

collaborative discussion sessions on the course designs should be conducted with the teachers and teachers should also be involved in each and every process of curriculum designing so they can also contribute their important suggestions in development of curriculum, address the classroom challenges and factors in PBL context. The involvement of teachers would also enable themselves in developing a better understanding about the course and content and eventually they can develop their teaching plans accordingly.

12. In student centered teaching methodologies, the first technique is the problem based learning. This method involves learning through real world problems. In a professional learning environment, students work on the complex situations and problems, collect the important resources and information and design the most possible and multidimensional solutions. Then comes the project based learning technique that consequently connect the learning activities with the concepts learnt in PBL. Such type of learning approaches are more helpful for the students of field of natural sciences, psychology, medicine, as well as dentistry, since it promotes critical thinking, problem solving and self-directed learning.

13. For students in other disciplines than English, an increased collaboration should characterize problem based learning (PBL) approach. For an example, having the services of both a language teacher and an engineering teacher are to be vital in an engineering PBL scenario. The language teacher would be able to gauge level of proficiency of student, while the engineering instructor would have the ability to determine if a student understands the disciplinary concepts. The structure of this collaborative structure will be such that the information covered will be relevant in terms of students' academic needs and this will in turn work out to be a more effective fulfillment of students' academic needs.

5.3 Scope for Future Research

Due to temporal constraints, the research study was planned for a briefer duration, leading to the selection of a smaller cohort of participants. The limited pool of volunteering students posed a barrier to recruiting a larger sample for data collection. If this research is conducted again in the future, the researcher could involve a larger group of participants. The research assessment was scheduled for one month, but a future researcher may consider extending the study duration to an entire semester. To

evaluate the effectiveness more comprehensively, a comparative approach could be adopted to examine the differences and productivity between problem-based learning (PBL) and traditional group learning (TGL) methodologies.

5.4 Conclusion

This study has provided a novel approach to English language teaching, offering valuable insights from a research and academic perspective. By introducing creative techniques, it empowers language teachers and students to enhance the effectiveness and enjoyment of the teaching-learning process. The study holds the potential to inform policymakers and curriculum designers, encouraging the incorporation of such content-driven approaches that support the integration of problem-based learning in language instruction.

This study could assist policymakers and curriculum developers in incorporating content-driven approaches that support the integration of problem-based learning (PBL) in language instruction. While there are both advantages and challenges associated with this instructional strategy, the benefits appear to outweigh the drawbacks. The study provided the researcher with valuable insights regarding the translation of methods and theories into practical applications. Findings indicate that PBL students demonstrate deeper and more enduring knowledge acquisition compared to those in traditional teaching settings. Accordingly, the academic and learning outcomes facilitated by PBL cannot be readily achieved through conventional teaching methods.

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APPENDIX-A**IELTS WRITTEN TEST****Task 2 - Write about the following topic:**

Learning English at school is often seen as more important than learning local languages. If these are not taught, many are at risk of dying out.

In your opinion, is it important for everyone to learn English? Should we try to ensure the survival of local languages and, if so, how?

APPENDIX-B

FEEDBACK FORM

Problem-based Learning (PBL) Tutor Evaluation Form (student to tutor)

Name of student (optional):

Name of tutor:

Date:

PBL session:

1 = strongly agree. 2 = agree. 3 = no preference. 4 = disagree. 5=strongly disagree.

1	Attends session as planned	1	2	3	4	5
2	Is able to assist group focus on learning issues and objectives	1	2	3	4	5
3	Shows enthusiasm as a tutor, and assists in creation of a comfortable learning climate.	1	2	3	4	5
4	Encourages critical thinking and a thorough look at available material.	1	2	3	4	5
5	Asks non-directive, challenging questions	1	2	3	4	5
6	Avoids mini-lecturing	1	2	3	4	5
7	Is able to direct group to alternate sources of information and learning materials	1	2	3	4	5
8	Provides re-direction where necessary	1	2	3	4	5
9	Facilitates feedback and evaluation process	1	2	3	4	5
10	Provides timely feedback and completes evaluations.	1	2	3	4	5

Personal Evaluation:

How did you find the topic? Does the topic has spark to motivate you to research about that?

What difficulties did you face during the research? Or did anything interesting happen to you?

Group level:

Personal level:

Comments:

Please provide any other suggestions or comments about the tutor.

What are the tutor's main strengths? What are the tutor's main shortcomings?

What are the tutor's main strengths? What are the tutor's main shortcomings?

What are the tutor's main strengths? What are the tutor's main shortcomings?

What do you expect the tutor to do to improve in the next tutorial session?

What is the new list of words related to the topic that you have learnt during this week's research/presentations?
