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Developing the Students' Academic Performance in EFL through Project-Based Approach. Case of Fourth-Year Students at Mohammed Boussalem Middle School, Khenchela

Thesis submitted to the Department of English in fulfillment of the requirements for the LMD Doctorate Degree in T.E.F.L

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Declaration

I hereby declare that the present Thesis entitled *«Developing the Students' Academic Performance in EFL through Project-Based Approach. Case of Fourth-Year Students at Mohammed Boussalem Middle School, Khenchela"* is the outcome of the original research work undertaken and carried out by me, under the valuable guidance and supervision of Pr.Kaouli Nadir.

I also declare that neither the Thesis nor a part of it has formed in any way the basis for the award of any Degree / Diploma previously of this university or any other university, except for some passages included in the article entitled *"Towards a Project-based Approach to ESP Teaching and Learning. The Case of Graduate Students of the Department of Mathematics at Abbess Laghrour University, Algeria"* published in Revue El-Bahith en Sciences Humaines et SocialesISSN: 2170-1121-12(03)/2020

Place: Batna *Mrs.Rakai Nafissa*

Date: 2/2/2021 *the Researcher*

Dedication

I dedicate this work to:

My father, Ismail, who believed in me

My husband, Messaoud, for his love and support

My family for their encouragement

Acknowledgments

I feel I have learned a lot from writing this thesis .It is a great treasure I will cherish not only in my future career, but also open the doors for future researchers to dig deeper into the subject to backbone theory with reliable practice.

At the very onset, I thank God the Almighty for helping me to fulfill this research work and for the countless gifts, He endowed me with.

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Abstract

Old-fashioned teaching methods in classroom-based education lack providing what learners need for future requirements .Born out of progressive education reform, and inspired by Dewey's (1897) and Kilpatrick's (1918) theories of learning, Project-based Learning is designed to deliver an active, engaging, student-centered approach to learning. It is a teaching method in which students gains knowledge and skills by working for an extended period to investigate and respond to a complex problem or challenge. The current work attempts to investigate the effect of implementing Project-Based learning on the students' academic performance in the EFL classroom in light of the new reforms of the Algerian educational system. Emphasis was put on trying to establish a relationship between the teaching method and the academic performance. Conceptually, this inquiry was framed using significant aspects of the constructivist theory, while briefly referring to other learning theories. Initially, this study is based on the assumption that using the project-based approach in teaching English would improve the students' performance. To reach this research's objectives, a mixed research design is used. Data are collected using a questionnaire, an interview, an attitude scale, and achievement tests. As a prelude, the researcher sought to explore the factors affecting fourth-year students' academic performance in the English subject at the Wilaya of Khenchela. Subsequently, a T-test is used to analyze the effectiveness of the project-based approach on fourth-year students at Mohammed Boussalem Middle school performance after subjecting the experimental group and the control group to a pre-test and a post-test under the same conditions to measure differences in performance. The obtained data revealed that project-based learning has a positive effect on the students' academic performance in learning English.

Keywords: Project-based approach, Academic performance, English as a foreign language

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List of Abbreviations

AFL: Assessment for learning

AOL: Assessment of learning

AYP: Annual Yearly Planning

BEM: Brevet d'Enseignement Moyen

CBA: Competency-Based Approach

DP: discrete point test

EFL: English as a Foreign Language

PBL: Project-based Learning

SPSS: Statistical package of the social sciences software

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General Introduction

Scope of the Study

Education is a substantial part of mankind's life. It is a dynamic concept characterized by endless stages of evolution. It is regarded as the key to national prosperity and welfare. It entails a combination of two significant processes; teaching and learning. Theorists assert that the paramount objective of teaching at any level of education is to bring fundamental changes in the learners to achieve specific outcomes. (Tebabal & Kahssay, 2011;Ayeni 2011) .To make learning more effective, teachers should implement the teaching methods that would best fit the learning objectives and the exit outcomes.

For several years, remarkable questions about the effectiveness of teaching methods on student learning have consistently raised considerable interest in the thematic field of educational research .(Hightower, 2011) The focal interest of educational practices seems to put the burden on teachers as well as the learner's shoulders to achieve considerable outcomes.

As educational demands grow, learners' performance quality becomes critical. Throughout the stages of learning, performance is assessed and ranked from high to low. In fact, it appears that the entire educational process is based on academic achievement where high performance is expected. Academic success is defined in terms of the acquisition of different kinds of knowledge and cognitive skills that would be evaluated through proficiency tests and examinations where achievement is reflected through marks or grades obtained. (Morrison, 1993, MacIntyre, 2002) Learners need to achieve better marks for many reasons, for instance, attaining a scholarship and getting hired in different institutions in their country or abroad. In this sense, performance is reflected in the grades and scores that the learners obtain throughout testing their competence in different modules of interest.

Performance is seen as the end-product of all educational endeavors which strive to make learners better achievers. The term academic achievement points to the degree of

success or level of attainment achieved by the pupil in the scholastic or the curricular subjects prescribed within the syllabus. In the book "Introduction to Psychology", Morgan (1961) views performance as the "accomplishment on a test of knowledge (or) skills".(Cited in Sangtam,2019,p.33) The inauguration of academic performance in the educational milieu has to lead many researchers to dive into the exploration of factors affecting or promoting it in the learners.

Substantial research found that the quality of teaching is often reflected through the performance of learners. (Hightower, 2011) In other words, the teaching method employed by the teacher may lead to high or low academic performance. Educational institutions' instruction has shifted from approaches traditionally connected with objectivism, behaviorism, and transmittal models of instruction (Gage, 1977) to approaches that emphasize active learning and learners' needs. (Palmer, 1998, 1999; Stage et al., 1998) Moreover, teaching jumped from the lecture-based approach to a more open-ended process linked with critical thinking, negotiation of meaning, self-directed learning, problem-based learning, and collaborative learning. (Barrett, 2005)

1. Background to the Research

Algeria has maintained a high level of investment in the educational sector since the independence. These investments aim to enhance and develop educational practices. To meet the rising demands, the educational system has witnessed a series of changes at the level of the educational structure, textbooks, teaching methods, teaching aids, and assessment tools. The most notable change that revolutionized the educational system is the introduction of a competency-based approach in 2002.This approach comes to put an end to traditional classrooms centered on the teacher and marginalizing learners. Roegiers (2006) reports the claims of the ex-Minister of National Education Benbouzid who posit that the competency-based approach is "Une réforme globale visant l'édification d'un système éducatif cohérent et

performant s'impose donc aujourd'hui pour permettre à la société algérienne de faire face aux multiples défis du 21ème siècle."(p7,8)Referring to this claim, the competency-based approach requires students and teachers to meet higher academic standards imposed by globalization. The term Standards, which stands for performance, refers to the minimum amount of information students should know and know how to use concerning a specific subject.

There is an increasing necessity to know languages as the world becomes a "global village". Regarding the role of English in this ever-shrinking global community, learning English has become vital. Given its due potential in the Algerian educational system, The reform of 2002 holds that English would be taught in the sixth-year(Middle school) rather than in the eighth-year and the old conception of learning English just to acquire linguistic terms expanded to entail methodological and cultural objectives as claimed by the syllabus designers (2006) that "The aim of teaching English is to help our society to get harmoniously integrated into modernity through a fully complete participation within a community of people who use English in all types of interactions - this participation should be based on sharing and exchanging ideas as well as experiences being scientific, cultural, or civilizational – this participation will help for better understanding oneself and the other."(p.88)In other words, this would suggest the dominant role the English language came to play in this era.

Rousova (2008) suggests that in the present days "Nearly all teachers understand how the industrial culture has shaped the organization and methods of schools in the 19th and 20th centuries, and they recognize that schools must now adapt to a new century. In this respect, Children need both knowledge and skills to succeed. This need is driven not only by workforce demands for high-performance employees who can plan, collaborate, and communicate but also by the need to help all young people learn civic responsibility and

master their new roles as global citizens."(p.14)In this respect, teachers are supposed not only to grasp the curriculum and be trained on how to deliver it to the learners but also they should explore ways to enable learners to know how to learn, cope with the changing world through investing the acquired skills to solve real-life problems .However, Teachers today are faced with enormous challenges not only to meet annual yearly progress (AYP)and complete the intended curriculum in an increasingly busy school year but also to come out with satisfying learning outcomes reflected in students' performance.(Sindelar,2002)

Academic performance is an international concern, enhancing the quality of education and human resources paves the way for national welfare. Through academic performance which is a marker of educational quality, students can reach their potential in a line of the underlined educational goals. The learning outcomes of the learners in the BEM and the BAC certificates raise an amalgam of worries among policy-makers, teachers, and even learners and their families. There are around 9.3million students enrolled across more than 27,000 educational establishments in 2018 and 596,000 students would pass the Middle School Certificate (Brevet d'Enseignement Moyen, BEM).UNESCO's 2017 report placed Algeria 119 out of 140 countries in terms of quality of education.

With the introduction of the new education system in Algeria, the students' performance in official exams (BEM &BAC) becomes critical. An amalgam of endeavors have been carried out by practitioners and researchers to dig deeper and shed light on the issue of students' academic performance nationally and internationally such as;

- Schibeci and Riley (1986) studied the influence of attitudes on achievement and it was found that attitudes influences achievement.
- Kyoshaba (2005) carried out a study to investigate the factors affecting the academic performance of undergraduate students of Uganda Christian University.

- Maatar (2011) investigated the impact of Language Anxiety on Academic Achievement among EFL University Learners.
- Ganyaupfu (2013) investigated the differential effectiveness of teaching methods on students' academic performance and he found that the teacher-student interactive method was the most effective teaching method, followed by a student-centered method while the teacher-centered approach was the least effective teaching method.
- Kashu (2014) studied the relationship between gender and academic performance ;
- Apkur &Yurtseven (2014) carried out research is to determine whether the relationship between motivational orientations, basic psychological needs, and academic performance in English class can be modeled. Results indicate that academic performance in the English course is merely affected by autonomy and attitude, which are among the components of motivational orientation and basic psychological needs.
- Goni et al. (2015) investigated the differences between students' gender and academic achievement in Colleges of Education in Borno State. ,
- Everett (2016) Examined the Barriers That Inhibit Student Achievement From a Teacher's Perspective.
- Iddo-Derraz (2009) conducted a literary review of the reasons beyond unsuccessful English learning. The paper discussed factors of age, social factors, pedagogical factors, and psychological factors.
- Benzerroug (2019) carried out a study to account for the challenges facing EFL regarding the country's current educational profile. It delineates the EFL

curriculum by focusing on its objectives and the skills necessary for carrying out successful communication.

However, very few studies are carried out to find out ways to enhance the academic performance of the students in EFL, particularly in the Algerian setting. For this reason, the researcher was empowered to spotlight on this critical issue by investigating the factors that may intervene with performance and how to enhance students' performance through project-based instruction .Sungar (2006) contends that "teachers use PBL to improve students' academic performance by going beyond teaching content to teaching students how to learn. PBL is different from other instructional strategies because it places students in the center of an authentic, ill-structured problem with no correct answer." (P. 316).

As a middle school teacher from 2013 to the present, the results of the students in the English subject have always been the focal interest in the educational milieu despite changes in the theory and the practice of the classroom context. Year after year, there is a gradual and growing dissatisfaction of the students' motivation and performance in EFL among teachers who report that the educational system is declining. The researcher's observations revealed that both teachers and students are experiencing challenges in generating satisfying learning outcomes. Thus, the researcher deems it necessary to provide a shred of empirical evidence to determine what might affect students' performance and how it can be improved through the implementation of project-based learning.

2. Statement of the Problem

Academic performance, which is measured by the examination results, is one of the major goals of every educational institution which according to Hoyle (1986) is established to impart knowledge and skills as well as enhance effective academic performance. However, despite the shift from traditional teaching methods based on the teacher's authority to learner-centered approaches, fourth-year students at Mohammed Boussalem Middle School at

Khenchela tend to show statistically poor academic performance in the English subject in the BEM exams despite their motivation to learn that language. In this study, motivation is assumed to involve "the attitudes and affective states that influence the degree of effort that learners make to learn." (Ellis, 1997, p. 75) The use of project-based learning "offers students a way of practicing their English while having fun…By creating something, students use English as a tool and see how flexible and useful it can be. Most important of all, projects offer teenagers a chance to find their voice and to do something meaningful and entertaining with the language they are learning. In short, projects motivate." (Wicks, 2000, p. 9)At first, the researcher would, therefore, like to investigate the factors affecting students' academic performance regarding the educational reforms that the Algerian educational system has undergone since 2002. Then, measure the extent to which the project-based approach can improve the students' academic performance in EFL.

3. Research Questions

This study attempts to answer the following questions:

1. Are there any differences between EFL teachers' and inspectors' views of the factors affecting students' performance?
2. What are EFL teachers' and inspectors' attitudes towards the project-based – approach?
3. To what extent does project-based learning influence fourth-year pupil's' attitudes towards learning English and doing projects?
4. How does project-based learning affect the students' EFL academic performance?

4. Research Hypotheses

The present research is based on the following hypotheses:

1. Although teachers and inspectors have different views of the factors affecting students' performance, PBL can be very useful in the EFL classroom.

2. The use of project-based learning in the EFL classroom will have a positive effect on the students' EFL academic performance.

5. Objectives of the Study

According to Maxwell (2008), objectives constitute motives, desires, and purposes that lead a researcher to carry out research. In this respect, objectives serve two central functions; guiding research and justifying the study. This research work aims to explore the effectiveness of implementing the project-based approach in the EFL classroom to improve students' academic performance. Besides, it entails the following specific objectives;

- Changing the current classroom practices and improving the educational quality through exploring the reasons behind students' underperformance in the English subject.
- *A*dvancing the educational standards through providing grounded findings to the efficacy of the project-based approach in improving performance
- *G*aining an understanding of performance and how it could be improved.
- Developing a positive attitude towards innovative learner-centered approaches.
- Raising awareness to the importance of collaborative work for future needs.
- Offering new horizons in front of students to ameliorate their academic performance in terms of outdoor activities that would help them gain new skills, strategies, and techniques.

6. The Significance of the Study

The significance of this research work is manifold. This study is meant to provide insights into practice that underlies the importance of PBL in education to serve the purpose of improving EFL students' academic performance.

From the one side, this research project would serve two-groups. The first beneficiary is the practitioners (teachers) who are swinging between old and new teaching methods to

improve the learning outcomes. Besides, they strive to keep students motivated and engaged in learning. In this concern, Gulbahar & Tinmaz (2006,) claim that:

> 'Many educators struggle to discover proper teaching and assessment strategies for their students. A large number of research studies are conducted and various teaching and learning strategies are proposed to answer the question, "How can we teach more effectively?" This process started with the behaviorist approach, continued with cognitivism, and ended up with the constructivist approach for the time being...In classes where constructivist approaches are implemented, students have a chance of learning by doing, enhancing their critical skills, and shaping their learning process by being active participants.'(p.309)

Through this study, teachers would reflect on their practice and think of the importance of PBL which is designed to make learning meaningful and engaging. Furthermore, a deeper understanding of teachers' perceptions and challenges about PBL would contribute to a better implementation of this instructional method. The results of this work could also motivate students and teachers and offers insights for a deeper understanding of PBL for policymakers to generalize the implementation of this method to all educational institutions

Referring to theory, this work may participate in establishing a new perception of the project-based approach and how to make it more effective. In sum, this research project can improve education in multifaceted ways. From one facet, it gives insights about teachers' perception of the factors affecting the learners' performance. On the second facet, it helps students to take responsibility for their learning through learning by doing and be better achievers.

7. Delimitations of the Study

This study is built upon the assumption that if EFL learners are instructed by the project-based approach, then their academic performance can be better. It is worth mentioning that academic performance is not only influenced by the teaching method, but

also by so many other factors that are investigated but not treated in the present work. Those factors may intervene with the reliability and validity of the study's results.

8. Overview of the Research Methodology

Research is defined as the process of collecting and analyzing data logically for a determined purpose through systematic ways known as research methods that have been developed for acquiring reliable and valid knowledge. A research methodology is a systematic and planned way for yielding data on a specific problem. (McMillan& Scumacher, 2010)

It is important to philosophically position this research work to clear out one's believes about the nature of reality (ontology), and the nature of knowledge (epistemology). (Merriam, 2009)According to traditional paradigms(i.e., positivists), researchers try to objectively uncover the reality through research, that reality is observable, stable, and measurable.(Merriam,2009)Since it is arduous to reach out this reality, positivists posit that researchers should strive to reach reality by the means of multiple methods. (Lichtman, 2006) Referring to this study, the researcher opted for mixed research method to unveil two realities; factors affecting performance and the effectiveness of the project-based approach in empowering students' academic performance. The exploratory research method is used to uncover the barriers that may hinder middle school students' from performing well in EFL. On the other hand, an explanatory research method is employed to clear out the relationship between the implementation of the PBL and the students' performance in EFL. The interpretive approach perspective assumes that there is no single reality since it is socially constructed. Moreover, they posit that there are different interpretations of a single event (Merriam, 2009) The present work attempts to construct knowledge about the reality of performance in the middle school context as it involves multiple perspectives about the dependent variable (academic performance) and its relation with the independent variable

(project-based learning).In this mixed research study, data are collected and analyzed using qualitative and quantitative research designs. Qualitative research designs can be organized by (1) focus on individual lived experience, as seen in phenomenology, case study, grounded theory, and some critical studies; and (2) a focus on society and culture, as defined by ethnography and some critical studies.(McMillan & Schumacher, 2011) For this study, qualitative research is used to take subjects' perspective as central to produce a deeper description of the students' EFL academic performance in the middle school. The qualitative research process is inductive. Data for this study are gathered through different instruments to build concepts and hypotheses about the reasons that lay beyond the poor performance of middle school students in EFL. Those tools entail;

- A questionnaire administered to a sample of middle school teachers at Khenchela city, selected through a convenient sampling technique
- An interview was carried out with two middle school inspectors of English who constitute the whole population.

The quantitative research designs focus on the objectivity of measurement and description of a particular event (McMillan &Schumacher, 2010) such designs can be experimental or non-experimental. In the present work, the researcher opted for experimental design to establish correlation among the under-researched topic's variables because this kind of designs "enables the researcher to manipulate an independent variable while controlling other independent variables".(Hornberger et al.,1997)The experimental research is grounded on the experiment that is defined by Muijs (2010) as "a test under controlled conditions that is made to demonstrate a known truth, or examine the validity of a hypothesis."(p.11) when experimenting, the researcher tries to control the environment as much as possible through ensuring that all students have the same age, social and economic status, and cultural background, then the dependent variable is manipulated. The sample for the experimental

stage includes 84 fourth-year pupils at Mohammed Boussalem middle school selected through convenience sampling and divided into two groups using the simple random sampling technique. The data are collected from the sample by the means of:

- A teacher-made test administered to the experimental and the control group at two different periods to measure variance in performance through independent samples t-test calculated using SPSS.
- A pre and post attitude scale administered to a randomly selected sample of fourth-year students at Mohammed Boussalem middle school to check differences in attitudes towards learning English and doing projects before and after the implementation of project-based method. The results are compared through paired samples t-test calculated using SPSS.

9. Organization of the Study

This research work is led by a general introduction that gives an overview of the study stating the research problem and the peripheral items surrounding it; research questions, the hypotheses, the objectives of the study, and the research methodology. After that chapter one discusses the academic performance and the factors affecting it. The second chapter is about the project-based approach. The third chapter is about the implementation of the project-based approach in the EFL classroom and its relation to academic performance.

Closing the review of the literature with chapter three and heading to chapter four which is allocated to the description of the research methodology, then, chapter five which is devoted to the analysis and the interpretation of data. Then closing the study with a general conclusion that summarizes the findings

10. Operational Definitions

Academic performance is the extent to which a student, teacher, or institution has achieved their short or long-term educational goals. Academic performance is commonly measured

through examinations or continuous assessments. (Annie et al., 1996) It is also operationalized as the extent to which a student has achieved his/her educational goals for the period of the study as indicated by the student's cumulative grade point.

Educational measurement: it refers to the use of educational assessments and the analysis of data such as scores obtained from educational assessments to infer the abilities and proficiencies of students. It is also understood as the assigning of numerals to traits such as achievement, interest, attitudes, aptitudes, intelligence, and performance. (Baker, 2008)

English as a Foreign Language: the teaching of English to students whose first language is not English

Project-based learning (PBL) is a model that organizes learning around projects. According to the definitions found in PBL handbooks for teachers, projects are complex tasks, based on challenging questions or problems, that involve students in design, problem-solving, decision making, or investigative activities; allow students to work relatively autonomously over extended periods; and culminate in realistic products or presentations (Jones et al,.1997; Thomas et al,.1999)

Attitudes: Fishbein and Ajzen (1975) defined attitudes as "A learned predisposition to respond in a consistently favorable or unfavorable manner with respect to a given object"(cited in General Technical Report PNW-GTR,1997, p.1902). Moreover, "Attitude is related to English lesson include liking, enjoying and interest in English or the opposite."(Nasir, 2014, p.13)

Chapter One: Factors Affecting Academic Performance

Introduction

The major purpose of reviewing the literature is to identify, compile, evaluate, and synthesize the dyad of pieces of literature related to the research topic.(Apu,2015,cited in Abaidoo,2018) to provide a profound understanding of the study's variables and how been researched and approached by different scholars. Borg asserts that "The literature in any field forms the foundation upon which all future work will be built. If we fail to build the foundation of knowledge provided by the review of literature our work is likely to be shallow and naive and will often duplicate work that has already been done better by someone else."(Cited in Singh,2006,p.36).Ergo, the review of literature serves a farrago of background functions as it " may open doors to sources of significant problems and explanatory hypotheses and provide helpful orientation for definition of the problem, background for selection of procedure, and comparative data for interpretation of results"(Good,1963).In this sense, it is viable to review the literature to plan the research work in an adequate way and to avoid replication .In his book "Fundamental of Research Methodology", Singh (2006) has suggested that literature review is indispensable in keeping up with an exponentially growing cumulative endeavors as it offers a rich source problem assortment and hypotheses formulation, unveils the availability of evidence, suggests the research methodology , and contributes to the replenishment of the porous body of literature. All in all, the review of literature is integrating prior research to explain the current one. It enables the researcher to define the limits of his study, avoid unintentional duplication of findings, and have knowledge about the research instruments proved to be useful.(Sangtam,2014)Thus, this chapter revolves around academic performance which captured the regard of many researchers in umpteen fields. It is a very critical element in all educational institutions and the business world. As the world became more competitive, performance quality has become a marker of human progress.(Wang, 2013)The desire for climbing the ladder of performance

as higher as possible puts heavy pressure on parents, teachers, students, and educational institutions within this framework, this chapter delves into major definitions provided by different scholars for this potential variable, the factors affecting it, and the types of tests used to measure this variable. Besides, this chapter intends to establish a link between academic performance and the teaching practices applied in the EFL classroom to get the end-product (the learner) equipped with a notably noticed academic achievement needed in the future.

1.1. Academic Performance Definition

Academic performance has received a great deal among many researchers and scholars. (Nuthanap, 2007)Teaching and learning outcomes are determined by assessing performance which is viewed as the observable behavior that can be measured in a specific situation generally an experimental one. (Simpson & Weiner, 1989)Academic performance according to the Cambridge University Reporter (2003) is frequently defined in terms of examination. In this piece of research, academic performance is measured through tests. The academic performance of a student consists of scores at any point in time obtained from a teacher-made test and term examination. Moreover, students' performance must be viewed as a multifaceted construct that entails descriptors that clarify the required learning goals that learners are expected to achieve .(Lawrence.1998) On the other hand, academic performance is typically measured by using students' grades or standardized test scores. (Alan et al.1992) Grades are used as a tool to monitor students' performance regularly.

In the current study, the researcher uses the terms of academic performance and academic achievement interchangeably. An amalgam of researchers pandered different definitions and conceptualizations to the term academic performance, Trow (1956) states that performance is the "knowledge attaining ability or degree of competence in school tasks usually measured by standardized tests and expressed in grades".(Cited in Devikra,2014,p.18) Good (1959) views performance as "the knowledge attained or skills developed in the school

subjects usually designed by test scores or marks assigned by the teacher". Referring to the definitions provided by Trow (1956) and Good (1959), performance is explained in terms of knowledge acquired by the learners and assessed by marks given in-class exercise, class test, mid-semester, and end of semester examination .(Martha,2009; Abaidoo,2018) Mehta (1969) opined that "academic performance includes both curricular and co-curricular performance of the students. In classrooms students perform their potentials efficiently as a result of it, learning takes place."(Cited in Maqboot & Ganai, 2016,p.9) Additionally, academic performance is understood as a measurable and observable behavior of learners within a specific period.(Yusuf, Onifade, and Bello,2016 as cited in Abaidoo,2018)

In short, academic performance refers to the activities of evaluating the learning outcomes students get in the school based on educational objectives. It aims at improving students' learning and its significance has led educational researchers to raise important questions; such as, what factors affect students' achievement? And how to promote students' performance?

A myriad of studies had been conducted to assess the factors that contribute to students' performance at miscellaneous levels such as gender differences, teacher's education, and teaching style, class environment, socio-economic factor, and family educational background.(Mushtaq &Khan, 2012)However, in this study, academic performance is tackled from the angle of classroom context where the teacher, the input, and the learner interact.

1.2. Psychological Models of Academic Performance

For several years, different theories or models have been presented by different researchers and scholars. The aim of these models is to provide a holistic understanding of the variables that affects the students' educational productivity. An overview of the eight learning models published between 1963 and 1976 is presented as follows:

1.2.1. Carroll's Model

This model is considered one of the pioneering and most influential model for effective school learning (academic performance). It was introduced by John Carroll (1963) who described most of the constructs affecting performance. The underlying assumption of this model entails that the students' mastery of instructional objectives is bounded by their ability to invest the time needed to learn the content. Carroll's model compromises five major constructs that affect academic achievement. These were (a) aptitude, (b) opportunity to learn (c) ability to understand instruction, (d) quality of instruction, (d) perseverance. Figure 2 illustrates Carroll's model of foreign language learning that is used as the theoretical base of this study.

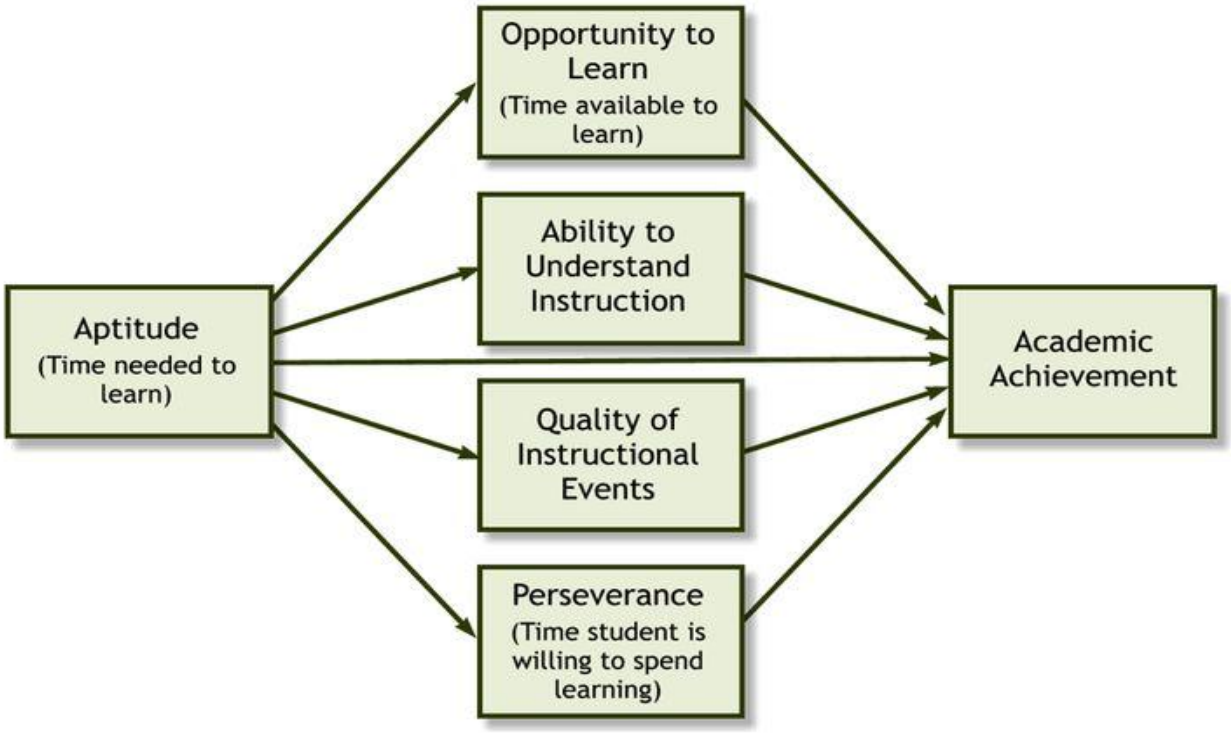


Figure 1. Carroll's Model of Foreign Language Learning (1962)

Source. Rintaningrum (2018,p.1)

Carroll (1963) proposes that (a) aptitude was measured by the time needed to learn; (b) opportunity to learn was measured by the time provided for instruction; (c) ability to

understand instruction was measured by the ability of the student to comprehend the task, and (d) quality of instruction was measured by how the learning task was organized, and how the instructor's skills influenced the effectiveness of the achievement (e) perseverance was measured by the willingness of the student to engage in active learning. Furthermore, it is worth mentioning that aptitude, opportunity to learn and perseverance are specified in terms of time, whereas, the ability to understand and the quality of instruction requires the analysis of instruction itself. In this model, Learning is defined as the function of efforts spent concerning the efforts needed. "The model of school learning assumes that students differ in the amount of learning time they need. If these differences are to be: adequately taken account of considerable skill in the classroom, management is required of teachers" (Carroll 1989: 29).This model has influenced educational researchers and developers for three decades and could still be used to handle current educational problems. (Cooley &Lohnes, 1976; Clark, 1987)

- **Aptitude**

The aptitude is regarded as the core variable in Carroll's model; it is referred to as the amount of time a student needs to learn a given task, unit of instruction, or curriculum to an acceptable criterion of mastery under optimal conditions of instruction and student motivation" (Carrol, 1989, p.26) In this respect, learners can achieve better if provided with enough time. This model views aptitude from the temporal angle; "High aptitude is indicated when a student needs a relatively small amount of time to learn, low aptitude is indicated when a student needs much more than average time to learn" (Carroll, 1989p.26). This implies that students with high aptitude would take less time to master the content in opposite to those with low aptitude.

- **Opportunity to Learn**

This variable refers to the time available for learning both in class (school curriculum) and within homework (educational context). Carroll (1998,p.26) notes that "frequently, the opportunity to learn is less than required than the student's aptitude." This is to be explained in terms of providing less time than lower students need to achieve a given set of outcomes which is regarded by Carroll as a major weakness.

- **Ability to Understand Instruction**

It is related to the learning skills, the information needed for understanding, and language comprehension. Carroll proposes that students with a high ability to comprehend instruction will be less affected by inadequate teaching instruction than students with less comprehension ability. Furthermore, this construct is considered as individual differences that are subjected to development or enhancement; for instance, learners who can develop learning skills will be capable to reduce the required time for learning, in other words, increase their aptitude for learning.

- **Quality of Instructional Events**

This is operationalized as the organization of instruction to ease acquisition. According to Carroll (1989), instruction encompasses structural aspects such as knowledge of objectives, access to content, and attentively planned and specified instructional events. He furthered his explanation of this construct providing that learning tasks are not meant to be broken down into small steps. Thus, if the quality of instruction is poor then students should depend on their resources.

- **Perseverance**

This is an operational and measurable definition of motivation for learning. It stands for the period learners wish to invest in mastering the determined learning objectives, and then high perseverance is marked by behaviors such as working beyond the allotted time, despite

uncomfortable environmental conditions or the reception of feedback of failure. Learners will gain higher achievement if they put forth more extra effort.

1.2.2. Cooley -Leinhardt

Cooley and Leinhardt (1975) have developed a classroom process model that emphasizes the relationship between school practices and school performance. In this model, the criterion variables being predicted are academic achievement and learner's attitudes towards school, peers, and teachers. Cooley and Leinhardt (1975) argues that school performance is a function of (a) initial abilities ;(b) opportunity; (c)motivators; (d) structure; and (e) instructional events. As the following figure may suggest:

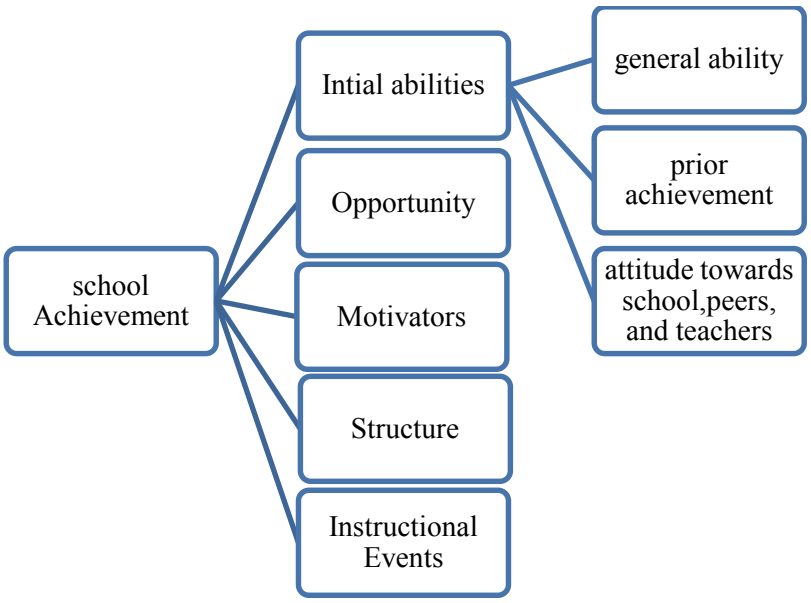


Figure 2. Cooley and Leinhardt (1975) Classroom Process Model

Source. Adapted from: Qureshi (2004,NP)

- **Opportunity**

This variable is given a temporal interpretation, it is defined as the number of times students could work on specific content.

- **Motivators**

Refers to the students' behavior ,and attitudes that enhance the engagement and the accomplishment of the given learning activities. This would include teacher's praise and

positive feedback for a behavior, incorporating desirable instructional materials that would raise students' motivation to do a task.

- **Structure**

This construct reflects the curricular variables which entail the way the curriculum is arranged and sequenced, the specificity of the learning objectives, and the matching of students and curriculum.

- **Instructional Events**

It is concerned with the instructional interactions of an interpersonal nature, their content, frequency, quality, and length.

1.2.3. Bloom's Model

Bloom's model of school learning (1976) emphasizes the cyclical characteristic of instruction; the school outcome of a learning task becomes the input to another. It is highly influenced by Carroll's' (1963) model. Bloom (1976) suggests that learning requires two pre-requisites; the learner's cognitive entry behaviors and affective entry characteristics, in turn, these variables have their antecedent on the students' personal and home characteristics. Within this model, academic achievement is presented in terms of (a) level and type of achievement; the (b) rate of learning; and (c) affective outcomes. Figure 3introduces the major variables that are suggested by Bloom to affect students' school productivity.

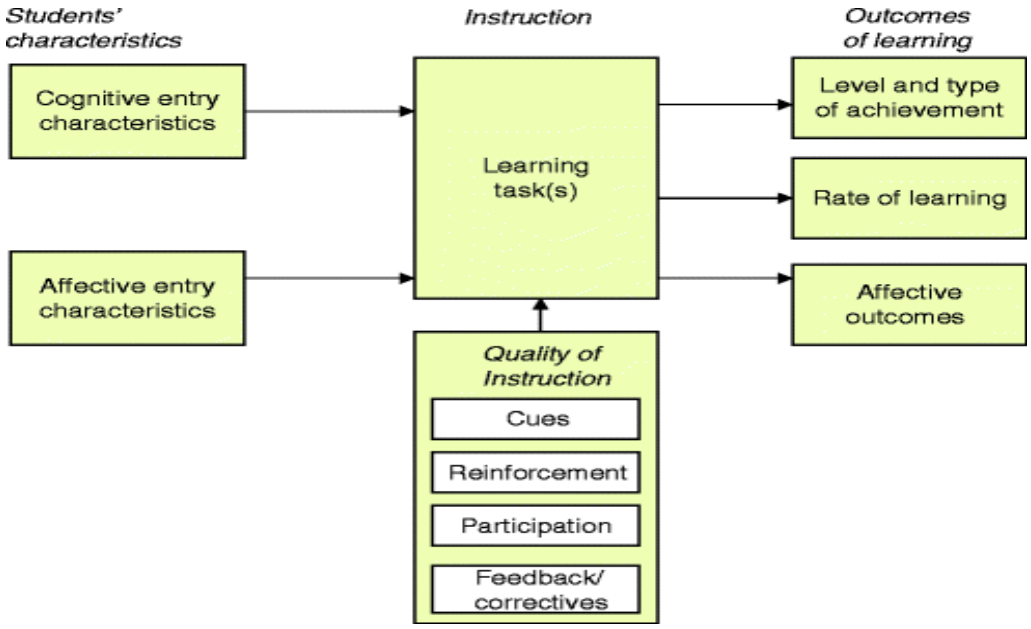


Figure 3. Bloom's Model of School learning

Source. The Encyclopedia of the Sciences of Learning (2012)

- **Cognitive Behavior**

The cognitive entry behaviors are regarded as specific prerequisites so that to fulfill individual learning tasks; for example, reading comprehension and verbal intelligence. As such, they do match Carroll's aptitude and ability to comprehend instruction. It is worth noting that this construct depends not only on the learning objectives but also on the form of the learning tasks. In other words, the instruction might be adjusted to match the characteristics of different students and keep on the instructional objectives

- **Affective Entry Characteristics**

This would also include task-specific attributes such as students' attitudes towards the subject matter, school, and self-concept.

- **Quality of Instruction**

This resembles in a way Carroll's construct of quality of learning. It comprises (a) cues which refer to the clarity in presenting and explaining the learning tasks; (b)

reinforcement which means the praise or blame used to sustain learning; (c) participation which is defined in terms of time allotted for a task; (d) feedback and correctness.

- **Learning Outcomes**

According to Bloom's model (1976), learning outcomes has three underlying types; (a) achievement; and (b) affective outcomes that refer to a gradual, cumulative improvement in the affective entry characteristics as the learner faces successive tasks. Successful learning experiences should lead to an improved attitude towards schooling, self-concept, and active engagement in learning (participation).The latter will result in an improved learning rate which constitutes the third learning outcome.(Bloom, 1976)

1.2.4. The Harnischfeger-Wiley Model

This model has been introduced by Harnischfeger and Wiley in 1976; it is a conceptual model of the learning process. Similar to Carroll's model, The Harnischfeger-Wiley Model rested on the conviction that the quantity of education is a determinant of the student's learning .(Harnischfeger and Wiley, 1974) This model focuses on the amount of time dedicated to instruction and gives great importance to the time allocated to practice. It encompasses; a) background characteristics, b) teaching-learning processes, and c) outcomes. The underlying principles of this model are that the activities assigned to the learners are the core of their learning meanwhile; learning is a time-bound process. Besides, the pupil's outcomes are directly linked to his pursuit. Thus, the teacher's behavior can affect learning and those pursuits. A summary of this model is illustrated in figure 4 as follows:

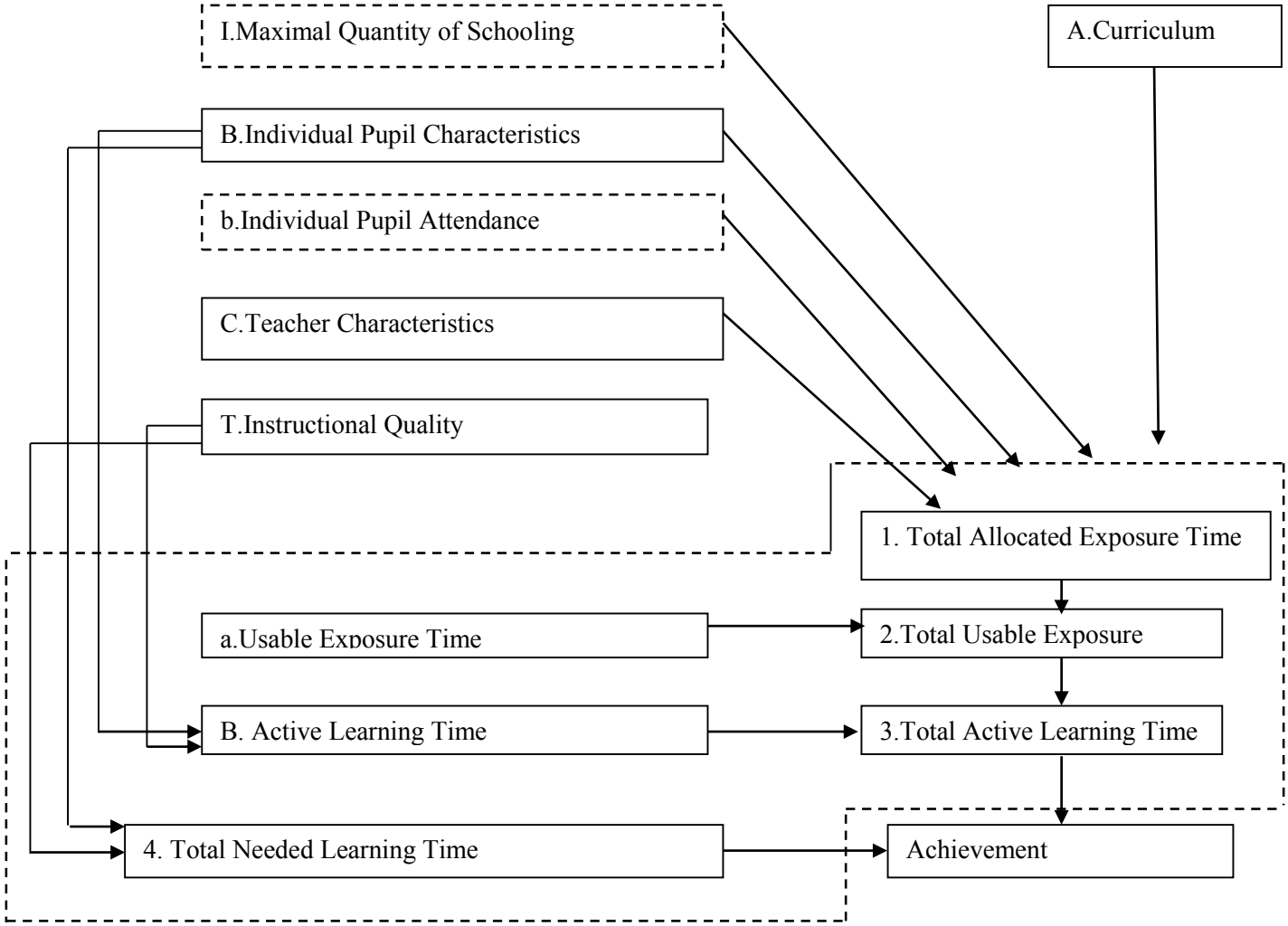


Figure 4. Individual Instructional Exposure and Achievement

Source. Adapted from :Time and Learning in the Special Educational Classroom (P.18)

- **Background Characteristics**

Refers in part to three interconnected components; teacher's background, pupils' background, and curriculum plus institutional factors.

- **The Teaching-Learning Process**

This factor includes two broad elements; teacher's activities and pupil's pursuit. The first element is affected by all the background characteristics when aligned together with the

pupil's background; it would determine the pupil's pursuit. However, the latter plus the pupil's background determine the pupil's achievement.(Haertel ,1980)

Harnischfeger and Wiley(1976) divide the-total time pupils spend on a given subject-matter into seven .learning-setting categories: 1.) Whole class instruction, 2) supervised small group instruction, 3) supervised individual instruction, 4) unsupervised group instruction, 5) unsupervised individual instruction-(seatwork.),6) transitions and 7) out-of-school pursuits' (e.g., homework).

1.2.5. The Bennett Model (1978)

This model attempts to explain factors influencing success in school learning (achievement).The major variables underpinning this model as illustrated in figure 5 include; a) quantity of schooling which refers to the amount of time the school is open for, b) time allocated to curriculum activity that stands for the opportunity provided for pupils to interact with a given curriculum content, c) total active learning time which is viewed by Gage (1974) as the amount of time pupils interact with their task ,d) total content comprehended achievement on curriculum tasks and feedback. According to Bennett, learning time is a major determinant of academic achievement.

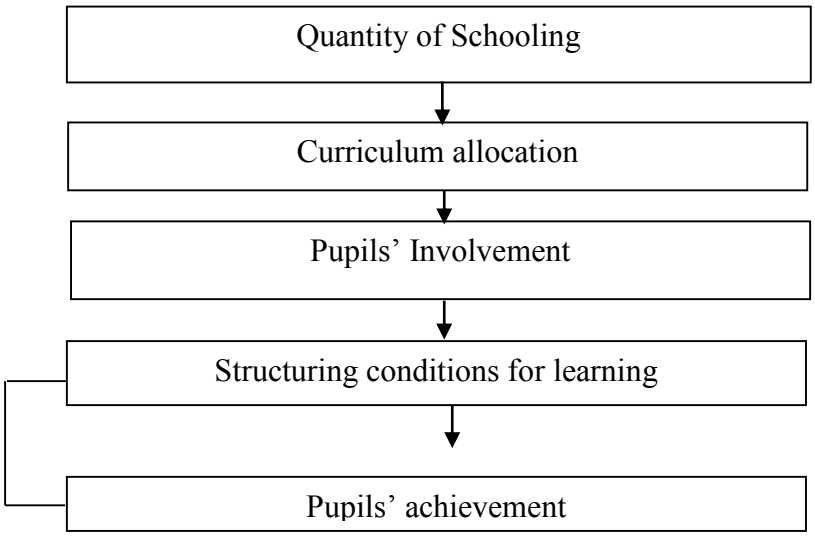


Figure 5. Bennett's Model

Source. Adapted from :Haertel (1980, p.12)

1.2.6. The Gagne Model (1977)

This model of teaching is based on the Information Processing Model. It is known as Gagne's Nine Events of Instruction (1965) which follows the cognitivist approach to learning and some of the implications of the behavioral learning theories. Gagne is considered as the leading contributor to the systematic approach to instructional design. His approach emphasizes a) the phases of the process throughout which learners go while learning a meaningful material and the conditions that serve as mediation for grasping the learning process, b) the different learning outcomes which stand for the acquired competencies as a result of learning and c) the events that have to occur so that learning proceeds successfully.

According to Gagne, the internal process of learning is "a change in human disposition or capacity, which persists over some time…, exhibits itself as a change in behavior." (1977, p.3) In this sense, learning happens as a result of a sequence of internal factors which are influenced by external factors such as, learning environment, teaching-learning activities, and material. (Senemoglu, 2002; Gagné et al, 2005)Table 1 presents the major components of Gagne's learning model.

Table01

Gagne's Learning Model

Component Parts of the Gagne Model		
Before Learning	**During Learning**	**After Learning**
The learner with entering capacities	Learning phases (internal conditions)	Learning outcomes Verbal information, Intellectual skills, Cognitive strategies, Attitudes, motor skills
Learning analysis (to identify competencies	Instructional events (external conditions)	

Source. Tuckman and Monetti (2010,NP)

The result of the aforesaid factors generates different learning outcomes which are categorized into four major categories; a)*intellectual skills* such as, categorizing and problem-solving, b) *cognitive strategy* which helps learners to manage a range of cognitive processes as selecting, coding, retrieval and problem-solving, c) *verbal information* by relating new knowledge with the previous one, and d)*motor skills and attitudes* as learned capacities.(Gagne et al,2005) Each category requires different kinds of conditions for learning and retention to occur. Hence, the internal conditions deal with what the learner knows before the instruction, while the external conditions deal with the stimuli that are presented to the learner. The main categories suggested by Gagne are summarised in the following figure:

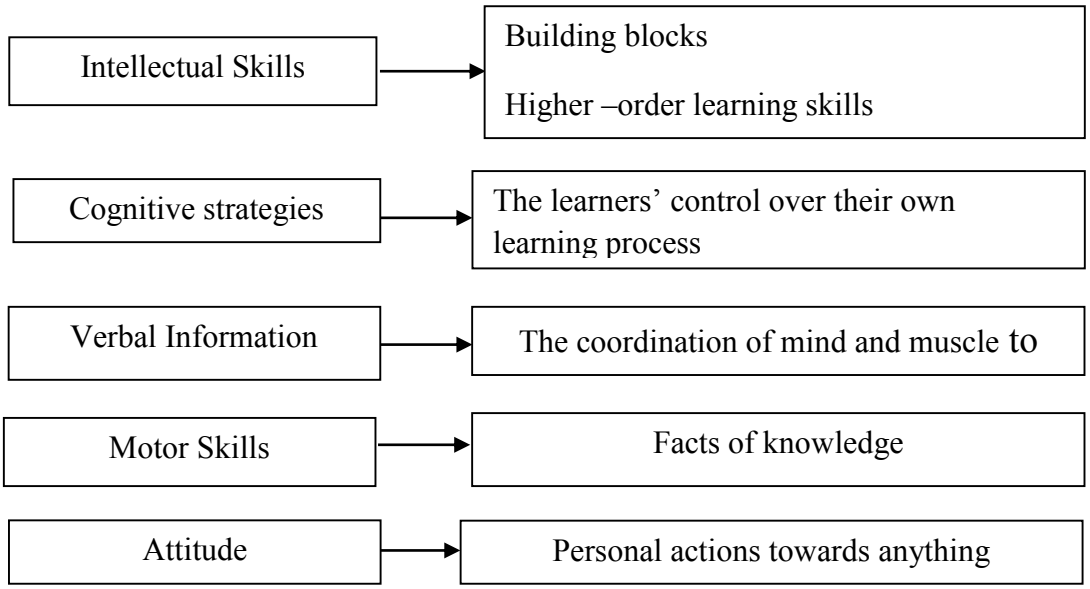


Figure 6. Gagne's Taxonomy of the Learning Outcomes

Source. Adapted from :Akdeniz (2016, p.16)

In the course of the learning process, each learning outcome develops. Gagne suggests nine series or phases of the learning process which he labeled as "events of learning". "Learning begins with the intake of stimulation from the receptors and ends with the feedback that follows the learner's performance. Between these events are several stages of

internal processing" (Gagne, 1977, p.69, cited in Akdeniz, 2016, p.17) The latter is being summarized into eight phases as they appear in Table 2.

Table 02

Gagne's Internal Learning Processing

Attention	The extent of receiving stimulation to activate receptors to produce patterns of neural impulses
Selective reception	Processing the received stimulation for storage in short-term memory
Rehearsal	Renewing the items stored in short-term memory
Semantic encoding	Meaningful encoding the items to store in long-term memory
Retrieval	Returning the stored information in long-term memory to the short-term memory, which is also called conscious or working memory.
Response organization	Selecting and organizing the performance for the exhibition
Feedback	Observing the exhibited performance and receiving information about it, and establishing reinforcement for future recall, exercise; and use of the performance
Executive control processes	Selecting and activating cognitive strategies to modify the learning process.

Source. Adapted from Akdeniz (2016, p.17)

The sequence of the learning phases may change according to the context or the teaching process (Gagne, 1977; Senemoglu, 2002) Instruction can help in enhancing the effectiveness of the learning process "the purpose of instruction, however, it may be done, is to provide support to the process of learning." (Gagne et al, 1992, p2) A sequence of external instructional events that would influence the learning process has been proposed by Gagne et al (1992)

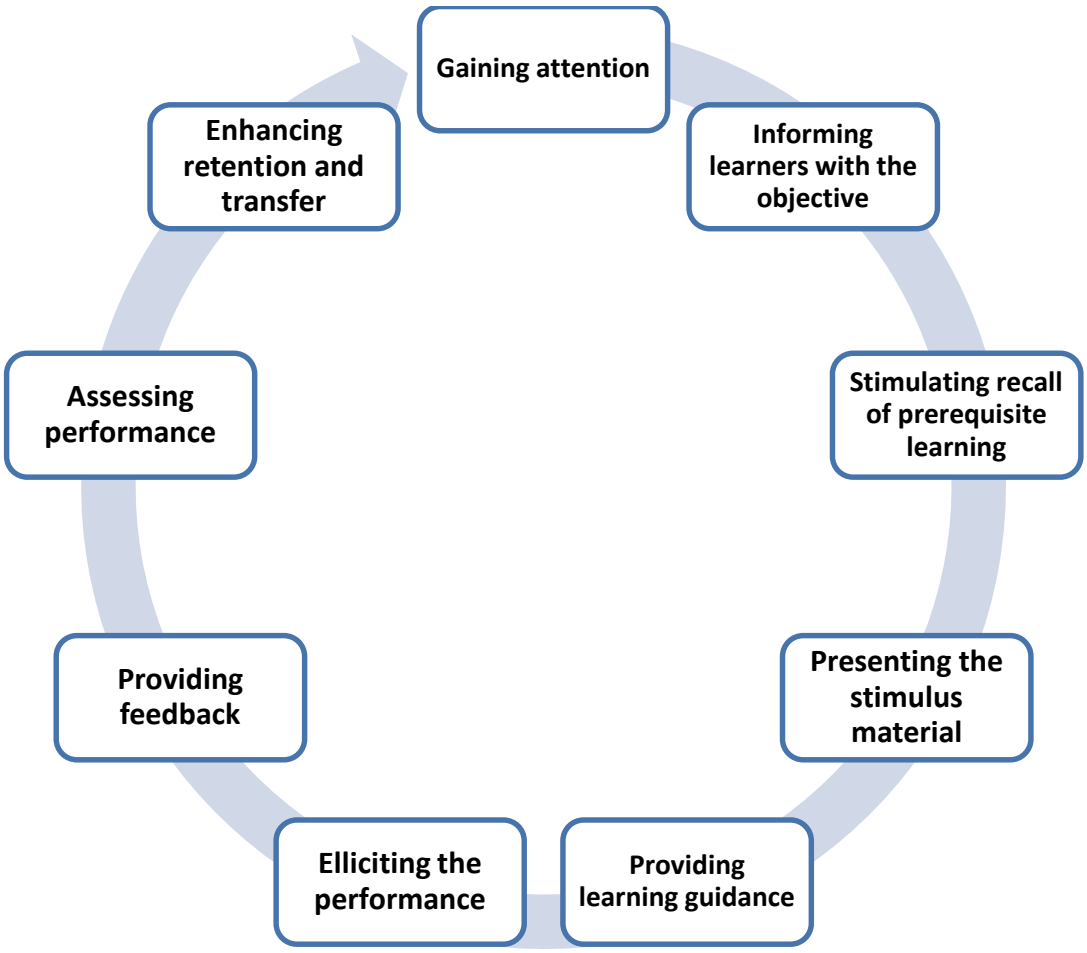


Figure 7. Gagne's Model of Instructional Design

Source. Adapted from Akdeniz (2016, p.18)

In the first step (Gaining attention) aims at directing the learner's attention towards the teaching-learning process through instantaneous changes in stimulus (Petry 1987;Senemoglu, 2002)The second step entails presenting students with what they will be able to do at the end of the lesson and what will they do with the newly acquired knowledge in life .(Gagne et al,2005)The third step deals with the retrieval of stored information from the long term memory to the working memory so that to relate new acquisitions to previous ones.(Ausubel, 2000,Gagne et al,2005) The next step is related to presenting learners with well-designed and developed learning materials that would lead them to achieve the learning objective. (Senemoglu,2002) The fifth step of instruction is the opposite of what is done in the third

step, where the teacher helps learners to store new learning in the long term memory. The sixth step is eliciting performance to stimulate learner recall by the mean of learners' active responses. Step seven is linked to providing feedback to ensure the occurrence of learning that will be assessed in the eighth step. The last step is similar to the fifth step as they aim to place the newly gained knowledge into long-term memory.

1.2.7. The Glaser Model

Robert Glaser (1976) has developed a fundamental teaching model applicable to all classes with four major components as they appear in figure8: a) analysis of the competencies and skills to be achieved, b) description of the initial state with which learning begins, c) conditions that are to be implemented to generate change from the learners' initial state and d) assessment procedures to determine the outcomes of the implemented conditions. (Gupta, 2007)

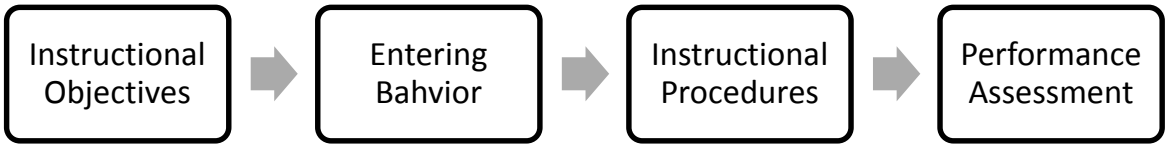


Figure 08. Glaser's Model of teaching (1976)

Source. Maheshwari (2013,NP)

- **Instructional Objectives**

It refers to what the learners should attain after the completion of a segment of instruction. Once this component is handled well, the promoted achievement will occur. To define the instructional objectives, teachers have to identify the end product in terms of observable performance or changes in learners' behaviors.

- **Entering Behavior**

This component stands for the learner's level in the prior instructional phase. It refers to the previously acquired knowledge, the intellectual ability, the motivational state, and certain social and cultural determinants of his learning ability.

- **Instructional Procedures**

It describes the course of the teaching process, the teaching skills, language, concepts, principles, and problem-solving.

- **Performance Assessment**

It is regarded as the process of measuring the learner's performance while and after the instructional process. It consists of observations and tests to make decisions about how well the instructional objectives are achieved. Besides, two types of performance are involved in this component; auxiliary and terminal. While the first type refers to the behaviors that are already acquired, the second type refers to the end products of instruction.

In short, Glaser's model suggests that there are many aspects rather than those related to the personality of the instructor which is based on the rational use of information obtained from assessment to develop instructional procedures.

1.2.8. The Bruner Model

Bruner (1966) presented a normative theory of instruction based on the study of cognition. According to Bruner, learning is an active social process of constructing new ideas and concepts ultimately build upon current or previous knowledge and this is known as the "spiral model". The latter involves selecting a piece of certain information and putting aside others so that to construct a hypothesis and, consequently, transforming information into a new cluster that would be the foundation for the further lifelong learning process .(Straughn, 1989) Bruner also believes that learners learn best when they solve problems and that the goal of education should be directed towards intellectual development rather than

accumulating knowledge; therefore, students should be presented with discrepant situations that foster problem-solving skills.(Bruner, 1967) In other words, curricula must provide a variety of possibilities taking into consideration individual differences among learners.

Based on these ideas, Bruner introduced a theory of instruction that does involve some major features devised to help students in their cognitive growth as presented in figure9. These variables include predisposition to learn, effective instruction, sequencing, and feedback.

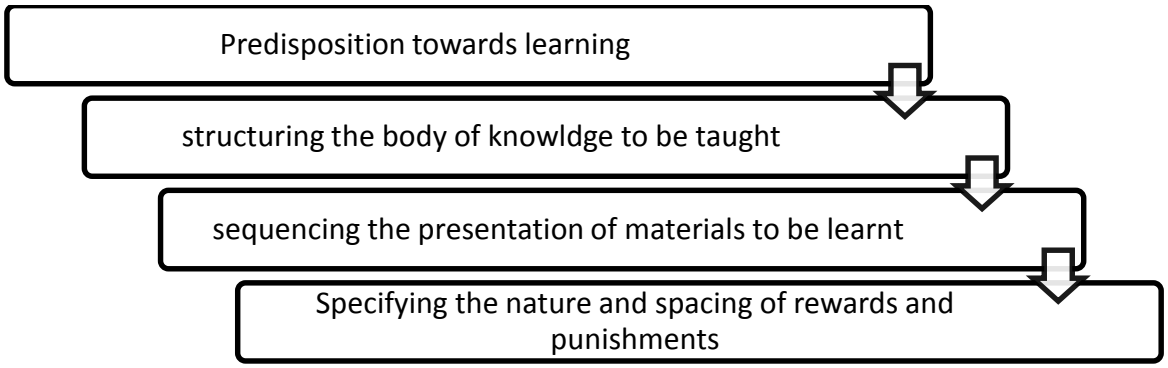


Figure 9. Bruner's model of Instruction (1966)

Source. Adapted from: Mehlenbacher (2010 p.169)

- **Predisposition towards Learning**

This refers to the use of the design of the learning situations to help students learn. The desire to undertake problem-solving can be activated by designing exploratory learning activities that would raise curiosity to solve uncertainty and ambiguity.

- **Structure of Knowledge**

Bruner (1966) explains this by saying that curriculum designers and practitioners "must specify how a body of knowledge should be structured so that it can be most readily grasped by the learner." He also adds that "Any idea or problem or body of knowledge can be presented in a form simple enough so that any particular learner can understand it in a recognizable form." In this respect, Bruner presents three modes of the concept

representation; a) enactive (a set of actions), b) iconic (a set of images), and c) symbolic (a set of logical statements)

- **Sequencing**

This is the most effective variable in Bruner's model because Bruner views that instruction should lead the learner through the content to promote the learners' ability to "grasp, transform, and transfer" what has been learned. Sequencing should follow the previously mentioned modes, from enactive to iconic, to symbolic. Yet, this will depend on the learners' learning styles.

- **Reward and Punishment**

This is the last element in Bruner's model and can be understood as motivation. Bruner suggests that the nature and the pacing of reward and punishment should be specified and that the movement from extrinsic rewards towards intrinsic ones is inherent in solving problems. To Bruner, learning depends upon knowledge of results when it can be used for correction. Feedback to the learner is critical to the development of knowledge. The teacher can provide a vital link to the learner in providing feedback at first, as well as helping the learner develop techniques for obtaining feedback on his or her own. All the above-discussed theories are summarized in the following table:

Table 3

Summary of the Learning Models

Theorists	Presage Conditions	Instructional Processes	Outcome
Carroll (1963)	Aptitude, Perseverance, Ability to comprehend instruction	Opportunity to learn; Quality of instruction(clarity of instruction; matchingtask to student	Proficiency in content

		characteristics)	
Cooley & Leinhardt (1975)	General ability; Prior achievement; attitude toward school,peer, and teachers	Opportunity, Motivators; Structure; Instructional events(Organization of the curriculum; specificity of objectives; matching students & curriculum	Academic achievement; Attitudes toward school,peers, and teachers
Bloom (1976)	Cognitive entry behavior (prior achievement; reading comprehension; verbal intelligence); Affective characteristics (attitude toward subject matter; self-concept as a learner; attitude toward school)	Use of cues; reinforcements; feedback and correctives (indicated by participation, overt or covert, in the learning task	Achievement; Affective behaviors; the improved rate of learning
Harniscfeger&Wiley (1976)	Teacher background; pupil background; curriculum and institutional factors	Teacher activities and pupil pursuits	achievement
Bennett (1978)	Aptitude and prior achievement (part of total content comprehension)	Clarity of instruction; Task difficulty and pacing (subsumed under total content comprehended); Time variable representing	Achievement on curriculum task

		an opportunity to learn	
Gagné (1977)	Internal conditions of learning	Activating motivation; informing learner of objective; Directing attention; Stimulating recall; Providing learning guidance; Enhancing retention; promoting the transfer of learning; Eliciting performance and providing feedback	Verbal information; Intellectual skills; Cognitive strategies, Attitudes; Motor skills
Glaser (1976)	Task learning already acquired; prerequisite learnings; cognitive style;Task-specific aptitude;General mediating abilities	Development of procedures; materials and techniques that foster competence(e.g, knowledge structure; learning –to-learn; contingencies of reinforcement); Assessment of effects of Instruction	Competent academic performance; Generalized patterns of behaviors; Ability for further learning
Bruner (1966)	Individual skills and predispositions; cultural context	Implanting predisposition toward learning; Structuring Knowledge (Mode of Representation; economy and power);Sequence of materials, Specifying rewards and punishments	Process of knowledge getting

Source. Haertel et al.(1983,p.80)

1.3. Teaching Method and Academic Performance

The ultimate aim of teaching at any education level is to make a fundamental change in the learner. (Tebabal & Kahssay, 2011) To facilitate the knowledge transmission process, teachers should implement appropriate teaching methods that best suit specific objectives and level exit outcomes. The teaching method which has gained a paramount position in the teaching/learning situation refers to how the teachers inspire their learners to fulfill the teaching activities and hence make learning happens. (Hightower et al., 2011) It also serves as mediation between the teacher, the students, and the subject matter.(Obaje, 2008) Adjumobi (2000) argues that "without adequate method, a clear set of objects and carefully arranged content likely to fail to produce a satisfactory result on the parts of the students." (Cited in Smith 2011, NP)Teachers should bear in mind the following points:

- The teaching method is an integral part of the school curriculum; therefore, the teacher needs to know the effective method to communicate with the students to achieve the underlined objectives.
- The methodology used by the teacher determines the success or the failure of the lesson
- Methods, or modes of instruction, are varied and dependent on the topic the teacher desires to deliver to his students.(Adunola, 2011)

Oladip and Ayeni (2000) view teaching as facilitating or bringing about the desirable change in the learners and to make this happen teachers should step into the world of the learners rather than the realm of personal experience. (Brown, 1997) Moreover, teachers should use the appropriate device to reach their learners and create the right reaction and response. In this scope, Secondary Education Commission (1952) proposed that "Any method, good or bad, links up the teacher and his pupils into an organic relationship with constant mutual interaction; it reacts not only on the mind of the students but on their intellectual and emotional equipment, their attitudes and values." Many methods have been

devised for teaching and teachers should be familiar with all of them so that to be able to determine the suitable one that would be more effective in attaining the set of the required objectives The Secondary Education Commission (1952) claims that:

> 'Every teacher and educationist of experience knows that even the best curriculum and the most perfect syllabus remain dead unless quickened into life by the right methods of teaching and the right kind of teachers. Sometimes even an unsatisfactory and unimaginative syllabus can be made interesting and significant by the gifted teacher who does not focus his mind on the subject matter to be taught or the information to be imparted but on his students, their interest, and aptitudes, their reaction and response. He judges the success of his lesson not by the amount of matter covered by the understanding appreciation and the efficiency achieved by the students.' (p.53).

There is no single method that can be advocated as the best for all settings because different lessons require different approaches to teaching. Several studies have been carried out to investigate the relationship between the teaching method and academic achievement namely; Evans and Carr (1985) Cross (2001) Brown (2002) Slavin (2002),Adunola (2011), Ganyaupfu (2013), Muzenda (2013), Lim & Phang (2014) and Wen-Hwa & Feng-Ming (2014)The results of these studies show that the teaching method selected by the teacher influences the learners' learning outcome. Quite remarkably, poor academic performance is found to be linked to the application of ineffective teaching methods by the teachers.

1.4. Measurement, Assessment, and Evaluation in Education

One of the daily tasks of the teachers in the classroom is to make decisions. To generate wiser decisions, they need information that can be obtained through the measurement of their students' progress, the value of the curriculum, and the effectiveness of the instruction (Mohan, 2016).The four terms; test, measurement, evaluation, and assessment are used interchangeably from time to time. Dizney (1971) has made the following difference between the aforesaid terms:

> 'Roughly, we may say testing deals with the use of tests and emphasizes the instrument, as it were. Measurement is a process ….let us simply consider measurement to be a process that results in a set of

> symbols representing selected characteristics of things in which we are interested….compared to measurement, the process of evaluation is even more complex. It has commonly said that evaluation deals with value and quality...Further, the evaluation suggests a more inclusive process than measurement, a process that incorporates quantitative statements en route to value judgments.' (P.8-9, cited in Deblassie, 1974, p.6)

In common parlance, the test is a set of questions that tends to answer the question of "How well does an individual perform?" On the other side, measurement is the assigning of numbers to the test results following a particular rule to answer the question "How much?" and evaluation adds the value judgment to the obtained scores and in its turn, it seeks to answer the question "How good?".(Singh, 2007)

1.4.1. Measurement

It is a broader concept that refers to studying the individual's outcomes or traits methodologically by the mean of suitable assessment tools (Campbell, 2012). According to Thorndike and Hagen (1986), measurement is "the process of quantifying observations (or descriptions) about quality or attribute of a thing or a person". In education, measurement is obtained through testing whose scores are being used to judge the effectiveness of teaching, to examine the efficacy of curricula, to judge the quality of administration, and to justify educational expenditure.(Sidhu,2002)Thus, measurement paves the ground for classification, selection, diagnosis, comparison, prediction, and research. Moreover, measurement in its nature refers to either the quality or quantity of an object. Mohan (2016) proposes three major steps in the measurement process:

- **Step 1** Identification and definition of the quality to be measured
- **Step 2** Deciding on how the quality is to be measured. This will involve a set of tasks wherein the quality will be observable.
- **Step 3** Conversion of these observations into a quantitative statement.

1.4.2. Evaluation

Different conceptualizations of the term evaluation have been provided by different researchers. Stufflebeam et al (1971) defines evaluation as "the process of delineating, obtaining and providing useful information for judging decision alternatives". Evaluation plays a vital role in teaching since it helps teachers in making judgments about whether parts, processes, or outcomes of a given program are satisfactory or not.(Berry, 2008) Another definition given by Gage and Berliner (1991) "evaluation is the process of collecting, interpreting, and synthesizing information to make decisions" Mohan (2016) states that the process of evaluation encompasses three main components: a) testing situation which refers to the behavior to be evaluated, b) measurement of the behavior and c) placing a value on the level of achievement shown in that behavior which the measurement indicates. To clear this process out, Mohan (2016) provides figure 10

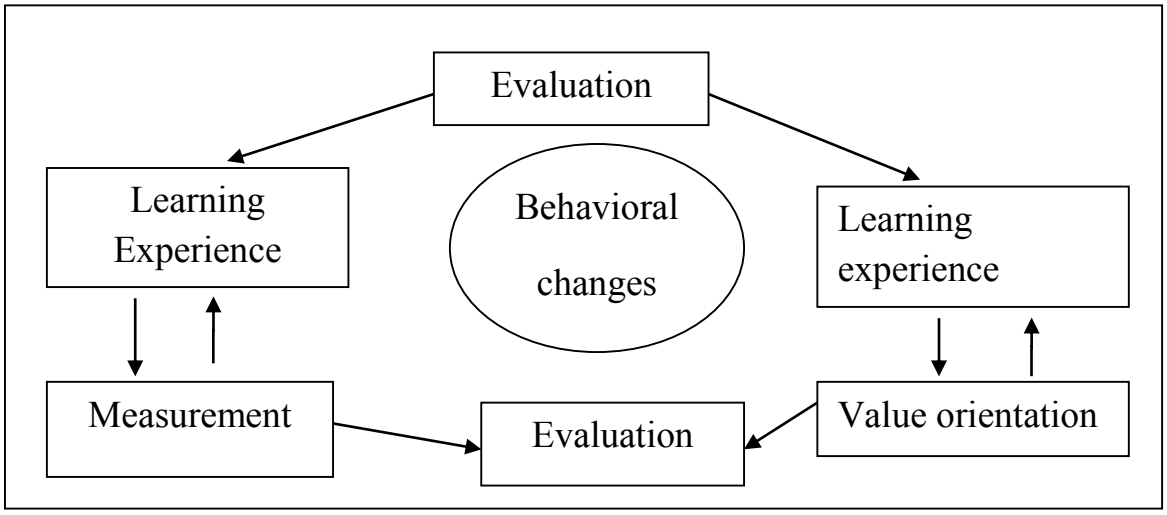


Figure 10. Model of Evaluation

Source. Mohan (2016, p.27)

Evaluation has multiple objectives at different levels which are listed by Downie as follows:

- Providing information for grading, promoting students, and reporting to parents
- Evaluating the effectiveness of a single teaching method or appraising the relative worth of several methods

- Motivating the student
- Selecting students
- Evaluating the entire educational institution and show how various aspects of it could be improved.
- Collecting information for effective educational and vocational counseling. (Cited in Mohan, 2016; p.28)

Airasian and Madaus (1972) suggest four categorizations of classroom evaluation in the following trend:

- Placement evaluation aims at determining pupils' performance at the beginning of instruction
- Formative evaluation (Evaluation for learning) aims at monitoring learning progress during instruction.
- The diagnostic evaluation is done to diagnose difficulties during instruction.
- Summative evaluation (Evaluation of learning) evaluates achievement at the end of instruction.

Measurement and evaluation differ in many aspects such as the emphasis, the techniques, and the objectives as being presented in table 4.

Table 04

Comparison between Measurement and Evaluation

Measurement	**Evaluation**
Focus is on a single aspect of subject-matter achievement or skills	Emphasis on overall pupil growth
Not based on predetermined objectives	Based on a wide range of objectives
Limited in scope	Concerned with the total personality of the pupils
Is a means to an end	Is an end in itself
Is done as and when required	Is a continuous process
Uses a limited set of techniques	Uses a variety of techniques

Source. Mohan (2019, p363)

1.4.3. Assessment

Assessment is regarded as a way to measure learning and program to provide teachers with comprehensive, valid, and reliable information on how effectively the students learn in the classroom and how well the curriculum caters for the students' needs. (Hunsley, 2002) Furthermore, assessment is an ongoing cyclic process with data flowing frequently. (Mohan,2016)It entails four main steps: a) defining the intended learning objectives, b) measuring the selected learning outcome, c) comparing outcomes with the intended objectives, and d) redesigning the program to improve the teaching-learning process.

A very interesting point stated by Biggs (2003) where he explains the perception of measurement for the teachers and the students by saying that "To teachers, assessment is at the end of the teaching-learning sequence of events, but to the student, it is at the beginning "(p.27)The aforementioned perceptions represent the place of assessment in the teaching-learning context. Thus, assessment is a natural part of the teaching-learning process which involves social interaction between the teacher and the students. Berry (2008) views assessment as: "Conscious and systematic activities used by the teacher and students for gathering information, analyzing and interpreting it, drawing inferences, make wise decisions, and taking appropriate actions in the service of improving teaching and learning" (p.6).

The quality of assessment is determined by understanding the educational objectives. For instance, doing assessment to examine the curriculum and the instruction process, to grade students, or to record students' performance on a standardized scale. If the assessment procedure has been well researched and has proved to be valid and reliable, then, it is formal; however, if that rigor has not been displayed although it generates valuable information then we are addressing informal assessment. Berry (2008) distinguished three major kinds of assessment:

- *Assessment of Learning (AOL)* is associated with the behavioral views of learning. It has as purpose to check whether the learners have met the set of requirements or not yet. The focus in this kind of assessment is on the product of learning.
- *Assessment for Learning (AFL)* on the other hand is associated with the constructivist view s of learning. It aims to understand what learners can or cannot do. The focus here is on the process of learning.
- *Assessment as Learning* is linked to the cognitive views of learning. It aims at enabling learners to become independent and autonomous. The emphasis is placed on the learner's active role in learning. It is worth mentioning that using multiple assessment procedures (holistic approach) in assessing an individual would yield clearer and valuable information. Furthermore, Neukrug and Fawcett (2015) introduced four major categories of assessment.

1. The *Assessment of Ability:* refers to the tests used to measure what a person is capable of doing in the cognitive realm. It entails achievement tests that measure what one has learned, this kind of tests, in turn, is subdivided into:

- *Survey Battery Tests* are given in school settings to assess progress in school and to measure broader content areas.
- *Diagnostic Test* designed to assess deficiency areas of learning.
- *Readiness Tests* used to measure an individual's readiness for moving ahead in school.

2. *Aptitude Testing* is another category of assessment that refers to those tests used to measure what one is capable of learning. It encompasses the following set of tests:

- *Intellectual and Cognitive Functioning Tests* used to measure a wide range of cognitive functioning
- *Cognitive Ability Tests* measure a variety of cognitive abilities and they are based on predicting a student's future referring to what he has learned at school.
- *Special Aptitude Tests* used to measure one facet of the ability
- *Multiple Aptitude Tests* measure many aspects of ability.

3. *Personality assessment* which deals with the affective domain. It is divided into three subsets

- *Objective Personality Testing* makes use of multiple-choice and true-false tests so that to assess personality aspects.
- *Projective Personality Tests* present a stimulus-response realm.
- *Interest Inventories tests* measure ones' personality orientations.

Informal assessment instruments target both ability and personality areas. It makes use of various tools such as observation, rating scales, environmental assessment, records of personal documents such as diaries, and performance-based assessment. Neukrug & Fawcett (2015) has presented a summary of assessment categories as they appear in the following figure

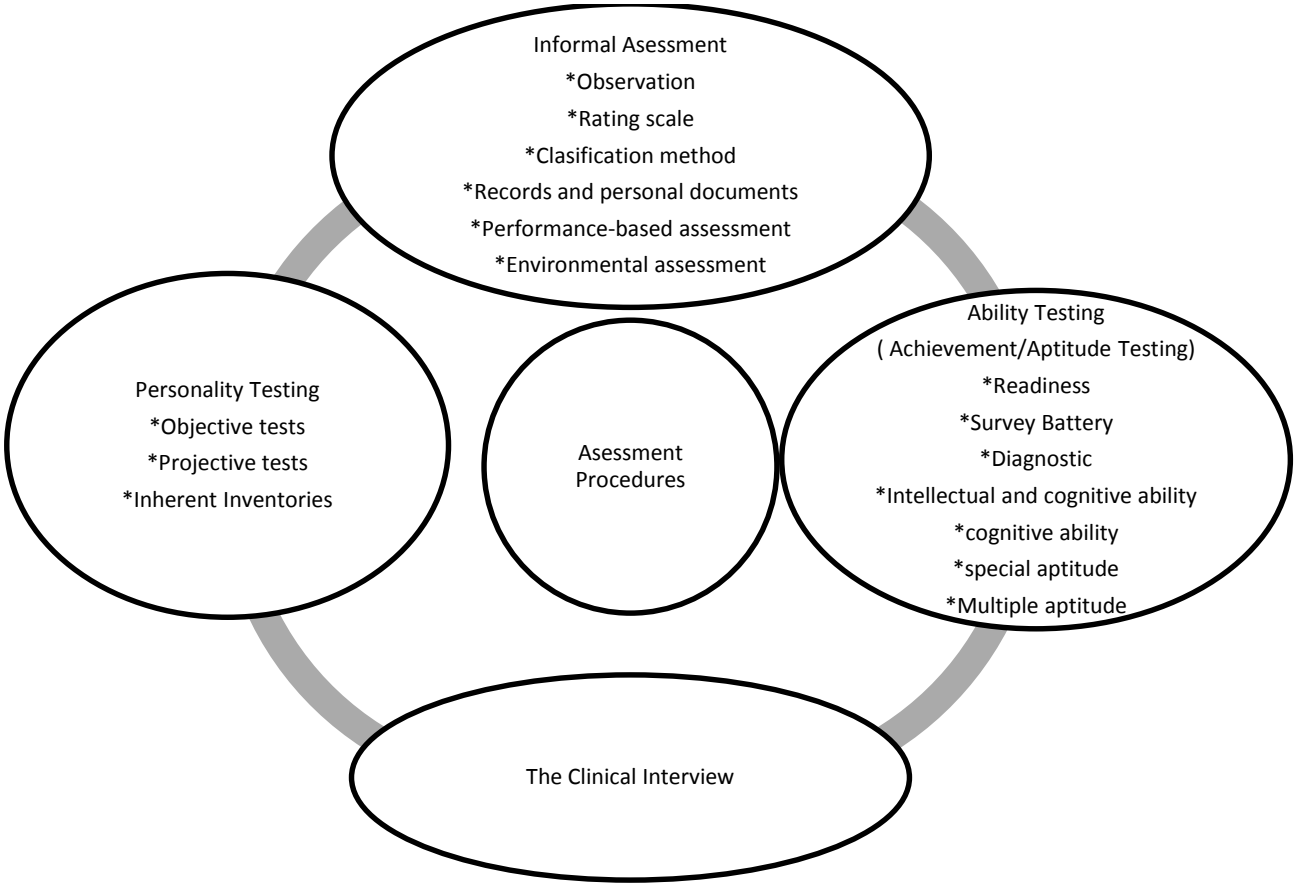


Figure 11. Model of Assessment's Categories

Source. Neukrug and Fawcett (2015, p.4)

1.4.4. Testing

Testing is one of the main characteristics of human social life. Throughout history, people have been put to tests to examine their suitability for a given position or to measure their standing on different types of construct (Spolsky,1995;Bachman, 2004) Tests are a subset of assessment techniques that generate scores based on the gathering of cumulative data, For example, finding the sum of the correct items on a given exam.

Gradually,tests are viewed as an extremely valuable tool for supplying and providing practitioners and students with information about their teaching and learning. It also enables teachers to examine how well students are performing and to check for any discrepancies between their expectations and the actual performance. Similarly, students can know the extent of their attainment and progress.

Caroll (1968) defines tests as "a procedure designed to elicit certain behavior from which one can make inferences about certain characteristics of an individual"(p. 46).Tests are also seen as a set of items to which students respond in the written or oral form typically during a fixed period. It has been also denoted as an instrument or a procedure for describing the characteristics of the students.(Brookhart and Nitko,2008)Furthermore, Tests can be exploited in evaluating instructional materials, tasks, and the previously set objectives (Alderson & Buck, 1993), besides the obtained results can be used in categorization and decision making about individuals and institutions. (Messick, 1996)

In the scope of language teaching, testing attempts to draw inferences about the students "levels of language ability and to predict their capacity to use the target language in real-life situations. The testing process has two major components: the construct(s) we intend to measure which is referred to as the "what", and the methods and techniques used to assess these constructs which are labeled as the "How"(Kane,2013;Shohamy,2008).

Bachman and Palmer (1996) suggest three stages of language test development; a) design, b) operationalization, and c) administration. The first stage sets the overall purpose of the test, analyzes the target language domains, and collects the required data about the characteristics and the language abilities of test-takers. The second stage outlines how to construct tasks and how to assemble them in a comprehensive test. The third stage looks at the item tryout and test delivery which constitutes the phases of this stage.

1.4.4.1. Types of tests

Tests are classified into:

1. Standardized Tests

Any standardized test is architected with a particular purpose in mind. Taking this purpose into consideration, standardized tests come to be classified into; achievement tests, aptitude tests, and diagnostic tests. Another classification of standardized tests based on

scores generates two types of tests either criterion-referenced tests or norm-referenced tests. (Mertler, 2007)

1.1. Standardized Tests based on Purpose

This kind of tests entails the following subtypes:

- *Achievement tests* measure how much the students have learned in a specific clearly stated content area. (McMillan, 2001).In addition to that, they tend to be used to determine and evaluate an educational program and instruction. (Spinelli, 2006)
- *Aptitude Tests* are referred to as intelligence tests are employed to measure an individual's cognitive ability.
- *Diagnostic tests* are defined by Morris et al. (1987) as those tests used to diagnose the learners' progress vis –à- vis the desired learning outcomes.

1.2. Standardized Tests Based on Scores

The standardized tests based on scores are subdivided into:

- *Criterion-Referenced Tests:* This type of test enables teachers to have an overwhelming view of what the students know, what can they do, and what do they excel in.
- *Norm-Referenced Tests:* This type of test enables teachers to know where their students are standing with a broad domain of content through making comparisons.

2. Objective Tests

This kind of test is also known as a selection test. It is used to measure the learning outcomes related to every learning objective. It consists of factual questions that call for short answers that can be unambiguously scored by anyone with an answer key. It includes items such as true-false items, matching items, multiple-choice items, and completion items, and essay items. (Miller et al, 2009)The majority of performance tests are designed likewise

(Morris et al, 1987). In the Algerian setting, this kind of test is combined with the constructed response tests wherein students are asked to display their writing ability through composing letters, paragraphs, short essays,…etc.

Objective tests are also called a teacher-made test. To get a better understanding of the nature of Objective tests; Baker & Baker (2006) proposes the following comparison between objective tests and standardized Objective tests.

Table 05

Comparison between Teacher-Made Tests and Standardized Tests

Teacher-Made Objective Test	**Standardized Objective Test**
The testers know the examinees and know what has been taught and what they want their students to master	The testers only have a general knowledge of the examinees' age or grade level. They also generally know what has been taught and mastered in the subject area.
The directions, items' format, and scoring are clear but unchecked for accuracy and fairness for the examinees	The direction, items' format, and scoring are clear and checked for accuracy and fairness.
The test construction may be done very fast and given to the students without being tested.	The test construction and preparation takes a great amount of time since it has to be checked.
When administering the test the tester may be present to clarify the directions for his/her class.	The directions and the scores are presented in the same way each time the test is assigned.

Source. Baker and Baker (2006, p.6)

1.4.4.2. Test Qualities

The ultimate goal of an effective test is to come out with an accurate measurement of the learners' language abilities as well as their progress in attaining knowledge about the language. To do so, a language test needs to meet the requirements of a myriad of qualities suggested by test developers. Anastasi (1982) suggests that "A psychological test is essentially an objective and standardized measure of a sample of behavior."(p.134) Munn (2012) posits that "A test is an examination to reveal the relative standing of an individual in the group concerning intelligence, personality, aptitude or achievement."(p.12) Cronbach (1990) says: "A test is a systematic procedure for comparing the behavior of two or more persons."(p.32)

For Lado (1959), a valuable test should be valid, reliable, scorable, economical, and administrable. Likewise, Weir (1988) points out the importance of validity, reliability, and efficiency in the test design. Mohan (2016) indicates that an effective test should have the following characteristics which he labeled as a) practical criteria and b) technical criteria.

- **Practical Criteria**

The practical criteria include the following features:

- *Economy:* refers to the economy of time and cost
- *Purpose:* the test should convey the purpose it is constructed for.
- *Acceptability:* this criterion is concerned with the suitability of the test for the examinees; for instance, the too easy or too difficult test will not be accepted by the targeted group
- *Adequacy:* this aspect is considered to be a prerequisite to the reliability and validity of a test. If the test is too small or too long then it goes against adequacy. Furthermore, a test should be adequate from all sides: content, age,

grade, local emphasis, expected learning outcomes; objectives, and so many other factors.

- *Usability***:** this has to do with the practicality of a test in terms of ease of administration, ease of scoring, and ease of interpretation as well.
- *Meaningfulness of Test Scores:* in a battery of tests, testers should specify what the overall score conveys, what scores and sub-scores on separate sub-tests convey, and what the various combinations of scores convey.
- *Comparability*

- **Technical Criteria**

The technical criteria of a test entail the following characteristics:

- *Items:* these are the first requisite of an effective test; henceforth, good items would have a positive reflection on the purpose, acceptability, adequacy, reliability, etc.
- *Standardization:* This criterion ensures the uniformity of testing conditions which must be the same for all examinees.
- *Objectivity:* stands for the objectivity of items and scoring.
- *Validity:* that is whether the test measures the right area or not. Validity can be affected by many factors namely; instruction, language, difficulty level of items, construction of test items, time limit, etc.
- *Reliability:* it indicates the degree to which individual differences in scores are attributable to true differences in characteristics being measured.
- *Discrimination:* this is to consider the poor, the average, and the good students when constructing test items
- *Norms:* the test developers must respect the norms of the test manual in test building.

Recently, a noticeable test design framework has been suggested by Bachman and Palmer (2000) which consists of six qualities: a) validity, b) reliability, c) practicality, d) instructiveness, e) authenticity and, f) impact.

- **Validity**

It refers to the degree to which a test measures what is supposed to measure (Hughes, 1989) In other words, validity deals with the extent to which the test procedure does what is intended to do .It concerns the usefulness and the relevance of what one is measuring. Types of validity are summarized as follows:

Table 06

Types of Validity.

Type of Validity	Aim of Testing	Approach to validation	Presumed Relation between test and criterion
Content Validity	When trying to measure an attribute of the present (e.g. vocabulary)	Demonstrate how well the content of the test samples the criterion	The test is a sample of its criterion
Predictive validity	When trying to predict an attribute of the future(e.g. college success)	Demonstrate how well the test scores correspond to a future criterion	The test is a sign of its criterion
Concurrent validity	When trying to discriminate, or estimate an attribute of the present	Demonstrate how well the test scores correspond to a contemporary criterion	The test is a sign of its criterion
Construct validity	When trying to infer an attribute of the present (e.g. intellectual capacity)	Demonstrate what psychological quality is measured by the test	There is no definitive criterion; the test is merely an indicator of its construct.

Source. Newton and Shaw (2014) /Retrieved from: http://sk.sagepub.com/books/validity-and-educational-assessment/n3.i523.xml

- **Reliability**

It stands for the consistency of measurement. It is about precise repeatable measurement. For instance, if the same test is to be administered to the same group of individuals at two points in time, it should not be any difference to the test taker whether to take it now or later and hence, it should provide similar results. (Good & Brophy, 1986) There are two components of test reliability as suggested by Hughes (1991):

a) The reliability of the scores on the performance of candidates from occasion to occasion, which can be ensured by the effective construction and administration.

b) The reliability of scoring can be achieved through objectively scored tests since it does not require the scorer's subjectivity. There are two major aspects of scorer reliability:

   - *Intra-rater reliability* is achieved only if the same scorer generates the same set of oral or written performance on two different occasions statistically is measured utilizing a correlation coefficient.
   - *Inter-rater reliability* stands for the degree of scores consistency given by two or more scorers to the same set of oral performance or written pieces.

According to Alderson (1995), the reliability of a test can be quantified in the form of a reliability coefficient which can be obtained by comparing two sets of test scores that are obtained via the test-retest method or by the split-half method (splitting the test into two halves then correlating the scores). The more similar are the two sets of scores; the test will be more reliable.

Reliability can be affected by different factors such as:

- *The length of the test* whose relationship with reliability can be expressed by a formula known as Spearman-Brown Prophecy Formula :

$$\rho^*_{xx'} = \frac{n\rho_{xx'}}{1 + (n-1)\rho_{xx'}}$$

(*p*xx'*)The reliability of a set of test (n) times as long as the original test

(*pxx'*) The reliability of the original test.

n: The factor by which the length of the test is increased.

- *Variability of the group*
- *Ability level of subjects*
- *Range of the measuring instrument*
- *The objectivity of scoring:* objective test type yield more reliable results than subjective tests
- *Scoring technique:* machine-scored tests would generate fewer mistakes and higher reliability than hand scoring.
- *The difficulty of the test*
- *Method of test construction*
- *Testing Conditions*
- *Error in the individual:* this criterion is linked to individual differences
- *Instability of scores*
- *Ambiguity*

- **Authenticity**

Bachman (1996) defines it as "the degree of correspondence of the characteristics of a given language task to the features of a TLU task." (p.23) In this sense, the major concern of authenticity is the degree of congruence between the test tasks with the content of what teachers and students have performed as a learning process and instruction. In addition to that, this concept provides a means for exploring the extent to which score interpretations can be generalized beyond the performance on the test to the language use.

- **Instructiveness**

It refers to the extent of involvement of test taker's characteristics in fulfilling a test task, those characteristics refer to gender, culture, academic background, and field dependence (Kunnan,1995) in addition to other characteristics that should be counted such as; aptitude ,background knowledge (Calapham, 1993), and personality characteristics (Berry, 1983)It is worth mentioning that those characteristics affect how students perceive test content and which strategy they use to respond to the different test tasks.

- **Impact**

It operates according to Bachman (1996) at two levels: a) *a micro level* that is the individuals who are affected by a specific test use and b) *a macro level* in terms of the educational system. An important aspect of impact is known as wash back that is "the effect of testing on teaching and learning " (Hughes,1989,p.1) as far as individuals are concerned, testing is a double-edged sword that can either be beneficial or harmful to teaching and learning.(Buchman,1997)Thus, test developers need to take into consideration the content of teaching, teaching methodology, ways of assessing achievement, direction (positive and negative), and the degree of the presumed impact.

- **Practicality**

It refers to the relationship held among the resources that will be required in the test design, development, and use of the test and the sources that will be available for these activities. This quality is different from the other qualities in the sense that it deals with how the test will be implemented. For a test to be practical, it requires some resources which are divided into three assets: a) *human resources* (teachers and test administration), b) *material resources* (space, equipment, and materials),c) *the allocated time* for the entire testing process. To sum up, practicality is a matter of the extent to which the demands of particular test specifications can be met within the limits of the existing resources.(Bachman; 1996)

1.4.4.3. Approaches to Language Testing

Teaching and testing are interwoven and have always been close to one another. Across the years, different testing methods have been developed under different teaching methods. Looking at the history of language testing Spolsky (1978) says:"It is useful, though an overgeneralization, to divide language testing into three major trends which I will call the prescientific, the psychometric structuralist, and the integrative sociolinguistic. The trends follow in order but overlap in time and approach. The third pick up many elements of the first, and the second and the third coexist and compete." (p. v).

1. The Pre-scientific Era

This period is traced back to the period before the application of principles of educational psychology to language testing. In this era which is dated from the 1990s to the 1970s, testing was intuitive and dependent on the personal impression of teachers. It was restricted to testing only on grammatical structures and vocabulary. (Farhady, 1980)In this regard, Spolsky (1978) asserts that: "Testing in this period is marked by the lack of concern for statistical matters or such notions as objectivity and reliability" (p. vi).Referring to what Spolsky maintains, it can be deduced that testing of that era showed serious deficiencies such as neglecting the statistical characteristics of tests, the lack of objectivity in scoring methods, and unsystematic testing techniques.

2. The Scientific Era

With the deficiencies of testing in the pre-scientific era and the swift changes in education and psychology, a new era rose on the horizon bringing noticeable changes. Statistical evaluation of tests was used to investigate the effectiveness of test questions (items).Psychometric qualities such as validity and reliability were introduced and used. Under the umbrella of the scientific era, three approaches to language testing inaugurated namely; psychometric structuralist, integrative sociolinguistic, and functional approach

2.1. Psychometric Structuralist Approach

The emergence of structural linguists such as Bloomfield and Fries and behaviorists such as Skinner inflamed the field of language teaching and ultimately language testing. In this trend, learners' ability was assessed through separate language elements testing, for instance, the four skills are tested separately. To satisfy the eagerness of this approach, discrete point tests (DP) were used. These tests focused on the measurement of discrete items separately based on the structuralist view of language as a set of finite structures. Moreover, other criteria besides validity and reliability has been added such as; item facility, item discrimination, and objectivity. Spolsky (1995) presents the main characteristics of this approach by arguing that: ' The quantifiable results provided by the mechanistic scoring of short true-false or multiple-choice questions, and the opportunity that large numbers of marks afforded of replacing judgments of individual performances by statistical norms, gave every appearance of solving the problem of reliability. Whatever it was that was being measured, at least it was measured consistently'. (P.54)

3. Post-Modern Era or Psycholinguistic-Sociolinguistic Approach

3.1. Integrative Sociolinguistic

This approach of language testing introduced a new angle to the understanding of what language is, how it is learned, and how it should be measured. Oller (1979) argued that "language competence is a unified act of interacting abilities that cannot be tested separately" (Cited in Brown, 2003,p. 8). While the structuralist suggested that language is a set of structures that have to be separately assessed, this approach on the other side considered language as a holistic phenomenon and emphasized the integrative character of language (Hughes, 1989). Additionally, they reverse the structuralist view of testing i.e. language should not be broken into discrete items but should be integrated as a whole part. (Carroll, 1961) Close tests and dictations are an example of tests which are undertaken under this

testing approach. A close test is viewed as a reading passage that has omitted words that testees are asked to find out so that to fill in the gaps. when comes to score in such tests, testers tend to use two kinds of methods "exact word method" and "acceptable word method" Dictation, on the other hand, deals with the writing down of a passage after having listened to it (Brown, 2003,p.8-9) and "it is an excellent measure of overall language proficiency". (Johansson 1974) . Oller (1972) suggest that:

> 'Dictation and cloze tests do not effectively tap the sociocultural, sociolinguistic, or communicative competence of the learner. These tests are as inadequate as DP [discrete point] tests in dealing with communication between two or more interlocutors, However, due to the diversity of language skills to be tested and the controversies on the nature of language tests, it is commonly accepted that a good, balanced language test should include both DP and IN [integrative] parts.'(P.50 cited in Spolsky, 1975,p. 7)

Thus, integrative tests share the same drawbacks as Discrete Points Tests in the sense that they do not tackle the communicative competence of the testees .(Farhady,1980)

3.2. Functional Approach in Language Testing

This approach emphasized the social function of the language and the breaking down the global concept of the language into communicative units. Tikunoff (1985) defined the functional approach as, "competent participation in completing classroom tasks with a high degree of accuracy". According to this approach, teaching is based on the learners needs to express that lead to the identification of three main types of meaning namely; a) *functional* (i.e. the social purpose of the utterance),b) *modal* (the degree of likelihood), and c) *conceptual* i.e.the meaning relations expressed by forms within the sentence (categories of communicative function).

The underlying objective of these tests is to measure the testees' ability to fulfilling language functions. Farhady (1980,) states:

> 'They [functional tests] are almost automatically valid because we would know exactly what we wanted to test before constructing a test. Functional proficiency could also be decomposed into linguistic, sociocultural, and minimum communicative proficiencies. This versatile property of functional tests would enable language testers to identify learner problems and/or the degree of contribution of each component of language competency to the totality of communicative competence.'(P.73)

Despite the functional tests' validity and reliability, they lack the quality of practicality.

1.4.4.4. Test Construction

In testing, educational institutions rely on written tests (pencil-and-paper test) to measure how well students have attained what they were taught. Test items are designed in a way that would demonstrate students' knowledge of a given topic which they have already tackled in the classroom. Teachers should make decisions about the following points:

- What type of tests to be administered?
- What items should be included within the test to measure a particular behavior?

The nature of the type of test is bound by the objective of measurement. Table 7 presents the most notorious classifications that have been supplemented by different authors: a) based on questions, b) administration, c) standardization, d) scoring, and e) traits.

Table 07

Major Types of Tests and their Classification

On the basis of questions	On the basis of administration	On the basis on standardization	On the basis of scoring	On the basis of traits
(a)Essay or free answer	(a)Individual vs Group tests	(a) Non-standardized Tests	(a) amenable to the qualitative scoring	(a)Intelligence tests
(b)Short Answers Type	(b)Oral vs Written Tests	(b)Teacher-made Informal Objective Tests	(b)amenable to pencil or punch-board scoring	(b)Tests of Special abilities
©Objective or New Type Tests	(c) Speed vs power tests	(c) Standardized Tests	© amenable to	© achievement tests
(i)Alternative Response Type				(i)Prognostic tests
				(ii)Diagnostic and analytic test
				(iii)Mastery tests

(ii)Multiple Response Type **(iii)Matching Type** **(iv)Completion Type** **(v)Simple Recall Type**	machine scoring	(iv)Quizzes (v) Instructional and practical tests (d) Personality Tests and Adjustment Inventories

Source. Adapted from: The BEM Guide (2018)

Test construction depends on a range of models according to different categorizations. In Algeria,tests are constructed based on an examiner's guide provided by the Ministry of National Education wherein it provides a guideline for designing tests and exams according to the typology that will appear in the official exams (BEM &BAC).Since our study is linked to the academic performance of middle school students, we limit the scope by exploring the test's format that appears in the Middle school Examiners' guide.

Table 08

Test Construction in the Algerian Middle School Context

On the basis of questions	On the basis of administration	On the basis on standardization	On the basis of scoring	On the basis of traits
Section One:**Reading comprehension questions** Section Two: **Mastery of Language questions** Section Three **Situation of integration**	Individual	Teacher-made objective test	Quantitative scoring	Achievement tests

Source. Adapted from:The BEM Guide (2018)

Middle school students are individually given written tests that aim to assess their learning outcomes in reading and writing. The tests include two essential parts. The first part includes two main sections. The first section is related to "Reading Comprehension" where students are asked to do activities related to the understanding of the text. The second section, on the other hand, is named "Mastery of Language" and it entails activities related to language forms. The second part is related to "Situation of Integration" which requires the students to write a composition on a given situation.

Parts	Sections	Activities	Scoring scale
① (14 pts)	A/ Reading Comprehension	✓ 2 activities related to comprehension	Act.1 03points Act.2 02points
		✓ 1 activity related to Lexis	02 pts
	B/ Mastery of Language	✓ 1 activity related to mechanics or morphology.	02 pts
		✓ 1 activity related to syntax	03 pts
		✓ 1 activity related to pronunciation	02 pts
② (06 pts)	Situation of Integration The candidates are supposed to write a communicative passage. These types of tasks may help: ✓ Letter-writing ✓ E-mail ✓ Dialogue ✓ Report ✓ Article ✓ Social media ✓ …….		(06 pts)

Figure 12. Typology of Middle School Tests and Exams

Source. The BEM Examiner Guide (2018,p.4)

To construct tests or exams, teachers are asked to refer to the BEM guide (2018) which is presented by the National Examination Board and considered as a blueprint. According to the guide teachers should consider the following points in designing tests:

1. The text must be submitted for the first time.
2. The text can be authentic or adapted.
3. The length of the text should be between 12 and 15 lines

4. The topic of the text must be from the official curriculum (Exit Profile).
5. The text should be related to the candidates' age, interests, and background.
6. The source should be mentioned at the end of the text (the author, the publisher, the year of publication, page...).
7. The text should be mistake-free.
8. The text should be free from stereotypes.
9. An illustration or a picture can be added to the text.
10. The text should be communicative.
11. The text should convey National and Universal values.
12. In both sections, the activities should be well balanced and graded (from easy to difficult) according to Bloom's taxonomy.
13. In section A (**Reading Comprehension**), the activities should reflect the candidate's understanding of the text (skim, scan, and reading for detailed understanding).
14. General truth questions should be avoided ("Does the sunrise from the East ?" / "Does water boil at 100°" ?).
15. The questions should cover the whole text.
16. The questions should be given in the order the answers appear in the text.
17. In section B, (**Mastery of language**), the activities should be contextualized.
18. Start with the situation of integration when devising a test.
19. The situation of integration should be prepared first as mentioned above because the content of all the activities should help the candidates to reinvest them in the written expression.
20. The items of the different activities could be reinvested in the situation of integration.

Part II: Situation of Integration

1. The situation of integration should thematically be related to the topic of the text.

2. The instruction of the situation of integration should include three sections:

CONTEXT → TASK → SUPPORT

3. The situation of integration should bear the following characteristics:

- A problem-solving situation
- Communicative
- Significant to the learner
- Challenging and motivating
- Complex (integration of different sources)
- contextualized

1.4.4.5. Bloom's Taxonomy in Test Construction

In 1948, Bloom has introduced an ambitious classification of educational goals and objectives. He aimed to develop a method of classification for thinking behaviors that were believed to be important in the processes of learning. Eventually, this framework became known as Bloom's taxonomy.

1. Definition of Bloom's Taxonomy

It is a hierarchical classification of educational objectives representing six levels of thinking and learning skills moving from the lowest to the highest order .The taxonomy was first devised by Bloom (1956) then revised by Krathwohl (2001).The original taxonomy had the following levels:

Table 09

Bloom's Taxonomy (1956)

Knowledge	"those behaviors and test situations, which emphasize the remembering either by cognition or recall, of ideas, material, or phenomenon" (Bloom,1956,p.62)

Comprehension	Translation, interpretation, and extrapolation
application	Use rules and principles to solve a problem
analysis	"The breakdown of materials into its constituent parts and detection of the relationships of the parts and of the way they are organized"(Bloom,1956,p.144)
Synthesis	"Putting together of elements and parts to form a whole"(Bloom,1956,p.162)
Evaluation	"making of judgments about the value …it involves the use of criteria as well as standards for appraising the extent to which particulars are accurate, effective, economical, or satisfying" (Bloom,1956,p.185)

Note. Adapted from: Salkind and Rasmussen (2008, p.110)

In the revised version of the taxonomy Krathwohl (2001), nouns are changed into verbs as presented in the following table:

Table 10

The Revised Taxonomy

Level	Definition	Action Verbs
Remembering	Recall of information	List, memorize define, recognize
Understanding	Interpret information in one's own words	Arrange, relate, label, recall, name, repeat, order, classify describe, discuss, explain express, identify, indicate, locate recognize report, restate, review select, sort, tell, translate
Applying	Use knowledge or generalization in a new situation	Demonstrate, dramatize, apply, choose, employ illustrate interpret operate, prepare practice, schedule, sketch, solve, use
Analyzing	Break down knowledge into parts and show relationships among parts	Discriminate, differentiate, analyze appraise, calculate categorize, compare, contrast, criticize diagram Distinguish,

		examine, inventory question, experiment, test
Evaluating	Making judgments based on criteria and standards	Appraise, argue assess, attach, choose, compare, defend, estimate, evaluate, judge, predict, rate, score, select, support, value
Creating	Bring together parts of knowledge to form a whole and build relationships for new situations	Arrange, assemble, collect, compose, construct, create, design formulate, manage organize, plan, prepare, propose, set up, synthesize, write

Note. Adapted from: Krathwohl, D. R. (2002). A Revision of Bloom's taxonomy: An overview. Theory into Practice, 41(4), 212-218.)

2. The Corresponding Level of the Items in Bloom's Taxonomy

Part One: Section One: Reading Comprehension

In this section, students are invited to read the text and perform three main activities related to the text .the two first activities are related to the comprehension (understanding) taxonomy level; whereas, the third activity falls within the knowledge (remembering) taxonomy level.

Section Two: "Mastery of Language"

Similarly, this section comprises three activities related to the language forms as; punctuation, transformation activities, pronunciation, and gap-filling activities. The two first activities are mainly related to the level of application as the student use rules to accomplish these items. The third activity which is associated with pronunciation is linked to the analysis level as it requires the students to find the correct pronunciation of words or linking words with sounds, etc.

Part Two: Situation of Integration

In this part, students are asked to write a short composition on a particular subject. This latter goes with the synthesis (create) level of the taxonomy.

To sum up, the middle school tests and exams are architected from the examiner guide November 2018 tackles the five levels of Blooms Taxonomy as they appear in figure 13.

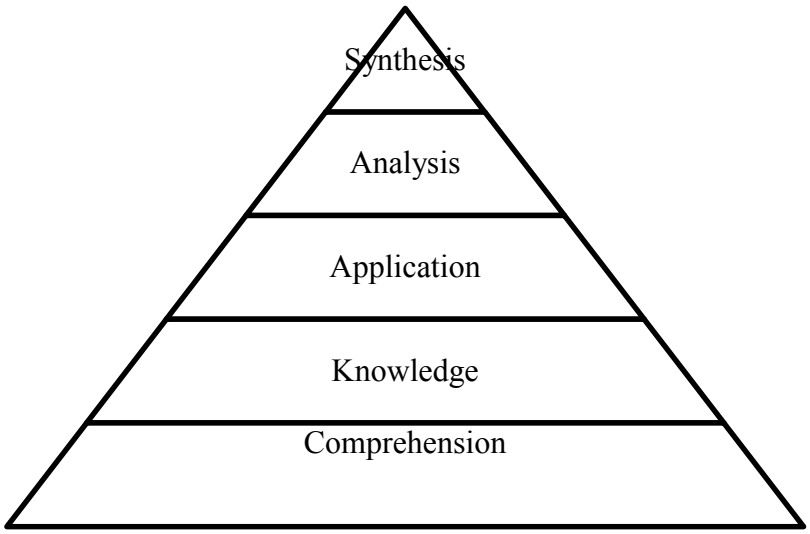


Figure13. Bloom Taxonomy in Middle School Tests and Exams

Source: The Researcher

Conclusion

This chapter dealt with the first variable of this study. To explore what is meant by performance, the researcher delved deeper into the major psychological trends that studied the major factors affecting students' academic performance most notably Carroll's model that has been taken as a basis for the present research work. After that, details about the evaluation, assessment, and testing are provided. Moreover, it explored testing approaches and modalities. The next chapter is dedicated to the Project-based approach, wherein, definitions, characteristics, merits and demerits will be discussed.

Chapter Two: Project-Based Approach

Introduction

Over the past decades, several teaching methodologies and approaches have been flourished and implemented in educational programs and curricula. The overall aim of these changes is the eagerness for improving students' learning. Moreover, there was discontent about student's learning outcomes and their inability to apply what they have learned in real-life situations. As a response to such needs, the Algerian educational system underwent several changes, shifting from the traditional approaches relying on the teacher as the only authority to a learner-based classroom. Educators have long researched the value of placing students in real-life contexts to help them gain a deeper understanding and achieve maximum learning .In the light of the subsequent changes applied in the Algerian, educational system, a new approach was introduced under the second generation reform in 2016 to break learning from the traditional teacher-in-front and students-in-rows educational model. In this chapter, we are going to tackle the second variable (independent variable) of this study which is project-based learning.

2. Theoretical Foundations of Project-based Learning

The theoretical foundation of Project-based learning is strongly grounded in constructivism. Railsback (2002) says that "project-based instruction strategies have their roots in the constructivist approach."(p. 6). Moreover, PBL borrows its principles from pragmatic constructivism, cognitive constructivism and social constructivism, which constitute the main stands of the constructivist learning theory.

2.1. Definition and Historical Development of Project-based learning

Project-based learning was first coined as a project method (Adderley, 1975; Kilpatrick, 1921; Kuethe, 1968) then as project-based learning roughly from the 1980s (Morgan, 1983, 1984). In some circumstances, projects and project work are also used to refer to project-based learning (Heywood, 2005).Project-based learning (PBL) is defined as a student-

centered and teacher-facilitated approach that organizes learning around realistic projects. (Thomas, 2000)Another definition provided by Dopplet (2003), Project-based Learning is a method that provides students with a healthy environment that would help them in improving their skills and thinking competencies. Bell (2010) adds to the definition of the process:

> 'Learners pursue knowledge by asking questions that have piqued their natural curiosity...Students develop a question and are guided through research under the teacher's supervision. Discoveries are illustrated by creating a project to share with a select audience. Organizers support the systematization of the processes that will be implemented throughout the research and project phases of PBL. Student choice is a key element of this approach'. (p. 39)

In this context, students engaging in PBL can work individually or collaboratively in small groups to produce a comprehensive report demonstrating their understanding of the topic area (Indrianti &Istanto, 2013). Furthermore, Bender (2012) states that PBL can be understood as "using authentic, real-world projects, based on a highly motivating and engaging question, task, or problem, to teach students academic content in the context of working cooperatively to solve the problem" (p.7) This suggests that PBL is a set of different activities with questions and problems that involve students in problem- solving and investigative activities. While there are many ways to describe PBL, there most commonly accepted criteria are as follows:

- PBL projects are central, not peripheral to the curriculum.
- Centered on a driving question (Grant, 2002; Blumenfeld et al., 1991; Thomas, 2000).
- Creation of artifacts (Blumenfeld et al., 1991; Grant, 2002; Bell, 2010).
- Develops essential skills and concepts.
- Focus on real-life topics (Moursund, 1999; Clark, 2006).
- The student is driven by student freedom (Blumenfeld et al., 1991; Thomas, 2000).

Project-based learning has its roots in the constructivist approaches of the early 20th century when John Dewey (1938) published his work "Experience and Education" in which he focused on a theory of experiential learning. Dewey (1938) writes, "The principle that development of experience comes about through interaction means that education is essentially a social process" (International Centre for Educators' Learning Styles, 2014).Dewey rejected schools that focused on repetitive, rote memorization. He believed that education was based on real experience. Relying on Dewey's theory, PBL can be viewed as a process framework within which social experience takes place.(Bender, 2012) PBL is also viewed as a practical expression of Dewey's philosophy. In this respect, Luk (2014) posits that; "the idea of "learning by doing" is first introduced by John Dewey, and it was then gradually transferred to project-based education. Project-based education is a student center pedagogical strategy which has been developed for more than 30 years".(p.59)

Beyond Dewey, a more theoretical validation for project-based learning has been introduced in Piaget's work (1973) on how children construct knowledge of the surrounding world. In other words, children come to learn by doing, a philosophy that has been applied in creating discovery-based curricula. (McLeod & Savory, 2009)Vygotsky's studies provided another base for PBL. He has defined the Zone of Proximal Development as "the distance between the actual developmental level as determined by independent problem solving and the level of potential development as determined through problem-solving under adult guidance, or in collaboration with more capable peers." (Vygotsky & Cole, 1978, p. 86) Referring to Vygotsky, PBL is a realization of the Zone of Proximal Development where the teacher plays the role of a facilitator of the problem in which students work collaboratively in groups to solve it. (Harris & Katz, 2001;Bell,2010)Table 11 presents the evolution of project-based learning through history:

Table 11

Historical Development of Project-based Learning

Author	Time Frame	Description
John Dewey	1938	Connection to experience and the quality of education
Jean Piaget	1973	Children construct an understanding of the world around them
Neufeld & Barrows	1974	"McMaster Philosophy" – a new approach to teaching medical students where students are presented with open problems they must work with others to solve. It was a decidedly different approach from a traditional lecture and test style of education
Lev Vygotsky	1978	Project-based learning can place students in a "zone of proximal development"
Markham, Lamer, Ravitz	2003	Comprehensive work on project-based Learning through the Buck Institute for Education
Barrel	2010	Work on Problem-based Learning capturing many parallels to project-based learning and connecting concepts within both to 21st Century learning
Bender	2012	Supplying a full modern definition of project-based learning in light of 21st Century learning and education issues
Larmer & Mergendoller	2012	Project-based learning in the context of the Common Core State Standards

Source. Harris (2014, p.32)

2.2. The Project-based learning Basic Features

There is a common agreement among researchers about the major features of PBL, which are derived from the various definitions of this method that is described as (a) comes from the needs and interests of students; it enables them to fulfill their need to gain new experiences and be responsible for their work; (b) PBL comes from a concrete and actual

situation thus it is not restricted by school premises but even parents and others from student surrounding can be involved; (c) PBL is interdisciplinary; (d) PBL is above all an enterprise of a student; (e) the final product of PBL brings a concrete product and the process and result should be recorded; (f) PBL is usually carried out in groups; (g) PBL connects the school with its neighborhood since it supports school integration into broader society and actual life (Coufalová, 2006).

Stoller (1997) suggests six major characteristics of project-based learning:

- Project work is not centered on specific language targets, but the real-world subject matter and topics of interest for students.
- The teacher offers support and guidance, but project work is student-centered.
- Students can work individually, in a small group or as a class for the completion of a project, but this working together is cooperative rather than competitive, which means that students share resources and ideas throughout the project.
- Starting with the use of varied resources and real-life tasks, students will gain an authentic combination of skills and ways of processing information.
- The completion of project work finishes with an end-product, such as an oral presentation, a report, a poster session, a bulletin board display, and so forth, to be shared with others. Apart from the final product, the process of working towards the end product is also important. Thus, project work has a process and product orientation which enables students to focus on fluency and accuracy.
- Motivation, stimulation, and challenge are potential characteristics of project work that help students gain confidence, self-esteem, autonomy, and improvement in language skills and content learning, as well as cognitive abilities. (P.4)

Thomas (2000) identifies five criteria for PBL;(a) centrality which means that PBL projects are the curriculum itself not peripheral,(b) driving question that represents a real

challenge for the learners,(c) constructive investigation that involves inquiry, knowledge building, and resolution ;(d) autonomy that stands for learners taking responsibility for their learning: and (e) realism which suggests that projects should be realistic, not school-like.

When planning PBL, teachers should take into account the aforementioned characteristics so that the project-based learning generates better learning results and outcomes. Moreover, the Buck Institution proposes the other seven features as they appear in figure14.

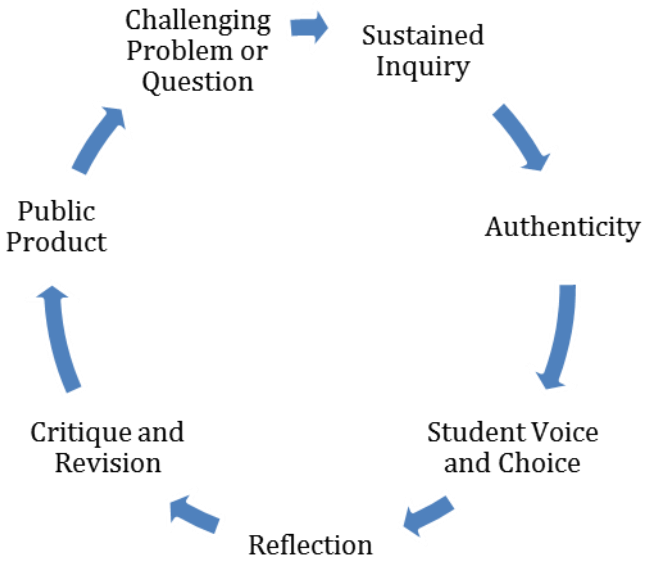


Figure14. Key Features of PBL

Source. Buck Institute for Education (2019)

2.3. Types of Projects

There are different ways to categorize PBL into various types. Most notably, William Kilpatrick distinguished four types of project work, based on the aims namely, a) *problem-based* projects, where intellectual problems are solved, b) *construction-based*, c) *evaluation-based projects*, and d) *finally drill-based* ones that aim at gaining a certain skill. Another classification is provided by Kalabzova (2015) is illustrated in the following table:

Table 12
Types of Projects

The viewpoint of classification	The Types of projects
The proposer of projects	*pupils spontaneous projects *teacher artificially prepared *Combination of preceding
The main aim of projects	*Problem-based *intellectual-based *construction -based *evaluation-based Aesthetic-based
The source of information	*Free(student take care of materials and information sources) *bounded (information source and material is provided to students) *combination of free and bounded sources
The duration of the projects	*short-term *medium-term *long term
The surroundings of projects	*school *domestic *combination of school and domestic *Outside the school
The number of people involved	*Individual *collective
The way of incorporation the project into the curriculum	*concerning one subject *comprising more subjects *cross-curricular subjects *distinctively aiming at key competencies
The focus of the content	*focusing on general educational areas *focusing more on areas of specialized training

Note. Adapted from :Kalabzova(2015,p.52)

Depending on the classification of the project work model provided by Jesberovà et al (2011;as cited in Kalabzova, 2015)The characteristics of project-based approach used in this research work as summarized in figure 15.

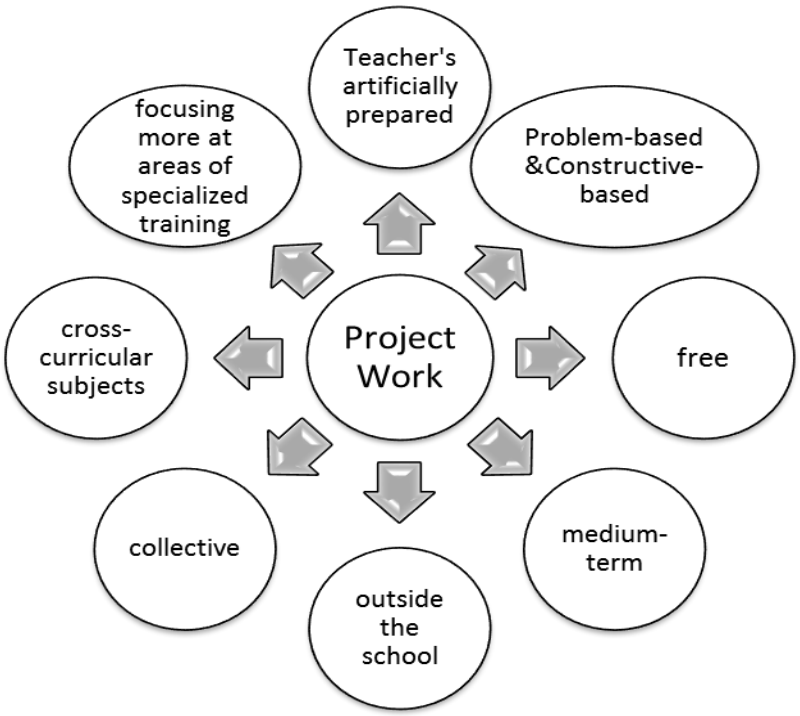


Figure 15. Characteristics of Projects

Source. Adapted from:Thomas(2000,p18)

Regardless of project type, educators should have an in-depth understanding of project-based learning because it can be considered by some as similar to projects though it is not. The difference between the project-learning and doing projects is presented in the table below:

Table 13

Projects vs. PBL

Projects	**PBL**
Teacher-directed	Inquiry-based
Highly-structured	Open-ended
Summative	On-going
Thematic	Driving question/challenge
Fun	Engaging
Answer giving	Problem-solving
De-contextualized – School world	Contextualized – Real-world

Note. Adapted from the West Virginia Department of Education

In project-based learning, the teacher asks questions, and then the students devise their pathway to solve the problem, test and revise their directions, learn information and develop skills, finally, apply their knowledge to solve real problems, and answer the teacher's questions. However when doing projects, the cycle is quite different. The teacher is the knowledge holder.He offers the direction to be followed by the students who learn facts and present them at the end.

2.4. The English Language in the Algerian context

Teaching English in the Algerian context went through some considerable changes during the last decades as a result of globalization and technological advance. Those changes are known as educational reforms. In 2002, CBA was introduced as the main method to be followed in teaching, bringing with it changes in the curriculum according to the learners' needs. Moreover, in 2016, the ministry of education presented another revised curriculum that is said to respond to the 21st century's learners' needs. Abdellatif says: "As a matter of fact, English has been defined as a second foreign language at the beginning of the 90s, and as a first foreign language after the 2000 reform, to gain the status of the language of science and technology used in lifelong learning in recent years." (2013, p.912) In this respect, the English language has started to gain a better place in Algerian schools after the introduction of CBA.

1. Definition of the Curriculum

This term refers to the academic content taught in a school. However, this is not the exact meaning of the curriculum at the level of schools because it is too general. It is rather defined as the knowledge and skills students are expected to learn, which includes the learning objectives they are expected to meet; the projects, sequences, and lessons that teachers teach; the homework and projects given to students; tests, assessments, etc. Since the

curriculum is the center of the teaching and the learning process, it is often the object of reforms.

1.1. The Structure of the Revised Middle School Curriculum

The revised curriculum appeared to solve problems within the educational system known as the New Curriculum though this expression needs to be discussed. The Orientation Law on National Education No. 08-04 23 (January 2008) having set three missions to the school: education, socialization, and qualification. The revised English curriculum fully integrates these missions and subscribes to the official educational guidelines (Curriculum of English for Middle School Education, May 2015)

1.2. Objectives of the Revised Curriculum

The revised curriculum objectives varied to include the emergence of the cross-curricular competencies and the core values which are the principles and beliefs that are delivered through lessons explicitly through the learning process. Among its main objectives is to help our society to cope up with modernity through the use of the appropriate linguistic tools for efficient communication, to promote national and universal values and construct the intercultural sense, to develop critical thinking, tolerance, and openness to the world, and most importantly to push the learner to have access to science and technology. All these objectives serve the learner

1.3. Guiding Principles

The purposes of the revised Curriculum are framed in nine guiding principles. They are organized around a view of language, a view of learners and learning, and a view of teachers and teaching. The first two principles are related to the English Language that describes the purposes for learning English in the world today to use it as a tool to develop communicative abilities. The majority of principles are related to learners and learning. Therefore, the principles capture what learners need to learn. While the last two principles focuses on what

teachers need to do to achieve the learning objectives mentioned in the curriculum (Tamrabet, 2016). These are the main principles that every teacher must be aware of them: to be a better communicator (Curriculum of English for Middle School Education, May 2015)

1.3.1. The English Language

The English language has gained a prominent place in almost all communities. For educational needs, it is seen to have the following features:

1. English Facilitates Two-way Communication with the World

English is the medium of communication that enables learners to connect with the world since English has become the global lingua franca or the common language and it is used by millions of people around the world (Graddol, 2006). For this purpose, the learner must learn English to introduce himself and his culture to the outside world.

2. Communicative Competence is the Aim of Language Learning

Communicative competence in English involves using receptive skills (reading and listening) and productive skills (speaking and writing) with the ability to use vocabulary and grammar appropriately without neglecting language strategies that help to clarify meaning. Language is always contextual, meaningful, and purposeful. Thus, context, meaning, and purpose need to be created in the classroom. (Bachman, 1990;Canal & Swain, 1980; Celce-Murcia, Dorney &Thurell,1995).

1.3.2. Learners and Learning

The learner is the center of the teaching-learning process. When the learner attains the underlined educational goals, we can assume that learning has reached its goals. Successful learning depends on the following criteria:

1. Successful Learning Depends on Supported and Purposeful

Development Learners benefit need to get involved in the learning process, and when saying process we mean the steps to reach the target. Each activity is built on previous

materials so that knowledge and skills build logically and gradually the target activity. For example, learners are required to write an email as a communicative task, they need first to pass through a set of lessons such as the present simple; greeting vocabulary expressing likes and dislikes, and so on, achieving the targeted task.

2. Active Learners are Successful Learners

Learners learn more when they are motivated as if the topics meet their interests and they are engaged in their learning. They have to interact with others and to relate their learning to their real-life situations and activate their imagination. This way, learners will practice the language outside the class such as interacting with people via social media using English.

3. Meaningful Activities and Tasks Support and Encourage Learning

Classroom activities must be related to their social lives that enable them to construct ideas and meaning in and out of class. It is hard to get the meaning of something that is not connected to our surrounding environment and cope with the life we live. Therefore, learners can express themselves and add what they already know and enrich the course only if it is related to a fact they live.

4. Learning is an Active, Evolving Process

Making mistakes and learning from them are the most important aims of the learning process that the learner must be aware of. The objective is to push the learner to keep performing even if he makes mistakes without neglecting the awareness of correcting them in the right and relevant way in order not to create this fear of making mistakes.

5. Assessment is an Ongoing Part of Learning

Assessment must be continuous along with the learning. There are various ways to assess learners and involve them as well. They have to be aware of how they are assessed and the way it is done so that they can improve themselves without necessarily relying on the

teacher; it is what experts call self-assessment. To illustrate, learners can be informed of the criteria and indicators of assessment to evaluate their work on their own. By assessing learners' abilities, they will be motivated to improve their skills.

1.3.3. Teachers and Teaching

Teachers affect the learning process in several ways. To foster learning, teachers should consider the following characteristics:

1. Teachers are Facilitators of Learning

Teachers are more like monitors, guides, and facilitators to support learners to learn and making them feel as if they are the ones who make the lesson and not the teacher. Structuring instructions and tasks that meet the learners' interests and needs and assisting learners in participating in their learning in a learner-centered teaching environment are the roles of the teacher.

2. Teachers Foster a Supportive Learning Environment and Effective Classroom Management

Classroom management is one of the golden roles of the teacher to help the learner learn in better conditions and control the class ensuring that classroom lessons run smoothly despite disruptive behavior by students.

3. Teacher Competencies that Support the Guiding Principles for Teaching English in Algeria

The teacher must have these competencies so that the learning process can happen effectively: a. the educator uses and plans tasks that permit learners to practice and develop real-life communication skills for reading, writing, speaking, and listening (e.g. talking with classmates, writing about an experience, reading an email, listening to a phone message). b. The educator arranges lessons that have communicative objectives and work hard to meet them. c. The instructor shows learners how to utilize language strategies to help in their

learning and communication. d. The educator arranges lessons that are interconnected and cooperate as a series to work toward short term goals and long term competencies. e. The teacher supplements and adapts the textbook to arrange tasks identified with learners' preferences, prior knowledge, and experience. f. The educator provides a balance of activities that focus in some cases on accuracy and sometimes on fluency. (Tamrabet, 2016)

1.3.4. The New Textbook

One of the radical changes is the change within the EFL textbook. It includes some new lessons and rubrics which are organized in five sequences and interrelated. Each sequence includes seven lessons mentioned in the teachers' guide:

- **I Listen and Do:** This section exposes the learners to the target language. Learners are very active. They identify and use the target language integrating interactive competence, interpretive competence, and productive competence. Listening lessons are designed to meet specific learning objectives, such as SWBAT use language orally to interact with others to create social relations and express needs. While listening, learners are exposed to English sounds in context. The teacher can use different techniques to introduce the lesson, for example, situations, synonyms, gestures, realia, definitions, translation, antonyms, drawing pictures, word family, miming and guessing/predicting. In addition to that, it paves the way for pronunciation lessons.
- **I pronounce:** Pronunciation lessons are included within a meaningful context that fits the learners‟ age and level. Pictures are highly integrated with the pronunciation activity because of their ability to foster learners‟ imagination and motivation. Teachers must focus on the relationship between sounds and spelling and sounds that may not exist in Arabic, Tamazight, and/or in French. The relationship between sound and spelling may be difficult for absolute beginners

- **My Grammar Tools:** Grammar in the textbook is taught implicitly and learners have to deduce the rules. The teacher follows the PIASP (Presentation, Isolation, Analysis, Stating the rule, and Practice) framework because it is considered to be the suitable framework that the learner passes through to deduce the rule and eventually have practice.
- **I Read and DO:** The reading passages vary in the learning process, for instance, a dialogue, a letter, an email, an ID, a poem, school regulations, a touristic leaflet, etc. We can identify three Reading techniques; skimming, scanning, and reading for gist:
    - *Skimming:* It is about global comprehension where the learner reads quickly to get a general idea of the text
    - *Scanning:* It is a selective reading to locate specific information
    - *Reading for gist:* It is reading to identify the important ideas of the text and it includes three phases and is taught with a PDP framework: Pre-reading, During-reading, and Post-reading.
- **I Learn to Integrate:** The learners in this section start to reinvest the previous knowledge, skills, and attitudes taught in the whole sequence. They work in groups to solve a problem.
- **I Think and Write:** It is an individual attempt to write following these stages: brainstorming, outlining, drafting, redrafting, editing, and publishing. The learner should also be able to assess his writing, and then with the help of his teacher and friends (peer assessment) following the grid of assessment that consists of criteria and indicators.
- **I Play and Enjoy:** This section provides some useful ideas and tasks that can be used in a TD session, such as, a song, a game, a puzzle, etc. (Tamrabet Lounis, 2016)

1.3.5. The New Lesson Plan

The lesson plan is claimed to be more organized and well-structured including two sections: the first section encompasses core values, cross-curricular competencies, materials, linguistic tools, learning objectives of the lesson, and domain. The second section includes time, framework, procedure, focus, learning objective, materials, and VAKT (Visual, Auditory, Kinesthetic, and Tactile) and M.I (Multiple Intelligences).

1. Core Values

Core values are presented in LAW OF ORIENTATION, 04-08 January 23rd, 2008 as follows:

- *National Identity*: He can speak about his name, nationality, language, religion, flag, national currency, etc.
- *National Conscience:* He can speak about historic and religious events and be proud of them.
- *Citizenship:* He will be responsible, honest, and respectful.
- *Openness to the World:* He can learn about others' cultures and markers of identity.

2. Cross-curricular Competencies

The cross-curricular competencies involve the development of the child intellectually, personally, and socially. In a world of growing challenges and diversity, schools must prepare students for their real lives as members of society. The cross-curricular competencies are the set of intellectual, methodological, communicative, personal, and social skills that enable the learners to look at things from different perspectives, to see the connection between different subjects' programs, and to make relationships to their learning and with their own experiences and real-life situations, as members of their families, communities, and society.

3. Learning Styles VAKT

Learning styles are distinctive techniques of learning or seeing new data. There are four prevalent learning styles: Visual, Auditory, Kinesthetic, and tactile.

- *Visual Learners:* Visual learners learn through seeing, so they can be motivated by tools like diagrams, charts, pictures, and symbols. For example, instead of writing out "male" each time, they can use the standard symbol ♂ ,or instead of writing "True" or "False", they can insert a smiley face.
- *Auditory Learners:* Auditory learners learn through listening. They can be motivated by reading, engaging in group discussions about course concepts and topics. For example, they can discuss again what they have done in class by talking to each other.
- *Kinesthetic Learners:* Kinesthetic Learners learn through doing. This type of learner needs to see movements, gestures, and body language to get meaning This is perhaps the most challenging learning style, for this reason, labs and tutorials become even more essential for these learners.
- *Tactile Learners:* Tactile learners learn through touching. They can learn and remember things using their hands and concrete learning materials.

2.5. English Language and Project-based Learning

Since the mid-1970s, English language teaching has come to espouse features and principles of learner-centered teaching, collaborative–learning, and learning through tasks, English language teachers have investigated and used the tradition of project work for several reasons, for instance, learners' use of language as they negotiate, analyze, and plan information (Hedge,2000)In 1990, Fried-booth proposed that there is no clear cut understanding of how people learn and most primarily " how the language of the classroom is

absorbed and later put to use outside the classroom" (1990, p.11)Different theories since then come to light to explain the aforementioned issue as it appears in Table 14.

Table 14

PBL and Learning Theories

Theories	***Description***
Social constructivist	that learning a language is a social, dynamic process and learners learn when they interact with one another (Dale, Tanner, 2012)
Input theories and output theories of L2 acquisition	Input should be meaningful, relevant, realistic, and multimodal Output: emphasis on creativity and mistake-making in producing language,
Cognitive	learning a language comprises of making personal meaning from new material and combining it with what is already known

Note. Adapted from: Kalabzová (2015,p.11)

Project-based learning which stimulates learners' cognitive ability is mainly linked with cognitive learning theories that emphasize higher-order thinking skills and performance-based assessment.(Schunk,2011)Moreover, cognitive learning theories assert that instruction should be meaningful to the learner, and the information should be presented in an authentic, collaborative real-world context so that students can determine their own learning goals and expectations.

In this setting, PBL is known by different terms used interchangeably such as project work, project method, project approach, project-oriented approach, or project-based instruction. For the past 20years ago, PBL is being used to allow learners "to interact and communicate with each other and with native speakers of the target language in authentic context" (Beckett, 2002, p. 54)He furthered by arguing that project-based learning is potential for teaching and learning a functional language. Henceforth, teachers must show their

learners the importance of PBL and enable them to see the possibility of learning a language through this method.

2.6. The Need for Using the Project-based Learning in the EFL Setting

PBL has been regarded as an alternative to the teacher-based paradigm as it gives more space for active learning via cooperation and inquiry-based techniques (Kuhn &Please, 2008; Zion & Sadah, 2007) In other words, it represents a real-life application of the research (Dewey, 1983) In this sense, this paradigm brought a shift to the learners' role from being "learning by listening to learning by doing" (Stauffacher et al., 2006)

Across the variant works and comprehensive reviews of the research on PBL (Barron et al., 1998; Beckett & Miller, 2006; Blumenfeld et al., 1991,Blumenfeld, Marx, Bass, Fredericks, &Soloway, 1994;Hmelo-Silver, 2004; Stoller, 2006; Thomas, 2000) it was established that project-based learning enhances the quality of student learning as well as their engagement level. Moreover, advocates of this approach (Thomas,2000:Bell, 2010) suggest that PBL is advantageous and an effective educational approach to meet the requirements of contemporary society more precisely the 21st- century demands. Henceforth, the required skills include personal and social responsibility, planning, critical thinking, reasoning, and creativity; strong communication skills, both for interpersonal and presentation needs; cross-cultural understanding, visualizing and decision-making, knowing how and when to use technology and choosing the most appropriate tool for the task.

In the EFL context, 21st- century students need not only good English language skills, but rather other skills to cope with the challenges represented by the rapid technological changes. The old school model that is based on the de-contextual reciting of facts is no longer effective to prepare students to overcome barriers in today's world. Alternatively, students should be equipped with fundamental skills (Reading and writing) and 21st-century skills (teamwork, problem-solving, research gathering, and time management, information

synthesizing, and utilizing high technological tools). (Edutopia, 2015)In this scope, Marincovich (2000) offers a pertinent perspective on the distinction between project-based learning and traditional instruction methods when he admits that "it is easy to overlook the many ways in which PBL goes against the grain of faculty and postsecondary educational life. While faculty are devoted to their discipline, eager to dispense knowledge, and content-oriented, PBL asks them to be student-centered, guiding rather than directive, and process-oriented (p. 3).the differences between PBL and the traditional approach are summarized below.

Table 15

Traditional instruction vs. PBL

Education Aspect	**Traditional Learning**	**Project-based Learning**
Instruction	Teacher-centered in which the teacher is the only authority	a student-centered approach in which students work cooperatively with the teacher to facilitate learning
Curriculum	Content Knowledge about facts Learn "Building-block" in isolation	Comprehension Understand concepts and principles Developing skills for complex problem solving
	Learners receive knowledge	Learners construct knowledge
Scope and Stage	Follow the curriculum strictly From block to block or unit to unit Centered, based on discipline	Larger units are formed complex issues and problems Diverged, interdisciplinary
Role of lectures	Lecturing	Provide a source of learning materials and participant in the learning
	The master	As partner
Assessment	Score from tests	Real achievement

	Comparing one another	Standard performance and development from time to time
	Reproduction of information	Demonstration and understanding
	Traditional assessment	Performance-based assessment
Learning Materials	Decontextualized text, lecturing, presentation	Contextualizes authentic sources, textbooks, interview, documents, etc
	focusing on memorization	focusing on understanding
	Activities and worksheet developed by the teacher	Data and materials developed by students
Technology Used	Supporting,peripheral	Main integral
	Teacher centered	Student-centered
	For extensive teachers' presentation	For extensive students' presentation or strengthen learning
Classroom Context	Students work by themselves	Students work in groups
	Competitive	Collaborative
	Students get information from teachers	Students construct, contribute, and synthesize information
Role of Learners	Students do teachers' command	Students do independent learning
	Remember and memorize information	Analyst, integrator, and presenter of ideas
	Students accept and finish the assignment in form of short reports	Students decide their tasks and work independently
Short-term objectives	Knowledge of facts,terms, and content	Understanding and application of complex ideas and process
Long-term	Width of knowledge(surface learning)	Depth of knowledge(deep learning)

objectives	Graduate mastering knowledge and successful in completing standard tests	Graduate with attitude and skills, who can develop themselves independently and perform lifelong learning

Note. Adapted from: Thomas et al. (2004), and Ziengenfuss (2006)

Education is defined by Dewey (1916) as "reorganization and reconstruction of experience which adds to the meaning of experience, and which increases the ability to direct the course of subsequent experience" (p. 76).In this light, learning can be effective if it stems from experience; thus, the primary difference between learning through PBL and learning through traditional teaching methods is that the first one is student-centered which implements collaborative learning activities to analyze, criticize, evaluate, and generate a piece of new knowledge in a non-linear way while the second, is teacher-centered depends on linear ways to explain de-contextualized knowledge that would be assessed through traditional assessment.

2.6.1. The Project-based Learning Framework in the English Classroom

The Project-based approach has occupied a significant place in English Language classes as a result of teachers' awakening and realizing that the previously used approaches are no more engaging and motivating.

> 'Project-Based Learning (PBL), however, is much more than producing wall displays and completing projects set by the teacher. The teacher's role should be to instigate the project, but then to let the learners navigate and steer it. The driving force should come from the students, as they find a way to tackle a real-life problem or conduct some inquiry research into areas that have an impact on their lives. PBL is about the process rather than the final product (which could still be a wall display, if appropriate), and developing the skill-sets such as critical thinking, communication, collaboration and creativity which are needed for life and work in the modern world.'(da Rosa,2018)

PBL encourages students to expand cross-curriculum knowledge through challenging experiences, developing technological skills, contextualizing communication skills, all by the mean of authentic and meaningful projects.

Here are some points to consider when creating an effective PBL program according to Buck Institute for Education (2018):

- Identify a ***challenging problem or a question*** that must be researched (not just Googled!) to expand knowledge and understanding of the area.
- Feature ***real-world contexts*** that are both stimulating and interesting, and which will ultimately have an impact on the lives of the learners.
- Engage the learner in associated cognitive processing as they sustain a ***level of inquiry.***
- ***Collaborating and communicating*** within the classroom community and beyond to set themselves tasks, delegate, and carry out research.
- Develop appropriate ***language awareness and language skills.***
- ***Self-reflection and evaluation, questioning*** what has been achieved and how it could move forward ,and finally
- Produce a *public product* to present, display, or exhibit to interested parties beyond the classroom.

The PBL Framework is presented in a circle, more interest and motivation is generated during the presentation stage, stimulating more areas of inquiry, and leaving questions that still need exploring. The presentation phase stimulates motivation and negotiation of ideas within the same group of learners and between groups.

Furthermore, students should be the center of the framework reflecting their needs and preferences, leading activities, expressing their ideas and points of view, rather than the teacher, who is supposed to manage and guide the entire process. Besides; teachers

coordinate with their students at every stage to check if any barriers would hinder students from moving to the next stages in the circle.

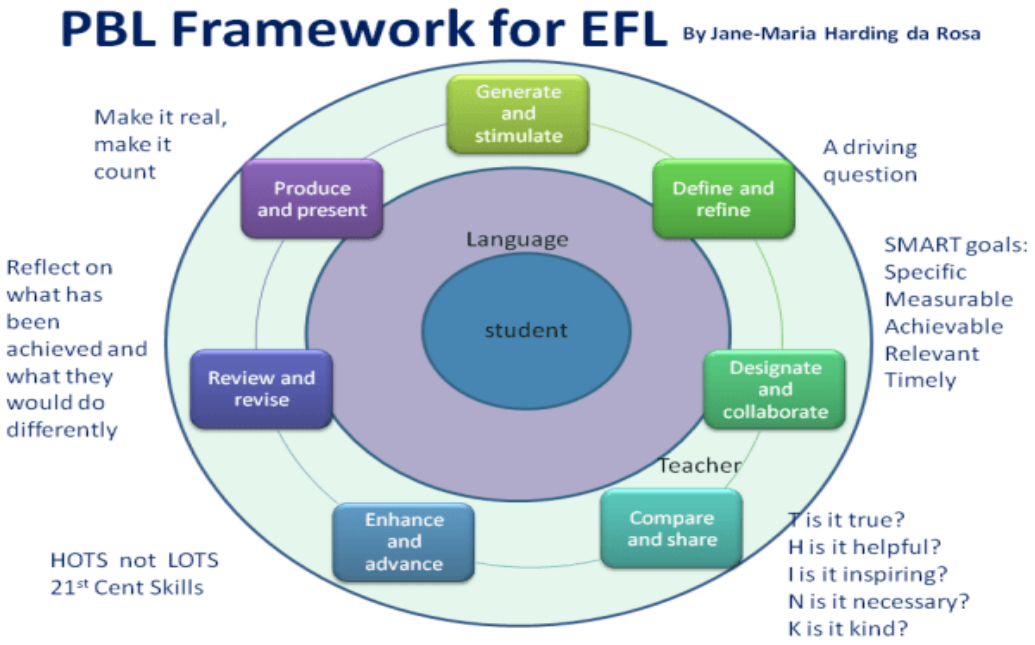


Figure 16. PBL Framework in EFL Setting

Source. Da Rosa (2018,NP)

Generate and stimulate: This initially comes from the teacher more specifically when dealing with young and teen learners. It entails that teachers have overwhelming knowledge of their students in terms of motivation, preferences, interests, learning styles, learning strategies, and how to attract and stimulate them. It is the teacher's job to build curiosity and passion into the project, adding and stirring when necessary. As ideas are generated, areas that need further exploration should become exposed.

Define and refine: From this, teachers need to define a driving question – one where the answer cannot be simply 'Googled'. Each class or group within a class should have a different driving question that is specific to their interests and needs. Teachers may start with defining quite a big question that stimulates learners and generates an inner force that will push them to explore different angles for reaching a reasonable answer.

Designate and Collaborate: At this level, teachers set goals using SMART principles (**S**pecific, Measurable, Achievable, **Relevant**, and **T**imely) and assign tasks and activities to the learners who would like more chances. Moreover what characterizes this level is collaboration. Learners need to feel secure via collaboration with the teacher in terms of doing the work, displaying goals, and assessing every individual in the groups.

Compare and Share: It is essential that there is a continuum of input and feedback, and this should come from peers as well as the teacher. Getting groups to compare what they are doing and sharing their ideas will only make all of the projects better. Students get a better idea of their performance by seeing what others have done and comparing themselves to each other. Giving and taking critical feedback is also an important part of development. It starts within the group having peers giving feedback then it moves to the teacher who provides each group with constructive feedback and finally getting the whole class assessing and commenting on each other work.

Enhance and Advance: basically, learners begin through recalling and using previous knowledge and skills and try to widen them throughout research and investigation within the context of their interests. At this stage, learners need to be selective in terms of what language, what knowledge, and which skill to employ. According to Patsy Lightbown, a lot of languages are acquired through meaningful language usage. However, many features of language cannot be acquired, so it is the teachers' job to provide learners with the language they need to complete a given task. Moreover, PBL allows teachers to adopt goals for learners at different proficiency levels, using the content the learners have created as a backdrop provides meaningful language. The focus should also be on developing Higher Order Thinking Skills (HOTS) such as reasoning, inquiry and discussion, creative thinking, self, and peer evaluation, and hypothesizing. Compare these skills to Lower Order Thinking Skills (LOTS) such as remembering information, ordering information, defining objects, and

checking to understand. Other skills that need to be enhanced are 21st-Century skills. These include Content Knowledge and 21st-Century Themes, Learning and Innovation Skills, Information, Media and Technology Skills, and Life and Career Skills.

Review and Revise: when completing the project, students should have a look at the whole project to ensure its validity and to learn how to look objectively and critically at their work. Similar to the Compare and Share stage in terms of questioning their work and getting feedback but this time it is done individually and not shared. This would rather help to consolidate learning and assess what learning has taken place.

Produce and present: This is the final product and it should be presented to more than just class peers. Presentation is not limited to a poster, display, or a PPT presentation – with the advancement of technology there are so many other ways to publish the work that your students have done, from info graphics to using Minecraft! Some of the other suggestions that came out through the webinar include leaflets, videos, photo stories, podcasts, school magazines, comics, e-books, school websites, blogs, Prezi presentations, puzzles, links with QR codes, video tutorials, Padlet, and using Google Forms and documents.

In a net shell, teachers should provide coherent and constructive input that will be exploited by the learners at every stage of the framework and this can be ensured through careful planning of the lessons.

2.7. The Role of the Teacher and the Students in PBL

The role of the teacher in project-based learning has been demonstrated in different ways such as a coach, a conductor, and the guide on the side. Even in the light of PBL, the teacher remains a content expert, a mentor, a motivator, and an assessor of learning.

> 'Teachers make instructional decisions based on their pedagogical content knowledge about how to best help students understand new ideas. They engage students in scaffolding conversations and monitor how the project is going. They devise new resources and provide coaching. They build a classroom culture that supports PBL. They act

> as instructional designers and project managers' (Larmer, Mergendoller & Boss,2015, P.46)

What is more is that the instructor acts also as a facilitator in PBL, however, this does not mean that they relinquish control of the classroom but rather means that they develop a positive healthy learning atmosphere of shared responsibility. Furthermore, teachers offer resources that would assist learners with the content. (Haines,1989).

Project-Based Learning Handbook by Markham (2003) defines the teacher's role as follows:

> 'At the heart of successful PBL is the teacher's ability to support and direct students. This requires instructional, organizational, interpersonal, and communication skills, as well as the ability to define the agenda for the class and push a project through to a successful conclusion. It also includes being sensitive to the fact that students finish work at different rates, with different abilities, aptitudes, and learning styles.'(P.3)

To sum up, PBL requires the teacher to adopt a new, enthusiastic attitude, to acquire a wide range of skills, and to leave the traditional supreme position. To put it differently, the teacher's role moved from "Leadership" to "Partnership".

When it comes to the students' role in PBL Hattie (2012) asserts that:

> 'Students' role is not simply to do tasks decided by teachers but to actively manage and understand their learning gains. This includes evaluating their own progress, being more responsible for their learning, and being involved with peers in learning together about gains in learning.'(p.88)

There is no doubt that the role of students in PBL is inextricably connected with that of the teacher who helps learners to gain knowledge and skills they need for life-long success. From the very beginning, students are engaged in inquiry experience through questioning, and then they cooperate with the teacher to come up with driving questions about the topic on hand. Together they plan the way of answering those questions and indulge themselves in research. What comes next is that students create something and improve it alongside the teacher to present it at last.

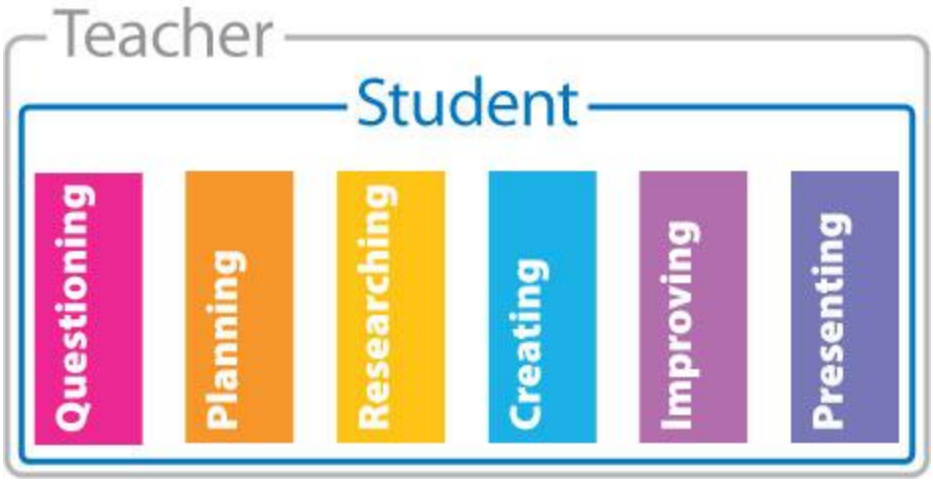


Figure 17. Model of teacher-student roles in PBL

Source. Thoughtful learning (2019)

Indrianti and Istanto (2013) propose that "Project-based learning can also promote collaborative learning among students. Project work allows instructors to distance themselves from teacher-dominated instruction and move towards creating a student community of inquiry involving authentic communication, cooperative learning, collaboration, and problem-solving" (p.279).However, in the traditional method, the teacher is the one who takes the lead through questioning, planning, and researching while giving students small space through creating, improving, and presenting.

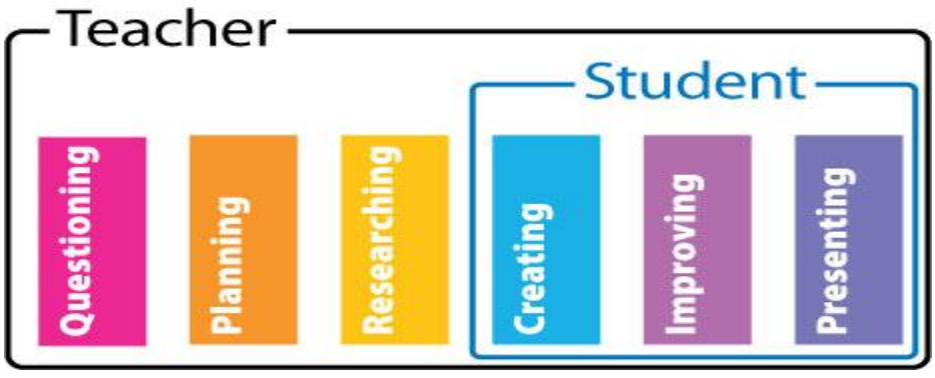


Figure 18. Teacher/Student Roles in Traditional Approach

Source. Thoughtful learning (2019)

2.8. The project-based Teaching and Learning Model

Project-based learning is a form of experiential learning through which students are positively engaged in relevant learning as they ask questions, explore problems, and find solutions. PBL is viewed as "the strategic, active engagement of students in opportunities to learn through doing, and reflection on those activities, which empowers them to apply their theoretical knowledge to practical endeavors in a multitude of settings inside and outside of the classroom." (Simon Fraser University) Additionally, PBL empowers students with the necessary skills to be citizens of the 21st-century. Teachers or mentors facilitate rather than direct. Project-Based Learning is a great instructional model for the 21st-century classroom because it gives students a greater degree of choice in what topics they study. PBL classrooms put the focus of instruction on broad essential questions rather than specific content objectives. For instance, students may be exploring the essential question about the required information and skills to solve a given problem or what might they do in a particular situation. In a PBL classroom, students would have a degree of choice and voice in how they want to address this question. That choice may be in the type of project they produce and voice is their discussions and presentation of the project. (Clancy, 2013)

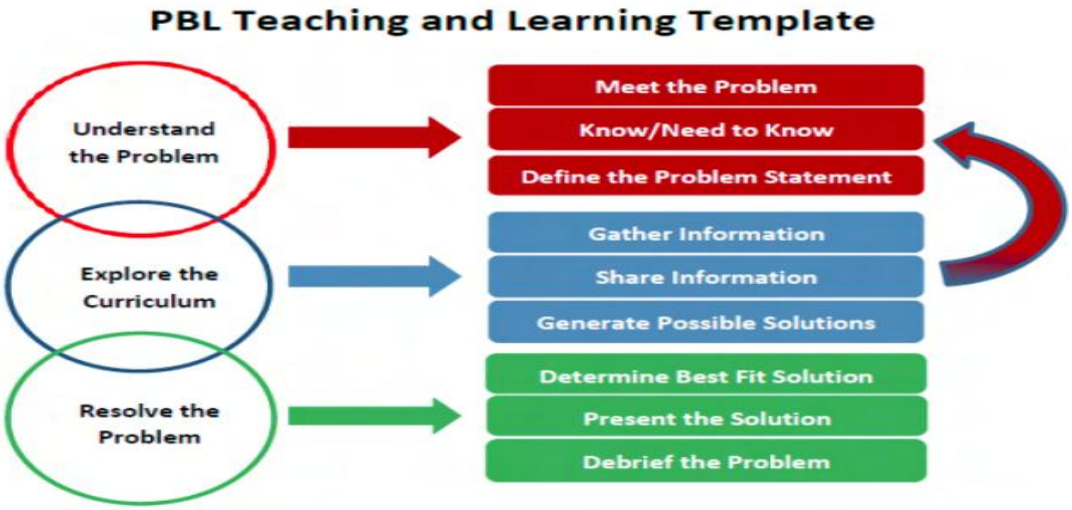


Figure 19. PBL in the Teaching-learning Process

Source. Adapted from: the Board of Regents of the University of Wisconsin System (2013)

Curtis (2013) proposes a model comparing the traditional unit plan that ends with a project with a PBL unit that uses the process of a project to guide students in learning a deeper and more meaningful context. In a PBL unit, the teacher is the center of the teaching-learning process, unlike the traditional approach where the project is the end product.

In short, the distinction between traditional unit and PBL unit resembles that of doing projects and Project-based learning illustrated in table 15.

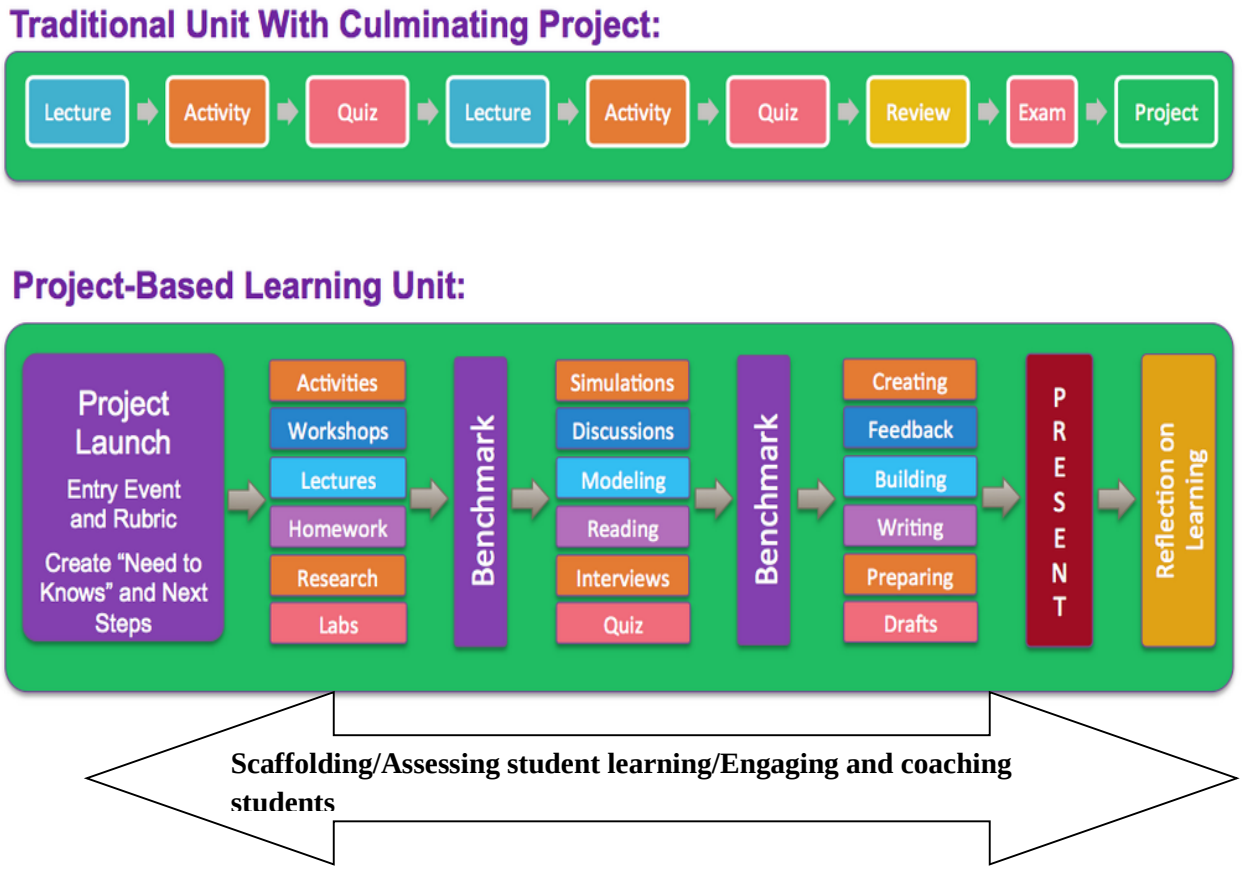


Figure 20. Traditional Unit Plan vs. PBL Unit Plan

Source. Curtis (2013)/ Retrieved from: http://www .bobpearlman .org / Best Practices/PBL.htm

Conclusion

Throughout this chapter, the researcher sought to provide an in-depth and up-dated literature about the project-based approach. The review of literature reveals that PBL has been evolved and immersed as a teaching and a learning approach that offers more opportunities for students to communicate using the English language. It differs from the traditional approach in the sense that the latter considers the project as an end-product to the teaching-learning process conversely to PBL where projects are the teaching-learning process itself. To maximize the effectiveness of PBL, teachers, and learners should cooperate and act as partners and not as sage on the stage

Chapter Three: The Relationship between the Academic Performance and the Project-based Learning

Introduction

A large area of research has been carried out through several years to determine what are the possible factors influencing students' academic performance namely ;(Al-Rofo, 2010; Applegate & Daly, 2006; Hedjazi & Omidi, 2008; Naser & Peel, 1998)In this chapter, we will discuss the relationship between Project-based approach and performance, how PBL is assessed, and the benefits and the drawbacks of implementing PBL in EFL classroom.

3.1. The Project-based Learning and Academic Performance

In this rapidly changing world, schools are evaluated based on the students' performance. Hence, teachers need to search for techniques to increase performance quality. While working in a digital technology-oriented school, the teacher focus has been to produce ways to motivate students to learn, research in the literature review revealed that enthusiasm is not sufficient to incorporate PBL. Teachers need to develop aspects more than enthusiasm for learning; they need to develop lessons that challenge and engage students for lifelong learning.

Project-based learning assist individuals to develop problem-solving skills, interpersonal skills, and autonomy. (Melton, 2013)In a specific content area, PBL is more effective than traditional methods for teaching math, economics, languages, science, and other disciplines(Beckett & Miller,2006; Finkelstein et al.,2010; Greier et al.,2008; Mergendoller, Maxwell &Bellisimo,2006)Moreover, a plethora of research show that academic performance is promoted when students construct their knowledge via contextual learning.(Barron et al. 1998; Hmelo-Silver, 2004; Hmelo-Silver & DeSimone, 2013; Kuhn, 2015; Parker et al., 2011; Wirkala & Kuhn, 2011; Zohar & Ben David, 2008)

Various studies demonstrate that students in PBL classrooms get higher scores than those in traditional classes. PBL improves students' academic achievement because of social interaction between students, as they collaborate, share their best ideas, and learn from their

peers. Another reason is that students get more opportunities to learn by doing and create their knowledge.(DiEnno and Hilton, 2005)

Moreover, PBL is considered by many researchers as the best instructional practice and the most effective approach for emphasizing problem-solving skills in a world in which knowledge itself is outdated by the time it is printed in textbooks(Barell,2010; Belland, French,& Ertmer,2009; Larmer&Mergendoller,2010; Partnership for 21st Century Skills,2009)In this respect, the curriculum in PBL is built around problems that stress cognitive skills and knowledge, the environment is student-centered where students actively work in groups and the teacher serves as a facilitator, the learning outcome should focus on the development of skills, motivation, and life-long learning. (Drake &Long, 2009)

3.2. The Implementation of PBL in the EFL Classroom

PBL is commonly seen as the use of authentic, real-world projects, based on the highly motivating and engaging question, task, or problem, to teach students academic content in the context of working collaboratively to resolve a given problem or situation. (Barell ,2007; Baron,2011;Grant,2002)

3.2.1. Components of PBL Assignment

Almost in every curriculum, teachers are supposed to fulfill a wide variety of projects that differ from one subject to another; however, not all projects done in class are examples of Project-based learning. (Grant,2002; Larmer &Mergendoller, 2010) Students must perceive PBL as personally meaningful to be fully engaged in the process of problem-solving. The underlying premises for implementing PBL are suggested by Blumenfeld et al (1994);

> 'Project-based learning is focused on teaching by engaging students in investigation. Within this framework, students pursue solutions to nontrivial problems by asking and refining questions, debating ideas, making predictions, designing plans and/or experiments, collecting

> and analyzing data, drawing conclusions, communicating their ideas and findings to others, asking new questions, and creating artifacts (e.g., a model, a report, a videotape, or a computer program).' (P.3)

Nearly all descriptions of PBL propose that teachers provide their students with challenging complex tasks that are authentic and resemble real-life problems. These tasks according to Bender (2012) include the following:

- Brainstorming possible solutions
- Identifying a specific series of topics to help collect information,
- Dividing up responsibilities for information gathering,
- Developing a timeline for information gathering
- Searching for information on the problem or question,
- Synthesizing the data collected,
- Collaborative decision making on how to move forward from the point,
- Determination of what additional information might be essential, and
- Developing a product, or multiple products or artifacts, that allows students to communicate the results of their work. (P.21)

The project-learning process includes the following steps:

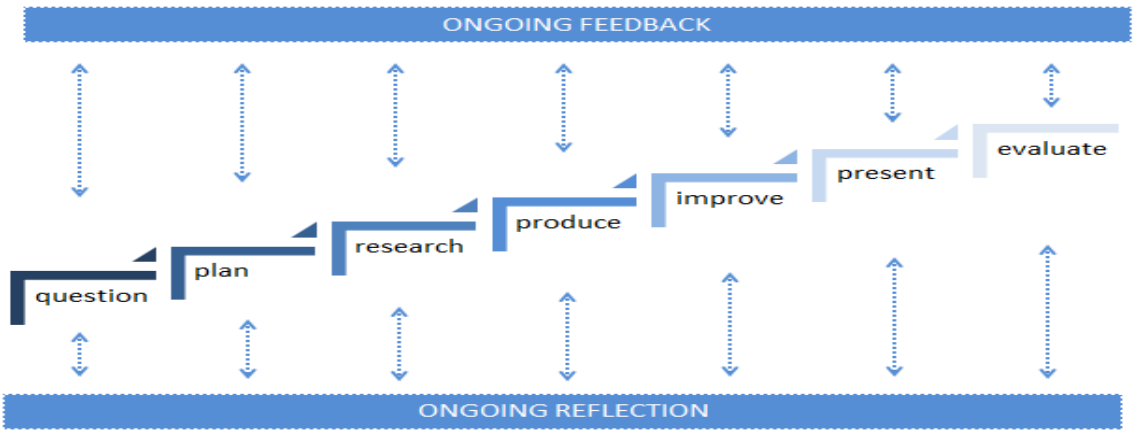


Figure 21. The Project-based learning Process

Source. Retrieved from: www.ToolkitPBL.com

3.2.2. Phases in implementing the Project-based Learning

According to Katz and Chard (2013), PBL entails three main phases: a) the beginning, b) the middle, and c) the end. During *the initial phase*, the teacher selects a topic to be tackled, brainstorm experiences, knowledge, and ideas. They do also hold a classroom discussion with the students to figure out what experiences they have had and what they already know. (Blumenfeld, 2000; Moursund, 1999)In their turn, students reflect their understanding of the topic and the concepts by explaining them through investigation and discussion. In the *second phase*, it is time for constructing the project through field investigation using different means so that to gather the required research materials. Each student must have the opportunity and the space to show what s/he has learned. In the *final phase,* the learners present their product after a fruitful process of seeking and getting information while the teacher assesses the presented project and the gained skills.

3.3. Assessment in Project-Based Approach

In recent years, assessment received a great deal of interest as it helps teachers to develop a deeper relationship with their students who receive feedback constantly from the teacher to promote their learning. (Moursund, 1999)In PBL, assessment is not done at random; it is rather done for a pre-established purpose. This will shape the evaluative information that will need to be gathered and the way it will be used in the assessment. Project-based learning lesson assessment tends to require more careful planning before the lesson implementation. Moursund (1999) suggests that there are three common phases of the evaluation of project-based learning:

- *Formative evaluation* designed to provide ongoing feedback.
- *A summative evaluation* carried out after the fulfillment of the project.
- *Authentic Assessment* used to reflect students' learning over time and not just students' performance on a piece of the project or a final exam.

In project-based learning, the assessment takes place in a context familiar to the student. Assessment standards are well known by students. Authentic Assessment helps to build real mastery of a subject by allowing students to revise their work and incorporate new understandings and constructive feedback. Assessment activities also require students to articulate and explain subject matter, their decisions, and their initiative to those doing the assessment (Mehl, 2000).

In project-based learning, teachers should assess the entire process of the project, not just the end product (Alexander &McKenzie, 1998)Besides, assessment should be based on the student's performance of realistic tasks (Flemming et al,2007) Furthermore, assessment in PBL guides the entire learning process. In doing so, teachers may use the following tools:

3.3.1.Rubrics

Rubrics are seen as the guidelines for a project. Warlick (2005) says that "In short it is a list of objectives, what the students will learn or learn to do as a result of completing the assignment. For each objective, a rubric will also list performance indicators, observable evidence that the students have gained the objective knowledge and or skills to varying degrees, each degree having an assigned number of points leading to a grade" (p.236)

In this respect, assessment rubrics list the adequate performance criteria to measure and evaluate student's understanding and success. (Stiggins, 1997) Moreover, rubrics guarantee authentic assessment as it allows learners to review the guidelines which might be considered as a ruler to measure their success and helps teachers to assess learning. (Goodrich,1997; Warlick,2005)

3.3.2. Portfolios and Eportfolios

Recently, there has been an emphasis on the use of Portfolios and ePortfolios to assess the student's engagement in project-based learning. Portfolio refers to collections of students' work samples. Teachers and students work together to decide which project they see as the

best representative of their learning and skills to be included in the portfolio which is usually assessed through rubrics.

On the other hand, ePortfolios are digital portfolios that are stored on computers. They may contain students' products either those constructed using the computer or scanned and stored digitally.

3.4. Advantages of the Project-based Learning

According to the literature, the project-based approach is claimed to improve academic results, develop a wide range of skills, increase students' motivation and enjoyment, and foster engagement beyond academia. (Harmer &Stokes,2014) In addition to that, Project-based learning prepares children for the workplace through exposition to a wide range of skills and competencies such as collaboration, project planning, decision making, and time management. Moreover, Collaborative learning allows students to bounce ideas off each other, voice their own opinions, and negotiate solutions and exploit all skills that will be necessary for the workplace (Blank &Harwell, 1997; Dickinson et al, 1998; Thomas, Michaelson, & Mergendoller, 2002). Bell (2010) defines PBL by citing some of its benefits:

> 'An innovative approach to learning that teaches a multitude of strategies critical for success in the twenty-first century. Students drive their own learning through inquiry, as well as work collaboratively to research and create projects that reflect their knowledge. From learning new, viable technology skills, to becoming proficient communicators and advanced problem solvers, students benefit from this approach to instruction'.(p.39)

Project-based learning increases the motivation of the students. Teachers often note an improvement in attendance, higher class participation, and a greater willingness to do homework (Bottoms &Webb, 1998; Moursund, Bielefeldt & Underwood, 1997). Students retain more knowledge and skills when they are engaged in stimulating projects. Project-based learning enhances the quality of learning and leads to higher-level cognitive development through the students' engagement with complex and novel problems (Reyes,

1998). Many teachers feel that project-based learning is an important and an effective part of their teaching repertoire.

A project-based learning lesson provides students with the opportunity to learn in an authentic, challenging, multidisciplinary environment, to learn how to design, carry out, and evaluate a project that requires sustained effort over a significant period, to learn to work with minimal external guidance, both individually and in groups, to gain in self-reliance and personal accountability (Moursund, 1999). As a result of these opportunities, many advantages of PBL emerge from a student's point of view. First, project-based learning provides a learner-centered approach and makes use of intrinsic motivation. Second, it encourages collaboration and cooperative learning. Third, it allows students to make incremental and continual improvements in their products, presentations, or performances. Fourth, it actively engages students in 'doing' things rather than in learning 'about' something. Fifth, it requires students to produce a product, presentation, or performance. Sixth, it challenges students with a focus on higher-order skills (Moursund, 1999).

Moursund (1999) reported the advantages of project-based learning from a teacher's point of view. Project-based learning has authentic content and purpose, uses authentic assessment, utilizes the teacher as a guide, has explicit educational goals, stems from constructivism, and aims to make the teacher a learner. Moreover, teachers report that project-based learning overcomes the separation between knowledge and thinking, helping students to both "know" and "do." It supports students in learning and practicing skills in problem-solving, communication, and self-management while encouraging the development of habits of the mind associated with lifelong learning, civic responsibility, and personal or career success. It integrates curriculum areas, thematic instruction, and community issues, assesses performance on content and skills using criteria similar to those in the work world, thus encouraging accountability, goal setting, and improved performance. It creates positive

communication and collaborative relationships among diverse groups of students, meets the needs of learners with varying skill levels and learning styles, and engages and motivates bored or indifferent students.

3.5. Challenges in Implementing the Project-based Learning

Teachers and students face several challenges and obstacles when they indulge themselves in PBL experiences.

From the part of the students, the impediments are resumed as follows:

- Generating meaningful questions,
- Managing complexity and time,
- Transforming data, and
- Developing a logical rationale to support decisions. (Marx et al, 1997)

In addition to this, Westwood (2008) suggests the following difficulties which students may meet in PBL experience:

- Some students lack adequate skills in reaching and collecting information.
- Some students may give the impression of productive involvement in the work but maybe learning and contributing very little
- Where projects involve the production of posters, models, charts, recordings, photographs, and written reports on display, there is a danger that these are actually "window dressing" that hides a fairly shallow investigation and a weak understanding of the topic.
- When different aspects of a topic are given to different group members to research, there is a danger that individual members never really gain an overall understanding of the topic. (P. 34-35)

From the part of the teacher, Marx et al. (1997) summarize the difficulties teachers encounter as follows:

- ***Topic:*** the selection of an effective topic can be troublesome since it has to meet a set of requirements such as students' level, interests, instructional language, and curriculum. (Katz, 1994)
- ***Time:*** PBL investigative projects as such require more planning time and classroom time than typical lessons on both a long-term and daily basis.
- ***Classroom Management:*** Teachers must balance student autonomy through imposing order.
- ***Subject Depth:*** Teachers need to focus on a driving question and link concepts and diverse activities, helping the students to construct their knowledge rather than didactically teach single subjects.
- ***Assessment:*** PBL requires alternative forms of evaluating the student's knowledge.

Conclusion

The project-based approach, like any other approach, has ups and downs. Regarding its importance in improving the academic performance of the learners, it can be said that it stems from the learner to the learner himself. Additionally, project-based learning provides teachers and learners with a wide range of benefits which supports the implementation of project-based learning in schools to engage students, cut absenteeism, boost cooperative learning skills, and improve academic performance.

PBL also redirects the path of the learning process from following orders to carrying out self-directed learning activities; from memorizing and repeating to discovering, integrating, and presenting; from listening and reacting to communicating and taking responsibility; from a knowledge of facts, terms, and content to understanding processes; from theory to the application of theory; from being teacher dependent to being empowered Therefore, there were shreds of evidence that the students who were taught by project-based

learning had more positive attitudes towards English lessons and better academic performance than those who were taught by the instruction based on student textbooks.

Chapter Four: Research Methodology Design

Introduction

Research is getting momentum moving from the periphery to the focus of life as from the beginning of time man is raising questions and seeking answers. Plenty of definitions have been provided to explain the nature of research. Some consider it as the movement from the unknown to the known as maintained by Kohari (2004) "we wonder and our inquisitiveness makes us probe and attain a full and fuller understanding of the unknown. This inquisitiveness is the mother of all knowledge and the method, which man employs for obtaining the knowledge of whatever the unknown, can be termed as research"(p.1)Robinson posit that "Research is the manipulation of things concepts or symbols to generalize to extend, correct or verify knowledge, whether that knowledge aids in the practice of an art."(Cited in Singh, 2006, p.3)Research is characterized by being logical, objective, and rigorous. It aims at redefining and refining the stock of knowledge as "The Researches should contribute to the theory and practice of study studies simultaneously. It should have the image of a helpful mechanism which can be used by researcher/research scholar in one way or the other, for the improvement of the process."(Sigh, 2004, p.5)Research is also an academic activity that comprises of "defining and redefining problems, formulating hypothesis or suggested solutions; collecting, organizing and evaluating data; making deductions and reaching conclusions; and at last, carefully testing the conclusions to determine whether they fit the formulating hypothesis"(Woody as cited in Kothari,2004,p.1)

There exist various kinds of research that are classified on different bases. Singh (2004) proposes four classifications of the research: *a) based on objectives* consists of fundamental and action research,*b)based on approach* can be either longitudinal or cross-sectional,*c) based on precision* comprising of experimental and non-experimental research, and *d) based on the nature of the findings* wherein research can be explanatory or descriptive. Inquiry proliferates from doubt and engenders progress and innovation besides it insulates

scientific and inductive thinking that would promote logical reasoning. This chapter theologizes the research methodology and design, data collection procedures, and discussion of the findings. It thoroughly highlights the four "building blocks" of research; epistemology, ontology, methodology, and methods.(Waring,2012).It starts with an exploration of the nature of educational research, providing various ways in which the researcher might see the world, then links those assumptions with how the researcher perceives knowledge and what procedures to be followed to select and use suitable techniques for gathering and analyzing data.

4. The Research Methodology

Fundamentally, research is "disciplined, balanced inquiry, conducted in a critical spirit"(Waring, 2012,p15) Defining educational research is still debatable among scholars, yet a definition given by Cohen et al(2007) seems to be of great sense as he defines it as "the systematic and scholarly application of a science of behavior to the problems of teaching and learning"(p.1)Looping this conceptualization of educational research to the current work, the researcher tries to investigate the problem of "low academic performance" through a systematic way. At the very onset, this study is framed by a series of interrelated assumptions

- What are the form and the nature of the social world? *ontology*
- How can what is assumed to exist be known? *epistemology*
- What procedure or logic should be followed? *methodology*
- What techniques of data collection should be used? *methods*

Research is intrinsically associated with the choices a researcher select to see and to form opinions and views about the world. A given research methodology will operate within a system of philosophical paradigm. Essentially, research methodology is about the conceptual and philosophical framework of research work. Additionally "it maps out the

epistemological and ontological character, commitments and design for your investigation" (Stokes, 2014, p.134)

The generic research methodology is developed based on the research onion model presented by Saunders et al.(2012).It describes the different aspects that need to be taken when addressing research and "guides the researcher to depict the issues underlying the choice of data collection methods"(Saunder et al.2006,p.106 as cited in Michalski ,2011 ,p.2) The research onion is divided into six levels:

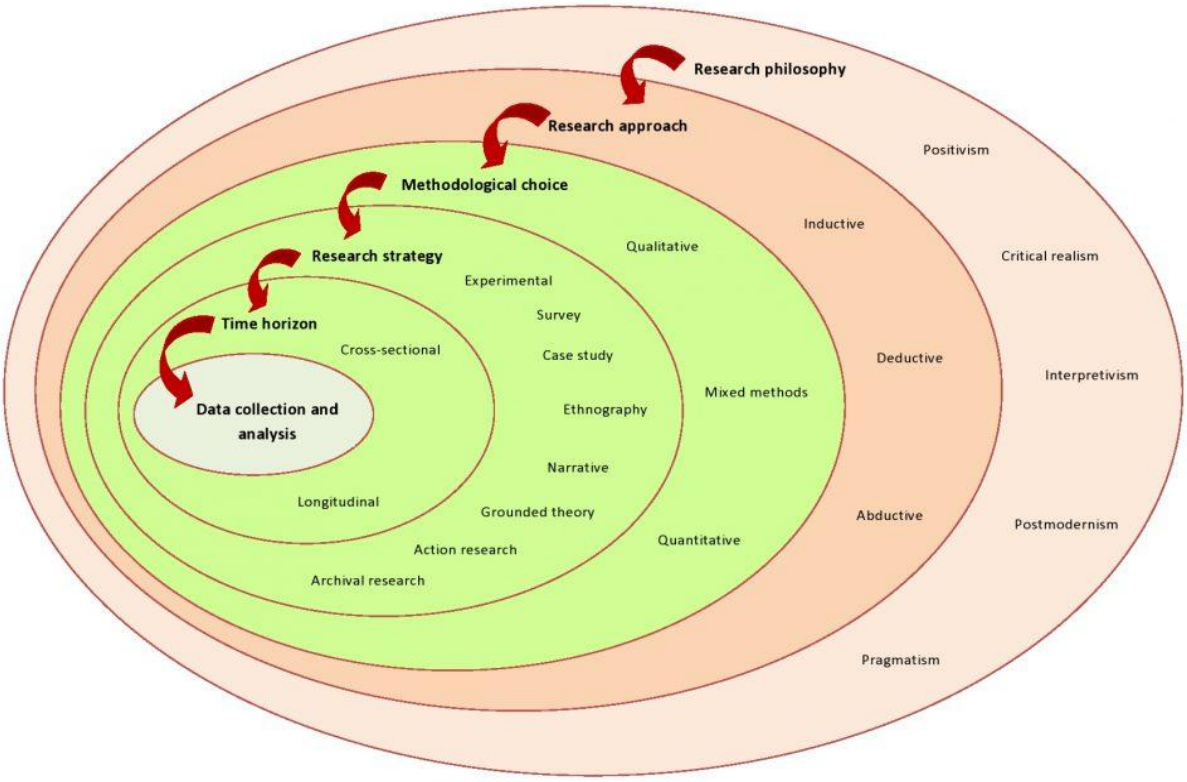


Figure 22. The Research Onion

Source. Mahesh (2020, p1)

4.1. The Research Philosophy

The choice of the research philosophy has a strong effect on the research methodology. It refers to the belief about how data should be gathered, analyzed, and used. A research paradigm is "a basic set of beliefs that guide action."(Guba, 1990) It encompasses *epistemology* that stands for what is known as true and how we should investigate the world

as well as an *ontology* that refers to what is believed to be true and how we view the world. Hence, the objective of doing research is to transform things believed into things known. Stainton (2020) suggests that epistemology answers the questions of what constitutes valid knowledge and how can we obtain it? Whereas ontology looks for what constitutes reality and how can we understand existence?

There are two basic positions considered in this frame; positivism and interpretivism. Positivists believe "that there is an objective reality apart from those who can observe and perceive it" (Kempen,2012,p.45) that is to say that the researcher in social sciences is inextricably bound to the human situation understudy rather than being independent and observing the phenomena from outside the system like natural sciences. Collins (2010) states that "positivism is in accordance with the empirical view that knowledge stems from human experience…all phenomena should be understood through the employment of a scientific method" (p38) i.e. Positivism holds an objective view of the social world that exists externally and measured using objective methods. Thus, positivism tends to generate hypotheses or research questions that "can be tested and allow explanations that are measured" (Subramanian, 2019).Positivism creates a body of knowledge that can be replicated to generate the same results. From the positivist perspective, this study attempts to understand how can project-based approach affect students' performance in EFL.

Similar to positivism, Realism proposes that whatever our senses perceive is the reality. Realism places emphasis on "the ways people make sense of the world through sharing their experiences with others"(Gomez&Mouselli,2018,p17) Interpretivists contend that reality can be unveiled and understood only through subjective interpretation and intervention. The interpretive method allows researchers to make discrepancies between various human behavior through fetching for the different roles they occupy (Shutt, 2006) this places emphasis on the difference between doing research among people and conducting research on

objects."Interpretivism does not aim to report on an objective reality, but rather to understand the world as it is experienced and made meaningful by human beings" (Collins ,2010,p.39)Through this views, the present work aims to explore factors affecting students' performance in EFL from different participants' views that reflect their experiences and subjective perceptions.

Pragmatism contends that there are no pre-determined theories or frameworks in social sciences that would shape knowledge and understanding. Researchers rather mingle different research lens. In short, positivism focuses on what we see, realism emphasizes what we see and experience, and pragmatism seeks to improve practice through the application of concepts.

Based on the above-mentioned philosophical stances, the current work combines the interpretive paradigm with the positivist one because they best suit for the requirements of this study and due to the following reasons first, to examine the possible factors that would influence the performance of the students in EFL, the researcher needs different perceptions and this can be achieved through the interpretive tenet. Second, to offer an empirical evidence of the effectiveness of implementing the project-based instruction to improve the students' performance and attitudes towards learning English and doing projects, positivism seems to be the most adequate paradigm to follow.

4.2. The Research Approach

Any research work involves the use of theory explicitly or implicitly. The research approach can be deductive, inductive, or abductive .First; Deductive reasoning entails a theory that is tested. Collins (2010, p42) proposes five sequential stages to deductive research:

- Writing a testable proposition, which entails the relationship between two concepts or variables

- Indicating how the concepts or variables can be measured
- Testing this proposition by collecting data to measure concepts or variables and analyzing it.
- Studying the outcome of the research, which will confirm the theory or establish how the proposition needs to be modified
- If necessary, modify the proposition and then repeating the process

In deductive research, the researcher needs to be objective, the methodology should be highly structured to ensure reliability, concepts need to be operationalized, concepts of reductionism are to be employed (moving from general to specific), and sufficient sample size to be involved to generalize. (Gomez & Mouselli, 2018, p.21)Conversely, the inductive approach moves from specific observations to general theories .Kempen (2012) proposes four steps for inductive research:

- observation
- Detecting patterns
- Make tentative proposition
- Develop general conclusions (theory)

When using an inductive approach, the researcher provides an understanding of the context "within which the research takes place and not focusing on a cause-and-effect relationship" (Collins, 2012, p.43) Researchers can adopt both deductive and inductive approaches (Patton, 2009)

Table 16

Research Approaches

	Deduction	**Induction**	**Abduction**
Logic	In a deductive interface, when the premises are true, the conclusions must also be true	In an inductive interface , known premises are used to generate untested conclusions	In an abduction interface, known premises are used to generate testable conclusions
Generalizability	Generalizing from the general to the specific	Generalizing from the specific to the general	Generalizing from the interaction between specific and the general
Use of data	Data collection is used to evaluate propositions or hypothesis related to an existing theory	Data collection is used to explore a phenomenon, identify themes and patterns and create a conceptual framework	Data collection is used to explore a phenomenon, identify themes and patterns, locate these in a conceptual framework and test this through subsequent data collection and so forth
Theory	Theory falsification or verification	Theory generation and building	Theory generation or modification ; incorporating existing theory where appropriate, to build new theory or modify existing theory

Source. Gomez and Mouselli (2018, p.20)

The deductive approach is typically associated with quantitative research while the inductive approach is linked to qualitative research (Michalski,2011)The present research aims to tackle the issue of academic performance in EFL from the mixed approach since the researcher moves from an inductive approach wherein the researcher seeks to create a theory about factors affecting middle school students' academic performance in EFL(from specific to general), then testing the theory holding that the use of PBL would make students perform better through deductive approach(from general to specific)

4.3. The Research Methods

The methodology describes the applied research process undertaken to answer the research questions. A research methodology is ascribed as "a systematic way to solve a problem. It is a science of studying how research is to be carried out. Essentially, the procedures by which researchers go about their work of describing, explaining, and predicting phenomena are called research methodology. It is also defined as the study of methods by which knowledge is gained. It aims to give the work plan of research."(Rajasekar,, 2013,p.5)It can also be understood as the science of studying how to conduct research. It seems very significant for the researchers to understand and what is meant by research methodology and differentiate it from the research methods which according to Kohari (2014) is viewed as "all those methods/techniques that are used for conduction of research"(p.7) In another definition proposed by Rajasekar (2013), research methods refers to "the various procedures, schemes, and algorithms used in research."(p.5).It is worth noting that research methods are essential to ease the process of collecting samples, data, and problem-solving. To clear this difference out, the research method stands for the research tool used to answer questions while the research methodology is the rationale for using a particular method and the lens through which research is to be undertaken. (Deborah, 2001)It is viable for researchers to know not only the research methods but also to consider

research methodology which unveils whether the chosen method would fit the problem or not.

The current piece of research is positioned in mixed research methods. In the broad sense, mixed research "represents research that involves collecting, analyzing, and interpreting quantitative and qualitative data in a single study or in a series of studies that investigate the same underlying phenomenon"(Cameron,2014,p.3)The central premise in mixed research methods is the dual use of qualitative and quantitative approaches either in parallel or sequential phases to give a profound understanding of the research problem (Creswell &Clark,2007)Another insightful definition of the mixed methods suggested by Onwuegbuzie and Collins (2007) in which he states that: "Mixed methods research is the class of research where the researcher mixes or combines quantitative and qualitative research techniques, methods, approaches, concepts or language into a single study or set of related studies"(p.120).what can be noticed in the aforesaid definitions is the blending of quantitative and qualitative methods. Creswell (2013) proposes that the rationale for merging methods can entail:

- Offering diversified and multiple perspectives.
- Confirming quantitative measures with the qualitative results.
- Providing a better scope for instruments, measures, or interventions to be better implemented.

Creswell (2013) has also enumerated six types of mixed research design:

- *Convergent Design*: quantitative and qualitative data are collected at the same time but analyzed separately then merged to check if they converge in a meaningful way.
- *Explanatory sequential design*: quantitative data collection and analysis takes place before qualitative.

- *Exploratory sequential design:* the qualitative phase comes before the quantitative. It aims to check if quantitative data can generalize the qualitative findings.
- *Embedded mixed methods:* both qualitative and quantitative data are collected and analyzed at the same time.
- *Transformative:* the qualitative method occurs to complement, explore, or argue the quantitative method.
- *Multiphase:* concurrent and/or sequential qualitative and quantitative data collection strategies are blended over three or more phases over a period of time.

For the requirements of this study, the researcher mingles exploratory research and explanatory research to provide an in-depth understanding of factors that may intervene with performing well in EFL and how performance can be promoted through the use of project-based learning. According to Ekka (2013) The exploratory research attempts to see what is there rather than to predict the relationships that will be founded" (p.17) He furthered that "the purpose of exploratory study may be :

- To generate new ideas
- To increase the researcher's familiarity with the problem
- To gather information for clarifying concepts"(p.17)

In this sense, the researcher grope for investigating what makes middle school students at Khenchela city show poor academic performance in EFL .Besides, the researcher strives to provide deeper insights from practitioners about the issue of performance and how the implementation of project-based learning would generate better outcomes in the middle school setting.

4.3.1. The Choice of the Research Method

The choice of the research method is tightly bound by the objectives set at the beginning of the study as well as the kind of data the researcher is interested in. The present work is a sequential mixed-methods approach in which, "the researcher converges or merges quantitative and qualitative data to provide a comprehensive analysis of the research problem" (Creswell, 2009, p. 14).This study is exploratory and aims to "searching explanations for events and phenomena, for example, finding answer to the question why are the things like what they are?"(Kothari, 1985 as cited in Rajasekar, 2013, p.10),and explanatory to investigate the relationship between the variables under study. According to Kothari (2004) "A flexible research design which provides the opportunity for considering many different aspects of a problem is considered appropriate if the purpose of the research study is that of exploration. But when the purpose happens to be an accurate description of a situation or an association between variables, the suitable design will be one that minimizes bias and maximizes the reliability of the data collected and analyzed". (p14)

The exploratory method is based on inductive reasoning moving from particular to the general or more clearly from "data to patterns to theory" (Johnson & Christensen, 2012, p.17) however the explanatory method is a fundamentally deductive approach moving from general to particular or "from theory to hypothesis to data". (Johnson & Christensen, 2012, p.17)

The present research work cyclically blends the two aforementioned methods .*The exploratory method* is used to explore factors that hinder middle school students from performing better in EFL; while, *the explanatory research design* (experimental research) is undertaken to reveal the relationship between the implementation of a project-based approach to teach English and the academic performance of the learners.

4.4. Research Strategy

There are diversified ways to carry out research depends on different factors such as the nature of the issue, the objectives to be achieved, the sample involved, and the data required. Trochim (2006) posits that "the research design refers to all the overall strategy that researcher chooses to integrate the different components of the study coherently and logically, thereby, ensuring you will effectively address the research problem; it constitutes the blueprint for the collection, measurement, and analysis of data. Note that your research problem determines the type of design you should use, not the other way round!".(Cited in Maganga,2016,p20)A research design is also "a mapping strategy which is based on sampling technique. It essentially includes objectives, sampling, research strategy, tools, and techniques for collecting the pieces of evidence, analyzing the data, and reporting the findings. Thus, the research design is the statement of the object of the inquiry and how a satisfactory culmination to be effected" (Singh,2006,p77)In general, a design states the conceptual structure within which research would be conducted and it should be feasible, flexible, free from bias, and suitable for the hypothesis.(Kothari,2004)

Notably, there are three research designs; *qualitative research* that generates words as data for analysis (Creswell, 1998; Patton, 2009), the *quantitative research design* is the one that generates numbers as data for analysis (Patton and Cochran, 2002), and *mixed-method design* comprises both qualitative and quantitative research designs.

Table 17

Difference between Quantitative, Mixed, and Qualitative Research

	Quantitative Research	**Mixed Research**	**Qualitative Research**
Scientific method	Confirmatory or "top-down"the researcher tests hypotheses and theory with data	Confirmatory and exploratory	Exploratory or "bottom-up" The researcher generates or constructs knowledge, hypotheses and grounded theory from data collected during fieldwork
Ontology(i.e.,nature of reality/truth	Objective, material, structural, agrred-upon	Pluralism, appreciation of objective, subjective, and intersubjective reality and their interrelations	Subjective, mntal,personal, and constructed
Epistemology(i.e., theory of knowledge)	Scientific realism;search for truth;justification by empirical confirmation of hypotheses, universal scientific standards	Dialectical pragmatism; pragmatic justification(what works for whom in specific context);mixture of universal (e.g.,always be ethical)and community-specfic needs-based standards	Relativism,individual and group justification, varying standards
View of human thought and behavior	Regular and predictable	Dynamic,complex, and partially predictable multiple influences include	Situational, social, contextual, personal, and unpredictable

		environment/nurture, biology/nature, freewill/agency, and chance /frtuity	
Most common research objectives	Quantitative/numerical description, causal explanation, and prediction	Multiple objectives,provide complex and fuller explanation and understanding Understand multiple perspectives	Qualtitative/subjective description empathetic understanding and exploration
interest	Identify general scientific laws; inform national policy	Connect theory and practice; understand multiple causation, nomothetic(i.e.,general)causation and idiographic (i.e.;particular individual) causation; connect national and local intesrsts and policy	Understand and appreciate particular group and individual inform local policy
Focus	Narrow-angle lens,testing specific hypotheses	Multilens focus	Wide-angle and" deep len examining the breadth and depth phenomena to learn more about them
Nature of observation	Study behavior under controlled conditions, isolate the causal effect of single variables	Study multiple contexts, perspectives, or conditions; study multiple factors as they operate together	Study group of individuals in natural settings; attempt to understand insiders'views,meaning , and perspectives

Form of data collected	Collect quantitative data based on precise measurement using structured and validated data-collection instruments	Collect multiple kinds of data	Collect qualitative data such as in-depth interviews,participant observation,field notes, and open ended questions.The researcher is the primary data-collection instrument.
Nature of data	Variables	Mixture of variables, words, categorical, and images	Words,images,categories
Data analysis	Identify statistical relationships among variables	Quantitative and qualitative analysis used separately and in combination	Use descriptive data; search for patterns,themes, and holistic features, and appreciate difference/variation

Source. Johnson and Christensen (2012, p.34)

The present study is twofold:

- Assess factors leading to poor performance through a qualitative approach that was deemed indispensable to engender viable descriptive data.
- Understand whether the students' academic performance in EFL can be enhanced through the project-based approach. This is done through a quantitative approach.

4.5. Population and Sampling

One of the main aims of scientific research is to be able to generalize findings; this can be realized only if the selected sample is representative of the population from which they are drawn. Sampling is a fundamental step and an integral part of the research methodology. It is

very necessary to identify the population and the sample from which data would be collected. In his book "*Statistics in Plain English*",Urdan (2010) posits that" a population is an individual or group that represents all the members of certain group or category of interest. A sample is a subset drawn from the larger population"(p.1)In research, the measure of a sample is called "statistics" while the measure of a population is coined as "parameters". Thus, the accuracy and the generalization of the parameters rely on the representativeness of the sample.(Singh,2006) selecting a sample or the sampling design " is a definite plan determined before any data are collected for obtaining a sample from a given population".(Kothari,2004,p.14)

A sample design refers to the techniques or the procedures the researcher would undertake to obtain a sample from a targeted population (Kumar, 2008) Practically, there are three major types of sampling designs: a) *the probability* that "adopt well-structured, stringent procedures for the identification and selection from the target populations"(Opoku et al. p.38), b) *non-probability* sampling or non-random sampling and, c) *mixed sampling* that "has characteristics of both random and non-random sampling designs"(Kumar,2011; p.208) The sampling process is entails the following steps:

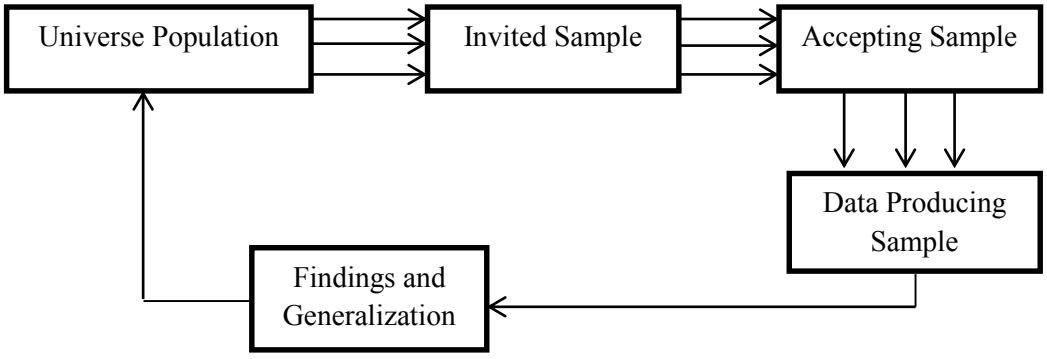


Figure 23. The Sample Cycle

Source. Singh (2010, p.95)

The population declared to take part in this research is the intermediate school EFL inspectors, teachers, and students at Khenchela city. They are expected to contribute to giving

a deep theoretical understanding of this research work. For the requirements of the explanatory research, the current study command students' who are going to pass the BEM exam and are accustomed to traditional methods of instruction so that differences in performance can be observed. Therefore, fourth-year students seem to be the most appropriate subject to be put under investigation.

After defining the research population, the next step is choosing the sampling technique that best suits the study's research design. Since it seems impossible to work with the whole population and regarding the fact that the researcher is a middle school teacher, it is more convenient to work with her students. The sample consists of 82 fourth-year students enrolled for the academic year 2018-2019 at Mohammed Boussalem Middle school, khenchela. The researcher worked in collaboration with the school administration to divide the students randomly using the probability sampling technique into two equivalent groups that would participate in the explanatory study .Besides, the simple random sampling technique (SRS) is used to select a sample of 39 students from the experimental group to respond to the attitude scale. On the other hand, the participants for the exploratory study constitute the two inspectors of English who are considered as the whole population to participate in the interview, a sample of 33 middle school teachers selected based on convenience sampling technique to respond to the questionnaire .Thus, convenience sampling method was preferred as the implemented sampling method in the study. The convenience sampling method refers to the selection of the sample from easily accessible and applicable subjects due to time, money and labor force limitations.

***1.The Participants for the exploratory study*:** encompass middle school EFL teachers and inspectors at the Wilaya of Khenchela.

1.1. Participants in the questionnaire: it is almost superlative to include the whole EFL teachers in this study; this is the rationale behind using convenience sampling to select a

sample of 33 teachers of English who have different qualifications, cultural background, and teaching experiences. They are teaching different levels in elementary school in different regions at Khenchela city.

Convenience sampling is termed as haphazard or accidental sampling "because elements may be selected in the sample simply as they just happen to be situated, spatially or administratively, near to where the researcher is conducting the data collection."(Etikan et al, 2016, p.2).This sampling technique is used by the majority of researchers (Leiner, 2014) Convenience sampling is a type of non-probability sampling which" refers to groups which are used as samples of a population because they are readily available"(Singh,2010,p.90)The collection of data from the respondents took place on a training day with the inspector. The researcher took advantage to administer the questionnaire to the sample. The main advantages of this sampling technique in its usefulness in saving time and effort .Moreover it is "useful as a starting point when little evidence exist on a particular issue"(McGrath et al,p.209)and" if my convenience sample does not differ from my population of interest in ways that influence the outcome of the study, then it is a perfectly acceptable method of selecting a sample".(Urdan,2010,p3,4)Since the selected sample has typical characteristics of the population, it can be considered as representative of the population and findings could be generalized.

1.2. Participants in the interview: two inspectors of English at Khenchela. They are the only inspectors who share responsibility for training teachers. A male and a female, this latter was a secondary school teacher then a middle school inspector, she holds a Bachelor's degree in English and a Master's degree in French. She is more experienced as an inspector than the male respondent who holds a Bachelor's degree in English and was teaching English in different middle schools for about 30 years.

2. Participants for the Explanatory Study: the choice of fourth-year students to take part in this study is due to several reasons; a) they have basic knowledge of English, b) they do know each other which makes it easier to conduct collaborative work, c) they share the same cultural background, and d) they are the first group to take the BEM exam under the Second Generation Reform. However, conducting empirical research on the entire Fourth-year middle school students at the Wilaya of Khenchela is practically impossible. Thus, the researcher sought to work with her students. They consist of 82individuals which is the total number of fourth-year students at the targeted school .This sample is randomly assigned into two equivalent groups to ensure that each individual will have an equal chance to be chosen.

2.1. Participants for the attitude scale: participants include a sample of 39 middle school students who are studying fourth-year at Mohammed Boussalem Middle school. This sample has been selected using a simple random sampling technique that "is one in which each element of the population has an equal and independent chance of being included in the sample" (Singh,2010,p.86)This type of sampling is also known as chance sampling where "every item of the universe has an equal chance of inclusion in the sample" (Kohari, 2004, p.60) It is, so to say, random sampling is a probability sampling technique that offers an equal probability to every element of the population of getting into the sample.

4.6. Time Horizon

This implies whether the research is cross-sectional or longitudinal .Michalski (2011) proposes that "whereas the cross-sectional approach relies on a sample of elements from the population of interest that are measured at a single point in time, the longitudinal approach focuses on the study of one research entity at multiple time points."(p4) In this sense, the cross-sectional time horizon is the pre-set time for gathering data and the longitudinal time horizon is the repeated data collection over an extended period. Since the objective of this study is double-edged starting with exploring what makes middle school students at

Khenchela city show low academic performance in EFL and then attempting to reveal the relationship the possible effect of the project-based learning and performance. Since Data collection for both the exploratory and the explanatory phases are collected during the academic year 2018-2019, this study is framed as cross-sectional.

4.7. Data Collection Instruments

Data collections are a methodical and systematic procedure of collecting observations, or measurements, and analyze them to proffer solutions to specific queries using valid and reliable techniques. According to Singh (2006) data collection "is the accumulation of specific evidence that will enable the researcher to properly analyze the results of all activities by his research design and procedures. The main purpose of data collection is to verify the research hypotheses."(p.212) The preliminary rationale for assembling data is" to allow the researcher to gather enough evidence and, consequently, draw the inferences required to make important decisions about the findings"(Tashakkori and Teddlie,2010, as cited in Opoku et al,2016, p 40) When starting collecting data, researchers should consider the research methodology and the objectives of the inquiry (Fellows and Liu,2003)There are several techniques for data collection that could be used independently or combined to complement each other and yield grounded research results (Nouam,2007)

Table 18

Research paradigm, primary methods and data collection tools

Philosophy/paradigm	***Primary methods***	***Data-Collection tools***
Positivist/postposivitist	Quantitative methods	Experiments
		Quasi-experiments
		Tests
		Scales
Interpretivist/Constructivist	Qualitative methods	Interviews

Pragmatic	Qualitative and/or quantitative methods	Observations Document reviews Visual data analysis Techniques from both positivist and interpretivist pradigms, such interviews, observations, testing and experiments

Source. Opoku et al. (2016, p 41)

Thus, the choice of the methods and the tools of data collecting depend on the philosophy stance. This study falls within the pragmatic paradigm since it uses qualitative and quantitative data collection tools. Advocates of the *pragmatic stance* argue that it is essential to employ both the *exploratory* and *the confirmatory methods* in one's research to provide an in-depth understanding of raised questions and make probabilistic predictions and generalizations.(Johnson & Onwuegbuzzie, 2006).According to Johnson &Christensen(2012)

> 'The quantitative research approach follows the confirmatory scientific method because its focus is on hypothesis testing and theory testing…on the other hand; qualitative research primarily follows the exploratory scientific method. Qualitative research is used to describe what is seen locally and sometimes to come up with or generate new hypotheses and theories. Qualitative research is used when little is known about a topic or phenomenon and when one wants to discover or learn more about it. It is commonly used to understand people's experiences and to express their perspectives.'(p.33)

Kothari (2014) proposes that "In the behavioral science data are collected by administering various types of research tools of the human sample subjects. The different traits and characteristics are quantified by using measurable instruments. These research tools provide different types of data. A researcher needs to understand the trait, tools, and type of

data"(p218)In this study, qualitative data are obtained utilizing a questionnaire and an interview; whereas, quantitative data are assembled through tests and attitude scales. The following table points the traits the researcher is interested in and the tools used to measure those traits:

Trait	*Tool*	*Type of Data*
1. Intelligence	Psychological tests	Equal-interval scale
2. Achievement	Educational tests	"
3. Aptitude	Psychological tests	"
4. Attitude	Scales	Ordinal scale
5. Interest	Inventories	Equal interval scale
6. Personality	"	"
7. Adjustment	"	"
8. Opinions of feelings	Questionnaire or Opiniionnaire	Nominal scale

Figure 24. A Classification of Scales of Measurement and Common Statistics Types of Data Regarding the Traits

Source. Kothari (2014, p219)

4.7.1. The Teachers Questionnaire

It is designed to capture data about teachers' perceptions of the reasons beyond the students' poor academic performance in English. "Researchers administer questionnaires to some sample of a population to learn about the distribution of characteristics, attitudes, or beliefs' of the target group" (Marshall and Rossman,1999, p.129 as cited in Wang,2013 p.405).To this end, the questionnaire consists of both closed and open questions to investigate the problem to the greatest possible degree. Open questions are employed in this study to back up closed items as been suggested by Fowler (1995) "When knowledge is measured in a true/false or multiple-choice format, some correct answers can occur by chance and not reflect knowledge of the subject. Open-ended answers to questions usually are a better way

to find out what people know (p. 178).The questionnaire best fit for the exploratory studies as they "are called for when the issue is complex, when the relevant dimensions are not known, or when the interest of the researcher lies in the exploration of a processor of the individual's formulation of an issue"(Selltiz et al.,1959,p.262 as cited in Powell,1997,p.93)

A questionnaire can be distributed to the respondents in various ways;

- *The mailed questionnaire*: is the common approach to gathering information but it has many shortcomings such as the challenge of availability of addresses and low response rate that would be made it difficult to generalize findings to the population under study.
- *Collective administration* presents one of the best ways to capture the attention of the respondents and ensure high response rates through saving time and money.
- *An online questionnaire* has become a common way of administering data to collect information and analyze it through appropriate software
- *Administration in a public place* is a time-consuming method wherein the researcher needs to catch the attention of the requested population and explain the purpose of the study thoroughly to ensure understanding.

In this research, the participants include a sample of 39 from the entire EFL teaching staff at the Wilaya of Khenchela sharing their perceptions by responding to the questionnaire which was administered through collective administration on a training day after the consent of the inspector. The participants were notified that :

- The questionnaire is entirely anonymous
- Data are private and secured
- Participation is a voluntary
- Answers are needed for academic purposes

Questionnaires allow researchers to get an amalgam of theoretical positions due to their flexibility, cheapness, and ease of administration(Bryman & Bell,2011)Reviewing the literature on questionnaires highly recommends piloting the questionnaire which means field pretesting (Fowler,1995)Besides, the pretesting should simulate the sample population, giving more space for comments, feedback, and recommendations (Mertens,2010).In this work, the questionnaire was introduced to five teachers and two inspectors so that to adjust the structure and question wording of the questionnaire. Converse and Presser (1986) stated that piloting is done to check: "variation, meaning, task difficulty, respondent interest and attention…'flow' and naturalness of the sections, the order of the questions, skip patterns, timing, respondent interest, and attention, overall, respondent well-being" (p. 54-55). Referring to what Converse and Presser suggested, the researcher took into account the aforementioned elements when conducting the questionnaire.

The pretesting questionnaire comprises of a) closed items which were quantified using excel and analyzed by frequency, and b) open-ended questionnaire items that were categorized into themes and summarized. Open-ended questions are employed so that "the participants can best voice their experiences unconstrained by any perspectives of the researcher or past research findings" (Creswell, 2014, p. 240). Finally, the results of the pilot study allowed the researcher to reconstruct the questionnaire used in this study.

The presented questionnaire included the following questions based on Powell's (1997) categorization of questionnaire items:

- *Factual Questions* were used to ascertain the personal information of the respondents.
- *Self-perception questions* employed to determine the participants' opinions about their practices

- *Information Questions* designed to investigate the respondents' knowledge about teaching methods
- *Opinion and attitude questions* intended to provide respondents ideas, inclinations, prejudices, etc.

Strengths of the Questionnaire: This method has many advantages and is cost-effective .It ensures the highest level of anonymity and confidentiality (Pawar, 2004) .Data is quickly gathered and easily analyzed .Kothari (2004).listed the following advantages for using questionnaires;

- Low cost and sufficient timing
- Free from bias since the respondents answer in their own words
- Respondents can be reached conveniently
- Data can be obtained from a large sample so that results can be more reliable

Limitations: any method has its limitations as proposed by Foddy (1993) "What is said may not ally with what was done. Beliefs and opinions change rapidly, minor changes in wording produce major changes in response, questions are misinterpreted, answers are affected by questions asked earlier, the order of questions affect answers, opinions are expressed even where nothing is known about the subjects"(cited inPawar,2004p.28) what this would mean is that there is a possibility of ambiguous responses that would make interpretation challenging and difficult. Moreover, once the questionnaire is administered there is the inflexibility of amending the approach and it is difficult to determine whether respondents are truly representative (Kothari, 2004)

4.7.2. The Interview

Interviews are major data collection techniques that are used to elicit data that is related to the interviewees' opinions, experiences, and perceptions about the research questions (Qu & Dumay,2011).There are plenty of definitions of the interview Monette et al.(1986) state

that "an interview involves an interviewer reading questions to respondents and recording their answers"(Kumar,2018,p220) There are three types of interviews based on the degree of flexibility**;** *unstructured interviews* in which researchers have complete freedom in terms of wording and the way they explain and formulate questions "depending upon what occurs in the context of discussion"(Kumar,2018,p220); *structured interviews* which are conducted by using a set of structured questions and "the interviewer must adhere to the instructions and follow the set pattern of questions without any flexibility. The interviewer cannot change the content, wording and order of questions" (Pawar, 2004.p.30); and *semi-structured interviews* wherein both structured and unstructured interviews are used depending on the needs of the research project. This type of interviews "allow the interviewers to ask relevant questions, appropriately probe further, and seek needed additional information" (Pawar, 2004, p.30)

A semi structured interview is used in this study to provide in-depth and context-rich perceptions of participants and "to delve deeply into a topic and to understand thoroughly the answers provided" (Harrell & Bradley, 2009, p. 27). The participants' views on the subject under investigation, is very important to give more validity and credibility to this research work whereby the researcher tackles the problem from different angles, viz., a personal interview. According to Opoku et al (2016) "the application of interviews provides a powerful means to discover new knowledge and capture the accounts of experts in the field in a more open, consistent and systematic manner, which the standardized methods, such as questionnaires, are unable to do"(p44)

Moreover, the interview makes it possible to have better control over the types of information received, as "the interviewer can ask specific questions to elicit this information" (Creswell, 2014, p. 240). According to Brown (2001) "…interviews are relatively flexible and personal and provide for relatively rich data in written or spoken forms. The flexibility of interviews allows the interviewer to explore new avenues of opinion in ways that a

questionnaire does not...The richness of the interview data also leads to more possibilities in terms of exploring the issues involved…" (p.78) .To ensure the credibility of the interview, a set of strategies was followed:

- Listening actively to the responses
- Probing participants whenever needed to get richer responses
- Use of memoing (note-taking) so to eliminate distraction and sensitizing participants of the importance of their answers.

Strengths of the interview: this tool allows the researcher to interpret verbal and non-verbal communication to enhance understanding of a phenomenon. Sahu (2013) suggested the following merits of the interview:

- Generating more in-depth information
- The flexibility that would help the interviewer yielding important information
- Minimizing nonresponse and misinterpretation
- Recording replies eliminates embarrassing respondents to repeat their answers

Limitations: interviews are costly and time-consuming and have a high chance of communication breakdown (Shipman, 1997).Furthermore; the interview is limited by the time allotted to respond to questions that have to be short and straight to the point. Besides, there is a high possibility of the bias of the interviewer.

4.7.3. The Students Attitude Scale

In social science studies, when measuring people's attitudes towards a given subject, the most appropriate technique is the attitude scale termed also as the opinionnaire. "Rating is the term applied to the expression of opinion or judgment regarding some situations, object, person, etc. These opinions are usually expressed on a scale or by categories of values, either quantitatively or qualitatively"(Singh,2006,p.202)There are several approaches to develop scales summarized in the table 19.

Table 19

Scaling Approaches for Measuring Peoples' Attitudes

Name of the scale construction approach	***Name of the scale developed***
1.Arbitrary approach	Arbitrary scales
2.Consensus scale approach	Differential scales
3.Item analysis approach	Summed scales (such as Likert scale)
4.Cumulative scale approach	Cumulative scales (such as Guttman's Scalogram)
5.Factor analysis approach	Factor scales (such as Osgood's Semantic Differential, Multi-dimential Scaling,etc)

Source. Kothari (2004, p.83)

In the current research work, the researcher used the summative design approach also known as the item analysis approach by the mean a Likert scale which "consist of fixed-choice response format to a series of equal-weight statements regarding attitudes, opinions, and/or experiences " (Rovai et al.,2013.p.39).The Likert scale was first introduced in 1932 by the social psychologist Rensis Likert.Under this approach, the researcher "invites individuals to rate their level of agreement or disagreement with items measuring their attitudes or perceptions " (Sullivan & Artino, 2009,p293).It is popular and widely used because it shows the magnitude or strength of an opinion as well as its direction. For the requirements of the explanatory phase of this study, the researcher used a three-points Likert-scale ranging from disagreeing to agree to collect quantitative data about middle school students' attitudes towards learning EFL before and after the implementation of project-based learning. Kothari (2014) posits that "There is no specific rule whether to use a two-point scale, three-point

scale or scale with still more points. In practice, three to seven points' scales are generally used for the simple reason that more points on a scale provide an opportunity for greater sensitivity of the measurement."(p78) Since the sample addressed to respond for the scale is novice and young, the researcher sought to use the three-point scale to facilitate the process of gathering data. The kind of rating scale employed in this study is the graphic rating scale instead of the itemized rating scale is due to its simplicity and rapidity (De Vaus,2002)and the fact that it is "commonly used in practice"(Kathari,2004,p.78) The attitude Likert scale is devised into two major parts. The first part explores students' attitudes towards learning English and the second part provided information about the participants' views of project work. It is important to highlight the students' attitudes towards learning because it is anticipated that attitudes are viable as Gunderson and Johnson(1980) posit that" when developing a foreign language, developing positive attitudes may be more important in the long run than the level of proficiency in speaking and reading the language"(p.39, cited in Wang,2013,p.405)

The scale used in the current research is developed based on the implications and the findings of the literature and many studies. Validity is ensured by calculating the correlation coefficient of the items using SPSS. Meanwhile, reliability is calculated using the Cronbach alpha to make sure that the scale items are reliable.

Merits of the Likert-type scale: This instrument has a myriad of advantages; it is easy to construct and more reliable. The responses are easily quantified and subjective to computation. Besides, the opinionnaire does not force the respondents to take a stand on a particular topic, but rather provide a degree of agreement. Likert scales have high versatility, efficient, and inexpensive method for generating quick data.(Murphy & Likert as cited in Singh,2006,p209)

Demerits: Likert-scales has several limitations one of which was suggested by Michie (2014): "A possible drawback is that they may generate data that do not capture the complexity of attitudes or beliefs they measure" (p.954) Moreover, people's attitudes are very vast and multi-dimensional that cannot be measured by the Likert-scales due to its uni-dimensional characteristic. Individuals may conceal their real attitude and express what is commonly acceptable.

4.7.4. The Experiment

The quantitative research is traced back to the positivist tenet which "holds that the purpose of the research is to develop confidence that a particular knowledge claim about an educational or psychological phenomenon is true or false by collecting evidence"(Gall&Borg,2007 as cited inMertens,2010,p122)In this realm, quantitative approach attempt to set out empirical to provide answers for the two positivist queries;

- Is the knowledge claim true in a given situation internal ⇨ (validity)
- Is the knowledge claim true in other situations ⇨ (external validity/generalizability)

There are five major types of quantitative research designs: descriptive, correlational, pre-experimental, quasi-experimental, and experimental. The difference between them lies in the degree of control of the variables.

Punch (2009), proposes that there are two focal strands within the quantitative designs:

- The comparison-between-groups strand, based on the experiment, and with the t-test and analysis of variance as its main statistical features seeking to answer "What is the effect of the cause?"
- The relationships-between-variables strand, based on non-experimental reasoning, with correlation and regression as its main features. looking for answers to"What are the causes of this effect?"

In the present work, the researcher sought to look for the "What is the effect of project-based learning on the students' performance?" in other words, the comparison-between-group strand is followed to answer this question. Experimental research design fetches for answering what will happen if something is done under carefully controlled conditions. Experimenters manipulate a given treatment and observe how it would affect or change a certain behavior. In this type of research experimenters tend to "test the hypothesis and confirm or disconfirm it in the light of the controlled variable relationship that they have observed"(Singh &Bajpai,2008,p.261)Moreover, the researcher opted for this quantitative design because "The experimental method is the only method of research that can truly test hypotheses concerning cause-and-effect relationships. It represents the most valid approach to the solution of educational problems, both practical and theoretical, and to the advancement of education as a science" (Maheshwari,2017) besides, it is viewed to be the ideal design to enable fair comparisons (Hartas,2010.p.240)This kind of research designs is characterized by randomization, control, and manipulation. In Education, the experimental method is used for several reasons such as exploring the deficiency of teaching methods, test the effectiveness of instructional materials ,examining the type of contents to be included in textbooks, and finding reasons for disciplinary problems .(Randolph,2008;Singh,2006)

For several decades, parents, teachers, counselors experienced a complex challenge to figure out how to enhance performance .Is low performance due to a skill deficit, inappropriate instruction, lack of home support, resistance to pressure to perform, insufficient reinforcement for efforts made, or what?(Mertens,2010,p125)To dig for answers for this question, the researcher undertakes this study wherein exploratory and explanatory research designs are coupled.

After collecting data about what lay behind poor performance in EFL in the middle school context at Khenchela city, experimental research is employed to investigate the effect

of project-based instruction on the students' academic performance. The tackled sample is fourth-year students at Mohammed Boussalem middle school, the participants comprise 82 students enrolled for the academic year 2018-2019.They are randomly assigned into two equivalent groups; experimental group and control group, the extraneous variables (age, sex, social status, cultural background) are controlled, and the dependent variable (academic performance) is manipulated through implementing the independent variable(the project-based learning)

Experimental group	*Control group*
1. Pre-test	Pre-test
2. Experimental factor	Control factor
3. Final test	Final Test
4. Comparison of gains difference	

Figure 25. Parallel or Equivalent Group Design

Source. Singh (2006, p142)

Testing is viewed as the process of measuring learning through evaluating performance that is expressed in the amount of knowledge or skills attained by the learners.(Burke,2009)The most common type of tests used for this objective is the achievement tests that are defined by Downie as "any test that measures the attainment or accomplishments of an individual after a period of training or learning"(cited in Mohan,2016,p141)

According to Singh (2009) "Achievement tests are generally classified as teacher-made tests and standardized tests. We normally use the teacher-made tests in the schools. Their results indicate students' achievement concerning the instruction provided in a school. These results are of great help in improving the teaching-learning process."(p196)The use of a teacher-made test or standardized test depends on the goals and objectives testers want to achieve. Standardized tests are beneficial in comparing students' performance in various

content areas; determining the status of an individual in a wider population; to compare classes' growth over a period among themselves. Teacher-made tests are generally used to find out if specific curriculum goals have been attained or not and to attribute grades to students so that to make comparisons with other students.(DeBlassie,1974)

In this study, an objective teacher-made standardized test is employed in both pre-test and post-test of this study to assess the students' performance due to its usefulness in identifying students' readiness as it also helps in measuring the knowledge and skills students learned and determining the academic progress they have made over time .It is made of selected and constructed response items.

Strengths: the experimental research is considered very useful to unravel how different elements "function together to support learning".(Cobb et al.,2003,p.9).It also has the potential to address the complexity of the learning environment to test and generate theories that would stem from "highly interventionist methodology .Furthermore, multiple factors can be examined simultaneously to reveal the nature of these factors, how do they work, and why.(Hartas,2010)

Limitations: experimental designs have received a great deal of criticism; some philosophical arguments propose that the aspect of causality is not realized in real educational situations and settings. Besides, The notion that the control group receives no treatment is unethical in education. According to Sutter (2012), experimental designs could generate results that are ambiguous because of many reasons such as; bias, poor instrumentation, inappropriate sampling, etc.

4.8. Ethical Considerations

Ethics is a critical factor in research. The researcher used several types of ethical issues most notably, *the informed consent* of the participants. All participants included in the study were informed in advance about the nature of the research. Besides, *anonymity*, privacy, and

confidentiality were ensured by keeping their names secret. Moreover, subjects' cooperation is sought and treated with *respect,* and findings are subjected to *trustworthiness* through honestly and objectively presenting and discussing the collected data.

Conclusion

This chapter presented a detailed description of the research methodology used in this study. It outlined and justified the research method through which the study's research questions would be investigated, the participants to be included, and the data collection and analysis tools to be employed. Because of the nature of the research, the researcher opted for a mixed research method, bound by the positivist and the interpretive lens. The study is twofold; exploratory and explanatory. Participants are carefully targeted and recruited through convenience and random sampling techniques. The upcoming chapter is devoted to the analysis and the interpretation of the findings.

Chapter Five: Data Analysis and Interpretation

Introduction

The analysis of data incorporates several interrelated and interwoven operations that are undertaken to summarize and organize the collected data in a manner to yield answers to the research questions or hypotheses through the researcher's judgments (Singh& Bajpai,2002)It also involves breaking down the existing complicated factors into simpler parts for new arrangements and interpretations. Data for this study include qualitative and quantitative data. The first type is analyzed using *descriptive statistical methods* whereas the latter is analyzed through the *T-test method.* The instruments used in *the exploratory phase* of this study namely, a questionnaire and an interview are analyzed via thematic analysis. The results from the questionnaire are presented in the format of tables and charts using the excel software whereas the interview is analyzed manually to detect common words, phrases and group them to determine trends and commonalities in the answers of the respondents. On the other hand, the instruments used in the *explanatory study* are analyzed using the SPSS program to generate accurate results about the effect of a project-based approach on the students' academic performance as well as the students' attitudes towards learning English and projects. This chapter outlines the analysis and the interpretation of the findings of this study.

5.1. Description of the Questionnaire

According to Barr, Davis, and Johnson "A questionnaire is a systematic compilation of questions that are submitted to a sampling of the population from which information is desired."(Cited in Sukhia &Mehrota, 1966, p.166) The review of the related literature in the precedent chapter provided a solid ground for the researcher to design the questionnaire which according to McDonough and Mc Donough (1997) affords a good deal of precision and clarity because the knowledge needed is controlled by the questions.

In this study, the questionnaire is constructed for EFL middle school teachers at the Wilaya of khenchela in charge of teaching fourth-year students during the academic year

2018-2019. Since it is difficult to administer the questionnaire to the entire population, a sample of 33teachers was selected to take part in the study through a convenience sampling technique.

The main objective of this questionnaire is to investigate the factors that negatively impact the students' academic performance in EFL. In addition to that, it aims at exploring teachers' views on the effectiveness of the project-based approach in improving students' academic performance. This questionnaire yielded two types of data about the respondents:

- *Factual questions* (open-ended items) related to obtaining informative information about the teachers' background information, their perceptions of the factors affecting students' performance, and teacher's views of project-based approach;
- *Self-perception questions* employed to determine the participants' opinions about their practices
- *Information questions* through open-ended questions were designed to investigate the respondents' knowledge about the teaching methods.
- *Opinion and attitude questions* intended to provide respondents ideas, inclinations, prejudices, etc. It consists of open-ended and closed-form items related to teachers' attitudes towards their students' performance and the effectiveness of PBL in improving the students' academic performance.

5.1.1. Characteristics of the Questionnaire

A. Validity

A questionnaire can be said to be 'valid' if it examines the full scope of the research question in a balanced way, i.e. it measures what it aims to measure. Validity is categorized into two broad components namely; internal and external validities (Greenland, 2008; Wong, 2012). Internal validity refers to how accurately the measures obtained from the research were quantifying what it was designed to measure whereas external validity refers to how

accurately the measures obtained from the study sample described the reference population from which the study sample was drawn. In the current work, the teachers' questionnaire's validity was examined by piloting the questionnaire to two EFL inspectors and five experienced teachers to ensure that the tool is valid before administering it to the sample.

B. Reliability

Reliability concerns the extent to which a measurement of a phenomenon provides stability and consistent results (Carmines & Zeller, 1979). Reliability is also concerned with repeatability. For example, a scale or test is said to be reliable if repeat measurements made by it under constant conditions will give the same result (Moser &Kalton, 1989).To ensure the reliability of our questionnaire, the researcher depended on the test-retest way by asking some participants to complete the questionnaire on two separate occasions.

5.1.2. Administration of the Questionnaire

The questionnaire was piloted before administering it to the sample of middle school EFL teachers to see if there are any ambiguities, repetitive, or unnecessary items. Before submitting the final version, some modifications were made as a result of the pilot study. The modifications include altering some questions and reformulating others. Thus, the questionnaire consisted of three sections;

- **section one :**deals with the participants' background information;
- **section two:** investigates teachers' Perceptions of the factors affecting the academic performance of the students and it contains two open-ended items and three closed-ended questions
- **Section three:** explores teachers' perceptions and attitudes towards the project-based approach and it consists of 09 open-ended questions and 09 closed-ended questions.

The questionnaire was administered to the teachers during a training day with the inspector to make sure that the respondents would have enough time to fill in the questionnaire and submit it on the same day.

5.1.3. Analysis of the Questionnaire

In the analysis of the questionnaire items, the closed items were quantified using excel and analyzed by frequency, while, the open-ended questionnaire items were categorized into themes and summarized.

Section 1: Background Information of the Respondents

This section aims to unveil information about the participants in terms of gender and experience.

Item1.Gender

	Male	**Female**
N	06	27
%	18.18%	81.81%

The findings reveal that females (81.81%) exceed males (18.18%) which reveal that we are dealing with a feminine sample.

Item2. Professional Experience

	1-5years	**5-10years**	**More than 10 years**
N	20	10	3
%	60.60%	30.30%	9.09%

Regarding the overall teaching experience that ranges from 1 to more than 10 years, , the majority of the teachers have an experience that ranges from 1 to 5 years(60.60%) followed by teachers having experience from 5 to 10 years (30.30%), whereas only (9.09%)

have more than 10 years of experience. This may suggest that more than half of the population is novice.

Section Two: Factors Affecting the Academic Performance of the Pupils

Item 01. What is your pupils' success rate?

Table 20

Pupils' Rating Success in EFL

	Frequency		**Percentage**	
0-30	First-term	23	First-term	69.69%
	Second term	19	Second term	57.57%
30-50	First-term	6	First-term	18.18%
	Second term	8	Second term	24.24%
50-80	First-term	3	First-term	9.09%
	Second term	3	Second term	9.09%
80-100	First-term	1	First-term	3.03%
	Second term	3	Second term	9.09%

As can be figured out from the data shown in table 20, the majority of the students (69.69%) show poor academic performance in EFL which is reflected in their success rates for both terms.

Item 02.How do you perceive your pupils' academic performance?

Table 21

Teachers' Perception of the Pupils'Academic Performance

Scale	**Frequency**	**Percentage**
Poor	21	63.63%
average	12	36.36%
good	00	00%

It is clearly shown in the table21 that most of teachers (63.63%) are dissatisfied with their students' academic performance this is due to the results of the students in the first term and the second term displayed in table 20

Item 03.Are you satisfied with your pupils' academic performance? Why?

Table 22

Teachers Attitude towards Pupils' Academic Performance

Yes		**No**	
Frequency	Percentage	Frequency	Percentage
09	27.27%	24	72.72%

It appears that teachers consider their students' academic achievement not satisfying at all (72.72%) and this confirms the results of table 21. The Teachers provide different reasons for their students' underperformance level :

- Lack of interest in studying English
- Poor efforts made by the learners
- Pupils' inability to relate what they have learned and what is on the exam paper
- Pupils' don't want to engage in classroom discussion using the target language
- Lack of previous acquisitions
- Lack of revision and concentration

It is noticeable that the reasons provided by the teachers are all related to the learner and can be linked to the some variables of the psychological models discussed in the review of literature as follows:

- *Perseverance* and *ability to understand instruction* in carroll's model and The *motivators* variable in Cooley& Leinhardt's model , and
- The lack of the *cognitive entry behavior* where students lack perquisites to engage in tasks like in Glaser's variable of *entering behavior* and the *affective entry*

behavior which is reflected in the lack of interest and similar to Bruner's variable of *predisposition to learn* that stands for the learners' desire to undertake and engage in a task.

Item 04.In your opinion, what are the factors beyond pupils' poor performance?

Table 23

Factors Affecting Academic Performance

Factors	Frequency	Percentage
The teaching method	20	60.60%
The content	18	54.54%
Lack of interest from the part of the students	28	84.84%
Time constraints	11	33.33%

According to the teachers, the major factors that lead to poor performance on the part of the pupils are lack of their interest in learning (84.84%) which has to do with motivation, the teaching method (60.60%) , the content (54,54%) which is viewed as long and difficult. Moreover, large classes and time constraints are also stated by teachers to be another factor hindering better performance. The results of this item ally with the factors described in the psychological models of learning.

Item 05. Do test and exam scores reflect the skills and knowledge of your learners?

Table 24

Teachers' Perception of testing

Yes		No	
Frequency	Percentage	Frequency	Percentage
13	39.39%	20	60.60%

The teachers perceive that test and exam scores do not reflect the attained skills and knowledge of the pupils due to the different factors that may inhibit students from achieving well for instance; psychological and aspects such as anxiety and stress as well as cognitive aspects such as poor memory and retention.

Section Three: Teachers' Perception of the Project-Based Approach

Item 01. How long have you been teaching with CBA (Competency-based Approach)?

Table 25

Teachers' Experience with CBA

Years	Frequency	Percentage
1-5	23	69.69%
5-10	8	24.24%
More than 10	2	6.06%

The majority of the teachers (69.69%) have experience ranging from 1 to 5 years with the Competency-Based Approach which indicates that the teachers have to some extent enough knowledge about the content and the methodology of the learner-centered classroom. To check this knowledge the following item would serve this purpose.

Item 02.What is a learner-centered approach?

Teachers provided different definitions for the learner-centered approach, they suggested that:

- It makes the learner in the center of the teaching-learning process
- It prepares learners for real-life situations
- It provides lifelong learning
- The teacher's role is guiding and monitoring learners rather than lecturing and transmitting knowledge mechanically.

The definitions provided by the teachers reflect their understanding of theory and how to relate it to practice. Furthermore, it shows their awareness of the learners' place in the classroom and their roles as well.

Item 03. Which teaching approach do you tend to follow in your class?

Table 26

Teachers Teaching Method in EFL Classroom

Learner-centered approach		**Teacher-centered approach**	
Frequency	Percentage	Frequency	Percentage
29	87.87%	04	12.12%

The results of item 03 conform to the results obtained from item 02 which suggests that teachers have an accurate understanding of the learner-centered approach and apply it in their practice. This is also an indicator of the teachers' awareness of the importance of learner centeredness rather than teacher centeredness.

Item 04.What are the challenges you meet in practice when focusing on the learner?

It is obvious that theory differs from practice and weaknesses can be only observed when we put theories into the field to check their effectiveness. The teachers state that they face different obstacles when using a learner-centered approach namely:

- Lack of collaboration and coordination between teachers
- Poor interaction (teacher-learner/learner-learner)
- Lack of preparation from the part of the students who show the inability to link pre-requisites.
- Lack of students' interest that results in disengagement in the lessons
- Large classes that hinder effective learning and results in noise and lack of understanding
- Time management

- The use of the mother tongue in the most of interactions inside the classroom

Hence, the aforementioned challenges will hinder better learning and will lead to poor academic performance in the end.

Item 05.Do you think that the learners are capable of meeting the expectations of 21st Century skills?

Table 27

Teachers' Expectations of their Learners

Yes		**No**	
Frequency	Percentage	Frequency	Percentage
15	45.45%	18	54.54%

The obtained data in table 27 show that the majority of the teachers (54.54%) have negative expectations towards their learners' capacity to acquire 21st-century skills and this can be traced back to the challenges they meet in the classroom especially those linked with the learners' disposition to learn and develop their skills and competencies.

Item 06.What is your definition of projects?

The respondents proposed several definitions for projects which reflect their understanding of the project work. In this way, some teachers consider projects as a final product that demonstrates learners' understanding; others view projects as a process that is made of a large task that is subdivided into smaller tasks. On the other hand, projects are also regarded as a way of assessment which means that teachers assign projects to assess acquisitions. Furthermore, projects are viewed as a way of investing learning through integrating acquisitions. Besides, it involves teamwork that would help students to overcome different challenges such as shyness, anxiety, poor self-image, etc.

Item 07. What role(s) do you play in the teaching-learning process?

Table 28

Teachers' Role in the Teaching-learning Process

Roles	Frequency	Percentage
Guide	17	51.51%
Facilitator	13	39.39%
Monitor	12	36.36%
leader	02	6.06%

Data reveal that the teachers tend to play the role of the guide in the classroom which suggests that the teachers are aware of their role in the learner-centered classroom where they guide learners, facilitate learning, and monitor learners' work. Besides they moved from leadership to guide the learners to learn on their own. Jezberová et al. (2011) argue that teachers 'role changes from a person who passes on information and knowledge to someone who helps students in their learning activities; teachers shift from the traditional role of a lecturer or a classroom expert to more roles which are derived from individual PBL stages. Moreover, Heines (1989) lists basic teachers' roles as a guide, facilitator, manager, counselor, or evaluator, depending on the teaching context and the PBL stage.

Item 08.How many projects do you have in the 4MS' Second Generation' syllabus?

Table 29

Number of Projects under the New Reform

01		**02**		**03**	
Frequency	Percentage	Frequency	Percentage	Frequency	Percentage
00	00%	05	15.15%	27	81.81%

Most of the respondents propose that there are three main projects in the school year each per term as indicated in the curriculum and they do not make projects as the center of learning but rather a means for assessing learners.

Item 09.What is your definition of the Project-based approach?

Teachers have given different conceptions for the term PBL; some consider it as a learner-centered approach that is based on projects done in group work. Others, on the other hand, perceive it as a way of learning by doing through integrating skills in observing, discovering, analyzing, and problem-solving. Consequently, all those views go with what theory says about the project-based approach.

Item 10. Do you implement a project-based approach in your class?

Table 30

The Implementation of PBL in EFL Classroom

Yes		**No**	
Frequency	Percentage	Frequency	Percentage
29	87.87%	4	12.12%

From the results of table 30, it seems that approximately all the teachers (87.87 %) use PBL in their classroom because for them it enhances group work and research skills, links between the classroom and the outside world, and allows learners to demonstrate their learning in real-life contexts.

Item 11.Do you think that the Project-based approach is effective?

Table 31

Teachers Perceptions of the Effectiveness of PBL

Yes		**No**	
Frequency	Percentage	Frequency	Percentage
20	60.60%	13	39.39%

The majority of the teachers (60.60 %) find that PBL is effective because it allows the learners to be creative, responsible, motivated, and autonomous. It helps students integrate skills, and exchange ideas with others. However, other teachers (39.39%) believe that PBL is not effective and is a waste of time. They assert that the pupils rely on the internet and ready-made information instead of researching and constructing knowledge.

Item 12. How do you find the project-based approach compared to the traditional approach?

The teachers consider the PBL as more effective than the traditional approach because it is more motivating and interesting. In addition to that, it calls for creativity through a problem-solving situation that requires the learners to use a variety of resources and link what they have acquired in the classroom with real-life situations. In contrast to the traditional approach where the learners are passive recipients of knowledge, PBL enables learners to learn by doing.

Item 13. How do you find the project work under the new educational reforms?

Table 32

Teachers' Perception PBL

Items	Frequency	Percentage
Challenging and creative	23	69.69%
Time-consuming and not interesting	5	15.15%
Promoting critical thinking and autonomy	16	48.48%
Integrating skills and abilities	20	60.60%
Difficult and unachievable	4	12.12%
Beyond learners' level and interest	11	33.33%
Encouraging collaborative work	26	78.78%
Developing self-confidence	22	66.66%

The teachers' answers suggest that they hold positive views on the project work under the Project-based approach. They argue that project work encourages group work (78.78%) which is one of the major characteristics of PBL; besides, it is challenging and creative (69.69%), develops self-confidence (66.66%), integrates skills and abilities (60.60%), and promotes critical thinking and autonomy (48.48%). These results perfectly match what Welch(2011) said about adapting innovative methods "A successful innovation may be one that conceptualizes existing ideas that stakeholders value, but have not yet become practice. Innovation can be an evolution, not necessarily a revolution" (p.63).In this respect, teachers adopt innovation in their practices through their positive views of project-based learning.

Item 14.When assigning project work, how do you find your learners?

Table 33

Students' Attitude in Project Work

Motivated		**Not interested**	
Frequency	Percentage	Frequency	Percentage
23	69.69%	10	30.30%

The findings in table 33 reveal that the majority of the students (69.69%) feel motivated while (30.30%) are not interested and this might be due to different readons such as, learners' learning styles and preferences that must be taken into account by teachers to attract the learners' attention to be involved in the project work. Project work is usually triggered by the learner's interest, and this allows him to choose the theme or the activity. Project work encourages learners to do personal research, work in pairs or in groups, and learn to communicate effectively, solve a problem in a real-life context, grow socially and emotionally. Thus, through the project work, the learner will learn how to learn while developing a certain autonomy, initiative, creativity, and responsibility. (Curriculum of English for Middle School Education, 2015)

Item 15.How do you perceive projects under the new educational reform?

Table 34

Teachers' Perceptions of the Project Work

A final product		**A whole process**	
Frequency	Percentage	Frequency	Percentage
25	75.75%	08	24.24%

The majority of the eachers (75.75%) consider the project work under the new educational reform as an end product rather than a whole sequential process; this goes back to the reason that they are still cognitively attached to the old notion of the project work as an end product of the learners that is used to assess learning.

Item 16.What are the sources the most used by your learners in the project work?

To carry out project work the learner, according to the teachers, rely on various sources for different purposes; for instance, dictionaries to check vocabulary and look for new words, books to look for necessary knowledge, the internet to fetch for similar works, and background knowledge to relate the cross-curricular competencies.

Item 17.Are you satisfied with the end-product of the project work in the EFL classroom?

Table 35

Teachers' Attitudes towards their Students Project Work

Yes		**No**	
Frequency	Percentage	Frequency	Percentage
24	72.72%	09	27.27%

It appears that most of the teachers (72.72%) are satisfied with their learners' project work because they show different thinking levels and new ideas. In addition to that, cooperation helps them to break some psychological barriers such as fear, anxiety, and shyness.

Item 18.What are some constraints that prohibit you from effective implementation of PBL?

The teachers claim that there are so many challenges that inhibit them from effectively implement PBL in the EFL classroom; for example, time constraints because of the length of the program that should be accomplished; the existence of weak learners who cannot cope with what their mates are doing and the introvert learners who are not sociable which generates other obstacles. Time limits declared by the teachers as a barrier conforms with the study carried out by Krajcik and Blumenfeld (2006) who found that teachers don't have enough time to plan and prepare lessons in the project-based classroom. In a qualitative study

conducted by Baysura et al. (2016), teachers complained about the shortage of time and some of them even refused to implement PBL because it required too much time and an excessive amount of an increased workload.

In a nutshell, the teachers recommend from syllabus designers to balance between the syllabus (Quality of Instruction &Instructional procedures) and the allotted time (aptitude) so that they can implement a project-based approach effectively; besides, they also suggest reducing the number of learners in classes so that each learner can have an equal chance for learning.

5.1.4. Discussion of the Questionnaire Findings

The analysis of the teachers' questionnaire unveiled the factors leading to poor performance on the part of the pupils, teachers' perception of the project-based approach, and the challenges the teachers confront while implementing PBL in the EFL classroom. As previously stated in this part, the questionnaire contains three sections:

- *Section one:* yielded Background information about the respondents' .It seeks to generate a general picture of fourth-year middle school EFL teachers at the Wilaya of Khenchela such as gender and the overall experience. The obtained results from this section show that females (81.81%) exceed males (18.18%). While participants overall teaching experience ranges from1 to 20 years, actually (75.75%) are novice teachers. This interpretation of the results suggests that the majority of the teachers are accustomed to teaching EFL using the Competency-Based approach.
- *Section two* investigated teachers' attitudes towards their students' performance and their views of the factors affecting it. The results unveiled that most of the teachers (72.72%) are not satisfied with their students' achievement and tracing this back to many factors such as students' lack of interest, the teaching content, the time constraints, and finally, the teaching method.

- *Section three* explored teachers' attitudes towards project-based learning, the findings suggests that teachers have a positive attitude towards PBL in the way that they perceive it as useful and effective, but they face several challenges in practice that reduces the effective implementation of this instructional method such as, large classes, time constraints, long programs, and students' interest .

In short, a deeper understanding of teachers' perceptions and challenges about PBL will contribute to a better implementation of this learning approach in the future .The findings of this tool would help teachers to investigate different ways to facilitate learning, help students take their due place in the classroom and guide them to gain all the necessary skills needed for effective lifelong learning.

5.2. The Analysis of the Interview

Bogdan and Bicklen (1998), posit that the interview uses the oral method to collect data between the interviewers and the interviewees. The interview can be semi-structured or structured. Interviews usually have the power to use the probes to allow the interviewer to get more in-depth information than any other data collection instrument (Patton, 2004). Hence, the interview can generate a better understanding of the issue under study and backbone the current researcher with information that may have not planned to investigate but they are useful in the study. In this study, the interview questions are developed by using the guideline of the research objective.

The interviewees are the two middle school inspectors of English at the Wilaya of Khenchela.The interview took place in a meeting organized for the teachers of English. The answers were manually recorded. The researcher followed in analyzing the interview Kvale's (1992) approach which contends that, data analysis in an interview needs to follow five steps:

- Categorization of meaning
- Condensation of meaning

- Structuring meaning through narratives
- Interpretation of meaning
- And ad hoc methods for generating meanings.

When analyzing the interview, the information was first read by the researcher. Second, the data were placed in the sub-topics of the study. For instance, all data are explained. The third step was to reread the common patterns in each category and decide which to take and which to leave out. Fourth, was to write narrates in each category using quotes from interviewees. The fifth step was to interpret narrates from respondents to gain meaning out of them. All categories of data were led by the research questions.

Data obtained from the interview are placed in three major themes(1) interviewees' attitudes and perception towards the students' academic performance and the factors affecting it;(2) the interviewees' attitude towards project-based approach;(3) recommendations for improving students' academic performance.

5.2.1. Interviewees' attitudes and perceptions towards the students' academic performance and the factors affecting it.

The findings held that both interviewees have the same attitude towards the students' academic performance in English which they described as "weak". The alignment of perception extended to the factors affecting students' performance in EFL as follows

Interviewee1: I do believe that our students' ***weak performance*** in English is due to the following reasons:

- *Poor socio-cultural home environment.*
- *Lack of motivation.*
- *Overcrowded classes.*
- *Lack of compatibility between the syllabus and the assessment methods.*
- *Lack of specialized institutes for training teachers*

Interviewee 2: In my perspective which is based on field observation, the ***poor academic performance*** of the students in EFL can be traced back *to the crowded rooms, lack of training among teachers, and the methods of evaluation used by the teachers.*

The researcher wanted to go further when the respondents said that teachers lack training, so he asked the interviewees whether the teaching method used by the teacher affects students' academic achievement in EFL or not and their answers were very positive that the teaching method influences the academic achievement of the students.

Interviewee 1: ***Of course*** it does because teachers need to use a variety of teaching strategies to make the learning experience more fun and practical.

Interviewee 2: ***sure,*** learners need to enjoy learning and be responsible for it, variety in strategies helps to target and develop different learning styles.

By examining the inspectors' answers, we can deduce that they do consider the teaching method as providing a variety of strategies to help learners learn better and this is what the project-based method provides for teachers.

5.2.2. The interviewees' attitude towards the project-based approach

The obtained data show that the interviewees perceive the project-based approach as an effective way to improve learning and, thus, improve performance.

Interviewee1: ***It's a good way*** to make pupils use their critical thinking, to find out solutions to the problems they face. It also encourages collaborative work and learning how to learn. A project-based approach does not only provides opportunities for students to collaborate or drive their learning, but it also teaches them skills such as problem-solving and helps to develop additional skills integral to their future, such as critical thinking and time management.

Interviewee 2: ***it is positive*** since it prepares students for future citizenship, besides it helps them to develop 21st-century skills, such as; communication, collaboration, and creativity.

The project-based approach is highly effective in improving students' academic achievement if it is done systematically, following its stages and checking learning by the teacher, and allowing the presentation to an audience as well.

5.2.3. Recommendations for improving the academic achievement of the students in EFL

Interviewee 1: *The first thing to do is to gain a student's love and respect, then:*

- *To vary teaching techniques*
- *To encourage critical thinking, collaboration, and communication*
- *To put them in real-life problem-solving situations*
- *To encourage creativity and imagination*

Interviewee2: *I think that enhancing academic performance can be developed through a variety of teaching resources, good preparation of the lesson, encouraging learners' efforts and initiatives, and working creatively.*

It can be deduced from the results above that both interviewees see that teachers should use different teaching techniques, give more space for learners, and be themselves creative and encourage creativity.

In conclusion, these results do ally with those obtained from the analysis of the teachers questionnaire and partly confirm our hypothesis that state that: " Although teachers and inspectors have different views of the factors affecting students' performance, PBL can be very useful in the EFL classroom".

5.3. Results of the Exploratory Study

In the first stage of this research work, teachers', and inspectors' current perceptions, views, and attitudes of the issue under investigation were explored and presented.

The study took place during the academic year 2018-2019. The number of the teachers who took part in this study is 33 in addition to the two middle school inspectors of English. The findings of the exploratory study provided answers to the following research questions:

5.3.1. Are there any differences between EFL teachers' and inspectors' views of the factors affecting students' performance?

After analyzing and comparing the teachers' and the inspectors' perspective of the possible factors that affect students' performance, it is apparent that there is *no difference* in their views and attitudes. Thus putting all together, the major factors that influence middle school students' academic achievement in EFL are;

- Students' *lack of interest* in learning English although they seem motivated and respond well to the teacher in the classroom.
- *Time limits* stand as a barrier against enough exposure to the language. It reduces students' interest and practice.
- *The class size* is a real challenge for the teachers to make group work. The latter face other obstacles because in many studies, teacher report that they encounter difficulties in collaboration and teamwork, highlighting the fact that only the leaders in groups took the responsibility, while others were passive and do not collaborate on an equal basis in the project developments, (Baysura et al., 2016; Harris,2014),
- The *content* of the syllabus is regarded as long to the allotted time.
- The *teaching method* changes each time to cope with modernism, but teachers' still not well-formed and prepared to apply these changes.
- Poor socio-cultural home environment which make students reluctant to learn any foreign language.

- *Lack of motivation*. Several researchers state that one of the most important stimuli in student achievement comes from teachers' motivation and encouragement (Akbari & Alivar, 2010; Gallagher, Rabinowitz & Yeagley, 2011). The need to be good at a task or being able to connect and relate to others is inspiring. All of the teachers agreed that motivating students offers opportunities to create a positive culture of success. The main factor is inspiring them to help them become self-motivated.
- Lack of compatibility between the syllabus and the assessment methods.
- Lack of specialized institutes for training teachers.

5.3.2. What are EFL teachers' and inspectors' attitudes towards the project-based – approach?

When it comes to learning EFL through PBL, both teachers and inspectors hold a very positive attitude They argue that it helps students to learn better, to cooperate with each other, to express their voice and choice, to produce oral and written messages in English, and to have a greater opportunity to learn from each other. However, many challenges limit the effectiveness of this learner-centered approach this is traced back to the lack of training on how to plan and implement it and the lack of innovative environment that would encourage both teachers and students to actively engage in meaningful and productive learning.

5.4. The Students Attitude Scale

The attitude scale which is made of 20 items was prepared by the researcher to investigate students' attitudes towards learning English, their attitudes towards doing projects before and after the implementation of the project-based approach.

5.4.1. Steps of constructing the scale

- The researcher constructed this scale depending on reviewing literature related to attitudes towards English and the attitude scales towards project-based learning strategies.
- All the previous related studies helped in forming the domains and the statements of the scale.
- The scale included positive and negative sentences.

5.4.2. Description of the Scale

The scale consisted of two domains (1) attitudes towards the English language, and (2) attitudes towards the projects. The scale items were constructed to measure students' attitudes towards the English language before and after the use of PBL. The researcher took into consideration the following points:

- The scale sentences included one idea to express a specific attitude.
- The sentences related to the scale and attitude subject.
- The sentences were as short as possible.
- The sentences were simple, easy, and suited students' level.

The three-point Likert scale was used to measure students' responses. The levels of the scale responses varied from agreeing, somewhat, and disagree. The students were asked to tick (√) her/his response. Furthermore, the teacher explained the questionnaire in Arabic and gave students the required time to fill this research tool. This step is meant to assure that the students understand every item so that to respond effectively. The attitude scale was distributed to 15 students to pilot it. After analyzing the reliability of our scale, we have made some changes and the final version of it consisted of 20 statements split into two domains as follows:

Table 36

Attitude Scale Domains

Domains	No. of items
Attitude towards Learning English	10
Attitudes towards projects	10
Total	20

5.4.3. Scale Instructions for students

The instructions were written on the instructions page and read to the students by the researcher. To avoid ambiguity, the statements of the scale were translated into Arabic to get students to understand the items easily and accurately.

Scale validity

A valid scale is a scale that measures what it is designed to measure. The study used internal consistency validity. This later indicates the correlation of the degree of each item with the total average of the scale. It also indicates the correlation of the average of each scope with the total average. This validity was calculated by using Pearson Formula. According to Table 42, the coefficient correlation of each item with the total average of the scale is significant at levels (0.01) and (0.05)

Table 37

Correlation Coefficient of each Item

No.	Pearson Correlation	Sig.level.	No.	Pearson Correlation	Sig.level
1	0.446	0.01	11	0.633	0.01
2	0.312	0.05	12	0.326	0.01
3	0.473	0.01	13	0.394	0.01

4	0.279	0.05	14	0.284	0.05
5	0.542	0.01	15	0.394	0.01
6	0.509	0.01	16	0.293	0.05
7	0.644	0.01	17	0.312	0.01
8	0.278	0.01	18	0.254	0.05
9	0.435	0.01	19	0.258	0.01
10	0.254	0.05	20	0.384	0.05

Table 37 presents the correlation coefficient of each item with the whole scale. Accordingly, it can be concluded that the scale was highly consistent and valid as a tool for the study

- **Scale Reliability**

The scale is reliable when it gives the same results if it is re-applied in the same conditions. The reliability of the test was measured by Alpha Cronbach and the Spilt-half techniques. The results are outlined in Table 38.

Table 38

Attitude Scale Reliability Coefficient

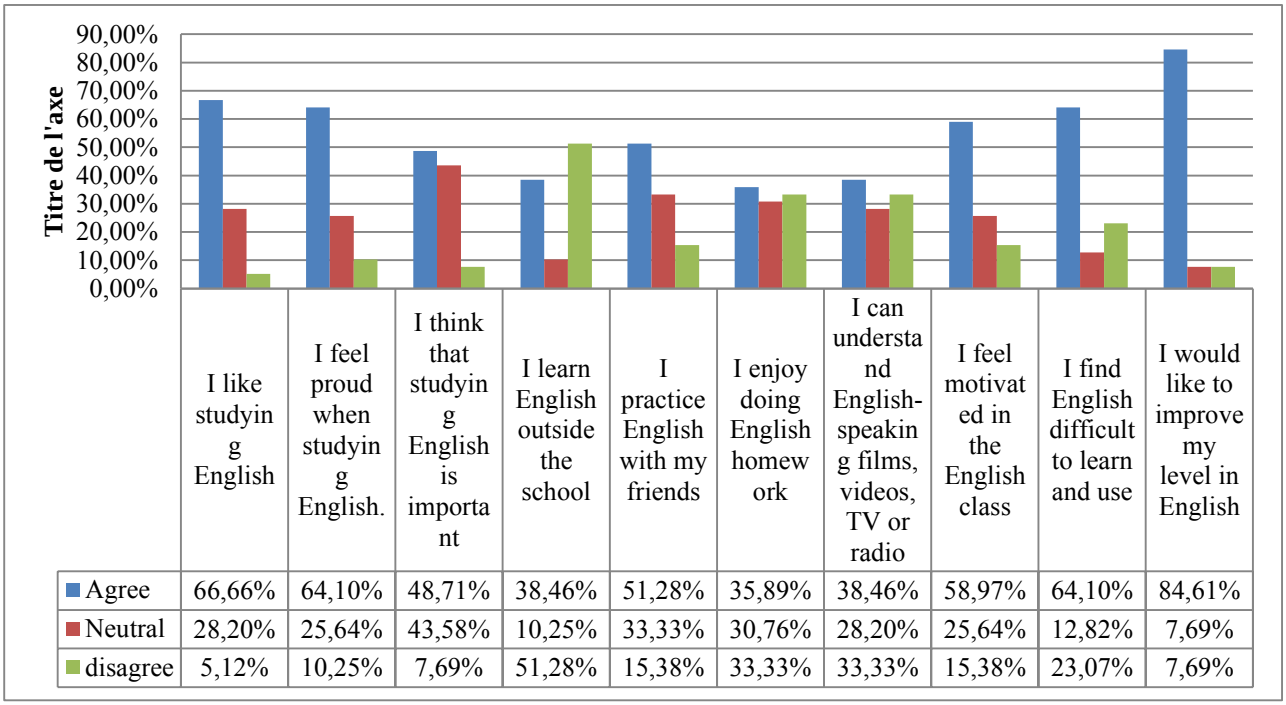
Reliability Statistics		
Cronbach's Alpha		
Cronbach's Alpha	Based on Standardized Items	N of Items
,805	,814	20

It is clearly shown in the table 38 that the scale is highly reliable

5.4.4. Analysis of the Scale

The students' opinionnaire has been designed essentially to elicit data related to the students' attitudes towards learning the English language and towards Project-based learning pre-and post-treatment. Attitudes towards English, in general, refer to the state of emotion and thought relating to the English language and the culture of English–speaking people. The attitude towards the English language implies the students' feelings, prejudices, or fears about the learning of English as a second language (Spolsky, 2000). The three-point Likert scale distributed to a sample of 39 students the scale starts with a brief introduction in which the aim of the research project is stated. The students are requested to tick in the box they find appropriate.

Part A/students' Attitude towards EFL



	I like studying English	I feel proud when studying English.	I think that studying English is important	I learn English outside the school	I practice English with my friends	I enjoy doing English homework	I can understand English-speaking films, videos, TV or radio	I feel motivated in the English class	I find English difficult to learn and use	I would like to improve my level in English
Agree	66,66%	64,10%	48,71%	38,46%	51,28%	35,89%	38,46%	58,97%	64,10%	84,61%
Neutral	28,20%	25,64%	43,58%	10,25%	33,33%	30,76%	28,20%	25,64%	12,82%	7,69%
disagree	5,12%	10,25%	7,69%	51,28%	15,38%	33,33%	33,33%	15,38%	23,07%	7,69%

Figure 26. Descriptive Statistics of the Students' Attitude towards Learning English

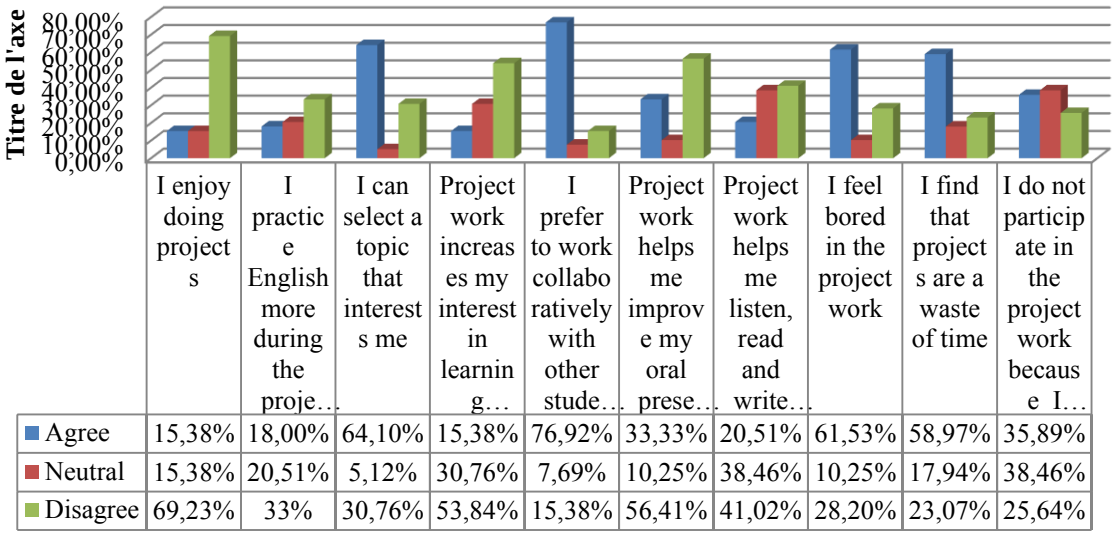
1. As seen in figure 26, the majority of the pupils like studying English (66.66 %) because it is motivating. In turn, this desire is reflected in feeling proud when learning EFL.

2. Despite the students' positive attitude towards English, (43%) of them claim that studying English is just like other subjects that can either be taught or not. However, (48%) perceive English as an important subject matter that must be taught and learned.
3. It is very interesting to notice in figure 26 that the learners learn English from a sole source which is the classroom (51.28%). This might be due to the limited use and acceptance of EFL in the Algerian milieu as claimed by the teachers in the questionnaire. Though, they try to practice it with their friends (51.28%). However, the limited practice outside the classroom makes it difficult for students to understand English speaking films, videos…

The ultimate effect of this is reflected in the students' dislike of doing English homework (63%) as well as their statement that they find English hard to learn and use because of the gap between school and outside world practices. For instance, they like to learn English but they don't use it since it is only limited to school.

Consequently, students want to improve their level in English (84.61%) Hereby, students should be provided with opportunities to recycle the acquired language and skills, then apply and adapt what they already know in more open contexts beyond the classroom.

Part II. Students' attitude towards Projects



	I enjoy doing projects	I practice English more during the proje…	I can select a topic that interests me	Project work increases my interest in learning…	I prefer to work collaboratively with other stude…	Project work helps me improve my oral prese…	Project work helps me listen, read and write…	I feel bored in the project work	I find that projects are a waste of time	I do not participate in the project work because I…
Agree	15,38%	18,00%	64,10%	15,38%	76,92%	33,33%	20,51%	61,53%	58,97%	35,89%
Neutral	15,38%	20,51%	5,12%	30,76%	7,69%	10,25%	38,46%	10,25%	17,94%	38,46%
Disagree	69,23%	33%	30,76%	53,84%	15,38%	56,41%	41,02%	28,20%	23,07%	25,64%

Figure 27. Descriptive Statistics of the Students' Perceptions of Project Work

As can be noticed in figure 27 that the majority of the students (69.23%) have a negative attitude towards projects .

Most teachers are afraid of students speaking their mother tongue instead of using English. In such a case, Hutchinson acknowledges that this is very probably to happen mainly during the teamwork, nevertheless, he advises not to considerate it as a drawback but as a natural phenomenon about which there is no need to worry as long as the final product is in English, students are provided with useful translation activities from various source materials and they have the opportunities to practice productive skills in English. However, if the situation persists, it would harm the students' capability to understand English and hence participate effectively in the project work. In addition to that (43.58%) of the answers revealed the students' inability to transfer what they have learned in the classroom to the outside classroom settings.

According to Fried-Booth (1990) how the language of the classroom is absorbed and later put to use outside the classroom is still not clear. Since PBL comes under Social constructivist theories of learning, it emphasizes mainly that learning a language is a social,

dynamic process and learners learn when they interact with one another (Dale, Tanner, 2012)Projects involve practicing several related skills like speaking, writing, reading, or listening in varied activities students luck this ability due to their negative attitudes towards projects

5.4.4.1. Analysis of the Effect of the Project-Based Learning on the Students' Attitudes

After discussing the students' attitudes, the researcher performed paired sample t-test to measure differences in the attitudes of a sample of students' pre and post the implementation of the project-based approach. Paired sample t-test which is also known as a dependent sample t-test, refers to a statistical procedure used to determine whether the mean difference of one group between two different measurements is significant or not.

- *The null hypothesis:* the project-based approach does not affect the students' attitudes towards learning English and doing projects
- *The alternative hypothesis:* the project-based approach affects the students' attitudes towards learning English and doing projects**.**

Table 39

Output from Paired Samples t-test

Paired Samples Test

		Paired Differences							
					95% Confidence Interval of the Difference				
		Mean	Std. Deviation	Std. Error Mean	Lower	Upper	t	df	Sig. (2-tailed)
Pair 1	pre - post	1,43590	4,44732	,71214	-,00576	2,87755	2,016	38	,051
Pair 2	pre - post	2.44349	2,96903	,32031	1, 35283	2.64702	6.245	38	,000

- **Pair one: Students 'Attitudes towards Learning English Before and After the Use of PBL**

As it can be observed in The results of the paired sample t-test, the p-value ≥0.05 and the calculated t (2,016) is less than the observed t (2.024),then it can be deduced that there is

no difference between the means, in other words, there is no significant difference between the students' attitudes towards learning English before and after the use of the project-based approach.

- **Pair Two: Students' Attitudes towards Doing Projects Before and After the Use of PBL**

Since the p-value is ≤0.05 and the calculated t (6.245) is more than the observed t (2.024) then there is a highly significant difference in the students' attitudes towards doing project pre-and post-treatment. Wicks (2009), claims that "Projects offer students a way of practicing their English while having fun…By creating something, students use English as a tool and see how flexible and useful it can be. Most important of all, projects offer teenagers a chance to find their voice and to do something meaningful and entertaining with the language they are learning. In short, projects motivate." (p. 9). In addition to this, the literature supports a connection between project-based learning and student motivation to learn (Blumenfeld et al., 1991; Bradford, 2005; Chang & Lee, 2010; Lam, Cheng, & Ma, 2007; Strobel & van Barneveld, 2009)

5.4.5. Discussion of the scale Findings

Coming up to the discussion of the obtained results from the analysis of the students' responses to the scale, the most important findings are:

- ***Students' attitudes towards EFL*:** across this part students show that they are interested in learning English (66.66%) and (51.28%) practice English with their friends which reflects the students' eagerness to learn and practice the language not only in the classroom but also outside of it.
- ***Students' attitude towards projects*:** As far as this section is concerned, the findings show that the majority of the students (69.23%) have a negative attitude towards projects

- **The effect of project-based learning on the students' attitudes:** Students hold *positive* attitudes towards learning English before and after the implementation of the project-based approach, however attitudes towards project work has positively changed after the use of PB**L**

5.5. The Experiment

After having an in-depth view of literature dealing with academic performance and the results of the exploratory phase, it seems that performance is a key component of the students' future. Hence, suggestions and strategies on how to foster the improvement of performance are what practitioners need so that to meet the requirements of 21st-century skills. Recent studies are emphasizing the benefits of PBL in developing academic performance, fostering the application and the retention of information, using critical thinking, and encouraging communication, and collaboration (Bell, 2010: Condliffe et al, 2016; Iwamoto et al., 2016; Harmer & Strokes, 2014; Holmes, 2012; Katz & Chard, 1992; Thomas, 2000)

The method in scientific research refers to the procedures and techniques that we employ to gather evidence about a given phenomenon (Cohen, et al., 2007; Goode & Hutt, 1952). To explore the effectiveness of PBL in improving middle school students' performance in EFL, the researcher opts for the experimental method of inquiry. According to Monro and Engelhart (1930) an experiment "is the name given to the type of educational research in which the investigator controls the educative factors to which a child or group of children is subjected during the period of inquiry and observes the resulting achievement."

According to Beveridge, the experiment is "making an event occur under known conditions whereas many extraneous influences as far as possible are eliminated and close observation is possible so that relationship between phenomena can be revealed."(Cited in Sing,2006,p.134) Therefore, the experiment is a means of gathering evidence to backbone

research by showing the effect that the independent variable could have upon the dependent variable while manipulating the surrounding conditions. In this sense, the change in the independent variable is only due to the influence of the independent variable. As our research hypotheses try to establish a relationship between the implementation of PBL in the EFL classroom and the academic performance of the learners. The variables can be identified as follows:

- *The dependent variable:* Students' academic performance in the EFL.
- *The independent variable***:** the integration of PBL in the EFL classroom.
- *Control Variables:* Students' age, level, learning environment, and learning preferences.
- *The confounding variables:* students' attitudes, social status, and economic status.

5. 5.1. The Design of the Experiment

The design of experiments is highly important because we are looking for tangible, credible, and valid results. The current research work has two groups (experimental and control). The study follows a pre/post-test design.

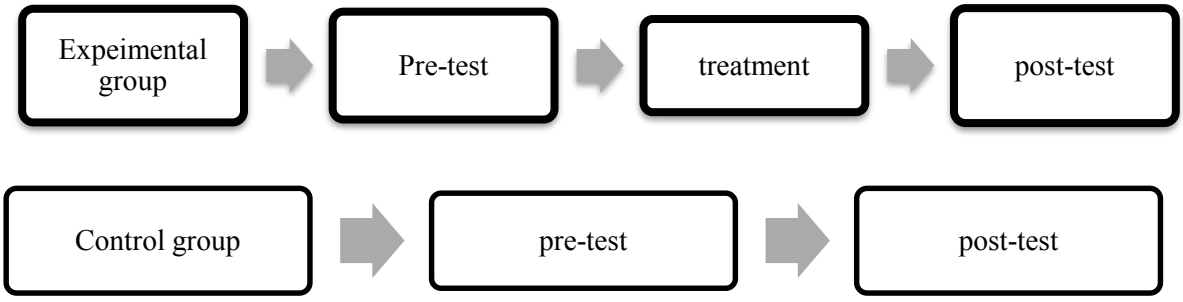


Figure 28. The Experimental Design of the Study

At the beginning of the experiment, both groups are subjected to a pre-test to check their performance in the English subject. Then, the experimental group receives a treatment that is learning English through a project-based approach; whereas the control group receives no treatment and learns English through the traditional approach. At the end, both groups take

a post-test that aims at checking if there is any significant difference in the performance of both groups. The obtained results from the pre-test and the post-test are statistically analyzed using an independent samples t-test. Moreover, the "t-test", which is the guarantee of validity of any experiment, was applied to reveal the effect of the independent variable upon the dependent variable.

5.5.2. The Treatment Procedures

It is worth mentioning that during the treatment phase, both the experimental and the control groups received instruction as a part of their syllabus activity during regular class periods which are defined as three sessions per week. The students were taught for approximately nine weeks in a session lasting one hour during the second term of the academic year 2018-2019

5.5.2.1. The Control Group

During the treatment step of this research work, students in the control group had been taught using the traditional approach. The teacher is assigning tasks for the learners and gives them the required time to do each task either individually, in pairs, or in groups then the correction is done with the help of the teacher.

5.5.2.2. The Experimental Group

Project-based learning enables the learner to observe, discover, manipulate and analyze the language and the task (more or less complex) to understand how it works and use it appropriately in different situations According to Bordallo & Ginest (1995) project-based learning is a process in which the learner must:

- Problematize: what do I do in this project, why and how?
- Learn and document
- Control and criticize
- Conduct and control

- Organize and plan
- Communicate and report

One of the underlying aspects of project-based learning is to develop problem-solving skills in learners. The researcher followed the underlying principles of PBL in his lesson plans to ensure the achievement of the expected outcomes. The lesson plan of each lesson is designed according to the nature of the lesson itself.

Table 40

Experimental Implementation Sequence Plan

Lesson	Lesson Focus	Objectives
Initial Situation	**PPU**	Introducing the initial problem-solving situation
Launching the Project	**PPU**	Introducing the problem that should be solved by the learners at the end of the sequence
I listen and Do	PDP	SWABAT ask and give information about food & use the strong and weak form in the polite request.
I Read and Do	PDP	SWABAT gather information to write a healthy menu
I listen and Do	PPU	SWABAT ask and give advice & distinguish silent letters
I Read and Do	PDP	SWABAT gather information to give advice about food using should and shouldn't
I Listen and Do	PDP	SWABAT describe food habits
I Read and Do	PPU	SWABAT make a recommendation about table

		manners and differentiate the diphthongs
I Listen and Do	PPU	SWABAT give instruction using the Imperative
I practice	PIASP	SWABAT use the imperative and sequencers in a meaningful context
I Read and Do	PPU	SWABAT gather information to write a recipe
I Listen and Do	PIASP	SWABAT compare and contrast food's nutritional values using the comparative form of regular and irregular adjectives.
I Read and Do	PPU	SWABAT defend positive actions
I Practice	PPU	SWABAT interpret a written message about food
I learn to Integrate	PPU	SWABAT prepare a weekly diet plan for a typical daily menu
I Integrate	PPU	SWABAT write an agony letter
I think and Write	PPU	SWABAT make a leaflet about the effects of junk food

Level:MS		
Sequence :	**Lesson**:	**Lesson focus**:
Learning Objective(s): By the end of the lesson, learners will be able to		
Competency (ies) targeted : interact,interprete ,produce		

<table>
<tr><td colspan="7">Domain: Oral / Written – Both.</td></tr>
<tr><td colspan="7">Language tools (target structures):</td></tr>
<tr><td colspan="2">Material(s):audiovisuals, flash cards</td><td colspan="5"></td></tr>
<tr><td colspan="5">Cross-curricular Competencies:
o Intel Comp: ability to interact,recognizing and identifying,taking decisions
o Metho Comp: ability to use reading and writing strategies
o Commu Comp: ability to use games to construct a message
o Personal Social Comp: ability to socialize through playing</td><td colspan="2">Core Values:
Socializing
Knowing and understanding the others
Openness to the word
Pride</td></tr>
<tr><td>Time</td><td>Framework</td><td>Procedure</td><td>Interaction Pattern</td><td>L. Objectives</td><td>Aids</td><td>VAKT / M.I</td></tr>
</table>

Figure 29. Experimental Implementation Lesson Plan Template

5.5.3. Population and Sampling

The sample of the experiment is selected based on convenience sampling consisting of (82) fourth-grade students at Mohammed Boussalem middle school, where the researcher works as a permanent teacher. The population is randomly distributed into two equivalent groups consisting of (41) students per group. The main purpose of using a simple random sampling technique here is that it allows the findings to be generalized to a larger population; it also helps to ensure that the sample is representative (Borg and Gall, 1989).

Table 41

Distribution of the Study Sample

Number of students	**Experimental**	**Control**
82	41	41

The students in both groups are equivalent in age, economic, cultural, and social levels. In addition to that, they are also equivalent to their general achievement as well as their English language achievement. To measure differences in performance, a pre-test and a post-test are used.

5.5.4. Analysis of the Pre-test Results

To ensure that the study subjects are equivalent in their performance, the researcher used a pre- test. The test is prepared by the researcher to measure the sample's performance in English. It is built according to the criteria of test specifications mentioned in the BEM Examiners' Guide of October 2018. Furthermore, the test is made up of three main parts:

- Reading comprehension entails three main activities,
- Mastery of language includes three activities, and
- The situation of Integration.

The results are recorded then analyzed using SPSS using the independent samples t-test. According to Urdan (2010), a t-test is defined as:" simply comparing two means to see if they are significantly different from each other". (p.93) the researcher used the independent samples t-test because she seeks to compare the means of two independent samples (experimental and control) to test the effect of project-based learning on the academic performance.

5.5.4.1. Procedures for Analyzing the Pre-test Scores

- Defining the null hypothesis and alternative hypothesis

Hypotheses can be viewed as the main elements of scientific research because of their role in linking theory to investigation which results in more discoveries in knowledge (Cohen, Manion & Morrison, 2007; Goode &Hatt, 1952; Kerlinger, 1973).A hypothesis can be defined as "a proposition which can be put to a test to determine its validity…It may prove to be correct or incorrect. In any event, however, it leads to an empirical test". (Goode &Hatt, 1952, pp.56-7). Kerlinger (1973) identifies three main reasons for the indispensability of hypotheses to scientific research. First, they represent the operational devices of 'theory'. Secondly, these devices can be tested to be shown true or false. Third, testing hypotheses can lead to the "advancement of knowledge" (p. 18).

Hypotheses can be classified into two types: alternative and null hypotheses. The former postulates that there is a relationship between the dependent and independent variables; while the latter assumes that no relationship exists between the variables being studied. In other words, the null hypothesis 'says', as Kerlinger(1973) puts it, “you’re wrong, there is no relation; disprove me if you can” (p. 204).According to Marilyn and Theresa (2003), the null hypothesis is a statement about a parameter of the population (s) and is labeled “H0”. The alternative hypothesis on the other hand is a statement about a parameter of the population (s) that is opposite to the null hypothesis and is labeled “H1”.In this study, the hypotheses are stated as follows:

H0: there is no statistically significant difference between the pretest scores of the experimental group and the control group.

H1: there is a statistically significant difference between the pretest scores of the experimental group and the control group.

Table 42

Pre-test Results for the Experimental and the Control Groups

Control Group		**Experimental Group**	
N	**Scores**	**N**	**Scores**
1	4	**1**	5
2	11	**2**	3
3	5	**3**	10
4	7,5	**4**	6
5	12	**5**	8
6	9	**6**	13
7	6	**7**	9
8	20	**8**	5
9	4	**9**	12
10	14	**10**	15
11	4	**11**	6,5
12	19	**12**	5,5
13	8	**13**	4
14	7	**14**	8
15	6	**15**	11
16	10	**16**	8
17	11	**17**	8
18	8	**18**	8
19	7	**19**	8
20	6	**20**	6

21	7	**21**	17
22	7	**22**	10
23	6	**23**	12
24	13	**24**	10
25	11	**25**	15
26	5	**26**	11
27	8	**27**	7
28	10	**28**	10
29	8	**29**	4
30	4	**30**	5
31	4	**31**	10
32	7	**32**	9
33	5	**33**	7
34	3	**34**	9
35	6	**35**	12
36	10	**36**	7
37	8	**37**	6
38	8,5	**38**	4
39	3	**39**	8
40	5	**40**	9
41	2	**41**	10
∑(sum)	319	**∑(sum)**	351
$\bar{x}$(Mean)	7,780487805	**$\bar{x}$(Mean)**	8,56097561

- The level of significance (alpha)

The significance level alphaα stands for the maximum probability tolerated for rejecting a null hypothesis (Marilyn and Theresa 2003).In our case alpha =0.05

- The Degree of Freedom

Df=(n1-1)+(n2-1)

Df=(41-1)+(41-1)

Df=80

- Stating Decision

At the degree of freedom 80 and alpha=0.05, the expected t value ranges between -1.990 and +1.990.

What this suggests is that we accept the null hypothesis if the t value falls within -1.990 and +1.990 otherwise, we reject it if the t value is less than -1.990 and greater than +1.990.

- Calculating the Pretest Independent Samples T-test

$$t = \frac{\bar{X}_1 - \bar{X}_2}{\sqrt{\frac{s_1^2}{N_1} + \frac{s_2^2}{N_2}}}$$

Table 43

Descriptive Statistics of the Pretest Scores of two groups

Group Statistics

	Group	N	Mean	Std. Deviation	Std. Error Mean
scores	Experimental group	41	8,5610	2,88140	,45000
	Control group	41	7,7805	2,81525	,43967

The results of Table 43 show that the mean of the experimental group (8.5610) is slightly higher than that of the control group (7.7805).The mean difference is **0.7805** which suggest that there is no difference between the performances of both groups. Thus, any changes in the post test means are due to the treatment.

Table 44

Pre-test Scores Independent Samples t-test Results

Independent Samples Test										
		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
scores	Equal variances assumed	,008	,928	1,241	80	,218	-,78049	,62913	-2,03250	,47152
	Equal variances not assumed			1,241	79,957	,218	-,78049	,62913	-2,03251	,47153

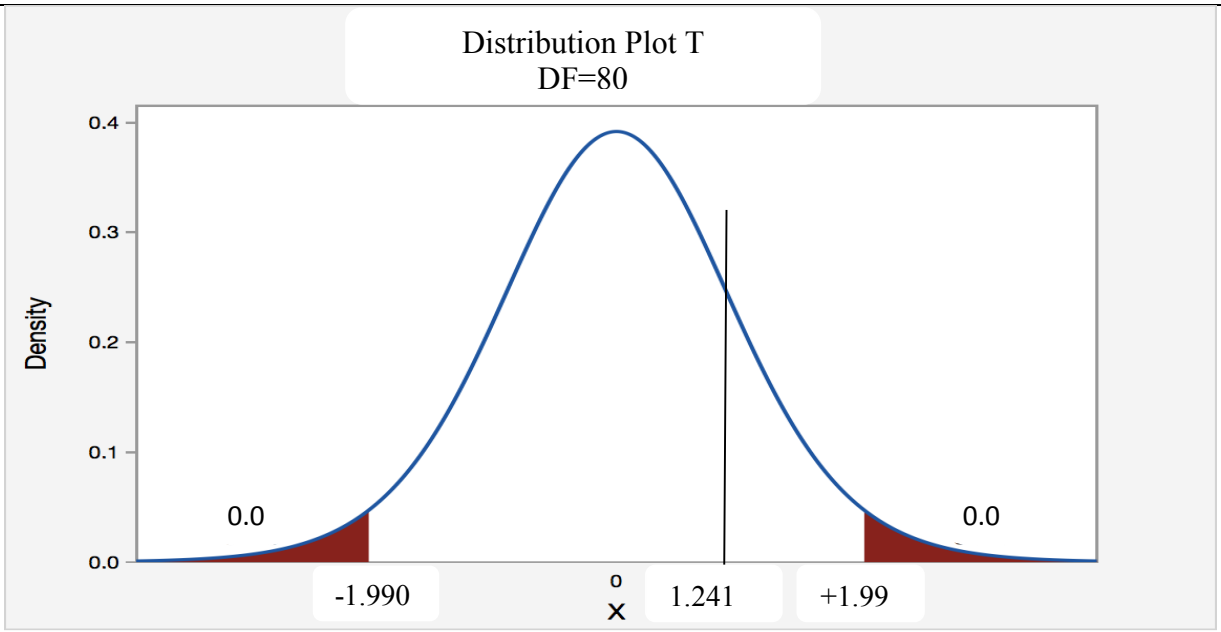


Figure 30. Distribution Plot of Independent Samples t-test Results

The findings of table 39 reveal that the obtained t value (1.241) falls between the observed t value (-1.990 and +1.990) and the alpha level is more than 0.05. Consequently, the null hypothesis which states that there is no significant difference between the pretest scores of the experimental group and the control group is accepted.

5.5.5. Analysis of the Post-test Results

After conducting a pre-test to see the variation of performance between the experimental and the control group, the researcher proceeds in the treatment phase in which the experimental group is taught using a project-based approach while the control group is taught using the traditional approach.

5.5.5.1. Procedures for Analyzing the Pre-test Scores

- Defining the null hypothesis and alternative hypothesis

H_0= There is no significant difference between the post-test scores of the experimental and the control group.

H_1= There is a significant difference between the post-test scores of the experimental and the control group.

Table 45

Post-test Results for the Experimental and the Control Groups

Experimental Group		**Control Group**	
N	**Scores**	**N**	**Scores**
1	7	**1**	1
2	12	**2**	4
3	12	**3**	8
4	6	**4**	5
5	11	**5**	13,5
6	10	**6**	8
7	12	**7**	6
8	19	**8**	9
9	10	**9**	9
10	13	**10**	12

11	8	**11**	8
12	19	**12**	6
13	10	**13**	3
14	10	**14**	4
15	9	**15**	6
16	12	**16**	5
17	13	**17**	6
18	12	**18**	6
19	10	**19**	7
20	11	**20**	9
21	10	**21**	19
22	10	**22**	11
23	11	**23**	11
24	15	**24**	8
25	7,5	**25**	12
26	10	**26**	8
27	7	**27**	5
28	14	**28**	11
29	10	**29**	5
30	7	**30**	8
31	10	**31**	13,5
32	9	**32**	8
33	9	**33**	5
34	9	**34**	12

35	11	**35**	7
36	10	**36**	9
37	10	**37**	7
38	9	**38**	5
39	5	**39**	6
40	7,5	**40**	5
41	7	**41**	8
∑(Sum)	424	**∑(Sum)**	319
$\bar{x}$(Mean)	10,34146341	**$\bar{x}$(Mean)**	7,780487805

- The level of significance (alpha)

The significance level alphaα stands for the maximum probability tolerated for rejecting a null hypothesis (Marilyn and Theresa 2003).In our case alpha =0.05

- The Degree of Freedom

Df=(n1-1)+(n2-1)

Df=(41-1)+(41-1)

Df=80

- Stating Decision

At the degree of freedom 80 and alpha=0.05, the expected t value ranges between -1.990 and +1.990.

What this suggests is that we accept the null hypothesis if the t value falls within -1.990 and +1.990 otherwise, we reject it if the t value is less than -1.990 and greater than +1.990

- Calculating the Pretest Independent Samples T-test

$$t = \frac{\bar{X}_1 - \bar{X}_2}{\sqrt{\frac{s_1^2}{N_1} + \frac{s_2^2}{N_2}}}$$

Table 46

Descriptive Statistics of the Post-test Scores of two groups

Group Statistics

	group	N	Mean	Std. Deviation	Std. Error Mean
scores	Experimental group	41	10,3415	2,95474	,46145
	Control group	41	7,7805	4,53603	,70841

As indicated in table 46, the mean of the experimental group (10, 3414) is higher than that of the control group (7.7805) .The mean difference is 2.5610 which suggest that the independent variable has an impact on the dependent variable.

Table 47

Post-test Scores Independent Samples t-test Results

Independent Samples Test

		Levene's Test for Equality of Variances		**t-test for Equality of Means**						
		F	**Sig.**	**t**	**df**	**Sig. (2-tailed)**	**Mean Difference**	**Std. Error Difference**	**95% Confidence Interval of the Difference**	
									Lower	**Upper**
scores	**Equal variances assumed**	9,869	,002	3,029	80	,003	-2,56098	,84545	-4,24347	-,87848
	Equal variances not assumed			3,029	68,766	,003	-2,56098	,84545	-4,24770	-,87425

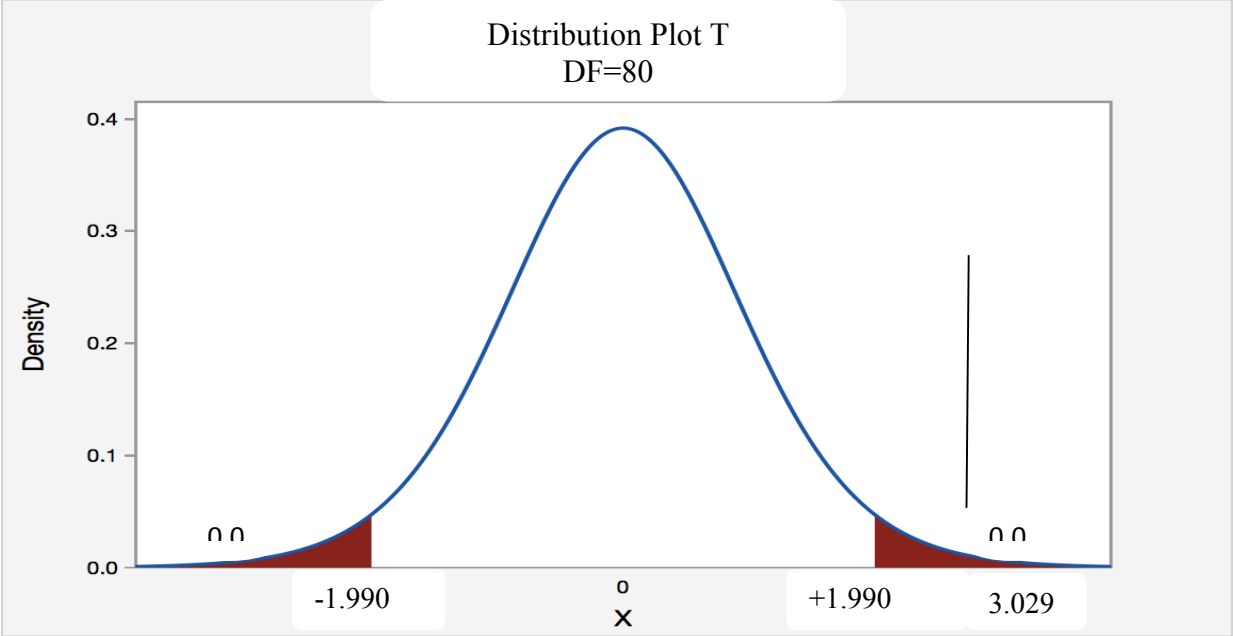


Figure 31. Distribution Plot Scores of Independent Samples t-test Results

The results of table 46 reveal that the obtained t value (3.029) falls out of the observed t value (-1.990 and +1.990) and the alpha is less than 0.05. By conventional criteria this difference is considered to be statistically highly significant.

Therefore, the null hypothesis (H0) is rejected and the alternative hypothesis (H1) is accepted. In other words the project-based approach has a positive effect on the students' performance.

5.5.6. Interpretation of the Findings

To investigate the impact of the project-based approach on fourth-year middle school students' EFL academic performance, the researcher sought to assign a pre-test to the control group and the experimental group to see the variation in performance. The results of table 39 clearly showed that there is no significant difference in the performance of both groups, after proving the equality in performance; the researcher stepped up to the treatment phase where the experimental group was taught through PBL; whereas the control group was instructed through the traditional method. Finally, the T-test is used to determine

whether the differences in the dependent variable for the given treatments are statistically significant or not.

The foreshowed results of table 46, reveals that the ID has got a clear and significant effect on the DV. Hence, we confirm our hypothesis that the project-based approach improves students' academic performance.

So, this result goes with those of many previous studies such as those of Aiedah and Audrey (2012) Basi and Beyhan (2010), Baş (2011), Chu et al (2011), Fragoulis (2009), Gokcen (2005),Imtiaz and Asif (2012), Ke (2010), Keles (2007), Ruenglertpanyakul et al. (2012). Simpson (2011).All of those studies concluded that the use of a project-based strategy in teaching develops students' performance levels.

5.6. Discussion of the Research Findings

Learning is the lifelong process of transforming information and experience into knowledge, skills, behaviors, and attitudes. (Cobb, 2009) With the advent of globalization and information technology, the importance of English as a language has tremendously increased. It is no more the language of the elite or the few sections of the society known as the 'educated classes but is now studied by people from all walks of life. To address the needs of the learners there has been a huge paradigm shift in the type of teaching we want to have in our classrooms. The shift is a resultant cause of the fact that researchers are increasingly emphasizing the learners' needs and aspirations before any teaching method can be implemented.

This piece of research has investigated the effectiveness of the project-based approach in promoting middle school students' academic performance in EFL and the reasons that underlie the students' underperformance in EFL. Both qualitative and quantitative approaches were applied in collecting, analyzing, and interpreting the findings of this research work.

The current work was guided by the following research questions which form the core of our study:

- Are there any differences between EFL teachers' and inspectors' views of the factors affecting students' performance?
- What are EFL teachers' and inspectors' attitudes towards the project-based – approach?
- To what extent does project-based learning influence fourth-year students' attitudes towards learning English and project work?
- How does project-based learning affect the students' EFL academic performance?

The first two questions concern the exploratory phase; they aimed at clarifying and targeting the teachers' and inspectors' perspectives on the project-based approach and the factors influencing performance. Whereas, the two last questions correspond to the experimental design. At first, the researcher gathered data by administering a questionnaire for the teachers and an interview for the inspectors to shed the light on the varied views and perspectives on performance and project-based learning. A pre-test and post-test design is used to determine the effectiveness of PBL in developing fourth-year middle school students' performance. After that, to measure differences in the students 'attitudes, a three points-Likert scale is administered to a sample of students from the experimental group.

RQ1. Are there any differences between EFL teachers' and inspectors 'views of the factors affecting students' performance?

There is no difference between the views of middle school teachers and inspectors towards what might affect students' performance in EFL. From this perspective, major factors are ;

- Lack of interest in studying English has to do with motivation
- Poor efforts made by the learners

- Students inability to make associations between what they have learned and what is on the exam paper
- Lack of engagement
- Lack of previous acquisitions
- Lack of revision and concentration
- The teaching method adopted by the teachers
- The content of the syllabus is viewed as too long and out of the reach of students since they coexist in mixed ability classes
- Time constraints confine teachers from remediating weaknesses and enhancing effective learning

The findings match the factors presented by different psychologists across time. Factors 1,2, 4,5,6, go with CooleY and Iteirihardtl ‘s (1975) psychological modal of factors affecting effective performance, Bloom's (1976) model of school learning, Harnischfeger and Wiley (1976).On the other hand, factors 3,8, and 9 go with Carroll and Bennett's models of learning.

RQ2. What are EFL teachers’ and inspectors’ attitudes towards the project-based – approach?

Teachers and inspectors share the same optimistic and positive view of PBL. As they assert that the project-based approach might be an effective approach that would lead to better learning outcomes

RQ3. To what extent does project-based learning influence fourth-year students ‘attitudes towards learning English and project work?

The subject under investigation is fourth-year middle school students who have been studying English for three years and had at least some basic knowledge about English. They were taught with the learner-centered approach, implemented and practiced differently by different teachers. When their attitudes towards learning English and doing projects were

investigated, the findings showed that they have a positive attitude towards learning English which reflects their awareness of the importance of this language to get access to different fields; however, they showed a negative attitude towards projects before treatment. After treatment, their attitudes significantly changed from negative to positive. These results emphasize the magnitude of PBL in changing attitudes.

RQ4. How does project-based learning affect the students' EFL academic performance?

The results of the experimental stage show that there is no significant difference at ($\alpha \leq 0.05$) between pre-test scores of the control group and that of the experimental group. After analyzing the obtained scores from the pre-test, data are statistically analyzed through t-test which is found to be (1.241), this value falls between the observed t value (-1.990 and +1.990); consequently, there is no significant difference in the performance of both group

After the treatment phase, the scores of the post-test, which are analyzed by the independent samples t-test, show that there is a significant difference at ($\alpha \leq 0.05$) between the scores of the control group and that of the experimental one. The obtained t-value (3.029) fall out of the observed t-value (-1.990, +1.990). Hence, these results confirm what was introduced in the theoretical part.

Based on the study findings and their interpretation the following conclusions were drawn:

1. The study provided important data on the use of a project-based learning approach in teaching English to middle school students. The results of the study provided strong evidence of the usefulness of project-based learning in enhancing performance.
2. In the light of the results of this study, it can be said that the project-based learning method has a positive effect on the middle school students' academic performance level as they were exposed to a wide range of skills and competencies such as

collaboration, project planning, decision making, critical thinking, and time management. Collaborative learning allowed students to bounce ideas off each other, voice their own opinions, and negotiate solutions.

3. Project-based learning strategy provided students with the opportunity to learn in an authentic, challenging, multidisciplinary environment, to learn how to design, carry out, and evaluate a project that required sustained effort over a significant period, to learn to work with minimal external guidance, both individually and in groups, to gain in self-reliance and personal accountability.

5.7. Implications of the Study

Although this study showed how a project-based approach can contribute to developing middle school students' performance in EFL, It has some practical implications that should be taken into account;

- Teachers should be aware of the factors that prevent their learners to achieve satisfying learning outcomes because, without precise knowledge of these factors, teachers could not find appropriate ways to remedy the weaknesses.
- Teachers might need to receive training on how to effectively implement learner-centered methods because, despite the change in the content of the teaching program, teachers still face difficulties in finding appropriate ways to combine the principles of the teaching methodology and the content to be taught.
- To ensure effective learning, teachers should cooperate with their learners, understand difficulties they face, spot weaknesses, and plan to learn accordingly.
- Teachers should also give learners enough space to learn on their own and not be restricted to their personal judgments' of what learners can or can't do.
- To overcome the factor of time constraint which was reported by teachers to inhibit them from effectively implement a project-based approach, they can assign

learners outdoor tasks in which they use cross-curricular competencies to decipher the given activity.

- Curriculum designers should pilot the content of the teaching program before introducing it to the educational institutions.
- Positive attitudes should be developed before implementing any teaching method
- Learning styles and preferences should be taken into account by teachers to ensure effective learning.
- Integrating ICT's can be very useful in helping teachers with time management.

5.8. Limitations and Direction to Future Research

As has been discussed in the theoretical framework, PBL has gained popularity around the world for more than 15 years. It has roots in different educational theories that stress the positive relationship between PBL and student learning outcomes. John Dewey's philosophy of experiential education and William Kilpatrick's "Project Method" laid the theoretical groundwork for PBL. More recently, research on how students develop 21st-century learning competencies (Pellegrino & Hilton, 2012) and the "science of learning" (Bransford, Brown, & Cocking, 1999) have suggested ways in which PBL could influence a broad range of students' outcomes. This study paid tribute to the wealth of prior research in the field of language teaching and learning. It did so by extensively reviewing a large body of theoretical accounts, and by incorporating significant methodological practices about the realities of middle school students' performance.

Like any research, the contributions of the present study are inevitably limited and subject to potential shortcomings that would lay the ground for future endeavors. The first limitation is the scope of the study that is restricted to the middle school context; more precisely fourth-year middle school students at Khenchela city, Algeria. Taking into account the observed low level that many Algerian middle school students show in foreign languages,

and in English in particular, this investigation shed light on the factors that might impede good academic performance. Besides, the researcher examined the incisiveness of project-based learning in fostering fourth-year students' performance in EFL. The results of this study have the potential to guide future requirements for effective implementations of project-based learning in the EFL classroom to generate better academics.

Even though the researcher has provided an empirical foundation for the importance of PBL in the EFL setting, it is subject to several limitations that should be spelled out for the benefit of researchers who may contemplate conducting similar research in other educational settings.

First, this study did not investigate the impact of project-based learning on the development of the four skills namely: reading, writing, listening, and speaking since it was limited to the overall performance of the students.

Second, future research endeavors might investigate the role of the project-based approach in promoting 21st Century skills that were not examined in this study. It would be very useful to study how do project-based learning influences specific 21st-century skills. It can be combined with the teachers 'perceptions of the importance of developing those skills for future needs.

Thirds, Project-Based Learning is a method that requires a lot of time from the teacher. Researchers might carry out studies to help teachers overcome difficulties in implementing innovative teaching methods.

Fourth, improving academic achievement in EFL is not an easy task that is why teachers need to shift from a didactic to an authentic type of teaching. The results of this study have the potential to guide the design of teachers' professional development on the implementation of Project-Based Learning. The project-based learning method is suited to diverse learners. Teacher predisposition and preparedness in adopting innovative teaching

methods to enhance learning is very important. Hence, various studies about the importance of the teachers 'beliefs and attitudes in enhancing students' performance and motivation can be carried out to provide an in-depth understanding of classroom practices.

Fifth, regarding the limited scope of this study, it seems very useful to investigate the effectiveness of incorporating PBL in undergraduate programs. Further investigation is needed to see the potential of PBL in other subjects.

Sixth, attitudes are investigated in this study in relation to the project-based learning; however, researchers can investigate the impact of attitudes on the students' performance.

General Conclusion

The Common Core and other present-day standards emphasize real-world application of knowledge and skills, and the development of success skills such as critical thinking/ problem solving, collaboration, communication in a variety of media, and speaking and presentation skills. Projects allow teachers to work more closely with students doing high-quality, meaningful work, and in many cases to rediscover the joy of learning alongside their students. Studying English should not necessarily focus on syntactic accuracy or proficiency in grammar usage. Instead, it should give opportunities to students to use as much English as they can in real-life contexts. Especially for Algerian students who have limited chances of using English, PBL is a better tool to give them the opportunities and the encouragement to use language with an emphasis on communicative purposes in real-world settings, rather than solely focus on accuracy as in traditional teaching. Data from this study is overwhelming enough for educationists and policymakers to start to consider the effectiveness of implementing the PBL approach in teaching English.

In its theoretical perspective, this study provided insights into literature about academic performance in terms of different conceptualizations of the term, the major underlying theories, and assessment means. Besides, it delved into the importance of teaching English and its role in meeting 21st-century expectations which can be met through project-based learning that was discussed intensively in the theoretical part in an attempt to make appropriate associations with the academic performance. Through this study, project-based learning is found as an effective means of teaching English as a foreign language and that it can be successfully employed with students who have only been exposed and subjected to a background of traditional forms of teaching and learning.

This research has highlighted the effectiveness of implementing the project-based approach in the EFL classroom to enhance academic performance. This study is two-fold, at first, explored the lacunae that hinder students from reaching better learning outcomes from middle school EFL teachers and inspectors' views and perspectives, and then to investigates the effect of project based learning on the students' performance and attitudes towards learning English and doing projects.

The data were collected using both qualitative and quantitative approaches to get an in-depth understanding of the possible relationship between the use of PBL and the development of fourth-year student's' performance level in English. To reach the objectives of this study, the researcher sought to use mixed research design entailing a variety of data gathering tools namely, the questionnaire and the interview used to unveil the differences in perspectives and attitudes of teachers and inspectors at Khenchela city. Findings reveal similarities and commonalities in views about factors inhibiting students from achieving better learning outcomes as well as in the attitudes towards the use of PBL in the English classroom. Furthermore, an experiment and an attitude scale are used to provide empirical evidence to the effectiveness of project-based learning in developing better learning performance and positive attitudes towards learning English and project work. The analysis and the interpretation of these tools showed that students' performance and attitudes towards projects improved after the use of PBL.

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Appendix A

Teachers Questionnaire

Title of the research project: Developing the Students' Academic Performance in EFL through Project-Based Approach. Case of Fourth-Year Students at Mohammed Boussalem Middle School, Khenchela

Name of researcher: Rakai Nafissa

Name of Supervisor: Pr.Kaouli Nadir

Dear teachers of English,

This questionnaire is a part of a Ph.D. thesis project; it is designed to investigate the effect of the project-based approach on middle school students 'academic achievement and the factors affecting students' academic performance in EFL. The project-based approach, which is referred to as Project Based Learning, or PBL, is an instructional approach built upon learning activities and real tasks that have brought challenges for students to solve. These activities generally reflect the types of learning and work people do in the everyday world outside the classroom. PBL is generally done by groups of students working together toward a common goal.

You are kindly asked to respond to each question either by ticking the convenient box or by writing full answers where necessary.

Section One: Background information

1. Your gender:

a. Male ☐

b. Female ☐

2. Your Experience: ☐ years

Section Two: Factors Affecting the Academic Performance of the Pupils

1. What is your pupils 'success rate? a. First Term ☐

b. Second Term ☐

2. How do you perceive your pupils' academic performance?

a. Poorly satisfying ☐

b. satisfying ☐

c. more than satisfying ☐

3. Are you satisfied with your pupils' academic performance?

a. Yes ☐

b. No ☐

justify……

……

……

4. In your opinion, what are the factors beyond pupils' poor academic performance?

a. The teaching method ☐

b. The content (difficult and long) ☐

c. Lack of interest from the part of the students ☐

d. Time constraints ☐

Other……

5. Do test and exam scores reflect the skills and the knowledge of your learners?

a.Yes ☐

b. No ☐

Justify……

……

Section three: Teachers' Perception of the Project-Based Approach

1/How long have you been teaching with CBA?

Years ☐

2. What is a learner-centered approach?

……

……

3/which teaching approach do you tend to follow in your class?

a.Learner-centered approach ☐

b. teacher-centered approach ☐

Other……..

4/What are the challenges you meet in practice when focusing on the learner?

……

5. Do you think that learners are capable of meeting the expectations of 21st -century skills (creativity; problem-solving, decision making…….)

a.Yes ☐

b. No ☐

6. What is your definition of projects?

.....

7. What role(s) do you play in the teaching-learning process?

……

8/How many projects do you have in the 4ms' second-generation syllabus?

a. 1 ☐

b. 2 ☐

c. 3 ☐

d. other ☐

9. What is your definition of the Project-based learning?

……

10/ Do you implement the project-based method in your class?

a. Yes ☐

b. No ☐

Justify……

11. Do you think project-based learning is effective? Why or why not?

……

12. How do you compare a project-based approach with the traditional approaches?

……

13/ How do you find project work under the new educational reforms?

a.Challenging and creative ☐

b.Time consuming and not interesting ☐

c.Promoting critical thinking and autonomy ☐

d.Integrating skills and abilities ☐

e.difficult and unachievable ☐

f.beyond learners' level and interest ☐

g.encouraging collaborative work ☐

h.developing self-confidence ☐

14/When assigning project work, how do you find your learners?

a.Motivated ☐

b.Not interested ☐

15/How do you perceive projects under the new reform?

a.a final product ☐

b. a whole process ☐

16/What are the sources the most used by your learners in the project work?

……

17/Are you satisfied with the end-product of the project work in the EFL classroom?

a.Yes ☐

b.No ☐

Justify your answer:

……

18. What are some constraints that may prohibit you from effective implementation of PBL?

……

19/your recommendations……

Thank you for your participation

The researcher

Appendix B

Attitude Scale Towards learning English via Project-based Strategy

4th -year middle school

Title of the research project: Developing the Students' Academic Performance in EFL through Project-Based Approach. Case of Fourth-Year Students at Mohammed Boussalem Middle School, Khenchela

Name of researcher: Rakai Nafissa

Name of Supervisor: Pr. Kaouli Nadir

Dear Students,

This attitude scale is a part of a Ph.D. thesis project; it is architected to help the researcher explore your attitudes towards learning English in general and towards project in particular. Read each statement and then tick the box that reflects your opinion

Thank you in advance for your kind cooperation.

Part A	**Attitude towards English**			
	Items	**Agree**	**Neutral**	**Disagree**
01	I like studying English			
02	I feel proud when studying English.			
03	I think that studying English is important			
04	I learn English outside the school			
05	I practice English with my friends			
06	I enjoy doing English homework			
07	I can understand English-speaking films, videos, TV or radio			

08	I feel motivated in the English class			
19	I find English difficult to learn and use			
10	I would like to improve my level of English			
Part B	**Attitude towards Project**			
11	I enjoy doing projects			
12	I practice English more during the project work			
13	I can select a topic that interests me			
14	Project work increases my interest in learning English.			
15	I prefer to work collaboratively with other students to finish the project work successfully.			
16	Project work helps me improve my oral presentation skills			
17	Project work helps me listen, read, and write better than before.			
18	I feel bored in the project work			
19	I find that projects are a waste of time			
20	I do not participate in the project work because I do not understand English			

Source: Adapted from: Nassir(2014)

Appendix C

Dear Colleague,

This interview is a part of a research project entitled: "Developing Students' Academic Performance through Project-based Approach". The project-based approach is referred to as Project Based Learning, or PBL is an instructional approach built upon learning activities and real tasks that have brought challenges for students to solve. These activities generally reflect the types of learning and work people do in the everyday world outside the classroom. PBL is generally done by groups of students working together toward a common goal. It is introduced into the Algerian Educational System under the reform of 2016.

You are kindly invited to provide answers to the following questions.

Thank you for your cooperation

1: How do you perceive the academic performance of the students in EFL?

2: Based on your experience in the field, what are the reasons that lie behind students' poor academic achievement in EFL?

3: Do you think that the teaching method used by the teacher affects students' academic achievement in EFL? Justify your answer

4: What is your attitude towards the project-based approach?

5: To what extent do you think that the project-based approach would improve students' academic achievement?

6: In your perspective, how can EFL teachers develop their students' performance?

Appendix D

Project-based Learning Essential Elements Checklist

Does the Project...?			?
FOCUS ON SIGNIFICANT CONTENT At its core, the project is focused on teaching students important knowledge and skills, derived from standards and key concepts at the heart of academic subjects.			
DEVELOP 21st CENTURY SKILLS Students build skills valuable for today's world, such as critical thinking/ problem solving, collaboration, and communication, which are taught and assessed.			
ENGAGE STUDENTS IN IN-DEPTH INQUIRY Students are engaged in a rigorous, extended process of asking questions, using resources, and developing answers.			
ORGANIZE TASKS AROUND A DRIVING QUESTION Project work is focused by an open-ended question that students explore or that captures the task they are completing.			
ESTABLISH A NEED TO KNOW Students see the need to gain knowledge, understand concepts, and apply skills in order to answer the Driving Question and create project products, beginning with an Entry Event that generates interest and curiosity.			
ENCOURAGE VOICE AND CHOICE Students are allowed to make some choices about the products to be created, how they work, and how they use their time, guided by the teacher and depending on age level and PBL experience.			
INCORPORATE REVISION AND REFLECTION The project includes processes for students to use feedback to consider additions and changes that lead to high-quality products, and think about what and how they are learning.			
INCLUDE A PUBLIC AUDIENCE Students present their work to other people, beyond their classmates and teacher.			

Appendix E

Pre-test

Algerian Cuisine

Algerian cuisine differs from region to region. Every region has its own cuisine, including Kabyl, Algiers, and Constantine. It is influenced by various cultures such as Berber, Ottoman, Arabic, and French. The common numbers of meals are three a day, and no Algerian meal is complete without reading. Most of the Algerian dishes are centered on bread, lamb, beef, poultry, olive oil, and fresh herbs. Traditional bread is almost always made with semolina, French bread is also widespread. Pork consumption is forbidden to devout Muslim inhabitants of Algeria in accordance with Sharia, the religious laws of Islam.

Meals are also based on fresh fruits and fresh vegetables. Algerians like different foods, for example traditional dish "Couscous", which is a staple dish often and served with chicken or lamb. Chorba, Berkoukes, and Chakchoukha are other traditional Algerian dishes that they also like.

Source: From Wikipedia, the free encyclopedia

Part One (14pts)

Reading Comprehension (7pts)

Read the text then answer the following questions

Activity One: Choose a, b, or c to complete the following sentences (3pts)

1: This short text is about: ……

a- Good eating habits b- cooking habits c- Healthy eating habits

2- In Algeria, there are ……meals per day

a- three b- two c- four

3- ……is a staple dish served with chicken or lamb

a- Chorba b- Berkoukes c- Couscous .

Activity Two: Read the text and answer the following questions (2pts)

1-Are the Algerian dishes similar to each other around the country?

……

2-List some traditional dishes

……

Activity Three:

A. Find in the text words that are closest in meaning to the following (1pts)

containing =…….. Too=…….

B. Find in the text words that are opposite to the following (1pts)

With #.....

Unfocused#.....

Mastery of language(7pts)

Activity One: Turn the following sentences into the active voice(3pts)

1- Algerian cuisine was influenced by variouscultures

.....

2- Delicious dishes were prepared by our chef

…….....

Activity Two: Fill in gaps with the appropriate discourse marker (2pts)

But- as a result-in addition-though

……..there was no technology; everyone was strong and healthy many years ago. They ate a very varied diet, and especially loved fruit, vegetables, and fish……, they took daily exercise. They enjoyed themselves playing and leaping about. The Earth was the healthiest place you could imagine, and it was clear. ……..both adults and children were full of joy and good moods…… everything becomes unhealthy now.

Activity Three: Classify these words in the table according to their pronunciation: (2pt)

Desire - enjoyer - player - our

/eIə /	/aUə /	/ɔIə /	/aIə /
.....	.....	.....	.....

Part Two: Situation of integration (6pts)

Your English friend wants to know a lot about "Algeria's cooking and food habits" .Write a paragraph talking about it, using the followings:

- Meals: Three: breakfast at (07:00-08:00a.m.), Lunch (12:00-12:30 p.m.) and dinner (19:00-20:00).

-Traditional dishes: Chorba, Berkoukes, Chakchoukha, Couscous……

-Other food: bread, lamb, beef, poultry, olive oil, fresh vegetables, and fresh herbs.

Appendix F

Post-test

TEXT:

The history of pizza begins thousands of years ago. Ancient people collected wheat and pounded it into small pieces. They added water and cooked it on a hot rock. Around 700 BC, the Greeks discovered new ways to prepare flatbread. They made it round and added oil, onions, and garlic. Then the Romans came up with several improvements, like adding cheese and meat. They also made a thin crust cooked in a wood-burning oven. The people of Naples, in Italy, were perhaps the first to add tomato to this flatbread. By the 1790s, the streets in busy neighborhoods were filled with food stands selling low-cost pizza. In 1830, the first pizza restaurant opened. That restaurant is still open today. In 1889, the King and Queen visited Naples. The queen loved pizza with red sauce, white cheese, and green herbs; the same colors as the Italian flag. This made pizza very popular in Italy. After the 1950s, following World War 2, millions of Italians moved abroad and took their food culture with them. This is how many Pizza shops popped up everywhere and people fell in love with it.

Adapted from https://www.englishlistening.rocks

PART ONE (14pts)

A/ Reading Comprehension:

Read the text carefully and do the following activities:

Activity One: Choose a, b, c, or d to complete the following sentences.(03pts)

1- The text is: a-a newspaper article b- an excerpt from a book c- a website article d- an ad

2- It is about: a- Greek food b- Italian food c- pizza recipe d- pizza history

3- In which paragraph is it mentioned that pizza became popular worldwide? ……..

Activity two:Read the text and answer the following questions.(02pts)

1- What ingredients did the Greek people add to their flatbread?

2- Were the people of Naples the first to add cheese to pizza?

Activity three

A- Find in the text words that are closest in meaning to the following(01pts)

baked =…….. well-known = …….

B- Find in the text words that are opposite in meaning to the following (01pts)

Modern ≠…… .high ≠…….....

B/ Mastery of Language (07 pts)

Activity one :Complete the following sentences using the comparative form of adjectives in brackets (03pts)

-Fish or seafood is ..... red meat. (healthy)

-Goat and camel milk contains .....fat ..... other kinds of milk. (little) –

Consuming fried food is .....any other food. (dangerous)

Activity two Supply the punctuation and the capital letters where necessary(02pts).

Algerian cuisine is very rich and variant. couscous rachta and chorba are some of the main traditional dishes in Algeria

……...

Activity three I cross out the odd word with a different vowel sound(02pts).

1- boil -pot -drop -chop.
2- peel -clean -bread - steam
3- stir -mix -serve -burn
4- grate -plate - dates -salt

Part Two: Situation of Integration(06 pts)

Your English friend sent you a message on Facebook. He/She wants to know about the different dishes and pastries in Algeria. Respond. Mention: - names of some dishes and pastries in the different wilayas. - the popular ones in your region. - your favorite dish/pastry and its main ingredients.

Appendix G

T-Test Table

t Table

cum. prob	$t_{.50}$	$t_{.75}$	$t_{.80}$	$t_{.85}$	$t_{.90}$	$t_{.95}$	$t_{.975}$	$t_{.99}$	$t_{.995}$	$t_{.999}$	$t_{.9995}$
one-tail	0.50	0.25	0.20	0.15	0.10	0.05	0.025	0.01	0.005	0.001	0.0005
two-tails	1.00	0.50	0.40	0.30	0.20	0.10	0.05	0.02	0.01	0.002	0.001
df											
1	0.000	1.000	1.376	1.963	3.078	6.314	12.71	31.82	63.66	318.31	636.62
2	0.000	0.816	1.061	1.386	1.886	2.920	4.303	6.965	9.925	22.327	31.599
3	0.000	0.765	0.978	1.250	1.638	2.353	3.182	4.541	5.841	10.215	12.924
4	0.000	0.741	0.941	1.190	1.533	2.132	2.776	3.747	4.604	7.173	8.610
5	0.000	0.727	0.920	1.156	1.476	2.015	2.571	3.365	4.032	5.893	6.869
6	0.000	0.718	0.906	1.134	1.440	1.943	2.447	3.143	3.707	5.208	5.959
7	0.000	0.711	0.896	1.119	1.415	1.895	2.365	2.998	3.499	4.785	5.408
8	0.000	0.706	0.889	1.108	1.397	1.860	2.306	2.896	3.355	4.501	5.041
9	0.000	0.703	0.883	1.100	1.383	1.833	2.262	2.821	3.250	4.297	4.781
10	0.000	0.700	0.879	1.093	1.372	1.812	2.228	2.764	3.169	4.144	4.587
11	0.000	0.697	0.876	1.088	1.363	1.796	2.201	2.718	3.106	4.025	4.437
12	0.000	0.695	0.873	1.083	1.356	1.782	2.179	2.681	3.055	3.930	4.318
13	0.000	0.694	0.870	1.079	1.350	1.771	2.160	2.650	3.012	3.852	4.221
14	0.000	0.692	0.868	1.076	1.345	1.761	2.145	2.624	2.977	3.787	4.140
15	0.000	0.691	0.866	1.074	1.341	1.753	2.131	2.602	2.947	3.733	4.073
16	0.000	0.690	0.865	1.071	1.337	1.746	2.120	2.583	2.921	3.686	4.015
17	0.000	0.689	0.863	1.069	1.333	1.740	2.110	2.567	2.898	3.646	3.965
18	0.000	0.688	0.862	1.067	1.330	1.734	2.101	2.552	2.878	3.610	3.922
19	0.000	0.688	0.861	1.066	1.328	1.729	2.093	2.539	2.861	3.579	3.883
20	0.000	0.687	0.860	1.064	1.325	1.725	2.086	2.528	2.845	3.552	3.850
21	0.000	0.686	0.859	1.063	1.323	1.721	2.080	2.518	2.831	3.527	3.819
22	0.000	0.686	0.858	1.061	1.321	1.717	2.074	2.508	2.819	3.505	3.792
23	0.000	0.685	0.858	1.060	1.319	1.714	2.069	2.500	2.807	3.485	3.768
24	0.000	0.685	0.857	1.059	1.318	1.711	2.064	2.492	2.797	3.467	3.745
25	0.000	0.684	0.856	1.058	1.316	1.708	2.060	2.485	2.787	3.450	3.725
26	0.000	0.684	0.856	1.058	1.315	1.706	2.056	2.479	2.779	3.435	3.707
27	0.000	0.684	0.855	1.057	1.314	1.703	2.052	2.473	2.771	3.421	3.690
28	0.000	0.683	0.855	1.056	1.313	1.701	2.048	2.467	2.763	3.408	3.674
29	0.000	0.683	0.854	1.055	1.311	1.699	2.045	2.462	2.756	3.396	3.659
30	0.000	0.683	0.854	1.055	1.310	1.697	2.042	2.457	2.750	3.385	3.646
40	0.000	0.681	0.851	1.050	1.303	1.684	2.021	2.423	2.704	3.307	3.551
60	0.000	0.679	0.848	1.045	1.296	1.671	2.000	2.390	2.660	3.232	3.460
80	0.000	0.678	0.846	1.043	1.292	1.664	1.990	2.374	2.639	3.195	3.416
100	0.000	0.677	0.845	1.042	1.290	1.660	1.984	2.364	2.626	3.174	3.390
1000	0.000	0.675	0.842	1.037	1.282	1.646	1.962	2.330	2.581	3.098	3.300
z	0.000	0.674	0.842	1.036	1.282	1.645	1.960	2.326	2.576	3.090	3.291
	0%	50%	60%	70%	80%	90%	95%	98%	99%	99.8%	99.9%
	Confidence Level										

Résumé

Les méthodes d'enseignement à l'ancienne dans l'enseignement en salle de classe ne fournissent pas ce dont les apprenants ont besoin pour les besoins futurs. L'approche par projet est une approche d'apprentissage active, engageante et centrée sur l'étudiant. Il s'agit d'une méthode d'enseignement dans laquelle les étudiants acquièrent des connaissances et des compétences en travaillant pendant une période prolongée pour enquêter sur un problème ou un défi complexe et y répondre. Le travail actuel tente d'étudier l'effet de la mise en œuvre de l'apprentissage par projet sur les résultats scolaires des élèves dans la classe EFL à la lumière des nouvelles réformes du système éducatif algérien. L'accent a été mis sur la tentative d'établir une relation entre la méthode d'enseignement et la performance académique. Conceptuellement, cette enquête a été conçue en utilisant des aspects significatifs de la théorie constructiviste, tout en faisant brièvement référence à d'autres théories de l'apprentissage. Au départ, cette étude part de l'hypothèse que l'utilisation de l'approche par projet dans l'enseignement de l'anglais améliorerait les performances des élèves. Pour atteindre les objectifs de cette recherche, un modèle de recherche mixte est utilisé. Les données sont collectées à l'aide d'un questionnaire, d'un entretien, d'une échelle d'attitude et de tests de rendement. En prélude; le chercheur a cherché à explorer les facteurs affectant la performance académique des étudiants de quatrième année dans la matière anglaise à la Wilaya de Khenchela. Par la suite, un test T permet d'analyser l'efficacité de l'approche par projet sur les performances des élèves après avoir soumis le groupe expérimental et le groupe témoin à un pré-test et un post-test dans les mêmes conditions pour mesurer les différences de performance. Les données obtenues ont révélé que l'apprentissage par projet a un effet positif sur les performances scolaires des élèves dans l'apprentissage de l'anglais.

Mots clés: Approche par projet, Performance académique, Anglais langue étrangère

ملخص

تفتقر أساليب التدريس القديمة في التعليم القائم على الفصول الدراسية إلى توفير ما يحتاجه المتعلمون لمتطلبات المستقبل. لقد تم تصميم التعلم المعتمد على المشاريع لتقديم ما يحتاجه المتعلمون من إصلاح تدريجي للتعليم ، ومستوحى من نظريات ديوي (1897) وكيلباتريك (1918) للتعلم. نهج تعلم نشط وجذاب ومتمحور حول الطالب. إنها طريقة تدريس يكتسب فيها الطلاب المعرفة والمهارات من خلال العمل لفترة طويلة للتحقيق في مشكلة أو تحدٍ معقد والاستجابة له. يحاول العمل الحالي التحقيق في تأثير تنفيذ التعلم القائم على المشروع على الأداء الأكاديمي للطلاب في الفصل الدراسي للغة الإنجليزية كلغة أجنبية في ضوء الإصلاحات الجديدة للنظام التعليمي الجزائري. تم التركيز على محاولة إقامة علاقة بين طريقة التدريس والأداء الأكاديمي. من الناحية المفاهيمية ، تم تأطير هذا الاستفسار باستخدام جوانب مهمة من النظرية البنائية ، مع الإشارة بإيجاز إلى نظريات التعلم الأخرى. في البداية ، تستند هذه الدراسة إلى افتراض أن استخدام النهج القائم على المشروع في تدريس اللغة الإنجليزية من شأنه تحسين أداء الطلاب. للوصول إلى أهداف هذا البحث ، يتم استخدام تصميم بحث مختلط. يتم جمع البيانات باستخدام استبيان ومقابلة ومقياس سلوك واختبارات إنجاز. كمقدمة. سعى الباحث إلى استكشاف العوامل المؤثرة في الأداء الأكاديمي لطلاب السنة الرابعة في مادة اللغة الإنجليزية بولاية خنشلة. بعد ذلك ، يتم استخدام اختبار T لتحليل فعالية النهج القائم على المشروع على أداء الطلاب بعد إخضاع المجموعة التجريبية والمجموعة الضابطة للاختبار القبلي والبعدي تحت نفس الظروف لقياس الاختلافات في أداء. كشفت البيانات التي تم الحصول عليها أن التعلم القائم على المشاريع له تأثير إيجابي على الأداء الأكاديمي للطلاب في تعلم اللغة الإنجليزية.

الكلمات المفتاحية: المنهج القائم على المشروع ، الأداء الأكاديمي ، اللغة الإنجليزية كلغة أجنبية