EFFECT OF ADAPTIVE TEACHING FOR IMPROVING LANGUAGE SKILLS OF UNDERGRADUATE STUDENTS

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EFFECT OF ADAPTIVE TEACHING FOR IMPROVING LANGUAGE SKILLS OF UNDERGRADUATE STUDENTS

By

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This thesis has been accepted by the Department of Teacher Education, Faculty of Education, International Islamic University Islamabad in partial fulfillment of the degree of **PhD Education**.

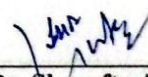Supervisor: _____
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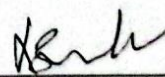Prof. Dr. Muhammad Imran Yousuf

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AUTHOR'S DECLARATION

It is hereby declared that author of the study has completed the entire requirement for submitting this research work in partial fulfillment for the degree of PhD Education. This thesis is in its present form is the original work of the author except those which are acknowledged in the text. The material included in the thesis has not been submitted wholly or partially for award of any other academic certification than for which it is being presented.

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SUPERVISOR'S CERTIFICATE

This thesis "Effect of Adaptive Teaching for Improving Language Skills of Undergraduate Students" submitted by Iram Shahzadi Reg. 172-FSS/PHDEDU/F20 in partial fulfillment of PhD Degree in Education, has been completed under my guidance and supervision. I am satisfied with the quality of student's research work and allow her to submit this thesis for further process as per IIUI rules and regulations.

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DEDICATION

I WANT TO DEDICATE MY THIS WORK TO

FIRST OF ALL MY

RESPECTED SUPERVISOR DR. FOUZIA AJMAL

MY HUSBAND, FAMILY MEMBERS

PARTICIPANTS OF MY RESERCH

AND

EVERY ONE WHO HELPED ME IN THIS

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ABSTRACT

Adaptive Teaching provides personalized learning, which aims to give each student a path to learning that is efficient, effective, and unique. The main objective of the study is to compare the scores of writing skills of the students of experiment group and control group. In Pakistan, education system is improving gradually. Students' diverse background at universities become a challenge for teachers. Classroom comprises of diverse students based on gender, family background, age, exposure, and language. It is very difficult to facilitate all sorts of students with individual differences. Challenges in writing that are faced by students are lack of vocabulary, poor grammar, poor spelling, students' readiness and lack of exposure to books and reading materials. Nevertheless, writing has always been a major difficulty faced by students in English language learning, especially in universities. At university level students face difficulties in developing language skills especially in writing skills. The nature of the study was experimental that was completed through quasi experimental research design. Pre-test and post-test were administered for experimental and control groups. Adaptive Teaching was taken as independent variable and writing skills was as dependent variable. The population of the study was comprised on BS students first semester from management sciences department. The population of the study was comprised on 120 students of first semester from management sciences department of Khawaja Fareed University of Engineering and Information Technology. The 30 students were selected through purposive sampling technique for experimental group and 30 for control group. Experimental group was taught through adaptive approach and control group was taught through traditional approach. CUNY assessment in writing test was used in pretest and posttest. The duration of the experiment was 16 weeks. Findings of the study reveal that CATW assessment in writing test score was increased among students of experimental group in post-test. In post-test students improved their application writing, essay writing, letter writing, paragraph writing, dialogue writing and composition writing. Moreover, score of writing skill test was also enhanced among students of experimental group in post-test, it means Adaptive Teaching enables the learner to improve language skill. In addition, there was no mean score difference of City University of New York assessment

in writing skills test in pre-test-and post-test among students of control group. Similarly, there was no significant mean score difference of CATW in pre-test of experimental group and control group. Moreover, in post-test comparison of mean score of CATW among students of experimental group improved their writing skills as compared to students of control group. It means that Adaptive Teaching influences language development in positive way. Moreover, findings of the study describe that there was no significant mean score difference on writing skills test among students of experimental group and control group in pre-test. It denotes that the pre-test score writing skills test between experimental group and control group was not significant. Consequently, the level of writing skills test of students of experimental group was greater as compared to the students of control group in post-test. It shows that students who were learning with Adaptive Teaching of experimental group in post-test perform better on language skill as compared the control group. The findings underscore the effectiveness of adaptive teaching in addressing varied linguistic needs and fostering meaningful language acquisition among undergraduates. This study contributes to the growing body of evidence supporting student-centered pedagogies in higher education. Universities should incorporate adaptive teaching frameworks into their language curricula, emphasizing student needs and data-driven instruction.

Keywords: Adaptive approach, Traditional approach of teaching, developing language skills, writing skill. Adaptive teaching in Higher Education

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LIST OF ABBREVIATIONS

AA	Adaptive Approach
AL	Adaptive Learning
ALT	Adaptive Learning Techniques
CATW	City University of New York Assessment Test in Writing
CUNY	The City University of New York
EFL	English as a Foreign Language
LMS	Learning Management Systems
LS	Lesson Study
MI	Multiple Intelligence
PD	Professional Development
SES	Socio-Economic Status
UCF	University of Central Florida
US	United States

CHAPTER 1

INTRODUCTION

Adaptive Teaching is widely considered a highly effective way to teach writing. Adaptive teaching has been repeatedly claimed pivotal to effective classroom instruction and student learning (Gallagher et al., 2022). A study reveals that in adaptive teaching, teachers employ prompts, instructional support, and feedback, taking into account individual differences in increasingly heterogeneous classrooms as compared to traditional methods (Parsons et al., 2018). According to Hardy et al. (2022), it highlights the several ways in which teachers adapt their teaching methods to meet the varied requirements and degrees of comprehension of their students. It has been asserted on multiple occasions that Adaptive Teaching is an essential component of successful classroom instruction and the learning of students. Adaptive Teaching involves the use of prompts, instructional support, and feedback by teachers to address the diverse needs of students in classrooms that are becoming more varied (Gallagher et al., 2022).

Brawlier and Vogt (2020), found that Adaptive Teaching competency, conceptualized as planning, diagnosis, didactics, and content knowledge, showed a measurable impact on student learning outcomes. During teaching it was observed that traditional, one-size-fits all teaching methods often fail to meet the diverse learning needs of students, especially in language acquisition. With classrooms becoming increasingly diverse in terms of language background, learning preferences and proficiency levels. Adaptive Teaching has the potential to offer more personalized and effective instruction. By focusing on how Adaptive Teaching methods can improve language skills, this research aims to contribute to more inclusive and impactful language education at the undergraduate level. Adaptive Teaching, through the use of technology and differentiated instruction, can help bridge learning gaps and enhance communication skills, grammar, reading and writing outcomes.

Typically, educational settings involve students who come from a wide range of social and linguistic backgrounds and possess a diversity of cognitive, motivational, and self-regulatory resources. Adaptive Teaching is a process where teachers engage in meta-

cognitive reflection on students' needs before, during, and after instruction, resulting in a socially built approach. According to Hardy et al. (2019), Adaptive Teaching may be considered a form of social practice that is carried out by reflective teachers in classroom settings. This type of teaching allows for adjustments to make to accommodate the unique learning requirements and variations of each student. Individual preferred mood of learning and preferred environment for learning. Learner prefers to learn some people learn by visual, auditory, kinesthetic, reading and writing it is a combination of different style of learning. Adaptive approach is a type of educational technology that uses data analytics and personalized learning techniques to tailor instruction to individual learner's needs and abilities.

The basic objective of Adaptive Teaching is to guarantee high-quality instruction that maximizes the outcomes for both students and teachers. Adaptive Teaching considers that everyone is different in terms of readiness, hobbies, and learning preferences in order to provide training that is responsive and focused. Learning preferences refer to the ways in which individuals best absorb, process, and retain information. These preferences vary from person to person and can influence how effectively someone learns in different environments. Prefer to read and write to absorb information. Benefit from note-taking, reading textbooks, and writing summaries. This method entails utilizing formative evaluation to comprehend student progress and adjust instructional tactics accordingly. According to Hardy et al. (2019), Adaptive Teaching is an inclusive method of instruction since it takes into account the various experiences, backgrounds, and capabilities of students.

Proficiency in effectively instructing writing at the university level is a crucial aptitude for English educators. Writing plays a significant role in the instruction of the English language. Writing instruction has been used from the early stages of education, when kids begin to acquire the proper formation of letters. A deficient foundation in writing can result in numerous consequences that could significantly impact students' academic performance. Writing is essential for enhancing both academic performance and social and emotional growth. Furthermore, in this fiercely competitive environment, the ability to write is also a crucial skill for achieving excellence. Lack of proficiency in

writing may hinder their prospects of obtaining employment in the future. Hence, it is imperative to address this matter with utmost efficiency (Moses & Mohamad, 2019).

The typical strategy that has evolved over time due to broad acceptance and use in the field of education is known as the conventional teaching method. It places an emphasis on teachers imparting knowledge to pupils through the use of lectures, standardized classroom setting, and standardized examinations. One of the goals of the conventional way of teaching is to ensure that all pupils are exposed to the same information and that they develop the same interests. Scholars and researchers advocating for innovative educational methods have frequently criticized the traditional teaching style as ineffective, inflexible, and antiquated. The conventional approach denotes the classic writing skills test method predominantly characterized by the lecture format. This writing skills test approach is centered on textbooks, dominated by the instructor, and focused on examinations. This section has a primary emphasis on learning to retain and reproduce information, as well as learning ideas and theories. Conventional teaching methods, sometimes known as traditional teaching methods, continue to be extensively utilized in educational institutions. The students are forced to study and recite the teachings that they are taught in class, and they are also required to repeat the lesson out loud when it is their turn to speak. This is in accordance with the conventional teaching methods. All students, save for those who are reciting, listen attentively and patiently await their turn. Students complete the full lesson using this method. Subsequently, educators administer projects, written examinations, or oral assessments that evaluate the students' ability to recall and retain the lecture material (McConnell, 2018). New teaching tactics that take a completely different perspective and approach are being adopted by the educational system, which is undergoing a fundamental transformation.

Teachers employ an individualized teaching approach where they instruct each student at a unique level without taking into account the collective needs of the entire class. Each student is treated differently based on the belief that each student possesses unique qualities. They consider the individual needs of each student and deliver instruction accordingly. Progressive teaching methods, in contrast to traditional education, are dependent on activities that are offered by the teacher. On the other hand,

adoption methods allow students to gain a global level of knowledge (Darling-Hammond et al., 2020).

Nowadays students in classrooms have diversity. Diversities mean religion, family background, culture and region of the students in universities. Diversity in the classroom is growing. A challenge to meet the needs of students, it is essential to look for effective teaching approaches. These diverse needs can be fulfilled only by applying the innovative strategies and methods of delivering knowledge by the teachers to students (Taylor, 2022).

Functional English subject is the essential part of educational curricula at university level by. In public universities, English subject was taught through traditional approach of teaching that was considered inappropriate method. Adaptive approach of teaching improves students' academic and linguistic skills at university level (Arghode et al., 2017). In academic environment adaptive approach of teaching is nebulous. Implementation of adaptive approach of teaching in higher education is not clear (Cavanagh et al., 2020). Adaptive approach empowers students' skills and knowledge by delivering information according to the mental approach through innovative teaching (Taylor, 2022). Adaptive approach predisposes individual teaching paths according to his or her strengths and weaknesses in education by using adaptive approach tools (Cavanagh et al., 2020).

Teaching through adaptive approach empowers the students' when they are evaluating on their meta-cognitive level and they monitor properly for their progress in lessons. Testing to learn is the method of adaptive leaning and important part of Adaptive Teaching and it plays a vital role in developing course formation (Bae et al., 2019). Adaptive Teaching is considered as effective approach of initiative of use of innovative educational activities through students by him at university level. Performance assessment, flexible teaching environment and individualize path all providing by the utilization of Adaptive Teaching platforms (Mavroudis et al., 2018).

A study was conducted to investigate the effectiveness of adaptive approach in classroom. It was found that exposure of adaptive approach of teaching increases language skill of students. Findings of study reveal that use of Adaptive Teaching

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approach improves students' academic achievement (Wu et al., 2017). A study was conducted on adaptive approach in educational teachings. Findings of the study reveal that problems related to teaching process was overcome and improves language ability among the students (Anindya Putri et al., 2020).

A study was designed to uncover the use of adaptive approach to evaluate the efficiency of students in study. Results indicate that use of adaptive approach was positively correlated with students' efficiency in writing skills (Hubalovsky et al., 2019). Moreover, a study revealed that the use of adaptive approach is continuously increasing to enhance the quality of education. The findings show that students actively participate in classroom activities when they experience the adaptive approach by their instructors (Martin et al., 2020). A study was designed to investigate the effectiveness of adaptive approach on performance of the students at higher education. It was found academic performance was significantly predicted by adaptive approach teaching (Normandin et al., 2019).

Strategies of adaptive approach based on instructional model, learner model, and content model were utilized. Instructional model comprised on the techniques of pacing, sequencing and format. Learner model refers to proficiency, learner knowledge, learner attributes, individual differences, learner preferences, and learner behavior. Content model based on knowledge for course that leads learning map. Adaptive Teaching strategies are crucial for meeting the varied needs of students, enabling a customized and efficient learning experience (Martin et al., 2020). All the contents of language skills (writing) were organized according to steps of Adaptive Teaching. Course of writing skills was implemented in the light of; Align, Engage, Motivate, Analyze and Support (Baker, 2020). In addition, course of writing skills was aligned, and then students were engaged with adaptive approach of teaching. Adaptive Teaching focuses on engage the students with learning. Motivation of the students to learn language skills is essential for active participation and practices the activities. Assessment is also important for adaptive approach of teaching. Progress of the students is evaluated in Adaptive Teaching.

The primary steps of Adaptive Teaching Approach are (Baker, 2020):

1-Align: Learning objectives was aligned with a consistent set of activities, content, and evaluation in courses.

2-Engage: Active learning benefits students. Adaptive learning is done correctly, students become more active. Course is structure for students to go through learning modules, practice exercises, and examinations while expanding their knowledge and abilities.

3-Motivate: Students motivated by prompt feedback, and adaptive learning offers several options for this.

4-Analyze: Learn analytics data helped you to understand individual and class progress and adjust your training.

5-Support: Institutions gave faculty with resources, rewards, and recognition because implementing adaptive learning requires time and attention.

This procedure was used in the experiment. Adaptive knowledge is especially needed by teachers since they deal with erratic and changing circumstances in their daily instructional activities (Lin et al., 2018). Teachers develop into adaptable educators, as described by Timperley (2013), who are driven by a strong sense of duty to enhance the involvement, learning, and overall welfare of every student. They engage in continuous investigation with the goal of expanding their professional knowledge, which is the foundation of their expertise.

1.1 Rationale of the Study

Language proficiency is a fundamental component of academic success and career readiness in higher education (Moses & Mohamad, 2019). However, undergraduate students often exhibit diverse levels of language competence due to differences in educational background, learning styles, cognitive abilities, and exposure to language learning environments. Traditional teaching approaches, which generally follow a one-size-fits-all model, may not adequately address these individual differences, leading to uneven learning outcomes. In this context, there is a growing need to explore

more flexible and personalized instructional strategies, such as adaptive teaching, to enhance students' language skills more effectively.

Adaptive teaching refers to the instructional approach in which educators modify the content, process, pace, or learning environment based on students' needs, performance, and preferences (Gallagher et al., 2022). Rooted in constructivist and learner-centered paradigms, adaptive teaching leverages ongoing assessment and feedback mechanisms to tailor instruction, thereby supporting each learner's progress. With the integration of adaptive methods—ranging from differentiated instruction to digital adaptive learning technologies educators can provide a more inclusive and effective learning experience. Despite its theoretical benefits, empirical evidence on the effectiveness of adaptive teaching for improving language skills particularly among undergraduate students is still limited, especially in non-native English-speaking contexts. Most existing research either focuses on general academic achievement or is conducted at the school level. Thus, a focused investigation is needed to determine how adaptive teaching can influence core language competencies such as reading, writing, listening, and speaking at the tertiary level. Furthermore, as language is not only a subject but also a medium of instruction in many disciplines, improving language proficiency can have a broader impact on students' academic performance across subjects, critical thinking skills, and future employability. Therefore, understanding the efficacy of adaptive teaching strategies in language instruction could inform curriculum design, teacher training, and institutional policy.

This study aims to fill the existing research gap by evaluating the impact of adaptive teaching methods on the language skills of undergraduate students. It seeks to determine whether these methods can lead to significant improvements compared to traditional instructional approaches, and to identify which specific adaptive strategies are most effective. The findings of this research could contribute valuable insights to educators, curriculum developers, policy-makers and stakeholders striving to enhance language education in higher institutions.

1.2   Statement of the Problem

In Pakistan, education system is improving gradually. Students' diversity in universities has become a challenge for teachers. Classroom comprises on diversity of students such as gender family background, age, exposure, and languages. It is impossible to facilitate all sorts of students with personal differences. At the present time, English is a language that is in demand all over the world. Students have various problems in writing, including limited vocabulary, deficient grammar, inadequate spelling, unpreparedness, and insufficient access to books and reading materials. Writing, on the other hand, has traditionally been one of the most challenging aspects of learning English, particularly for students who are enrolled in higher education. In addition, teachers are encountering several difficulties when it comes to instructing children in writing proficiency. For students who are studying English as a second language, writing in English has always been a challenging part of the learning process.

Developing students' writing abilities is one of the most difficult issues that teachers confront today. Writing, on the other hand, has always been a substantial obstacle for students who are getting their English language studies underway. In education, adaptive approach of teaching is commonly viewed as the effective way of teaching. In the light of this approach every student can improve his or her academic performance at different level of education. At university level students face difficulties in developing language skills so, the adaptive approach is highly effective method to enhance writing skills. Whenever, conventional approach of teaching is commonly used in developing countries especially in Pakistan but the learning outcomes are not satisfactory. Comparatively, the adaptive approach of teaching is perceived as an effective way of delivering with the use of innovative approach of teaching in higher education. Therefore, the study is aimed at investigating the effect of adaptive approach of teaching for improving language skills of undergraduate students.

1.3   Objectives of the Study

Objectives of the study were to:

1. Investigate the effect of adaptive approach of teaching on writing skills of under-graduate students.
2. Compare the mean score of writing skills in pre-test and post-test of experiment group.
3. Analyze the mean score difference of writing skills between the experimental group and control group.
4. Examine the retention rate of writing skills through adaptive approach of teaching in experimental group.
5. Find out the effect of the adaptive teaching approach on the writing skills and perception about undergraduate students at university level.

1.4   Hypotheses of the Study

Ho_1: There is no significant effect of adaptive approach of teaching on writing skills of undergraduate students.

Ho_2: There is no significant mean score difference of writing skill test in pre-test and post-test of experimental group.

Ho_3: There is no significant mean score difference of writing skills test between experimental group and control group in post-test.

Ho_4: There is no significant difference on retention rate of writing skills through adaptive approach of teaching in experimental group.

Ho_5: There is no significant effect of the adaptive teaching approach on the writing skills and perception about undergraduate students at university level.

1.5   Significance of the Study

This study has provided an opportunity to utilize adaptive approach of teaching in higher education. This study is significant for the policy makers and stakeholders. The basic significance of the study will address the application of Baker's steps (2020) of Adaptive Teaching approach in developing writing ability and writing skills among a sample of under-graduate students at the university level. In addition, this study is helpful to know the effectiveness of Adaptive Teaching as compared to other strategies. Previous studies didn't explore the effect of the Adaptive Teaching approach on the under-graduate students at university level and neither has been compared with another teaching approach.

The findings of the study provided a remarkable literature review for the researchers to conduct a study on Adaptive Teaching at university level. Findings has contributed empirical evidence in previous literature on Adaptive Teaching and communication skills. Researchers and stakeholders can get valuable literature from this study to work on adaptive learning in future in improving their academic performance. Research indicates that Adaptive Teaching is an efficacious, student-centered methodology designed to address the varied requirements of learners while fostering high-quality instruction. It acknowledges that each learner is distinct and necessitates customized teaching to achieve their maximum potential. So, this approach needs to be used in the education sector to make sure that the quality of education goes up.

Studies indicate that when educators are flexible, they can customize their instruction to address the distinct needs of each student. By means of this tailored method, students can interact more closely with the content, create meaningful connections, and attain improved learning results. A study found that being flexible in the classroom is helpful in many ways. As students watch their teacher be flexible, it makes them more resilient and helps them learn how to solve problems. Adaptability cultivates a positive and supportive classroom environment, enabling students to feel at ease when taking risks and making errors. The findings of this study offered evidence that adaptive learning technology should be introduced into educational institutions in order to conduct skill level assessments on each individual student and to design

personalized learning routes for those students. Public and private educational sectors can get the benefits from the outcomes of the current study to implement Adaptive Teaching. Teachers can also get benefit from the findings of the study by planning effective classroom activities to equip under-graduate students with writing and writing skills and practices. In addition, this study will provide the roadmap to practice Adaptive Teaching approached may also guide further research in this educationally important area.

1.6   Delimitations of the Study

Due to lack of time and financial constrains the study was delimited to:

1. Functional English subject as a course

2.   Faculty of Humanities and Social Sciences, Khwaja Fareed University of Engineering and Information Technology, Rahim yar khan

3.   Undergraduate students from BS Management Sciences, Batch Spring 24-A studying with course ENG-1118-A

4. Writing skills of Expository style

1.7   Operational Definitions of the Study

1.7.1 Effect

A change which is a result or consequence of an action or other cause. Effect means how much change in writing skills due to adaptive approach of teaching.

1.7.2 Adaptive Approach of Teaching

Adaptive Teaching is one way to provide personalized learning, which aims to give each student a path to learning that is efficient, effective, and unique. Adaptive learning is a way of teaching and learning that tries to make courses, readings, practice

tasks, and tests more relevant to each student by taking into account their current skills and performance.

1.7.3   Language Skills

Language is essentially a skill. A skill may be called the ability to do something well. Language comprises of reading, writing, listening and speaking skills.

1.7.4   Writing Skills

Writing abilities are unique attributes that empower writers to articulate their thoughts into coherent language and engage with the message on a psychological level. Linguists provide multiple interpretations of the concept of writing. Writing is part of a bigger activity where the main focus is on something else, like speaking, playing out, or practicing language.

1.8   Theoretical Framework of the Study

According to socio-constructivist theories of learning, teaching can be seen as the ongoing process of a teacher's actions being influenced by the social environment of the classroom. As stated by Corno (2008), adaptive education considers the different levels of knowledge and skills that students possess to be opportunities for learning rather than challenges that need to be conquered. It is possible for teachers to organize learning activities in accordance with the specific learning needs of each individual student, which is to the benefit of all students, because the social environment of the classroom allows for this.

It was suggested by Parsons et al. (2018) that teachers who change their lessons based on how each student learns best also do metacognitive thought on their students' needs before, during, and after class. These teachers possess extensive knowledge of their students' learning needs and anticipated learning paths, as they analyze effective instructional designs. Importantly, these educators are also able to adapt in a flexible manner to the unique peculiarities of their students as well as changes in the circumstances that arise inside the more complicated environment of a classroom.

Importantly, these educators are also able to adapt in a flexible manner to the unique peculiarities of their students as well as changes in the circumstances that arise inside the more complicated environment of a classroom. Accordingly, Boeheim et al. (2021) discovered that Adaptive Teaching competency, which can be viewed as planning, diagnosis, didactics, and content knowledge, demonstrated a measurable impact on the learning outcomes of students in a study that was conducted not too long ago. Adaptive approach of teaching has become the future of educational training today. Metacognitive theory (Schraw & Moshman, 1995) provides the background the adaptive approach of teaching because it focuses to help and promote the learners according to their academic needs. This theory is also known as the self-awareness metacognitive theory that enables the learners to rethink about their thoughts. As learners get adaptive approach of teaching, they improve their knowledge, level of confidence (Moshman, 2018).

1.9 Conceptual Framework of the Study

Figure 1.

The Steps of Adaptive Teaching Approach (Baker, 2020).
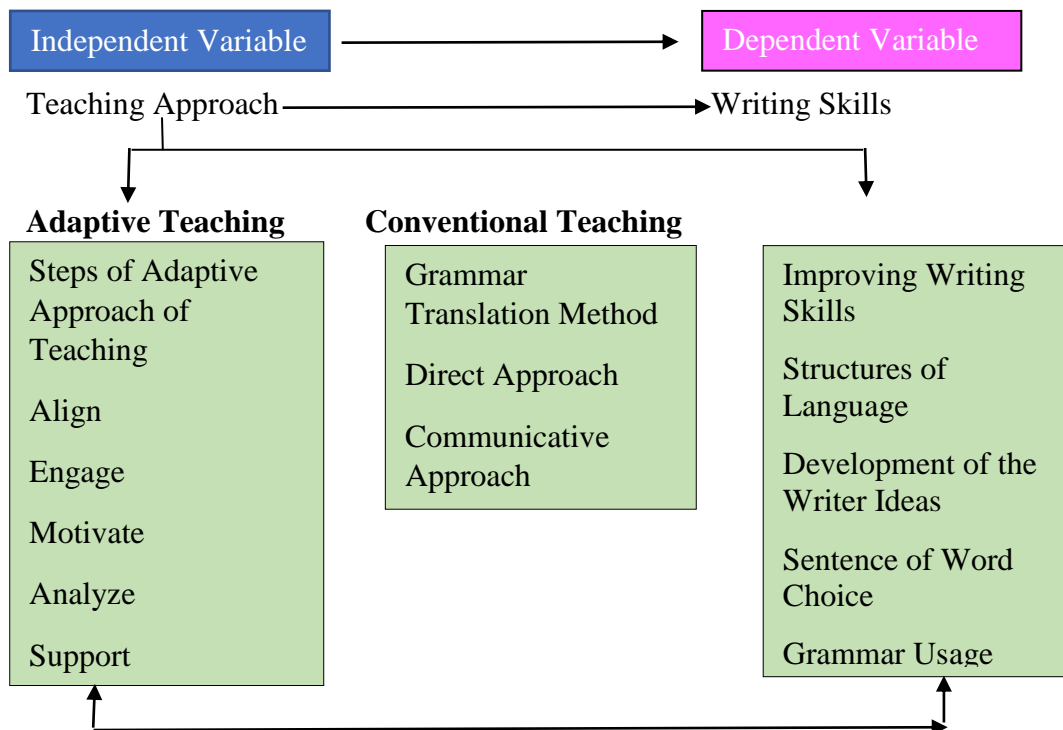
The conceptual framework that has been offered provides an overview of the numerous instructional methods. The experimental group received instruction through an Adaptive Teaching strategy, whereas the control group was taught using a conventional method. Based on the findings, it can be concluded that the adaptive method is the independent variable, while the writing skills of the students are the dependent variable. An Adaptive Teaching approach successfully conveyed the experimental method. Steps of Adaptive Approach of Teaching are; align, engage, motivate, analyze support. The conventional approach of teaching includes; grammar translation method, direct approach, communicative approach. Control group was taught thought by the researcher. We conducted the pretest and post-test for the experimental group. We also measured the pretest and post-test of the control group.

1.10 Overview of the Chapter

This chapter has a detailed background and introduction of the Adaptive Teaching approach that it is based on the Adaptive Teaching steps like align, engage, motivate, analyze, support and Adaptive Teaching arrived on the education sector in the 1950s and main focus of research was to develop writing abilities among secondary school students. Background and introduction of the topic lead with the rationale of the study that why a need was felt to conduct this study, rationale with logical arguments and justification is explained in this chapter. Research objectives, hypotheses, and a short description of the research methodology used for this study are also part of this chapter. A self-explained conceptual framework of the study is also explained in the chapter. Overall, this chapter is a brief introduction of the research process adopted for this study.

CHAPTER 2

LITERATURE REVIEW

A literature review is known as the search and evaluation of available literature on the particular topic a researcher is going to research on. Literature reviews show a reader that a researcher has an in- depth grasp of a particular topic and knows here his/her research best fit in the literature Basically, Literature review provides the scientific background of the proposed variables. Previous studies were conducted on Adaptive Teaching and students 'class participation, students 'engagement and students 'academic achievement. There were few studies on the role Adaptive Teachings in language skill. In addition, empirical review of literature enables the researcher to develop research hypotheses. A complete direction of conducting a study is derived from the reviewing the literature. The literature review for the study was divided into three main sections according to the topic of study. Section 1 highlights the introduction, background and historical perspectives of Adaptive Approach of Teaching. Section 2 presents the detailed literature about personalized learning and writing skills, how they can be developed among students, and why writing skills are necessary for undergraduate students. Section 3 leads a discussion evaluating teacher's adaptability with the help of adaptive instruction, writing skills and concluded it the literature review research gaps on the basis of previous studies. Let's have a look at each section in detail.

Section 01: Adaptive Teaching Approach

Students who come from a wide range of social and linguistic backgrounds and who possess a diversity of self-regulatory, motivational, and cognitive, resources are often required to participate in educational settings. Particularly in environments with increased student heterogeneity, such as, the consideration of individual student needs, inclusive educational settings have recently reemerged as a prominent topic in practice-oriented, empirical and theoretical work. This is especially true in the context of inclusive educational settings. According to several studies conducted in the field of education, one of the most important aspects of successful teaching is the ability of teachers to adapt

their lessons to the specific developmental stages of their students. A clear method for evaluating Adaptive Teaching is to determine its impact on achieving positive student learning outcomes. The level of implementation of Adaptive Teaching in classrooms is likely correlated with teacher professional competency (Parsons et al., 2018), Adaptive Teaching, a widely discussed concept (Parsons et al., 2018), has gained significant international recognition because of inclusive education regulation. Some nations, such as the Netherlands and, Canada have national education policies that support the integration of students with special educational needs into conventional education settings. Enforcing these regulations may result in a heightened variety of pupils in classrooms in terms of their motivation, educational needs, abilities, and backgrounds (Suprayogi et al., 2017).

Considering the potential benefits of Adaptive Teaching on student performance and assistance (Deunk et al., 2018), there is a requirement for suitable, efficient, and ongoing teacher professional development initiatives that specifically encourage Adaptive Teaching methods (Suprayogi et al., 2017). Lesson Study (LS) is considered to enhance teachers' awareness of students' diverse educational requirements, increase their confidence in addressing these needs, and improve their ability to adjust their classroom practices accordingly (Schipper et al., 2017).

Adaptive Teaching necessitates the strategic organization of learning activities, instructional materials, and curriculum, as well as being responsive to the diverse learning needs of students within the social context of the classroom. The aim is to achieve the desired outcome. Adaptive Teaching involves the teacher offering different choices to allow students to obtain knowledge, comprehend it, and demonstrate their grasp based on their individual levels of preparation, interests, and learning characteristics. Considering students' preparation might also result in increased academic performance. Evaluating the proficiency of students enables them to attain the learning goals according to their unique pace and position (Gheyssens et al., 2021).

Adaptive Teaching is considered crucial for providing excellent instruction and fostering student learning. This outlines the strategies used by educators to adapt their instruction to address the varied needs and levels of understanding of students. Multilevel regression research found that adaptive classroom discourse enhances students' long-term

learning. Teachers commonly demonstrated adaptive behavior, underscoring the significance of teacher professional development (Hardy et al., 2023). Adaptive Teaching is often used in the field of education to refer to the process of adapting instruction to the individual diversity of students in terms of their talents, motivation, and linguistic background. Adaptive Teaching is characterized using differentiating instructional strategies to adapt training on both a macro level and a micro level (Hardy et al., 2019). Higher education institutions are showing a growing interest in adopting adaptive learning methodology as an innovative data-driven instructional strategy (Mirata et al., 2020).

Real-time verbal exchanges between foreign language teachers and students are crucial for language development. However, it is important to note that classroom interactions are multifaceted and complex. Teachers can employ a powerful educational method by comprehending and reacting to learner utterances, which can effectively support the development of learner language skills (Smit et al., 2022). Adaptive Teaching is widely recognized as a fundamental aspect of good training. It enhances teachers' professionalism and their capacity to make decisions (Vaughn et al., 2022).

The significance of adaptive education has grown in both research and practice. However, the complex nature of the subject necessitates the implementation of efficient professional development methods, such as Lesson Study, which can facilitate the adoption of adaptable teaching techniques (Schipper et al., 2020). Adapting learning to reflect the diverse individual disparities among students poses a significant difficulty. The previous research examined the impact of an adaptive learning environment on enhancing writing skills and usability among undergraduate students studying English as a Foreign Language (EFL). A design standards checklist was developed to offer direction for the design process of the proposed online adaptive environment. The adaptation process was conducted based on the Multiple Intelligences (MI) theory, which involved dividing the students into three groups (interactive, introspective and analytic) based on their dominant intelligences. Each group was presented with various activities based on different sorts of multiple intelligences. The writing proficiency of each student was taken into consideration when adapting those tasks. The students' personalized learning path was predetermined based on their MI profile, which encompassed their personal

data, EFL writing level, and various intelligences. Consequently, every student advanced through the adaptive environment following a personalized learning trajectory. Various internet programs such as, Hangouts, WhatsApp, Google Drive, and Facebook, were used in the adaptive environment.

2.1   Adaptive Learning

Modern educational systems often use a consistent strategy and engage all students in a standardized manner. Still, this situation presents numerous challenges because the students possess varying degrees of knowledge, objectives, traits, learning preferences, and multiple intelligences (Gohar & El-Ghoul, 2016). Teachers must have a thorough grasp of their pedagogy, the educational setting, and the subject matter they are teaching. Moreover, it is imperative for educators to have a thorough comprehension of the developmental characteristics of their students, encompassing both a general understanding and an individualized perspective (Goodway et al., 2019).

It is essential for teachers to acknowledge that students have different backgrounds, such as their Social-Economic Status (SES), family, race/ethnicity, and culture. By understanding these differences, teachers can make appropriate adjustments and changes to ensure that all students can access the content in a learning environment that is safe and inclusive. This is emphasized by Forzani (2014) and McDonald et al. (2013). In lessons, routine specialists are adept at providing precise instructions and presenting tasks clearly and concisely. Due to their lack of flexibility, students are more likely to follow the lesson plan and perform consistently, regardless of the situation. They lack the capacity to adjust to new situations (Kavanagh et al., 2020).

Adaptive teachers are those who acknowledge when their plan is not entirely applicable, investigate why their instruction is not effective, and employ flexible and creative skills to find alternative approaches. Adaptive teachers can modify their teaching and assignment delivery to meet student needs (Kavanagh, 2018). In their study, Kavanagh et al. (2020) explain that adaptive expertise involves judgment and innovation, while routine expertise focuses on efficient and precise execution.

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2.2 Writing Skills

Writing skill is a key factor in determining academic success and is vital for participating in civic life and the global community. Academic writing is a crucial skill, particularly for students in higher education. In school reports, conference papers, and other academic documents, students must present their findings in a clear and concise manner. Most of the research in academic writing tools focuses on enhancing students' grammatical abilities, especially for those learning English as a second language, along with skills in technical or scientific writing (Ocharo & Hasegawa 2018). The acquisition of writing skills is important for adult learners of English for a variety of reasons. To fulfill their functional responsibilities, such as completing forms, recording messages, or composing email communications, individuals may be expected to generate written messages. Proficiency in writing is sometimes necessary for individuals to excel in their academic pursuits or advance in their professional endeavors. Writing is a crucial undertaking for numerous kids as it enables them to articulate their thoughts on paper and communicate them to others (Gohar & El-Ghoul, 2016).

2.2.1 Writing is a Complex Process

Writing is considered challenging since it necessitates the creation of sentences that are both coherent and grammatically accurate. Nunan (2003), defined writing as the cognitive process of generating ideas and subsequently structuring them into coherent statements and paragraphs to create high-quality written work. Furthermore, Isleem (2012) asserted that writing performs a crucial function in facilitating student's skill to articulate their thoughts and emotions. Furthermore, it is crucial for the advancement of students' linguistic skills, comprehension of topics, mastery of idiomatic expressions, and understanding of grammar.

Writing is a crucial ability that encompasses various interconnected proficiencies. In Gabrielatos (2002) study, the components of writing abilities were characterized as accurate spelling, right grammar usage, and adequate word selection. Additionally, good formatting and arranging, as well as the presence of cohesion, coherence, and unity, were identified as important factors. While writing abilities are of great importance, numerous

studies have demonstrated that it is the most arduous task. According to Johnstone (2002), writing is the most challenging linguistic task because of its involvement in complex cognitive processes, including idea formulation and the transformation of these ideas into coherent sentences. In addition, Wang (2005) stated that writing poses a difficulty for numerous educators. The primary objective of language instruction is to enable students to get proficiency in comprehending, employing, and producing the foreign language to enhance their learning, education, or work prospects across diverse sociocultural settings (Soproni, 2020).

Teachers of languages face several difficulties. First and foremost, it is necessary to provide classroom settings that allow for the meaningful use of language at the right level of difficulty (Snow, 2014). According to Larsen-Freeman and Cameron (2008), getting students to actively participate in the language lesson is a second challenge that needs to be overcome. According to Gibbons (2015), the third problem is that language serves as both the subject matter of the foreign language lesson and the instrument that is used to master the subject matter. A crucial component of a language lesson is the provision of opportunities for students to engage in meaningful and rich classroom interaction. As part of this, students are encouraged to participate frequently and to collectively construct meaning (Gao, 2019).

Currently, higher education has various obstacles including concerns over quality, exorbitant expenses, a heterogeneous student population, equitable accessibility, and the provision of educational opportunities for nontraditional learners, such as older individuals (Elletson & Stromeyer, 2019). Various cutting-edge instructional approaches and technological advancements are currently being investigated to address these issues (Veletsianos, 2016). Adaptive learning is a method that offers a customized learning experience and is primarily utilized in blended and online learning environments.

Adaptive learning pertains to technologies or systems that observe student performance and utilize data to consistently customize instructional material based on individual students' actions and needs (Becker et al., 2018). This is made possible by technical advancements such as learning analytics and machine learning. For instance, it was disclosed that most specialists in higher education hold a favorable view of adaptive

learning and acknowledge its significant capacity to enhance student outcomes. This finding was discovered via a survey conducted on the subject of computing and information technology in higher education. A recent assessment of studies has identified multiple problems that higher education institutions have while testing or implementing adaptive learning principles (Becker et al., 2018).

Teachers in conventional settings are encountering heightened pressures to adapt their instructional methods to address the educational requirements of a heterogeneous student body with differing socioeconomic backgrounds (Ainscow et al., 2019). The rise of learner-centered, constructivist methodologies in education has resulted in a heightened focus on teacher adaptability (Parsons et al., 2018). This pertains to addressing students' needs and criteria throughout all educational tiers (Jager et al., 2021).

Educators that adapt their instructional approaches to cater to the individual requirements of their pupils should anticipate acknowledgment within the field of education and society at large (Schleicher, 2016). Parsons et al. (2018) provide evidence suggesting that the teachers that demonstrate adaptability are the most successful. Nevertheless, accommodating the specific requirements of students is an intricate undertaking, especially in classrooms that are seeing an increasing level of diversity (Parsons et al., 2018).

Teachers frequently experience a sense of inadequacy when it comes to modifying their curriculum and teaching methods to accommodate the individual learning requirements of each student. This is due to the intricate nature of the task and the specific skills required for Adaptive Teaching (Dixon et al., 2014). To tackle this problem, it appears that providing instructors with appropriate Professional Development (PD) is crucial. This PD should specifically concentrate on teaching methods that can be adjusted to different situations, as well as strategies to assist teachers in adapting to new circumstances (Parsons et al., 2018).Various concepts, such as adaptive instruction, diverse education, and differentiation, are employed to describe the practice of adjusting to the needs of a range of pupils in different classroom environments. Consequently, some scholars contend that these ideas frequently possess ambiguous designations that lack clarity and accurate implementation (Deunk et al., 2018). The absence of clear and

agreed-upon definitions and terminology in studies on differentiation and related tactics may be causing misunderstanding, both among academics and the public. The absence of clearness implies that evaluating adaptive instructional behavior through systematic measurement may provide challenges. Thus far, this approach has not yielded significant understanding of the behavior and thought processes of teachers who effectively implement differentiated education (Van Geel et al., 2019).

Corno (2008) sets adaptable teaching apart from other similar ideas by putting it in the social and changing setting of classroom activities. This is accomplished despite the utilization of labels in a way that hinders the identification of appropriate strategies to meet the educational requirements of students. On one hand, teachers must be flexible, dynamic, and responsive in their interventions; on the other hand, they must meticulously structure their classes and assess the progress and needs of their students. Moreover, Adaptive Teaching, as defined, encompasses differentiated teaching activities that occur before, during, and after the lesson. It also involves adopting an "adaptive mindset," where teachers perceive student differences as beneficial and supportive for both teaching and student learning. So, Adaptive Teaching is about how teachers carefully and proactively plan the lessons, materials, and activities for learning, as well as how they think about and plan for the social needs of their students in the classroom so that the lesson goals can be met (Beltrami, 2017).

2.3   Effect of Adaptive Teaching on Students' Learning

The significance of employing Adaptive Teaching methods to enhance classroom education and facilitate student learning has been frequently underscored (Gallagher et al., 2022). Adaptive Teaching refers to the practice of teachers utilizing cues, instructional assistance, and feedback to cater to the unique requirements of students in classrooms that are growing increasingly varied (Parsons et al., 2018). Adaptive Teaching encompasses the thorough elements of teachers' preparation, achievement, and assessment of education (Hardy et al., 2019).

Adaptive education, in the context of teacher-student interactions, is associated with the principles of scaffolding and contingent support (Van de Pol et al., 2010, 2011). By utilizing tailored prompts and diagnosis-based instruction, these constructs aim to

provide teachers with thorough explanations of how they facilitate students' learning. Studies indicate that Adaptive Teaching positively influences students' understanding of concepts across multiple areas. It has been observed to be effective in different instructional settings, including classroom instruction, small group work, and one-to-one tutoring. Socio-constructivist learning theories in education articulate teaching as the continuous interaction and analysis of an instructor's conduct within the classroom's social setting. Adaptive education perceives the disparities in students' knowledge and aptitude levels as "opportunities for learning" rather than "obstacles to surmount" (Corno, 2008). Educators can design instructional activities that take into account the distinct learning needs and social contexts of the students, thereby benefiting all learners.

Parsons et al. (2018) state that instructors who adapt their courses to accommodate student variety also engage in metacognitive reflection on student needs prior to, during, and after instruction. These teachers are specialists in the learning needs and planned educational histories of their pupils because they reflect on effective teaching designs. These teachers possess the ability to adjust to the unique variations among their students and the evolving situations that occur inside a classroom setting, which is a crucial skill. Adaptive Teaching is closely linked to teachers' professional skills, philosophical viewpoints, instructional ideas, and their capacity to flexibly apply their informative knowledge. Students' learning outcomes are impacted by Adaptive Teaching competency, according to a recent study by Brühwiler and Vogt (2020). This competency includes planning, didactics, diagnosis, and topic understanding. Considering this, Hardy et al. (2019) make a distinction between Adaptive Teaching that is intended and Adaptive Teaching that is executed. Intended Adaptive Teaching is a component of planning in which teachers realize the differences among their students in order to develop instructional environments that are specific to fulfil the specific requirements of each student's learning prerequisites. It is referred to as "implemented Adaptive Teaching," and it describes adaptive instructional episodes in which students really participate in the activities that were intended for them. This results in an alignment between the student's intentions and the actual implementation that takes place.

For more than three decades, researchers in the fields of computer science and cognitive science have been collaborating on the development of adaptive learning

systems that model human tutoring interactions through the application of artificial intelligence. Many tasks, such as content presentation, question formulation, task assignment, hint provision, query resolution, and behavioral or attitudinal change suggestions for learners, call for the use of these systems (Ma et al., 2014). The adaptive learning systems typically possess a core design characterized by a "closed loop." This architecture entails gathering learner data to evaluate student progress, provide suitable personalized feedback and as well as learning activities. The algorithms of the adaptive system employ three models to guide their decision-making: a task model that delineates the features of learning activities; a student model that characterizes the background attributes of learners (including motivation, knowledge level, and affect,); and a domain model that encapsulates the knowledge to be acquired (comprising questions, dynamic hint, tasks, prompts, feedback, quizzes and recommendations). The study's authors are Lee and Park (2008). The increasing availability of computers and internet connectivity in educational settings has intensified interest and eager in technology-based educational platforms, particularly ALS utilizing AI.

2.4   Adaptive Teaching Practices/Historical Bases of Adaptive Approach

According to certain scholars, adaptive expertise can provide significant benefits, particularly when it comes to adapting to changes in job demands, dealing with complicated environments, and handling unusual circumstances (Crockery, 2018). Teachers have a special requirement for adaptable knowledge since they are constantly confronted with uncertain and changing environments in their professional activities. Timperley (2013) states that teachers are motivated by a strong sense of duty to enhance the involvement, learning, and welfare of every student. They also engage in continuous investigation to develop the knowledge that forms the foundation of their professionalism. Timperley (2013) states that teachers become into adaptive teachers. Adaptive expertise refers to the ability of teachers to continuously learn and improve their teaching techniques by understanding and applying certain information, abilities, and attitudes. This concept was introduced by Tomlinson and Imbeau in 2023. Implementing curriculum reform and employing experienced Adaptive Teaching methods can assist students in developing adaptable competency. Nevertheless, there is a

scarcity of empirical research that has utilized adaptive expertise as the central framework for examining teachers and their strategies (Ardoinet al., 2020).

When scholars analyze teachers' methods, they often employ terms such as teacher's flexible practices or Adaptive Teaching. According to Parsons (2018), adaptive instruction refers to the deliberate and proactive actions taken by a teacher to address the unique demands of a student or instructional environment. It involves making conscious and improvisational changes to their professional knowledge or practice. Teachers can customize their teaching methods in order to accommodate the individual demands of every student. The individuals possess a high level of skill in evaluating and understanding the students' answers, analyzing fundamental data, and providing suitable support to fulfil specific needs (Gallagher et al., 2022).

According to Corno (2008), this instructional adaptability involves making immediate adjustments to address the specific requirements of students. Corno also encompasses the notion of macro-adaptations, which entail the alteration of curriculum and instructional strategies to incorporate novel material. Teachers employ reflective practices to assess, oversee, and regulate their teaching techniques in order to implement necessary adjustments (Vaughn et al., 2022). Previous research on Adaptive Teaching can be classified into two main categories. The initial approach is formulating a theoretical framework and examining adaptive strategies implemented in classroom. The stream of research is centered on identifying methods to enhance teachers' adaptive writing skills strategies. Parsons and his research team exemplify the initial category. The researchers introduced a cyclical model of Adaptive Teaching that includes student stimulation, instructor metacognition and introspection, and teacher intervention. Additionally, Parsons et al. (2018) have developed a protocol for the use of teaching observations specifically designed for adaptive learning education. The researchers devised this protocol.

Beltramo (2017), utilized data from co-generative discussions to formulate and implement adaptive classroom strategies. Schipper et al. (2018) conducted a study using a combination of quasi-experimental and mixed methodologies to assess the impact of lesson study on instructors' self-efficacy and Adaptive Teaching. Nevertheless, the effect

of adaptive strategy of teaching on students' educational learning has not been adequately examined.

2.5   Implementation of Adaptive Teaching in Classroom

At a small scale, adaptive approach of teaching is strongly connected to the ideas of contingent and scaffolding assistance as they all aim to apply adaptive teacher actions depending on the diagnosed understanding of students. The aim of this is to ensure that children can learn efficiently. According to Corno (2008), addressing teachers' micro-acts is particularly challenging. This is a result of the significant situational constraints they face. At a small scale, another element of Adaptive Teaching is consistently evaluating students' understanding as they are participating in learning tasks (Brawlier & Vogt, 2020). This evaluation is an essential component of Adaptive Teaching. Lazonder and Harmsen (2016) differentiate among teacher heuristics, prompts, explanations and scaffolding. Prompts and heuristics are regarded as implicit structures, whereas explanations and scaffolding are considered explicit manifestations. In general, these formats lacked specificity, although they did provide some mild advantages in terms of student outcomes.

Vorholzer and von Aufschnaiter (2019) further on this concept by suggesting three components of instructional teacher support. These features separate the level of conceptual knowledge, the level of self-determination, the cognitive level, and the interconnections among these three levels. Nevertheless, the existing body of work on scaffolding primarily examines the dynamic interplay between the task-specific knowledge levels of individual learners and the assistance provided by teachers. This contrasts with the conceptions that largely focus on several categories of teacher behavior. Contingent support, commonly referred to as scaffolding, is considered a fundamental component of scaffolding, along with fading and the use of assessments (Hermkes et al., 2018). Both attributes are fundamental elements of scaffolding.

Wood (1978) describes the approach of adjusting support to meet the individual requirements of students inside the classroom through the use of the contingency shift principle. This concept posits that the level of assistance provided by a teacher is

contingent upon their capacity to enhance regulation, also known as explicit support, in the event of a student's failure to complete a task, and to reduce regulation if a student succeeds. In Pea's (2018) study, the author emphasizes the significance of the cognitive processes involved in teacher help, which are crucial for facilitating successful scaffolding episodes. Examining the cognitive activation of students to enhance their higher order thinking processes is an essential aspect of instructional quality. One can accomplish this by employing techniques such as provoking cognitive conflicts or promoting the rationalization of concepts. Structuring is a crucial aspect of simplifying the learning environment as it highlights and consolidates significant information (Pretorius et al., 2018).

According to Reiser (2018), organizing and problematizing are two approaches that are inter-related but can potentially generate conflict, requiring careful management. An excessive amount of structure may impact students' active engagement in an activity, whilst excessively demanding difficulties might lead to feelings of frustration. According to Pea (2018), modeling and concentrating are considered higher-order functions of scaffolding. Modelling helps students develop more complex thinking and problem-solving skills, while focusing helps them pay attention to the most important aspects of a problem. Typically, teachers engage in actions such as modelling, problematizing, concentrating, and organizing to provide substantial support that encourages pupils to actively participate in activities. Research suggests that scaffolding is an excellent method for enhancing student learning, whether it is used in one-on-one instruction or in small group collaborations. Regrettably, there seems to be a scarcity of scaffolding in typical classrooms. It is important for learning environments to have Adaptive Teaching, where teachers change how they help students learn to meet the specific needs and wants of each student (Gallagher et al., 2022).

Adaptive learning is done in a sequential manner, like the development of other technological developments. The South African university has recently commenced the implementation phase. The organization acknowledges the advantages of flexible learning for students, professors, and organizations, and is actively seeking ways to integrate adaptive principles into the curriculum. The Swiss university utilizes adaptive learning at both the course and module levels. This involves evaluating novel

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instructional approaches and policies to guarantee broad acceptance among all academic departments. Neither of the universities, along with numerous other higher education institutions globally, have effectively integrated adaptive learning on a significant level across their courses and faculties (Graham et al., 2013).

2.5.1 Practices of Adaptive Teaching at University Level (the Egypt University of Mansoura)

The experimental design was comprised of a sample of sixty students who were in their second year of study at the Mansoura Faculty of Education and were majoring in English. They were divided into two groups: an experimental group and a control group. The participants were classified into both categories. In this study, three tools were used: 1) an assessment for writing skills in English as a Foreign Language (EFL); 2) an analytical rubric for writing skills; and 3) a usability scale for judging how easy it was for students to learn in the adaptive setting. The findings demonstrated that the adaptive online learning environment improved the writing skills of English as a Foreign Language students. The students indicated that the learning environment was conducive to information acquisition and engagement with both classmates and the instructor (Gohar & El-Ghool, 2016).

2.5.2 Practices of Adaptive Teaching in Improving Education (in the United States)

Over the past two decades, there has been an increasing popular conviction that artificial intelligence has the potential to improve education. This is supported by the growing frequency of adaptive learning systems in the United States. Research conducted at American educational institutions has shown that adaptive learning systems can improve student learning. In a recent study by Jones (2018), 86% (32 out of 37 studies) reported positive effects on learning outcomes when examining the impact of adaptive learning. Another study by Xie et al. (2019) supports these findings. Bomash and Kish conducted a study in 2015 where they compared a total of 6,400 courses, out of which 1,600 were adaptive. The findings demonstrated that adaptive courses surpassed non-

adaptive courses in enhancing student performance. 147 middle and high schools across seven states in the United States performed a thorough efficacy evaluation of the adaptive learning programmed Cognitive Tutor Algebra I. The study produced incredibly beneficial results. Pane et al. (2014) discovered that the average student's performance improved by around 8 percentile points after a 2-year intervention. A recent study conducted over a span of two years has discovered that personalized learning has a substantial positive impact on students' academic achievements in both mathematics and reading. In addition, the students who fared the worst exhibited considerable improvements compared to their classmates (Pane et al., 2017). Xie et al. (2019) analyzed 70 articles published in journals included in the Social Sciences Citation Index between 2007 and 2017 that discussed adaptive and personalized learning. Of these, 46% were directed towards college students, while only 9% focused on high school and middle school students.

The research encompassed individuals from two separate institutions: The University of Central Florida (UCF) and Colorado Technical University. Students from both institutions validated the educational effectiveness of Realizeit's adaptive learning technology. UCF students noted a reduction in peer involvement while utilizing the Realizeit adaptive learning platform compared to classrooms that excluded it. Dzuiban et al. (2017) discovered that most students at two colleges had a positive experience with an adaptive-learning course. They acknowledged that the adaptive learning technology adapted to their needs over time and expressed their readiness to participate in another course that used adaptive learning. Dzuiban et al. (2017) executed the research. Nakic et al. (2015) determined that students' success in adaptive learning was a significant attribute of their educational experience. The researchers conducted an experiment to pinpoint the factors that could accurately predict the performance of 22 individual users in adaptive courses. Nakic et al. (2015) discovered that learning systems achieved optimal adaptation by concentrating on student motivation, cognitive styles, and preferences for learning materials, prior knowledge, and learning styles. Conversely, accommodating learner attributes such as age, interaction styles, personality, emotions, affect, psychomotor skills, anxiety, and gender yielded less success. Nakic et al. (2015) found that students responded positively to the adoption of adaptive learning technology.

2.5.3 Practices of Adaptive Teaching in China

Adaptive learning systems modify the teaching process to suit the individual learning requirements and skills of each learner. These systems have demonstrated favorable effects on learning. Numerous educational institutions in the United States have adopted adaptive learning systems, while the rate of implementation in China is accelerating, with one programmer attracting around 2 million unique users over the past three years. Considering the rapid implementation of adaptive learning in China, it is valuable to examine its efficacy in the nation's educational system. This study aimed to evaluate the educational impact of personalized adaptive learning software relative to two prevalent teaching methods in China: large-group and small-group classroom instruction. This article delineates the results of two efficacy trials performed using Squirrel AI Learning, a leading adaptive learning system in China. Two studies conducted a comparison between the effectiveness of customized adaptive learning instruction in the classroom and traditional large-group education, while another study compared it to small-group training. On a mathematical test, eighth-grade pupils from two Chinese provinces, randomly assigned to use Squirrel AI Learning, outperformed their peers who received whole-class or small-group teaching from experienced educators. Future research may build upon these findings (Wang et al., 2023) by examining the selection, deployment, and impact of adaptive learning systems within Chinese education.

Adaptive learning is an acknowledged objective in Chinese education policy, as it has the potential to address persistent educational challenges in China, such as inequality (O'Meara, 2019). According to Zhang et al. (2007), China has made significant advancements in establishing educational equality, but it still lags below the worldwide standard. Adaptive learning has the capacity to mitigate the disadvantages of large class sizes in China, which may lead to inequitable educational opportunities. According to data from the U.S. Department of Education (2011-12), Chinese junior secondary schools often have an average class size of 52 students, whereas middle schools in the United States have an average class size of 16.7 students. Instructing in big courses presents difficulties for educators in customizing instruction to address the specific needs of individual students, particularly those who are disadvantaged. Bosworth's (2014) study

demonstrates that kids hailing from low-income, minority, and disadvantaged backgrounds exhibit lower academic performance in big class settings compared to their counterparts.

2.5.4   Comprehensive survey between China's and Asians

Adaptive learning encourages difference by giving each student, no matter what level of skill, a personalized lesson plan. Private tutoring, either in small groups or on an individual basis, is becoming increasingly popular among Chinese families as a means of addressing what they perceive to be deficiencies in big class sizes. Still, lowering class size may not enhance children's academic performance. According to the 2005 Urban Household Education and Employment Survey in China (Zhang & Liu, 2016), over 66% of junior high school students and 50% of senior high school students engaged in private tutoring. While Asian students and their families may perceive that individual and small group tutoring enhances academic performance (Zhan et al., 2013), evidence indicates that merely reducing class size is inadequate for promoting educational advantages. For example, Zhang and Liu (2016) state that a number of studies have demonstrated that students of East Asian and East Asian American descent have achieved lower levels of academic achievement.

Adaptive learning offers a potential option to ensure the quality and effectiveness of students' tutoring sessions. Adopting adaptive learning methods could potentially alleviate the ongoing educational gaps between rural and urban areas in China. According to a comprehensive survey, the math and Chinese-language scores of rural Chinese pupil's lags behind those of their urban counterparts by a span of 2 years (Wang et al., 2018). Urban schools in China have a higher teacher-to-student ratio and a greater number of instructors with advanced degrees compared to rural schools (Peng et al., 2014). For addressing these limitations, rural schools are less inclined to possess a sufficient number of educators who possess expertise in non-core subjects and are more prone to assigning teachers to subjects in which they lack competence (Peng et al., 2014). Adaptive learning can be employed to guarantee that children residing in remote areas have a top-notch education, including subjects that are not often considered essential.

Section 02: The Effect of Adaptive Learning in Developing Language Skills

Effective instruction necessitates the utilization of various writing skills approaches and educational encounters that cater to the requirements of each student within a well-proportioned time frame (Dounias et al., 2019). It is the responsibility of a teacher to effectively fulfill the varied requirements of students, to improve the students' professional skills and competences, and to play a significant part in the creation of an atmosphere in which students feel at ease asking questions and looking for solutions. Adaptive learning is currently one of the most innovative and forward-thinking approaches to education and training that are currently available (Ennouamani & Mahani, 2017).

The principal objective is to modify the educational setting to more effectively meet the unique requirements of each student (Aldosari et al., 2018). Educational environments modify the curriculum to accommodate the diverse learning preferences of students during their studies (El-Sabbagh, 2021). Alshammari and Qtaish (2019) assert that tailoring the learning environment to align with students' preferences can help them articulate their learning preferences and experience greater satisfaction. The concept that individuals possess unique learning styles and different levels of progress, determined by their abilities and potential, is the basis for the practice of adapting education.

2.6   What is Writing Skill?

Writing is a component of the skills involved in producing written content, as it helps with communication. In simple terms, writing is the process of converting the symbols used for oral communication into those used with written language. Writing, as a linguistic system, serves the purpose of conveying meaning between individuals. Given the appropriate motivation, both the teacher and the student can enhance their writing abilities and make strides towards their educational goals. The capacity of an educational institution to create a favorable learning environment is a crucial element in motivating students to actively engage in their studies (Alaye & Tegegne, 2019).

Barrett et al. (2017) say that teachers' ability to communicate well with their students depends on how committed they are to understanding how important these skills

are for preparing students for life. It is realistic to anticipate that the capacity of instructors to connect with students in a manner that is both successful and acceptable will improve the educational process and its fundamental components (Bustamante et al., 2018). This is why it is essential for teachers to have the ability to communicate with students both within and outside of the classroom. Adaptive learning is a way of teaching that takes into account what makes each student special and changes the way lessons are taught to meet the needs and desires of all students (White, 2020).

The fundamental principle of adaptive learning is a fusion of ideas derived from cognitive psychology. The concept is founded on the notion of learning preferences which posits that individuals possess distinct inclinations in terms of how they absorb, evaluate, and retain information. Research on individual differences demonstrates that individuals possess unique viewpoints, and it is important to provide a suitable learning environment that may cater to their specific learning preferences. The main objective of adaptive learning is to diminish a student's tendency to compare themselves with other learners, while simultaneously motivating the learner to concentrate on their own abilities and measure their progress against their personal development and individual objectives. This process fosters self-assurance and the development of a positive educational identity (Soltani & Izquierdo, 2019).

Adaptive learning offers numerous advantages to the educational system by assigning the learner's role in the educational process, implementing educational testing, boosting learners' self-confidence and skills through personalized content delivery, and enhancing the teacher's guidance and counseling, thereby increasing its effectiveness (Muñoz et al., 2022). An inherent benefit of adaptable learning is in its capacity to meet the personalized requirements and inclinations of every student, particularly tailored to their own learning modality (Laili et al., 2020). Adaptive learning, facilitated by adaptive educational technology, has experienced a surge in popularity in recent years. The principal rationale for this is the increasing necessity to accommodate students' varied requirements, preferences, and learning preferences while simultaneously assisting educators in delivering tailored content, timely feedback and integrated assessments (Elmabaredy et al., 2020). The core objective of adaptive learning technology is to facilitate information acquisition tailored to each student's specific cognitive variations,

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training needs and hence improving the learning experience for all individuals (Morze et al., 2021). Adaptive approach of learning entails modifying educational materials and instructional strategies to meet the specific requirements of learners, with the objective of enhancing the efficacy and quality of education (Alamri et al., 2021). Employing adaptive approach of learning technology is an influential and effective educational method since it enables educators to decompose knowledge into smaller parts and customize curriculum comprised on a learners' existing level of understanding (Morze et al., 2021).

2.6.1 Adaptive Teaching and Students' Learning

An evident advantage of adaptive approach of learning technology has the capacity to enhance and improve students' academic learning (Daines et al., 2016). Research demonstrates that adaptive learning technology delivers personalized learning experiences, boosts engagement, student motivation and, retention rates, offers significant benefits and as well as insights for both educators and learners, and empowers student or leaners' academic performance (Elmabaredy et al., 2020). Numerous studies have investigated the implementation of adaptive learning to customize student education (Alamri et al., 2021). Adaptive learning technology customizes education based on students' behavior and learning patterns via adaptive assessments (Alamri et al., 2021). Students receive prompt and immediate feedback as they go from one task to another.

2.6.2 Increasing Engagement and Motivation

Adaptive technology improves students' engagement and motivation by cultivating learner confidence (Alamri et al., 2021). Adaptive learning technology enhances student involvement by employing many strategies and resources, including blogs, artificial intelligence, chats, social networks, wikis, and forums. Adaptive learning technologies enhance student motivation by progressively presenting them with more complex content, actively engaging them through immediate feedback, and finding indications of success for students (Kabudi et al., 2021).

2.6.3 Instructor Benefits

Adaptive technology is advantageous for teachers as it offers crucial insights into learners' requirements and preferences, along with the ability to monitor student advancement. This is supported by study conducted by Morze et al. (2021).The technology's monitoring features enhance efficiency regarding time and financial resources in both instruction and education (Pugliese 2016). To achieve these efficiencies, students must have the necessary and essential knowledge and potentials or abilities to scientifically and effectively employ the technology (Cavanagh eat al., 2020). Adaptive approach of learning strategies or technologies allow educators to track student advancement, providing critical insights into the unique needs of diverse learners (Morze et al., 2021).

Progress indicators, when incorporated into adaptive systems, offer a visual depiction of a student's advancement. By monitoring progress, educators can combine the abilities that students have effectively learned with areas where students have not yet gained mastery in a certain subject. This allows educators to adjust their education as needed (Dziuban et al., 2017). Customizing subjects based on students' learning can help alleviate the load of overwhelming material for both teachers and students, while also assisting students in developing their own learning strategies (Elmabaredy et al., 2020).

Cavanagh et al. (2020) developed a framework known as the Adaptive Learning Design Framework. This structure consists of four sequential phases. The preliminary phase entails delineating explicit educational objectives. Cavanagh et al. (2020) propose establishing objectives that students can successfully achieve within an average duration of 30 minutes. The second step involves creating the content, assessment criteria, and providing comprehensive feedback for each evaluation item. We recommend incorporating a minimum of five assessment questions in each session to ensure students have a comprehensive understanding of the topic. The third phase entails the development of a flexible learning pathway. This comprises the process of aligning the content with a hierarchical structure that signifies the precise concepts that need to be comprehended in their entirety before advancing to more intricate topics. To reach step 3, instructors must specify the specific order in which mastery of concepts is expected or

required by more advanced concepts. The fourth step entails creating supplementary materials and alternatives for students who desire extra practice chances. Faculty can gain advantages from effectively utilizing adaptive learning technologies (Cavanagh et al., 2020).

Section 03: Improved Student Outcomes and Feedback through Adaptive Approach of Teaching

Studies have shown that adaptive learning systems enhance student outcomes and feedback. Multiple studies have demonstrated a correlation between enhancing student learning outcomes and reducing mortality rates. Studies demonstrate that courses employing adaptive learning technology improve students' engagement and viewpoints (Guerrero-Roldan et al., 2021). Research from Morze et al. (2021) showed that demographics and age influence student responses.

2.7 Students Performance and Attrition

Research has shown that the strategic implementation of adaptive learning technologies can improve student performance in several subjects, especially among students who have insufficient understanding in certain subjects (Gurrero-Roladan et al., 2021). A limitation of this research is that they typically offer broad information on the results attained, such as successful completion of a course, instead of pinpointing the specific methods and strategies that enhance learning outcomes for certain categories. Fortunately, more research has yielded more detailed information regarding the specific domains of knowledge and subsequent evaluations that demonstrate enhanced performance when adaptive learning technology is employed, as opposed to its absence. Elmabaredy et al. (2020) and Muralitharan et al. (2019) have presented evidence demonstrating that the utilization of adaptive learning technology leads to enhancements in test scores and overall performance across many subjects. Although several of these studies just reported an "improvement" in exam scores, they did not provide a specific measure of the extent of this change.

Dzuiban et al. (2018) discovered that the Realizeit adaptive learning software maintained consistent levels of, student advancement, communication, knowledge acquisition and engagement activities in both math and nursing courses across the two universities. Guerrero-Roldán et al. (2021) found that courses using adaptive learning technology had a lower attrition rate than comparable courses without such technology.

2.8   Student Perspectives

Adaptive learning technology enhances the quality of feedback given by teachers to students (Guerrero-Roldan et al., 2021). The instructional performance of adaptive learning technologies was highly rated, and students expressed satisfaction with the courses that utilized those (Dziuban et al., 2017). While adaptive learning technologies have significant promise, they do not help every learner. Elderly individuals generally excel in courses that include adaptive learning methods. Moreover, Nakic et al. (2015) suggest that adaptive learning technologies are most effective when they are customized to suit the individual student's motivation, preferred learning materials, cognitive style, and past knowledge. Guerrero-Roldán et al. (2021) showed that the Learning Intelligent System gave students useful and as well as appropriate feedback.

Dzuiban et al. (2018) investigated the application of the Realizeit adaptive learning software in mathematics and nursing courses. The findings revealed that the use of Realizeit led to increased student feedback. Dzuiban et al. (2018) demonstrated that the Realize it software enhanced the organization of educational content and empowered students with greater control over the information. The Realizeit program enabled the deployment of authentic and continuous progress assessments, allowing students to actively participate in their evaluations by receiving immediate feedback (Dzuiban et al., 2018). Dziuban et al. (2017) investigated the students' perception and response to the implementation of the adaptive learning platform Realzeit.

2.9   Weaknesses and Threats/Challenges

Although there are advantages to adaptive learning systems, they can be affected by specific flaws and obstacles. There are three categories into which the flaws can be

classified: teacher issues, student concerns, and institutional factors (Mirata et al., 2020). Faculty apprehensions include reluctance regarding the technology, insufficient expertise with adaptive software, the significant burden associated with the implementation and utilization of the systems, and the relinquishment of control over design and course content (Mirata et al., 2020). The student is aware of several problems, such as inadequate implementation, technological barriers, inherent difficulties in using technologies, less social interaction with peers, problems integrating material across different platforms and a lack of empirical and credible evidence showing that adaptive learning strategies and technologies enhance educational results (Alamri et al., 2021). Institutional factors relate to the allocation of resources, encompassing time and financial assets (Morze et al., 2021).There are also concerns regarding the privacy of students and ethical implications that are associated with these difficulties (Akgun & Greenhow, 2022). Furthermore, there are concerns regarding the integration of learning management systems and absence of cooperation and support from leadership (Mirata et al., 2020).

2.10   Faculty Concerns

Within the scope of their research, Mirata et al. (2020) carried out a Delphi survey at two different educational institutions to investigate the challenges that are related with the implementation of adaptive learning in these educational establishments. Mirata et al. (2020) identified faculty hesitance and insufficient comprehension of adaptive software as two obstacles impeding the widespread adoption of adaptive learning technology. Elmabaredy et al. (2020) assert that some researchers view the burden associated with the implementation of adaptive learning as a hindrance. Elmabaredy et al. (2020) found that the production of one hour of instructional content necessitates 200 hours of development time. This is since every learning activity must be meticulously crafted and aligned with explicit learning objectives. Additional faculty concerns include a decreased degree of control over courses and instructional material, limited involvement in course design, and a wide spread lack of skill with adaptive software (Mirata et al., 2020). In the adaptive learning course, educators must create comprehensive knowledge maps that enumerate all abilities and prerequisites essential for students to achieve course objectives and succeed in outcome assessments.

2.11   Student Concerns

The inadequate implementation, technical glitches, and intricacy of the adaptive learning system can all exert an adverse impact on student learning (Alamri et al., 2021). Students that employ these systems may experience social isolation and lack motivation to utilize them (Alamri et al., 2020). While some researches have indicated that adaptive learning systems enhance student performance, students remain skeptical of the concept. Another concern is that students may engage in academic dishonesty or select easier work. According to Aleven et al. (2017), students' "gaming the system" conduct can have an impact on specific systems. This approach involves students relying on the system to provide solutions instead of engaging in critical thinking and active engagement, while receiving step-by-step feedback and reminders. Aleven et al. (2016) found that specific systems do not elicit or improve student self-regulation in the learning context. Attempts have been made to develop systems that tackle the issue of system manipulation by utilizing statistical computations to identify susceptible areas in learning system programs that are prone to manipulation. Subsequently, the areas can be reconfigured.

Teachers and students face difficulties when their assignments are not consolidated in a single system due to variations in assessment methods (Mirata et al., 2020). Students may receive their assignments using several platforms such as the publisher's website, an institution's Learning Management System, print resources, a third-party website, or other online. Although the presence of many types of assignments can be beneficial, it significantly diminishes the effectiveness and influence of flexible learning systems due to the limited amount of data available for analysis.

Teachers apply various resources due to the insufficiency of content or question types provided by certain publishers. Additionally, some publishers lack necessary tools, such as the capability to incorporate questions within video lectures. Moreover, some publishers impose additional charges for features that are freely available elsewhere, such as clicker questions. Furthermore, certain publishers offer proctoring services like Responds and Proctorial, catering to specific needs. Numerous other specialized requirements also exist.

An adaptive learning system is considered optimal only when all course assignments provide data to the system (Johannes & Lanerstrom, 2017). Students face a significant challenge due to the limited availability or restricted access to credible data about the influence of adaptive approach learning technologies on their academic achievement and performance (Yarnall et al., 2016). One acknowledged issue is that students do not actively engage in the case studies offered by the adaptive learning system. Moreover, even when they engage, they fail to dedicate adequate time to them, limiting their ability to teach (Hinkle & Moskal, 2018). A study of Griff and Matter (2013) found no significant differences in grade distributions or retention rates across sections that exclusively employed adaptive learning.

The survey findings presented by Yarnall et al. (2016) support the conclusions of the study conducted by Hinkle and Moskal (2018). Yarnall et al. (2016) released the findings of a study that had 19,500 distinct students who were enrolled in classes taught by more than 280 teachers. These instructors utilized adaptive learning courseware. Their research produced a variety of outcomes, with the majority of course grades indicating no enhancement because of the utilization of adaptive courseware. Yarnall et al. (2016) found that the utilization of adaptive instructional materials does not impact a student's likelihood of successfully completing the course. Yarnall et al. (2016) found a beneficial impact of using adaptive learning instruction on seven different sets of learning assessment scores, when direct comparisons were feasible.

2.12 Institutional Considerations

Institutional barriers must be removed to increase the difficulty of adopting adaptive learning technologies. According to Morze et al. (2021) , a substantial amount of time and money must be allocated for adaptive learning technologies to be successful. Although Learning Management Systems (LMSs) can conduct adaptive functions, their primary goal is not to work with adaptive systems, and their compatibility with them is limited (Morze et al., 2021). Furthermore, students do not need to formally give permission for the adaptive system to use data from prior semesters in the present

semester when student progress is tracked utilizing adaptive learning technology software (Akgun & Greenhow, 2022).

While adaptive learning technology systems typically request user consent to access their data customers may lack full understanding that the system could be gathering information such as ethnicity, gender, location, and the user's language. When educators and administrators contemplate the utilization of adaptive learning technology, they should consult the policies of their school districts to ascertain the regulations pertaining to student data privacy. State rules vary significantly in how much they acknowledge and respect consumers' ability to control their educational data. While school district policies usually mandate parental consent, it is evident that the frequency of obtaining student permission and the level of awareness among kids under the age of 13 about the use and sharing of personal data are not well-defined (Akgun & Greenhow, 2022).

The implementation of legislation and privacy regulations could potentially have a negative effect if they restrict the utilization of contemporary adaptive learning platforms and educational technology. These platforms can customize and empower student learning experiences and play a significant role in enhancing student achievement. Due to the extensive use of various technologies by the majority of students, requesting consent to engage in an educational activity may lead to consent fatigue. Exhaustion can cause consumers to give consent for adaptive learning systems to use their personal data without carefully reviewing the information provided by vendors regarding the usage or sharing of the data (Remian, 2019). Moreover, the utilization of intricate legal terminology throughout the process of gaining consent may lead to customers lacking a complete understanding or neglecting to read understand the consent language (Remian, 2019).

The absence of leadership support toward employing an innovative adaptive learning technologies is a prevalent challenge that prevents many organizations from adopting these technologies (Mirata et al., 2020). University strategy plans sometimes fail to adequately incorporate adaptive learning (Bailey et al., 2018). Organizations and individuals tasked with evaluating adaptive learning systems often encounter challenges

when attempting to assess these systems without relying on the explanations provided by vendors about black-box models (How & Hung 2019). Ethical considerations may be the basic obstacles to the widespread or at global level implementation of adaptive learning technologies. Several scholars have raised ethical problems connected to ALS (Adaptive Learning Systems).

Zawacki-Richter et al. (2019) identified multiple ethical issues associated with the utilization of powered by AI adaptive learning platforms. The utilization of facial physiological monitoring, eye-movement technology and recognition in systems designed to assess student attention, affect, and motivation raises ethical and privacy concerns. Additionally, there are issues about how teachers can effectively utilize this data for writing skills purposes.

2.13   Adaptive Instruction as Best Practices

Conventional classrooms operate under the assumption that all students share uniform learning styles and capabilities, overlooking their distinct attributes, including individuals past knowledge, learning preferences, strengths and as well as weaknesses. Consequently, certain pupils may necessitate additional time and practice to understand concepts, whereas others readily comprehend them and advance. Regrettably, individuals with a slower learning pace or diminished cognitive capacities face difficulties in matching the progress of their peers, resulting in feelings of frustration, inadequacy, demotivation, and disengagement. This situation might give the impression of insufficient stimulation or excessive difficulty, which can lead to negative attitudes towards school and hinder the academic advancement of youngsters with hidden talents.

Adaptive instruction, also known as adaptive learning technologies, has emerged as a potential solution to tackle this challenge. Personalized learning is an instructional approach that tailors the educational process to accommodate the specific needs and skills of each student. The underlying principle of this technique is that every student possesses distinct learning preferences, and abilities. As a result, the training ought to be tailored to meet their needs and the pace at which they are progressing. English language instruction currently employs a variety of technologies and platforms to foster adaptive learning. In this group are technologies like mobile apps, learning (LMS), Intelligent Tutoring

Systems (ITS), that can translate text and recognize speech, gamified learning platforms, AI chatbots, and ALEKS, which tests each student's knowledge to give them a personalized learning experience (Ginting et al., 2024).

Adaptive instruction and differentiated instruction, although commonly used interchangeably, have distinct meanings for the purpose of this discussion. ALT stands for adaptive learning technology, which is instructional software that customizes itself to cater to the specific requirements of each learner. ALT considers relevant student characteristics, including academic achievements, readiness, current knowledge, preferred learning styles, and personal interests. It utilizes data analytics and computers to assess a student's progress. It then alters the instructions. For example, it could provide personalized guidance, assessments, and support to individuals or modify the pace of learning, content, results, or educational environment. To assess a student's areas of proficiency and improvement, educators can collect data and use analytics to modify the content, pace, and complexity of instructional materials. Assessment methods for evaluating student performance include quizzes, exams, progress tracking, student feedback, and monitoring the time spent on certain learning activities (Ginting et al., 2024).

Education is a writing skills approach in which teachers adapt instruction to meet the specific needs of individual students, particularly within the classroom setting. Teachers utilize many strategies to modify the material, methods, and/or educational outcomes to accommodate the distinct learning preferences, and capabilities of individual students. Multiple research papers have investigated the impact of adaptive education on enhancing learning outcomes and motivation. Scientists have created an algorithmic system that assesses students' strengths and weaknesses in real-time, providing customized instruction and feedback based on their individual requirements (Ginting et al., 2024).

The adaptive learning system can adapt to the individual learning pace of each student, enhancing their competency in mathematics and reading. Furthermore, researchers investigated the effectiveness of a tailored gamified learning platform in improving students' motivation and involvement in the educational process. The system

comprises tailored information, game components, and a recommendation algorithm. The experimental group of students had higher motivation and engagement levels than the control group, which utilized traditional learning methods. It delivered personalized feedback and tailored training to fulfill the needs of the Adaptive Teaching cohort (Sing et al., 2021).

In the group that did not receive adaptive training, all students were given identical instruction. The study's overall findings emphasize the importance of carefully evaluating many elements, such as instructional design and student characteristics, when creating and implementing adaptive training in educational settings. Many teachers struggle to comprehend the process of incorporating flexible instruction into their classes, despite the widespread knowledge of adaptable teaching methods. The study's findings revealed that teachers from diverse locations do not modify their teaching methods to cater to the distinct requirements of individual students. As a result, teachers provide difficult tasks to struggling students, while high-achieving pupils continue to practice the abilities they have previously mastered. Ariyani et al. (2023) argues that there is a want for further data on efficacious strategies to enhance student results.

A recent study and meta-analysis of adaptive learning in elementary schools demonstrated that, when implemented successfully, it can improve outcomes. This study examines empirical evidence about the effectiveness of in-class adaptive instruction in secondary education. It analyses the research technique employed and the specific contexts in which the efficiency of this instruction is evaluated. ALT empowers students to exert autonomy in their utilization of educational resources and actively engage in their own educational voyage (Srinivasa et al., 2022).

Kay (2013) defines student control as an educational strategy that empowers students to have authority over several elements of the learning process, such as the speed, order, and extent of their learning. Students who possess autonomy in the learning process can more effectively enhance their comprehension of a particular subject area. Students can independently guide their learning by drawing from their personal experiences, interests, and knowledge, without being totally dependent on the instructor's leadership. Self-determination theory posits that individuals are driven by their innate

psychological needs for autonomy, competence, and relatedness. Autonomy is the capacity to make decisions autonomously and with a robust feeling of personal agency. Autonomy refers to a system where individuals perceive their acts as self-sanctioned and aligned with their own objectives and desires. Students have the potential to enhance their comprehension of a specific subject matter while also boosting their desire and effectiveness (Ryan & Deci, 2000). Prior studies on flexible instructions indicate that the integration of adaptive instructional systems with educational technology can significantly enhance learning outcomes, namely in the fields of mathematics and science. Teachers and curriculum developers should consider integrating this technology into their instructional methods. According to an expert, adaptive instructional systems can enhance students' learning results and motivation by offering personalized feedback and coaching (Ginting et al., 2024).

A controlled laboratory trial randomly assigned undergraduate students to either an adaptive or non-adaptive instructional approach. On the other hand, the non-adaptive system provided comprehensive feedback, whereas the adaptive system provided personalized input based on performance. Researcher employed pre-tests, post-tests, questionnaires, and interviews to assess learning outcomes and motivation levels. To evaluate cognitive and metacognitive abilities, including attention, understanding, and self-monitoring, we employed eye-tracking and think-aloud methodologies. Utilizing these methods resulted in the acquisition of useful insights regarding cognitive engagement and learning strategies. The research demonstrated that adaptive systems may tailor learning by altering content and delivery methods, resulting in enhanced outcomes and increased motivation. In addition, the adaptive method improved cognitive and metacognitive abilities, such as the ability to concentrate, make sense of information, and keep track of progress. The ensuing inquiry into adaptive education unveiled that the utilization of adaptive learning technology had a beneficial effect on pupils' scholastic attainment, specifically in the fields of mathematics and science. The researchers performed a thorough assessment of the available literature and chose 48 studies that met their precise criteria for inclusion (Cavanagh et al., 2020).

The research demonstrated that adaptive systems could tailor learning by altering content and delivery methods, resulting in better outcomes and increased motivation. The

adaptive technique also improved cognitive and metacognitive abilities, including concentration, comprehension, and self-assessment of progress. The subsequent investigation into adaptive education revealed that the implementation of adaptive learning technologies resulted in enhanced academic achievement among students, particularly in the subjects of mathematics and science. The researchers conducted a comprehensive examination of the existing literature and selected 48 studies that satisfied their specific inclusion criteria (Cavanagh et al. 2020).

The researchers performed an extensive literature review on adaptive educational systems, concentrating on studies that evaluated the efficacy of adaptive systems in comparison to conventional, non-adaptive training. The study results indicated that adaptive systems were more effective in fostering advanced cognitive skills, including problem-solving and critical thinking. Additionally, these systems enhanced students' ability to apply their knowledge in unfamiliar situations. Adaptive learning systems are highly effective in enhancing learning results, particularly in mathematics and scientific disciplines, where students may encounter difficulties (Ginting et al., 2024).

Ginting et al. (2024) conducted a meta-analysis to investigate the impact that adaptive learning environments have on the learning outcomes and engagement levels of students. The statistical method known as meta-analysis is a methodology that brings together the findings of a number of different researches in order to provide an all-encompassing evaluation of the performance of an intervention. During the course of this investigation, a comprehensive analysis of prior research on adaptive learning environments was carried out, and forty studies were found to satisfy the inclusion criteria. Following that, they used statistical analysis to determine the overall influence that adaptive learning environments have on student learning outcomes and engagement. The meta-analysis demonstrated that adaptive learning environments improve students' learning preferences, including academic performance and cognitive skills. Researcher determined that the effect size was moderate, indicating a significant impact of flexible learning settings on students' learning outcomes. Additionally, the researchers discovered that flexible learning preferences environments have the potential to maximize the level of engagement that students have in the learning process. According to the findings of the study, the use of adaptive learning and personalization as instructional strategies can be

advantageous for students who possess a wide range of learning preferences and abilities. For the purpose of determining the effects that personalized learning and adaptive learning have on pupils, a comprehensive testing procedure was carried out.

2.14   Research Gaps from Previous Findings

Adaptive learning and customization in the context of higher education were two topics that scholars prioritized in their research between the years 2010 and 2020. According to the findings of the study, the implementation of adaptive learning and personalization has the potential to improve students' academic performance as well as their level of interest. The findings of the research indicate that the implementation of adaptive learning and personalization led to an increase in test scores, an improvement in course grades, and an increase in engagement with the materials covered in the course.

According to the findings of these studies, the implementation of Adaptive Learning Methods (ALT) and instructional systems has the potential to achieve significant improvements in academic achievement, particularly in areas of study that students find challenging. It is therefore important for educators to take into consideration the specific technology that is utilized as well as the degree of customization in order to ensure that these interventions are as effective as possible. Therefore, educators must evaluate the specific technology utilized and the degree of customization to optimize the efficiency of these interventions. Upon conducting a comprehensive search across multiple databases, they successfully identified 33 studies that met their predetermined inclusion criteria. The effectiveness of ALT was investigated in a number of different research domains across the course of the study, which included a total of 5,863 participants. The researchers came to the conclusion that elements like the specific technology used, the length of the intervention, and the degree of personalization affected the effectiveness of ALT.

Based on the findings of this study, it is recommended that instructional designers and educators consider the technology that is utilized as well as the level of customization that is required to enhance performance. From 2010 to 2020, researchers analyze the implementation of adaptive learning and personalization in higher education. It was

discovered that the implementation of these measures enhances students' academic achievement and degree of engagement. Concretely, their findings indicated that the use of these tactics resulted in increased test scores, improved course grades, and enhanced involvement with the study materials.

According to the findings of a study that was conducted between the years 1990 and 2014, the impact of adaptive testing on the learning outcomes and motivation of students appears to be dependent upon the particular setting in which it is administered. The study focused primarily on adaptive testing in educational settings, and then proceeded to analyze the data obtained from the tests in order to determine the extent of its influence. One specific thing the researchers found was that customized testing could sometimes make students less motivated and worse at school. The factors contributing to the problem encompass a fiercely competitive testing atmosphere, students' lack of familiarity with the exam format, and a poorly constructed adaptive testing system. Nonetheless, the researchers found that adaptive testing can enhance students' learning outcomes and boost their motivation when the testing atmosphere is less rigid and the adaptive testing system is designed appropriately. Therefore, educators and test developers need to carefully assess the environments where they plan to implement adaptive testing. Adaptive learning systems have yet to fully achieve their potential in enhancing learning outcomes and minimizing costs (Ghemawat, 2017). To come up with the method for the study, the researchers look at the outcomes of many experiments and case studies in which ALT was used in different schools. As an additional step, they conducted interviews with teachers and administrators who had successfully implemented ALT in their classrooms. Despite ALT's promise to improve learning outcomes while cutting costs, the researchers discovered that there are a number of challenges to its widespread adoption, including a high cost to develop, complex technological integration into existing systems, and a lack of research demonstrating their efficacy? The effectiveness of ALT is greatly impacted by its design and implementation, according to the researchers. The researchers highlighted the crucial role of well-established learning goals in directing ALT usage. Collaboration between educators, administrators, and developers was also emphasized to ensure the successful

accomplishment of those goals. A study examined limitations to ALT's performance as well as how they can enhance learning outcomes.

Feldstein conducted an analysis of multiple case studies and pilot programs to examine the implementations of adaptive learning across various institutions. The author collaborated with developers, educators, and administrators who were directly involved in the implementation of these technologies. He discovered no appreciable gains in learning outcomes even though ALT promotion was suggested to enhance these effects. Feldstein stated that the emphasis on technology took attention from essential educational matters, such as the necessity for individualized attention, efficient teaching methods, and active involvement. Furthermore, he noted that the adaptive learning industry has inadequately tackled several critical challenges, such as the high costs associated with research and implementation, insufficient capacity, and limited empirical evidence of effectiveness. Feldstein proposed that the industry must resolve these challenges prior to investing in new technology. While ALT has the potential to enhance learning outcomes, its effectiveness has received overstatement. Educators and administrators should exercise caution when investing In Alternative Learning Technologies (ALT) and consider exploring other strategies that may more effectively address core educational challenges.

The ineffectiveness of adaptive instructional systems frequently arises from a deficiency of access by users, inadequate user experience, and insufficient feedback. Their objective was to ascertain the causes of failure in adaptive educational technologies and investigate potential remedies. To carry out the investigation, the researchers thoroughly examined the existing body of literature on adaptive educational technologies, with a specific emphasis on studies that documented instances of failures or constraints associated with these technologies. A total of 31 pertinent papers were selected and the data was evaluated to identify recurring themes and trends. The study discovered that failures in ALT frequently arise from user control deficiencies, inadequate user experience, and insufficient feedback. More precisely, the researchers discovered that users frequently see the technology as excessively prescriptive and lacking sufficient autonomy in shaping their learning experience. There is no content provided. Moreover, the study showed that a significant number of Alternative Learning Tools (ALTs) had a

subpar user experience, often characterized by ambiguous, disorganized, or challenging interfaces. Ultimately, the study concluded that a number of alternative learning tools (ALTs) lack enough feedback, hence preventing users from effectively assessing their progress and adjusting their learning strategies. Consequently, failures in adaptive instructional technology usually stem from problems that can be resolved by enhancing the design and development process.

Integrating Adaptive Learning Technologies (ALT) in higher education might pose challenges due to teacher reluctance, inadequate technical infrastructure, and a lack of student excitement. The faculty members exhibited hesitancy in using the technology, mostly due to apprehensions regarding its impact on their instructional approaches, the limited availability of training, and the potential escalation in their workload. Ginting et al. (2024) conducted a study on the implementation of adaptive learning technology (ALT) in higher education and the challenges that institutions encounter throughout its adoption. A qualitative case study analysis was conducted, focusing on six universities that had included ALT in their curricula. Their conclusions were derived from interviews conducted with academics, administrators, and students who were directly involved in the adoption of the technology. The interviewees aimed to gain a deeper understanding of the challenges and advantages of Alternative Learning Techniques (ALT) in higher education. The integration of ALT into established learning management systems, coupled with the requirement for IT support, led to challenges in technical infrastructure. Student motivation significantly influenced the effectiveness of the technology. Students lacking motivation or interest in technology did not benefit from adaptive learning. This observation is significant; it indicates that students may have recognized adaptive technologies due to their incomplete integration into the learning process. The effectiveness of ALT may be viewed differently by faculty and students. Faculty members expressed apprehension about relinquishing control over the learning experience, and a significant number regarded technology as a laborious and challenging aspect to include into their teaching. Conversely, students admitted to a deficiency in engagement with technology, asserting that it failed to offer sufficient feedback or assistance for their academic progress. In order to tackle this problem, we conducted a study that utilized both qualitative and quantitative research approaches. The research

investigated a total of 130 faculty members and 375 students at a prominent public institution in the United States (Liu et al., 2021).

The survey questions were designed to evaluate the perspectives of teachers and students regarding the usage of ALT in the LMS, with a specific focus on its effectiveness, user-friendliness, and influence on teaching and learning outcomes. It has been observed that there may be divergent viewpoints between teachers and students regarding the efficacy of ALT. Staff members' exhibit concern regarding the loss of control over the learning process, whereas some students perceive a lack of engagement with technology. This study proposes that universities should consider the concerns and diverse viewpoints of faculty and students while integrating Alternative Learning Technologies (ALT) into the Learning Management System (LMS). Universities should provide extensive training and support to faculty members to guarantee their competence and comfort with the technology. Faculty members should possess knowledge of the situations in which a lack of control in their teaching experience could be beneficial or detrimental. According to the findings of a separate study (Nam & Smith-Jackson, 2007), students who exhibited a high degree of motivation were more likely to make advantage of the student control features that are available in an online learning environment. These children exhibited a heightened propensity to actively interact with instructional material, seek alternative possibilities, and achieve enhanced academic results. The research by Miltenoff et al. (2013) shown that student motivation significantly influenced the efficacy of student control options, particularly within mobile learning environments.

Students with high motivation demonstrated a greater tendency to utilize student control options, actively engage in their learning process, and achieve superior learning outcomes. Research experiments indicated that the effectiveness of a student control tool designed for enquiry-based learning in science education was significantly influenced by the students' level of motivation. Jones and Tzekaki (2016) found that highly motivated students were more likely to use the tool proficiently, engage in enquiry-based learning activities, and achieve better learning outcomes. Three studies provide concrete evidence, all converging on the premise that student motivation is a crucial determinant in the effectiveness of student control choices (Ginting et al., 2024). Enthusiastic students demonstrated a greater propensity to actively involve themselves in their academic

pursuits, explore novel opportunities, and actively contribute to their educational experience. In addition, highly motivated students demonstrated superior academic performance when given the opportunity to have control over their learning.

These studies demonstrate that student motivation plays a crucial role in specific situations, such as online and mobile learning settings or inquiry-based learning in science education. It is crucial for educators to give priority to monitoring the motivation levels of their students and make efforts to establish educational settings that promote motivation, autonomy, and engagement. By adopting this method, there is a higher likelihood that students will make use of student autonomy options and achieve excellent learning outcomes.

English students easily acquire academic language since they are exposed to specific terms repeatedly during topic studies. It is widely recognized that carefully choosing content that matches the interests and needs of ESL students is essential for promoting their motivation and facilitating their learning process. To enhance students' progress in their specialized areas of necessity and competency in English language learning, it is important to link their objectives with the unique categories, classifications, and styles of English. The effectiveness of ALT in facilitating English vocabulary acquisition relied on the inclusion of interactive support components, suitable content selection, and explicit learning objectives (Chen & Yang, 2019).

Many individuals reported that offering feedback on students' performance and progress facilitated effective engagement with the adaptive system and improved their mathematical skills. A previous experiment explores the influence of feedback on student autonomy in a dynamic English writing system. The study found that offering feedback to students regarding their writing skills and progress enhanced their engagement with the adaptive system, enabling them to utilize its features more effectively.

Even though students have the potential to exert a greater influence on the learning process, teachers continue to play an essential part in providing students with support, assisting them in properly navigating resources, and making the most of the benefits that come together with student autonomy. Offering instruction, addressing enquiries, and monitoring progress can all improve the success of children utilizing

student management options. There is a possibility that students will still require guidance and support from the teacher in order to successfully explore the materials, particularly when the learning activity is difficult or complex. Instructors can help students by answering questions, providing clarifications, and monitoring advancement. According to Ginting et al. (2024), the availability of instructor support in an alternate learning environment has a beneficial influence on the level of motivation and contentment that students experience.

The study demonstrated a positive correlation between the amount of instructor support and the levels of motivation and pleasure indicated by students regarding their learning experience. According to a separate study (Dickes et al., 2019), students could not successfully employ self-directed learning tactics in a non-traditional learning environment without teacher assistance. The research indicated that students with increased instructor supervision effectively employed self-directed learning strategies, resulting in improved attainment of their educational objectives. Researchers discovered that in an Alternative Learning Technology (ALT) setting, pupils with little prior knowledge needed the help and feedback of their instructors. The research indicated that students with limited prior knowledge who received a higher volume of teacher feedback and guidance achieved improved learning outcomes (Ginting et al., 2024).

An independent study found that students needed help from their teachers in order to use self-directed learning methods well in a non-traditional learning environment (Dickes et al., 2019). Students who were given a greater amount of supervision from their teachers were found to be able to successfully implement self-directed learning strategies, which ultimately led to an increase in the students' level of success in achieving their educational objectives. During their research, the researchers discovered that students who had a low level of knowledge in an Alternative Learning Technology (ALT) environment need extensive feedback and help from their instructors. Based on the findings of the research conducted by Ginting et al. (2024), it was found that students who had less prior knowledge and who received more feedback and direction from their teachers produced better learning outcomes.

2.15   English Teachers and Adaptive Teaching

Despite the concentration on student control in the learning process, English teachers continue to have a vital role in supporting and guiding students through the curriculum. Teachers can employ several tactics. Initially, they can provide students with advice and assistance by responding to inquiries, providing clarifications, and overseeing advancement (Ginting et al., 2024). Teachers have a distinct advantage in being able to offer individualized feedback and assist pupils in recognizing their areas of weakness that require improvement. By providing such assistance, educators can assist students in maintaining their motivation and involvement with the content, ultimately resulting in enhanced proficiency in the acquisition of the English language. Additionally, they can establish virtual platforms for discourse or social groups where students can pose inquiries and obtain responses from both their classmates and instructors. Furthermore, educators can produce films or audio recordings that effectively elucidate complex ideas in a straightforward and succinct manner. In addition, educators have the option to utilize interactive multimedia tools such as simulations or games to enhance students' comprehension of abstract ideas and facilitate visual representation (Ginting et al., 2020).

Currently, technological advancements offer the possibility of creating personalized education by permitting pupils to select their own academic path (Alamri et al., 2021). Technological advancements have enabled the adoption of personalized learning, aimed at addressing the individual educational requirements of students to enhance their knowledge and increase engagement (Wallington & Bernacchi, 2020). Personalized learning is an educational methodology that enables customization of objectives, sequencing of information, speed of learning, and instruction to cater to the unique requirements of each student (Peng et al., 2019). AL is a method of tailored learning, as described by Waters (2014).

Martin et al. (2020) contend that the aim of AL is to create a distinctive learning experience that addresses the individual differences among students. By customizing the way information is presented to students based on their level of understanding, as determined by evaluation findings, we can accomplish this goal. In addition, AL considers the student's preferences about the specific materials, technical equipment, and

software. AL techniques strive to generate educational experiences that capitalize on students' existing knowledge and correspond with their learning goals. Software technologies support these approaches by monitoring students' advancement and gathering data, allowing for instructional adjustments based on the results (Peng et al., 2019).

AL systems have been adopted by educational institutions for various objectives. Students utilize these tools to do homework assignments, participate in activities, and obtain assistance during the duration of the course. Alternatively, students employ AL systems as remedial tools to enhance their understanding, particularly for those who require additional support. Universities have performed research to assess the impact of adopting Artificial Intelligence (AI), particularly in terms of increasing engagement, promoting retention, and improving learning outcomes.

Diziuban et al. (2017) conducted a study to examine how university students respond toward adoption of flexible and as well as an effective learning environment that incorporate Adaptive Learning (AL). The statistics indicated that, although there were variations among schools, students from both institutions rated AL favorable in terms of its educational efficiency. Moreover, most individuals hold the belief that Artificial Intelligence (AI) grants them enhanced flexibility and enhances their capacity to acquire knowledge.

Conversely, Wang et al. (2019) employed an organized framework of knowledge to automate the classification and integration of contemporary learning resources. They provided students with tailored resources aligned with their proficiency in the Japanese language. The findings suggest that tailoring course materials to address students' individual needs improves their course engagement.

Centrino et al. (2024) assessed the efficacy of Adaptive Learning (AL) in improving students' proficiency in mathematics, biology, information literacy and chemistry during their undergraduate pharmacy degree. The results indicated that the utilization of AL had a noteworthy effect on enhancing comprehension of the remedial chemistry curriculum. Nevertheless, it did not produce comparable results in the remaining academic disciplines.

Savio-Ramos (2015) revealed that the efficacy of personalized learning in enhancing the mathematical abilities of high school pupils was examined. A total of 117 kids in grades 10 through 12 attended the event. Participants who participated in customized learning (individualized learning) reported having a more favorable impression of the method compared to those who were in the group that engaged in traditional learning. Adaptive learning theory is based on a teaching method that customizes the educational process to match each learner's unique learning style. Using data to develop a tailored program considers different capabilities and requirements rather than following a pre-established course. This leads to an individualized and data-informed educational experience (Sezgin & Yuzer, 2022).

2.16   Evaluating Teacher Adaptability in English Teaching Higher Education

Teachers in higher education must address learner diversity when implementing educational innovations. Adaptive Teaching methods effectively address the issue of student variety. Research indicates that Adaptive Teaching is commonly considered the benchmark for good teaching (Darling-Hammond & Bransford, 2007). An adaptive instructor utilizes several instructional tactics to accommodate the requirements of distinct student groups while ensuring that all learners have a shared teaching aim. Throughout the process of adaptation, teachers engage in cognitive monitoring to determine the most effective approach to adapting (Duffy et al., 2009).

Adaptive Teaching not only deals with the everyday challenges in the classroom and caters to the various requirements of language learners, but it also enables teachers to successfully incorporate educational modifications or advancements that are required or recommended by educational authorities. Adaptability is a crucial characteristic of a proficient teacher, as it directly connects to their ability to successfully adopt educational changes and innovations. According to Hattie (2008), an excellent teacher is someone who uses writing content knowledge in a flexible and innovative way and can adjust their teaching methods based on the specific classroom situation. A teacher who is adaptive can improvise with greater ease (Hattie, 2008). This description highlights both the teacher's inventive behavior and their ability to adapt to the specific characteristics of the

classroom. Therefore, a hypothesis suggests a strong correlation between innovation and teacher adaptability. We project that fostering teacher adaptability will enhance their ability to embrace educational innovations.

However, English higher education teaching lacks a standardized method for assessing the adaptability of English teachers. Current approaches mainly focus on educators in a broad sense, such as the CARE coaching model (Hoffman & Duffy, 2016). Their objective is to improve the adaptability of pupils rather than that of teachers. Additionally, Martin et al. (2012) proposes a tripartite model that places a high emphasis on students' adaptability. In addition, Parsons et al. (2018) have created a mathematical education model that incorporates several understandings of teacher adaptation in educational settings beyond the teaching of English. Alternatively, professional development programs most effectively implement a strategy to enhance teachers' flexibility, as the cultivation of teachers' professional competence necessitates both practical experience and formal education. Given that most definitions for teacher adaptability highlight the interactive aspect of teaching, it is necessary for the Teacher Professional Development (TPD) model aimed at promoting teacher adaptability to also be interactive.

2.17   Teacher Adaptability

Zimmerman (2002) defines self-regulated learning as a component of adaptability. Self-regulated learning refers to the learners' cognitive process through individuals' control, monitor, enhance skills, direct their thoughts, actions to seek and achieve learning goals and improve their abilities (Holliman et al., 2018). Bakhtiar and Hadwin (2022) have introduced a four-step paradigm for self-regulated learning, with adaptation being the last level. The four cyclical phases are considered a continuous loop and include (a) delineating tasks, (b) establishing objectives and devising a plan, (c) employing study techniques and strategies, and (d) flexibly modifying studying through metacognition. In the last phase, the learner evaluates their own performance and adjusts their thinking and behavior to effectively finish the learning tasks. This corresponds to the idea of adaptability as defined by Martin et al. (2012, 2013). Bakhtiar and Hadwin

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(2022) assert that self-regulated learning models commonly include an adaptation phase. In this phase, individuals evaluate their own performance and determine the necessary cognitive and behavioral modifications for future enhancement (Collie & Martin, 2017). The comprehensive comprehension of adaptability resulted in the suggestion of an updated definition and, subsequently, the creation of the tripartite model of adaptability (Matin et al., 2012).

Martin et al. (2012) described the adaptability is the capacity of the learners to effectively regulate their psychological and behavioral processes in the face of novel, changing, or unpredictable situations, conditions, and scenarios. Their three-part model of adaptation included three types of regulation: cognitive, behavioral, and affective. This implies that people change, manage, and modify their cognition (thoughts), behavior (actions), and affection (emotions) accordingly (Martin et al., 2012; 2013). Their approach is based on the life-span theory of control, which holds that an individual's progress toward a goal is successful when it is consistent with the restrictions and possibilities in the social context (Martin et al., 2012). To do this, an individual must exert control over both the behavioral aspects (primary control) and the cognitive components (secondary control) of pursuing their goals. Compensatory primary control helped and alternative options, while compensatory secondary control reassessed individuals' objectives, limited their ambitions, and adjusted their expectations. Martin et al. (2012) considered the compensatory aspects of this hypothesis to be analogous to their perception of adaptation. Nevertheless, they differentiated the theory of control that spans an entire lifetime from adaptability by emphasizing its lack of emotional regulation and its focus on disengaging from goals. According to their belief, during the process of adaptation, an individual is unable to alter the ultimate objective. Instead, they can only modify their approach to the various events and conditions to successfully attain their end goal. In contrast, the implementation of compensatory control over cognitive and behavioral adjustments can lead to favorable results in the surrounding environment. This involves modifying one's actions and ideas to effectively respond to environmental events (Collie & Martin, 2017).

Adaptive education, within the context of education, pertains to educational systems that integrate students with diverse abilities, skills, knowledge, attitudes, and

beliefs. According to Matei and Gogu (2018), it is necessary to adjust to the variations in educational environments, and adaptive learning environments offer systems to accomplish this. Martin et al. (2012) primarily utilized the tripartite model of adaptability in educational settings like schools and universities (Collie et al., 2016). However, its application in relation to teachers and the teaching profession has been relatively limited. Therefore, Collie and Martin (2017) advocated for additional research on how instructors alter their education in response to the distinct circumstances of classrooms, which necessitates that they effectively address and handle ongoing changes while teaching.

Lin et al. (2018) identifies various distinct aspects of the classroom environment that demand teacher adaptability. These include working with different groups of students, teaching different subjects, and managing multiple classroom events simultaneously (not necessarily one situation at a time). Parsons et al. (2018) incorporated the theories of social constructivism and teacher metacognition (Duffy et al., 2009) to include the idea of Adaptive Teaching into the field of mathematics education. Adaptive Teaching, in this context, refers to a process that involves the following steps: receiving feedback on students' learning, motivation, and conduct; reflecting on this feedback and making decisions on how to respond; and finally, acting based on these decisions. Various elements, including their abilities and limitations, as well as the obstacles they faced, influenced the behavior of instructors. Additionally, teachers' reflection and metacognition played a role in moderating their actions. The classroom included all these elements. Gallagher et al. (2020) argued that Parsons et al. (2018) model did not adequately consider the cognitive processes of teachers.

According to the findings of Centrino et al. (2024), it is becoming more and more obvious that not all students require the same education, and there is a significant desire for individualized education from students. The usefulness of the adaptive learning program in helping middle school students develop their communication skills—such as listening, reading, speaking and writing—in face-to-face instruction was assessed in a prior study. The post-measurement communication skills scale scores of experimental and as well as control groups showed statistically significant differences in favour of the experimental group. Additionally, the study demonstrated that the mean communication ability scores of the experimental groups differed statistically significantly between the

pre- and post-program assessments, with the post-measurement showing the greatest advantage (Al-Sarayrah, 2023). Diziuban et al. (2017) did a study to find out how students at two universities—Colorado Technical University and the University of Central Florida—respond and adapt to flexible learning settings that use AL. However, despite the fact that there were differences between the two universities, the findings showed that students from both universities gave AL high grades for providing a successful education. Furthermore, most people believe that AL improves their adaptability and knowledge acquisition. A study of Wang et al. (2023) reveal that adaptive teaching compiles the students to fulfill their educational need according to their level. Similarly, the findings of previous study of Savio-Ramos (2015) reported the influence and effectiveness of adaptive teaching for improving algebra competence among school students.

2.18   Critical Analysis of Literature Review

After reviewing the literature review on the Adaptive Teaching approach was comprised on three sections; first section provided the detail about adaptive approach of teaching, second section was consisted of studies related to the effect of Adaptive Teaching on language skills at different level of education. Additionally, the third section discussed the outcomes of Adaptive Teaching among students. In the light of sections, firstly it was analyzed that in this digital era, Adaptive Teaching is essential to implement in education sector. Adaptive Teaching is the effective strategy in education to meet the diversity of the students. Implementation of Adaptive Teaching is growing rapidly worldwide due to its effectiveness in education sector but it can be challenging for the educational sectors to practice. According to the second section, it was analyzed that ample of evidence suggested the effect of Adaptive Teaching is significant on developing language skills. Adaptive Teaching is a significant positive predictor of students' academic performance. Unfortunately, literature is scarce related to adaptive approach of teaching in developing countries, especially in Pakistan. There are few studies that were conducted to examine the effectiveness of Adaptive Teaching on students' academic achievement. Some studies were designed to investigate the role of Adaptive Teaching in improving communication skills of students at school level. At university level there is

limited literature available on the effectiveness of adaptive approach in improving writing skill among students of undergraduate programs. The current study was conducted to fill this gap. Third section discussed the outcomes of Adaptive Teaching among students at different level of education. Practice of Adaptive Teaching enhances the learning outcomes of the students. Literature reveals that students perform better in Adaptive Teaching as compared to traditional method of teaching. Implementation and practice of Adaptive Teaching is not convenient in for the educators and instructors in education sector.

The teacher plays a vital role in educational contexts, actively engaging with students and providing varied experiences through employed methodologies and designed activities. As a result, it is essential to develop several skills, with effective communication with students and others being the most important. The instructor must effectively convey essential information and experiences to address the needs of the pupils. Inadequate communication between instructors and students impedes their learning. Communication is fundamental to the educational process, and its effectiveness is dependent on the quality of interactions between teachers and students. Mutual agreement and understanding improve the relationships between teachers and students, facilitating effective communication among pupils. The students' development of verbal and non-verbal communication skills, coupled with the teachers' insufficient proficiency in fostering effective communication behaviors, exposes them to potential maladaptation. To address this diversity, educators must be trained to employ effective communication skills and a rational, empirical approach.

Adaptive learning is one of the most innovative and advanced methods of education and training currently available. The primary goal is to make adjustments to the learning environment in order to better accommodate the specific requirements of each individual learner. It was confirmed that students can articulate their learning preferences and that their satisfaction increases when the learning environment is customized to their selections. The concept that every individual learns in a unique manner and at a distinct pace, depending on their capabilities and potential, serves as the basis for the process of education adaptation. To be an effective educator, it is necessary to incorporate a variety of instructional strategies and educational experiences in order to meet the needs of each

individual student within the same amount of time. An educator is responsible for addressing the varied needs of students, enhancing their professional skills and abilities, and creating an environment conducive to inquiry and support. It has been demonstrated by a great number of investigations that there is a significant flaw in the way in which teachers communicate with their students. This indicates that students are losing fundamental abilities and are unable to communicate successfully with each other. In light of the aforementioned, it is important to emphasize that teachers have a difficult time communicating their expertise to pupils. This necessitates that teachers have the information, experience, and skills that the traditional in-service teacher training system was unable to give. Teachers need to have a wide range of speech skills in order to communicate well. An effective educator possesses the ability to engage with students and communicate his ideas clearly. Communication is the art and process of sharing and getting ideas. The quality of the ideas presented determines the effectiveness of communication. Communication is a fundamental method for the processes of agreement and understanding that educators must engage in to achieve the educational institution's goals. In education, communication is defined as the exchange of experiences between two or more individuals until it becomes prevalent and shared among them. This process leads to the alteration of each participant's existing beliefs and attitudes. To facilitate effective communication, the instructor must create opportunities for the student's area of expertise to align closely with his own. A specific set of skills is required to complete the communication process. Listening, speaking, reading, and writing are essential skills for effective conversation. The absence of these elements leads to significant failures in the process. With suitable motivation, both educators and learners can improve their writing skills and progress towards their academic objectives. The teacher's ability to communicate with students promptly and accurately is essential, both in and out of the classroom. This will undoubtedly positively impact the educational process and its core components. It is critical to develop training programs that teach teachers how to communicate effectively with students through structured and focused exercises that promote productive dialogue. Adaptive learning addresses these issues by modifying the learning environment, scientific content, and presentation of knowledge, whether through traditional or electronic means. This research focuses on Adaptive Learning, an

educational approach designed to tailor instruction to the abilities of individual students, specific groups of learners, or their preferred learning methods. For the purpose of making the educational process more effective and successful, it is necessary to focus on the most important issue, which is the adaptability of the learning environment to accommodate a variety of learning preferences. To put it simply, learning settings will be more flexible and able to change how they teach based on what they learn about the student's learning style. The main goal of adaptive learning is to get students to stop comparing themselves to other students. Instead, they should focus on their own strengths and compare themselves to their own personal and professional goals. This helps them build their confidence and create a positive educational identity. The fundamental advantage of adaptable learning is that it accommodates to the specific requirements and preferences of each individual student in terms of the most effective method of learning for them.

2.19   Overview of the Chapter

This study was conducted to investigate the effect of Adaptive Teaching for improving language skills of undergraduate students. Adaptive Teaching provides personalized learning, which aims to give each student a path to learning that is efficient, effective, and unique. The main objective of the study is to compare the scores of writing skills of the students of experiment group and control group. This chapter was comprised on literature review on adaptive approach of teaching and language development. Ample of studies were conducted to examine the effect of Adaptive Teaching on students' learning. Researcher reviewed literature globally regarding use of Adaptive Teaching in education in different levels. Comparison of Adaptive Teaching and conventional teaching techniques was discussed in this chapter. Effect of Adaptive Teaching on communication skills was uncovered among middle school students. Theoretical and conceptual framework was developed though reviewing the literature. An insufficient amount of published material on adaptive learning in higher education in Pakistan prompted the researcher to explore the impact of Adaptive Teaching on the enhancement of language skills among students enrolled in the Bachelor of Science (BS) program. After studying the literature theoretically and empirically in the perspective of

worldwide, especially in Pakistan, the gaps were identified. Therefore, researcher conducted this study on university students.

CHAPTER 3

RESEARCH METHODOLOGY

This study determined the effect of Adaptive Teaching for developing language skills of undergraduate students. Research methodology comprises of research design, data collection method, population, sampling technique, instrument, experimental group, control group, steps of Adaptive Teaching, strategies of adaptive approach, lesson plan, ethical consideration, data collection, data analysis. Research follows the systematic procedure in methodology according to the objectives of the study.

3.1   Research Design

The nature of the investigation was quantitative. A quasi-experimental study design was adopted. The purpose of a quasi-experimental design is to determine whether or not there is a cause-and-effect relationship between an independent variable and a dependent variable. A genuine experiment, on the other hand, adheres to the principle of random assignment, whereas a quasi-experiment does not follow this concept. Subjects are assigned to groups based on factors that are not completely drawn at random. Evaluations of interventions are the focus of quasi-experiments, which are studies that do not employ randomization in their methodology. Similar to randomized trials, quasi-experiments are conducted with the purpose of demonstrating that there is a causal connection between an intervention and a result. In the context of quasi-experimental research, it is possible to make use of both pre-intervention and post-intervention evaluations, in addition to control groups that are not selected at random. Both the experimental and control groups underwent pre- and post-testing. Adaptive Teaching was taken as independent variable and language skills was taken as dependent variable. Symbolic representation of the research design is as;

O1　　X1　　O2

O1　　X2　　O2

Where O1= pre-test and O2=post-test

X1= Experimental Group

X2= Control Group

3.2   Population

The population of the study were the students of main campus Abu Dhabi Road Rahim Yar Khan. The course of Functional English of BS students of first semester of Department of Management Sciences was allocated by Khawaja Fareed University of Engineering and Information Technology. The sample of study was taken from the Department of Management Sciences. The total numbers of students enrolled in first semester section-A and Section-B were 120.

Table 3.2.1

Population of students in the Department of Management Sciences at KFUEIT (Male/Female)

Sections	Students
Section-A	60
Section-B	60
Total	120

3.3   Sample and Sampling Techniques

The study was experimental and students were selected for experimental group and control group through purposive sampling technique. It is a type of non-probability

sampling techniques in this way the researcher chooses their sample from the population on their own knowledge and judgement. Researcher decided on the bases of her judgements what type of respondent can participate that can meet the criteria. So, researcher selects the sample on the bases of research objective and specified criteria

The sample of the study consisted of undergraduate students from the BS program of Management Sciences semester 1st studying language course "Functional English Subject". The sample of the study was 60 undergraduate students from the Department of Management sciences at Khawaja Fareed University of Engineering and Information Technology Rahim Yar Khan. Total students were 120. The 30 students were selected for an experimental group and 30 students were selected for control group through purposive sampling technique. Similarly, students for control group were selected in this way.

Key features of the selected undergraduate students were as following;

- Under-graduate students enrolled in BS Management Sciences Program
- Under-graduate students studying language course ''Functional English''

Table 3.3.1

Sample of students in the Department of Management Sciences at KFUEIT (Male/Female)

Groups	Sample Size
Control Group	30
Experimental Group	30
Total	60

3.4   Instrumentation

To collect the data from the experimental group and control group four instruments were used for the study. They were as;

- City University of New York Assessment Test of Language Skills
- Writing Skills Test
- Self-Reported Protocol
- Perception Scale

3.4.1   Preparation of Research Instruments

Research instruments of the study were selected and prepared according to the research design and objectives of the study. Instruments were also prepared under the proper guidance of the supervisor and experts to maintain the validity and reliability of each instrument. After the selection and construction of instruments, each instrument was validated through expert opinion, and pilot testing was done to check the reliability of the instrument.

3.4.2   City University of New York Assessment Test of Language Skills (Writing)

The CATW is a standardized examination that evaluates students' writing proficiency in English. An instrument that was utilized in the research was the CATW, which was designed to evaluate the level of language proficiency possessed by undergraduate students. This test was made at CATW in 2012. For the purpose of evaluating the writing abilities, the CATW (Audant, 2016) was utilized is designed to assess students writing skills. The test measure student's ability to apply different aspects including solving problems, making predictions, and analyzing situations. CATW assessment test in writing consists of open-ended questions that are suitable to measure the writing abilities of under-graduate students at university level. There was no need to obtain permission in order to utilize this instrument for the research project because it is freely accessible on the internet.

http://www.cuny.edu/academics/testing/cuny-assessment-tests/resources.html

The purpose of the CATW is to evaluate students' capacity to think and write in English in a manner that is analogous to the manner in which they will soon be required to think and write. The reading passage, often known as the text, plus the writing directions make up this assignment. The test aims to assess students' ability to utilize various language skills, including critical analysis of writing tasks and texts, development of the writer's ideas, response structure, language use in terms of sentence construction and word selection, as well as grammar, usage, and mechanics. There was no need to obtain permission in order to utilize this instrument for the research project because it is freely accessible on the internet. The students are required to read both the passage and the directions, and then they must adhere to the guidelines while writing an essay that provides a response to the passage. Students must read the passage and instructions and then write an essay responding to the passage while following the instructions. The CATW is a reflection of the learning skills that were taught beginning with the first semester of the "Functional English" course;

1. Finding significant ideas in the reading
2. Creating a concise summary of the most important topics presented in the reading
3. Showing simple critical thinking in response to these important concepts
4. Recognizing a central concept in the text and articulating a well-structured response to that concept.
5. Creating a coherent essay that demonstrates the relationships between concepts
6. Ideas that are supported by an appropriate amount of personal experience, books, studies, and/or other sources of information
7. Exhibiting proficiency in sentence formation, diversity, and lexical selection
8. Exhibiting proper grammar, mechanics, and usage of the written word

The CATW requires students to articulate and substantiate their opinions regarding the reading material, systematically organize their thoughts and writing, and utilize the conventions of standard written English, encompassing suitable sentence structure, vocabulary selection, and accurate syntax, usage, and mechanics. The evaluation of student writing samples is carried out by the CATW with the use of an analytical scoring guide known as a scoring rubric. There are two faculty members that

grade each test independently, and both of them assign scores to each test based on five different areas. In each category, the possible range of scores is from one to six points.

The CATW Test is an assessment system used primarily to determine college readiness in areas such as reading, writing, and mathematics. Introducing or justifying a similar standardized test in the context of Pakistan requires a careful look at the local educational system, its gaps, and the potential benefits of such an evaluation tool. A standardized test like CATW could provide an objective, skills-based metric for admissions across different school systems in Pakistan. This could reduce dependence on rote memorization, which dominates many current assessments. Since English is the medium of instruction in most Pakistani universities, a CATW -style reading/writing test can assess language readiness and help design bridge programs for students from Urdu- or regional-language backgrounds. Aligning Pakistan's university entrance standards with internationally recognized models can help students integrate better into global academic systems. This would also aid students applying to foreign universities.

The Five Scoring Categories

1. Critical Response to the Writing Task and Text: Your capacity to accomplish the writing work, as well as your ability to demonstrate a knowledge of the key concepts presented in the reading material, your ability to use critical analysis, and your ability to integrate your own ideas and experiences in order to reply to the primary ideas presented in the text are all emphasized in this area.

2. Development of Writer's Ideas: In this section, you will be evaluated based on your capacity to develop your ideas in a way that is both clear and orderly. For instance, you may be graded on your ability to use summary, narrative, or problem/solution.

3. Structure of the Response: Within this category, your capacity to organize ideas into a coherent essay that provides support for a key focus, often known as a thesis, will be evaluated. Your essay's structure is analyzed to determine whether or not it contains evidence of logical links between ideas and whether or not transitions are used to show examples of these connections.

4. Language Use: Sentences and Word Choice: In this category, you will be evaluated based on the extent to which you display sentence control and variation in sentence structure. Additionally, your capacity to use acceptable vocabulary in order to make your views understand able will be evaluated in this category.

5. Language Use: Grammar, Usage, and Mechanics: For the purpose of ensuring that your meaning is understood, this category assesses your capacity to adhere to the conventions of normal American English language use in terms of syntax and mechanics.

It was felt by the researcher that the language of some statements is difficult for the students and some statements are very basic according to university level students. So keeping in view the understanding level of selected undergraduate students some statements of writing test were rephrased with simple and clear language. This test consisted of three main sections including 1stsection was based on letter writing, paragraphing writing, application writing 2nd section included on essays, dialogue writing and 3rd section consists of composition questions of passage requirement. CATW was used for both pre-test and post-test of the study but for the post-test order of the statements was changed. (Attached as Appendix-1)

3.4.3 Indicators of Writing Skills

Researcher selected these domains of writing skills of the students. These 3 factors of language skills were focused in this study. CATW was developed in New York to evaluate the writing proficiency of the students. In developed countries CATW is used as in adaptive approach of teaching to measure writing skills. There are five domains of CATW of students' writing skills. Researcher improved three domains through Adaptive Teaching. It was challenging for the researcher to implement of adaptive teaching at university. There is no opportunity to apply adaptive method in education to improve students' learning specially communication skills. Through this experimental study researcher improved the students' writing skill by the intervention of adaptive approach teaching as compared to conventional method. As a consequence, it was evident that adaptive approach is an effective approach in the field of education at university. In,

Pakistan conventional method of teaching is frequently used at university level to teach students. Comparatively, adaptive approach is the best practice of teaching for the students to improve their language skill as compared to conventional method. Students improve these three factors of language skills in the five steps that are mention below;

1. **Development of the Writers' Ideas**

   ● Ideas are either little developed or not at all used in line with pertinent developmental strategies.
   ● There is a lack of development of ideas, and there may be a limited application of developments that are relevant to the situation.
   ● The growth of ideas is either general or inconsistent, however certain techniques to development occasionally enhance the clarity of the writers' concepts.
   ● Most concepts are proficiently developed, and methods of development (e.g., summarizing, evaluating, narrating) are effectively employed to support and articulate the writer's thoughts.
   ● Concepts are thoroughly articulated, and methodologies for development (e.g., summarization, evaluation, narration) are typically employed adeptly to reinforce and communicate the authors' ideas**.**

2. **Language Use: Sentences and Word Choice**

   ● Sentences exhibit a significant lack of control or none at all.
   ● Sentences exhibit inadequate control, and there is minimal, if any, diversity to enhance intelligibility.
   ● Although the management of the sentences is inconsistent, there is some structural variety that helps to promote the clarity of the concepts.
   ● The majority of sentences exhibit proficient control, and there is sufficient structural diversity to enhance the understanding of the concepts.
   ● In general, sentences are well controlled, and there is a good deal of useful variety in the construction of sentences.

3. Language Use: Grammar, Usage, and Mechanics

● There is only a slight demonstration of language proficiency in the response. Grammar, use, and mechanics are usually faults, and flaws frequently make it difficult to comprehend what is being communicated.

● The response reveals a lack of mastery of the language (language proficiency). There are occasions when things like grammar, usage, and mechanics are proper; yet, flaws are frequently distracting, and some of them make it difficult to grasp.

● There is unbalanced command of the language. Generally speaking, the grammar, usage, and mechanics are acceptable; but, there are a few flaws that are distracting and may occasionally make it difficult to read.

● There is a competent use of language. The grammar, usage, and mechanics are generally correct, and the meaning is typically expressed in a clear manner.

● Even if there might be a few mistakes in syntax, usage, and mechanics, it is clear that the author has a solid grasp of the language, and the meaning is typically understandable.

3.4.4 Writing Skills Test

To measure the writing ability of undergraduate students a writing skills test was constructed by the researcher focusing on the research objectives of the study. After the careful and in-depth review of ''Functional English'' content a writing skills test was developed. The writing skills test was consisted of MCQs and short question answers. Content of writing skills was consisting of concepts taught from the given outline of Functional English subject. Reliability of this test was checked by Cronbach alpha. Cronbach's alpha is a statistic commonly used to measure the internal consistency or reliability of a set of items in a test or questionnaire. It indicates how closely related the items are as a group—essentially assessing whether they all measure the same underlying construct. The validity of the writing skills test was also tested through expert opinion. The language of writing skills test was simple and easy to understand for undergraduate students. (Attached as Appendix- II)

3.4.5 Self- Reported Protocol

To report the writing abilities of undergraduate students of the experimental group and control group was used to examine the learning retention of a student before and after for achieving the learning outcomes. A self-developed writing protocol was used by researcher. The Self-reported protocol was aligned with the objective no. 4 and also tied to the actual learning retention. The Self-reported protocol consisted of 21 statements. Writing skills test of the undergraduate students were seen on five points rating as; **5.** Always or almost always true to me. **4.** Usually true to me. **3.** Somewhat true to me. **2.** Usually not true to me. **1**. Never or almost never true to me. After the careful construction of self-developed protocol, its reliability was checked by Cronbach alpha. Cronbach's alpha is a statistic commonly used to measure the internal consistency or reliability of a set of items in a test or questionnaire. It indicates how closely related the items are as a group—essentially assessing whether they all measure the same underlying construct. Moreover, it was validated by experts' opinion by selecting the students of undergraduate students. (Attached as Appendix- III)

3.4.6 Perceptions Scale

A self-developed perception scale was used to find out the under-graduate students' perception about a different perspective of the experiment. This perception scale was used only for the experimental group. A self-developed perception scale was aligned with the objective no.5 and the statements of the perception scale were about different activities, contents and task performed by undergraduate students and researcher during the experiment. A seven-point rating scale was used to rank the perception of undergraduate students. The rating scale was as1.Totally disagree, 2. Disagree, 3. Disagree more than agree, 4. Neither disagree nor agree, 5. Agree more than disagree, 6. Agree, 7. Totally agree. The perception scale was consisted of 37 statements and all were related to experiment tasks and activities. After the careful construction of self-developed protocol, its reliability was checked by Cronbach alpha. Cronbach's alpha is a statistic commonly used to measure the internal consistency or reliability of a set of items in a test or questionnaire. It indicates how closely related the items are as a group—essentially assessing whether they all measure the same underlying construct. Moreover, it was

validated by experts' opinion by selecting the students of undergraduate students. (Attached as Appendix- IV)

3.5   Validity of the Instruments

Validity is known as the degree to which an instrument measures what needs to be measured. The validity of an instrument helps to consequently understand the score of an instrument. The validity of an instrument is as much important as the reliability of an instrument. If the instrument does not function according to desired objectives/tasks then the instrument is not considered a valid instrument. The validity of an instrument is measured through content and face validity. Discriminant validity, a kind of criterion validity that assesses whether a measure does not correlate with assessments of other constructs, was examined by the researcher. High discriminant validity assures that the new measure is unique and does not simply reflect other unrelated constructs. This form of validity is critical for determining the originality of a new measure and ensuring that it is not accidentally assessing anything else. The difficulty index, often known as the p-value, represents the percentage of right answers among total responses. Items with a p-value between 0.3 and 0.7 are considered to have a good difficulty index, indicating that they are moderately tough. In general, objects of moderate difficulty should be picked above those that are considerably easier or much harder. Before pilot testing, all four research instruments including CATW, writing skills test, Self- Reported Protocol, and Perception scale were validated through expert opinion. To check the validity of the CATW Test of Language Skills (Writing) two experts from the department of Education and three experts from the department of English were selected having enough experience of teaching in Education and Functional English. After the feedback and suggestions given by experts' opinion on CATW, certain changes were made in writing. These changes were as;

- Rephrased certain statements in easy and simple language for better understanding of students
- Removed some statements according to expert's suggestions as these statements were indicating repetition of concepts

- Changed statements orders to make it more understandable for students
- Decided total marks and time for performing the CATW

The writing skills test was validated by five experts (2 experts from education department and 3 from English department) having enough experience in teaching subjects. After expert opinion suggestions and feedback following changes were made in the writing skills test.

- Decided time and total marks for performing writing skills test.
- Removed some statements as per experts' suggestion
- Rephrased certain questions according to the understanding level of students.

Self- reported protocol was also validated before data collection. Students were selected for expert opinions of self -reported protocol validation. No changes were made as it was suggested appropriate by experts.

The validity of the perception scale was also checked through expert opinion from the department of English and Education teachers. In the light of their suggestions certain changes were made in the perception scale as under;

- Certain statements were removed
- Revised the rating scale
- Removed rewritten statements and rephrased certain statements according to suggestions

3.6   Pilot Testing

After validation of all research instrument, pilot testing was done to check the reliability of writing skills test. For pilot testing, 12 students who had studied series of content course of Functional English were selected as participants of pilot testing. These participants were from the BS Functional English program of Department of Humanities and Social Sciences at Khawaja Fareed University of Engineering and Information

Technology and these were from the 4th semester but none of them was selected as a participant of the experimental and control group.

3.7   Reliability of Instruments

The reliability of an instrument represents whether the instrument is reliable to collect the data from the sample or not. Reliability is also known as a quantification for constructing a good test. If all items of a test are correlated with each other and have balance item difficulty that test is considered a reliable test. Before data collection reliability of writing skills test was computed. Test was based on MCQs, so for MCQs item analysis was done by calculating difficulty index and item discrimination for each MCQs. Detail of calculated item discrimination and difficulty index (writing skills test) is as followed.

Table 3.2

Reliability Analysis of City University of New York Assessment in Writing Test

Reliability Statistics

Factors	No. of Items	Cronbach's Alpha
Letter writing	1, 2, 3, 4, 5	.702
Paragraph writing	6, 7, 8, 9, 10	.528
Application writing	11, 12, 13, 14, 15	.615
Essay writing	16, 17, 18, 19, 20	.861
Shot dialogue	21, 22, 23, 24, 25	.857
Composition passage	26, 27, 28, 29, 30, 31, 32, 33	.837
Total	33	.947

Cronbach's Alpha reliability of CATW was assessed on the basis of the score of the students these factors such as 1= minimum score, 2=average score, 3= maximum score. Results of the table indicate that CATW is reliable for using to measure writing skill of undergraduate students at university level. All the factors of CATW were found with significant reliability; letter writing (.702), paragraph writing (.528), application writing (.615), essay writing (.861), shot dialogue (.857) and composition passage (.837). Overall, Cronbach's alpha value was .947 that is highly reliable and significant for the use of class room assessment test in writing.

Table 3.3

Item Analysis for Writing Skill Test (WST)

Items	Difficulty Index	Item Discrimination	Decision
1	0.61	0.59	Item included in the test
2	0.67	0.61	Item included in the test
3	0.59	0.54	Item included in the test
4	0.45	0.62	Item included in the test
5	0.49	0.47	Item included in the test
6	0.67	0.53	Item included in the test
7	0.52	0.69	Item included in the test
8	0.47	0.47	Item included in the test
9	0.41	0.51	Item included in the test
10	0.65	0.57	Item included in the test
11	0.40	0.64	Item included in the test
12	0.54	0.49	Item included in the test
13	0.67	0.52	Item included in the test
14	0.51	0.41	Item included in the test
15	0.53	0.59	Item included in the test
16	0.52	0.43	Item included in the test
17	0.54	0.47	Item included in the test
18	0.49	0.52	Item included in the test
19	0.60	0.53	Item included in the test
20	0.59	0.56	Item included in the test

All the items of writing skill test are valid and relevant for this construct of the study so all these items were used in the study to measure writing skill.

Table 3.4

Self- Reported Protocol To Access The Language Skills Of Undergraduate Students

Reliability Statistics

Cronbach's Alpha	N of Items
.771	21

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Total Correlation	Item-Cronbach's Alpha if Item Deleted
WS 1	75.0833	46.447	.426	.755
WS 2	74.6667	47.152	.673	.740
WS 3	73.7500	46.386	.813	.733
WS 4	73.8333	52.515	.111	.779
WS 5	73.7500	51.295	.309	.764
WS 6	74.0000	52.000	.189	.772
WS 7	74.1667	49.970	.403	.758
WS 8	74.0000	46.000	.836	.731
WS 9	73.6667	50.424	.361	.760
WS 10	74.0000	54.364	.016	.780
WS 11	74.3333	52.788	.147	.773
WS 12	73.9167	56.265	-.223	.782
WS 13	73.4167	53.720	.160	.771
WS 14	74.5000	49.727	.287	.767
WS 15	74.2500	46.386	.567	.743
WS 16	73.9167	51.720	.369	.762

WS 17	73.8333	50.515	.437	.757
WS 18	73.6667	49.697	.428	.756
WS 19	74.0000	54.000	.013	.786
WS 20	74.1667	47.424	.488	.750
WS 21	74.0833	52.992	.103	.778

The overall Cronbach's alpha reliability is .771 which is considered significant to use in the study. Table shows that all the items of the research instrument are statistically significant. Values of the items are reliable. It means that reliability of all the items is significant. Furthermore, there is no need to include and exclude the items.

Table 3.5

Perception of Under-graduate Students about Their Learning Experience with Adaptive Approach Teaching Method

Reliability Statistics

Cronbach's Alpha	No of Items
.915	37

The overall Cronbach's alpha reliability is .915 which is considered significant to use in the study.

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Total Correlation	Item-Cronbach's Alpha if Item Deleted
ATWS 1	163.0833	556.629	.000	.917
ATWS 2	163.1667	553.606	.037	.918
ATWS 3	163.0000	564.545	-.145	.921
ATWS 4	162.6667	569.879	-.217	.922
ATWS 5	162.5833	536.811	.351	.914
ATWS 6	162.8333	519.606	.555	.912
ATWS 7	162.9167	495.356	.738	.908
ATWS 8	162.9167	522.447	.432	.914
ATWS 9	162.9167	522.265	.376	.915
ATWS 10	162.8333	523.970	.485	.913
ATWS 11	162.3333	531.333	.497	.913
ATWS 12	162.3333	529.152	.665	.911
ATWS 13	162.4167	510.447	.683	.910
ATWS 14	162.1667	526.152	.632	.911
ATWS 15	161.4167	511.902	.694	.910
ATWS 16	161.9167	528.447	.349	.915
ATWS 17	162.7500	537.477	.180	.919
ATWS 18	162.5000	539.182	.265	.915
ATWS 19	162.4167	522.265	.629	.911
ATWS 20	162.3333	520.970	.437	.914

3.8. Experimental Procedure

3.8.1 Formation of Group

Two groups; the experimental and control group were formulated by purposive sampling technique for experiment. Groups were formulated on the basis of pre-test scores.

3.8.1.1 Control Group

The control group was formulated based on pre-test scores through the purposive sampling technique. Purposive sampling techniques is a non-probability sampling techniques in this method, not every individual has a known chance of being included in the sample. The ''Functional English ''subject was taught to the control group by the traditional teaching methods. The traditional teaching method for this study was on only focusing on the lectures but was comprised of students' assignments, presentations and quizzes.

3.8.1.2 Experimental Group

The experimental group for this study was also formulated based on pre-test scores through purposive sampling technique. Purposive sampling technique is a non-probability sampling method this is considered to be one of the most common sampling techniques, group participants according to pre-selected criteria relevant to a particular research question. The ''Functional English'' subject was taught to the experimental group by Adaptive Teaching approach. The Adaptive Teaching approach was comprised of activities, discussions, and presentations of material following writing skills concepts.

3.8.2 Pre-Test

The pre-test was consisted of two tests; CATW. To check the writing ability of undergraduate students (CATW) was used, whereas writing skills test was used to assess the writing skills of undergraduate students. A writing skills test was consisted of MCQs

and short question answers. Items of the writing skills questionnaire was consisting of the content from the given outline of the ''Functional English'' subject.

3.8.3   Treatment

Treatment for the study was formally started after the pretest and formation of the control group and experimental group. The treatment duration for the experimental group was four months (whole semester). The experiment was conducted February 2024 to May 2024. Details of treatment for the control group and experimental group are as follows.

Table 3.6

Treatment details of experimental group and control group

Experimental Group	Control Group
The Adaptive Teaching approach was Treatment for the control group was used to teach the experimental group.	Treatment for the control group was followed with the traditional approach of teaching.
Lesson planning according to Adaptive lesson plan steps was done for each lecture.	Different teaching method like grammar translation method, direct approach and communicative approach will be used as traditional method.
Activities related to writing and selecting writing skills test were also included in the experiment.	The teaching was not only focusing upon the lecture but students' assignments, lecture but students' assignments, presentations, quizzes and class participations also included in the traditional approach.
The lesson plan of Adaptive Teaching Approach was based on the following steps; 1. Align 2. Engage	The lesson plan for each control group lecture was prepared following the traditional lesson plan for format. Steps for control group lesson plan were;

3. Motivate	1. P.K. Testing
4. Analyze	2.Announcement of the topic
5. Support	3. Presentation

The procedure for the implementation of steps the Adaptive Teaching lesson plan for the experimental group was an under; **Align** proposed that learning objectives should be aligned with a consistent set of activities, content an evaluation in course.

4.Association /Application

5.Recapitulation

6. Homework

Engage makes the structure of the course that students go through learning modules, practice, exercises and examination while expanding their knowledge and abilities.

Motivate that focused on by prompt feedback and adaptive learning offers several options for this.

Analyze learn analytic data can help you understand individual and class progress and adjust your training.

Support will provide the appropriate support to the students while doing writing activities.

Traditional lesson plans were implemented with the following procedure;

A variety of activities, including those for individuals, pairs, small groups, and the entire class, were utilized.

Provide opportunities for a range of skills such as discussion, writing, and viewing.

Explore methods to engage, elucidate, and expand existing knowledge, facilitating students' linkages between their prior understanding and forthcoming learning material.

Focusing the students to ask questions to enhance their thinking process and to clarify their queries to interpret their thinking and control them.

Allow students to use computer tools (e.g., M.S. word, power point)

Strategies including Instructional model, Learner model, and Content model were used to implement the Adaptive Teaching approach.

The 23 lectures for both the control and experimental group were delivered according to the selected approaches (Adaptive Approach for experimental and Traditional for Control group). After 23 lectures participants of both groups were assessed and compared by the presentations on the selected teaching method. An excel sheet for assessing writing abilities of the control and experimental group developed by the researcher was used. This sheet was also used to compare the writing abilities of the control and experimental group to check the effect of the Adaptive Teaching approach.

Table 3.7

Table of Specification

Topics	Knowledge	Comprehension	Application	Analysis	Synthesis	Evaluation	Total	Total %
Application, Essay, Letter, Paragraph, Dialogue and Composition Writing	3 (25%)	3 (25%)			3 (25%)	3 (25%)	12	12%
Writing Skills	15 (50%)					15 (50%)	30	30%
Perception of Writing ability	7 (33.33%)					14 (66.66)	21	21%
Learning experience	10 (27.02%)				9 (24.32%)	18 (48.64%)	37	37%
Total	35	3			12	50	100	100 %

3.8.4 Post-Test

After the completion of the experiment, a post-test was conducted for both the experimental group and control group to evaluate the results of the experiment. Post-test was conducted after the completion of lesson plans presentation by experimental group and control group. This time was given to participants to clear their writing skills concepts before attempting the post-tests. The post-test was also consisted of two tests Class room Test of language skills for writing ability and writing skills for writing skills.

The order of both test items was changed in the post-test to avoid the repetition of same answers from students.

3.8.5 Lesson Presentations

To assess the writing abilities of undergraduate students in practical form, lesson plan presentations were taken from experimental group and control group. Undergraduate students from the control group and experimental group were asked to select a topic of their own choice and prepare a lesson plan following a teaching method with suitable A.V. Aids and present it in class.

Presentations of the control group and experimental group undergraduate students were assessed through a researcher made word self-reported sheet. Later on, writing abilities of both groups were compared to find out the effect of Adaptive Teaching approach on undergraduate students writing skills and practices. Lesson presentations were planned after 23 lectures delivered through Adaptive Teaching approach and traditional approach of teaching.

3.8.6 Perception of undergraduate Students about Experiment

To explore the perception of experimental group undergraduate students about different aspects of the experiment, a researcher-made perception scale was used. This was the last step of experimental procedure and perceptions were collected after post-test and lesson presentations by both the control group and experimental group. Undergraduate students were asked to rate the different tasks and activities performed by them and teacher during the experiment.

3.9 Selection of Instructor for Experimental and Control Group

The researcher trained to teach the experimental group through Adaptive Teaching Approach. The researcher's her- self teaching was selected to avoid the personality and teaching experience effects during the experiment but the researcher also makes sure to avoid biases throughout the experiment.

3.10   Teaching Material for Experimental Group and Control Group

HEC approved for Teaching of Functional English subject was used to teach control group and experimental group during experiment. The main objectives of teaching this subject are to enable students to;

1.   Describe the importance of Functional English

2.   Understand aims and objectives of teaching of Functional English

3.   Apply effectively the various methods & techniques of teaching Functional English

4.   Develop lesson plans for teaching different concepts in Functional English

5.   Prepare and use inexpensive audio-visual aids for the teaching of Functional English

The outline contains eight chapters and the whole outline to teach the control group and experimental group of the study. (Attached as APPENDIX V)

3.11   Development of Lesson Plans

Lesson planning has always been considered an essential component of teaching. Lesson planning gives direction, organization, and consistency in teaching and makes the teaching more confident to deliver information. The lesson plan is also proof of efforts made by teaching during his/her teaching. The study was conducted to find out the effect of the Adaptive Teaching approach on the language (writing) skills of undergraduate students. As the study was experimental and was focusing on a teaching approach so keeping in mind the main objective of the study lesson plans for the experimental group according to Adaptive Teaching approach were made. Lesson plans were made according to the ''Teaching of Functional English'' subject outline and all topics were covered in lesson plans. 23 lesson plans of the Adaptive Teaching approach were made. All lesson plans were made before starting the experiment and all activities for the experimental group according to the CATW and writing skills were selected before the experiment. Slight changes according to the situation during experiment duration were made in activities. Under the supervision of the supervisor, all lesson plans and learning activities

were prepared and were validated by experts having experience in teaching this subject. Detailed of course outline topics are given below in table farm. And detailed of all lesson plans attached as APPENDIX VII.

3.12   Data Collection

The effect of Adaptive Teaching approach was checked by;

- Applying the City University of New York before and after the completion of the experiment.
- Applying the writing skills test before and after the completion of the experiment.
- Using self- reported protocol to assess the writing abilities of undergraduate students of the control group and experimental group.
- Using perception scale to explore the experiment group perception about different aspects of the experiment including tasks and activities. The experimental study was conducted for one semester and duration of test experiment was 16 weeks.

3.13   Data Analysis

Collected data were analyzed through descriptive and inferential statistics using SPSS software 26 version. The mean score was calculated using descriptive statistics and the t-test was calculated using inferential statistics. The effect size was also calculated by Cohen's d effect size formula.

Table 3.7

Alignment of Objectives, Hypotheses, Instruments and Data Analysis

Objectives	Research Hypothesis	Instrument	Data analysis techniques
1.To investigate the effect of Adaptive approach of teaching on writing skills.	Ho_1. There is no significant Mean score effect of adaptive approach of teaching on writing skills	CATW (Classroom test of writing ability.)	Mean Score
2. To compare the means score of CATW assessment in writing and writing skills in pre-test and post-test of experiment group.	$H0_2$. There is no significant mean score difference of CATW assessment in writing test between experimental and control group	CATW Classroom test for writing ability.) and self-reported protocol to compare the writing skills undergraduate students	t-test
3. To analyze the mean score difference of CATW assessment in writing and writing skills between experimental group and control group.	$H0_3$. There is no significance mean score difference of writing skills between experimental and control group	Writing skills test	Means score
	$H0_4$: There is no significant mean score difference of CATW assessment in writing in pre-test and post-test of experimental group.		
4. To examine the retention rate means score of writing skills to adaptive approach of teaching in experimental group	$H0_5$: there is no significant means score difference of writing skills between experimental group and control group	CATW, writing skills and self-reported protocol	Means score

Table 3.8

Rubrics for marking CATW and writing skills pre-test post-test

Description of student's response	Quantification
1. CATW	
Open-ended Questions	50 marks
Criteria judgments	
● **Critical Thinking**	05 marks
● **Connection and clearly written response**	05 marks
● **Beginning and Development**	05 marks
2 Writing skills test	
MCQs	30 marks
Short questions answers	
1. **Content**	03 marks
2. **Organization**	02 marks

3.14   Threats to Internal Validity of the Experiment

The 3.9 table shows the internal threats of the experiment and how they were controlled during the experiment.

Table 3.9

Threats to Internal Validity of the Experiment

S.No.	Threat	How they were controlled
1	**History**	Learning environment and learning material was common for the experimental group and control group
2	**Maturation**	Almost the age of experimental group and control group was same to control this threat. Time duration was based on only one semester.
3	**Testing**	Questions order was changed to control the effect of the instrument after pre-test of two instruments that were used in pre-test and post-test.
4	**Instrumentation**	To control this threat, only the order of questions was changed. In pre-test and post-test instruments were carefully administered. Same learning environment was selected for pre-test and post-test. Pilot testing and validation of instruments was accomplished.
5	**Statistical Regression**	On the bases of the scores of pre-test the formation of groups was done and random selection was done to control this threat.
6	**Differential Selection of Participants**	Random selection of experimental group and control group was the way to control the threat of differential selection of participation.
7	**Morality**	Pairing and matching is used to control this threat.
8	**Selection Maturation Interaction**	Selection of the same age of experimental and control group was done to overcome the threat of selection maturation interaction.

3.15   Threats to External Validity of Experiment

Table 3.10

Threats to External Validity of the experiment

S.No.	Threat	How they were controlled
1	**Pre-test Treatment Interaction**	This threat was controlled by keeping the scores of pre-test highly confidential and not discuss with the participants. Pre-test score was only used for the purpose of the formation of experimental group and control.
2	**Selection-Treatment Interaction**	On the bases of pre-test scores, the random selection of experimental group and control group was done to control this threat.
3	**Multiple-Treatment Inference**	One treatment for four months was given to experimental group with consistency of activities during the treatment.
4	**Treatment Diffusion**	Participants were requested to not share any activity, material and experience of treatment with other group participants and opposite group.
5	**Experimenter Effects**	To control this threat, researcher taught the experimental group and control group.

3.16   Ethical Considerations

Following ethical consideration were kept in mind during the study;

- All participants of the study were informed before the pre-test and were brief about the purpose of the pre-test
- The confidentiality of participants was kept sustained throughout the study

- The classroom environment was kept the same for both the control group and experimental group

3.17   Chapter Overview

This chapter explains the detailed procedure of the research methodology used for the study. As the study was Quasi-experimental, so pre-test post-test control group design was used as a research design of the study. All enrolled under-graduate students in the Department of English were treated as the population of the study. Two pre-test post-tests were used to assess the writing and writing skills knowledge of under-graduate students from the control group and experimental group. Writing skills were checked through lesson plan presentations after the completion of lessons. In the end, undergraduate students' perception was also taken about the different activities of the experiment. A detailed description of lesson plans with topics and objectives is also explained in the present chapter. Experimental procedure, development of lesson plans, development of the instrument, its reliability and validity all are explained in this chapter. Overall, this chapter gives a detailed description of the research methodology.

CHAPTER 4

DATA ANALYSIS AND INTERPRETATIONS

This chapter deals with data analysis and data interpretation of the study. Data analysis is the last but most important phase of the research. The study was aimed to find out the effect of the adaptive approach on the language and writing skills of undergraduate students. Collected data from pre-test post -test, self -reported protocol, and perception scale were analyzed through inferential statistics. Inferential statistics is used to test research hypotheses. For the purpose of answering the research questions, the mean score was computed, and a t-test was utilized in order to establish whether or not the study's null hypothesis was true. Detail of analyzed data is presented in tabulated form as under:

Table 4.1

Mean scores analysis of CATW pre-test and post-test of Experimental group

	Pre-test	Post-test
Type of Test	CATW	CATW
Total number of participants	30	30
Mean score	57.46	62.16

Table 4.1 shows the mean score difference of CATW pre-test and post-test of experimental group. Findings of the study reveal that the mean score difference (57.46) for CATW pre-test and (62.16) for the post-test on the basis of inferential statistics. Results suggest that Adaptive Teaching improved students' language skill. Students achieved higher score in application writing, essay writing, letter writing, paragraph writing, dialogue writing and composition writing in post-test. Adaptive intervention enables the students to perform better in the CATW post-test. So, this development of language skill was predicted by Adaptive Teaching and Adaptive Teaching is a positive

predictor of writing skill among students. The p-value is <.001 so, the findings of the study rejected the null hypothesis. The p-value <.001 depicts that there is statistically significant mean score of difference of students' writing ability. Results evidence that practice of Adaptive Teaching at university level improved the communication skill that is emergent for the students to survive practical life. In fact, outcomes of the study show the importance of Adaptive Teaching. Additionally, students perceived Adaptive Teaching as an effective strategy by improving their language skill. Empirically, the role of Adaptive Teaching in empowering students' educational skill is significant.

Table 4.2

Mean scores analysis of Writing skills pre-test post-test of Experimental group

	Pre-test	**Post-test**
Type of Test	Writing skills test	Writing skills test
Total number of participants	30	30
Mean score	24.60	37.03

Table 4.2 describes the mean score of writing skills test of experimental group. The mean score of writing skills test is increased among students in post-test as compared to pre-test. Findings of the study reveal that mean scores (24.60) for pre-test and (37.03) for post-test depict that the writing skills of the experimental group were much developed through experiment as compared to score of pretests. The post-test mean value (37.03) shows that participants of the experimental group were much equipped with writing skills at the end of the treatment as compared to before treatment. In post-testing the students were found with the greater level of writing skills due the learning with adaptive method of teaching in the class of Functional English. It is suggested that practice of adaptive method of delivering lecture is the predictors of students' performance on writing skills. So, the Adaptive Teaching approach enhanced the writing skills of the experimental group. Findings of study rejected the null hypothesis because p-value is <.001 that denotes that difference of writing skills is significant in pre-test and post-test of

experimental group. Students' performance was improved on writing skills in post-test that is positive predicted by adaptive strategy. Practically, the outcomes of this experimental study proved that the practice of Adaptive Teaching in higher education can improve quality of education. Adaptive Teaching enables the students to achieve their academic needs.

Table 4.3

Mean scores analysis of CATW pre-test and post-test of Control group

	Pre-test	**Post-test**
Type of Test	CATW	CATW
Total number of participants	30	30
Mean score	62.16	81.66

Table 4.3 presents an examination of the control group's mean scores on the CATW test both before and after the administration of the test. The fact that the participants in the control group were on the same level of language (writing) development before the pre-test and after the post-test is demonstrated by the fact that the mean value for both the pre-test 62.16 and the post-test scores was 81.66. Findings of study fail to reject the null hypothesis. The p-value is .116 that is greater than 0.05 which suggest that there is no statistically significant mean score difference of CATW among students who were leaning traditional method of teaching. They did not improve their writing abilities. Lectures, presentations and activities were the three components that comprised the traditional form of instruction that each student received. Traditional method of teaching is not an appropriate way of delivering information to students according to their needs so, there was no change in score of CATW among the students of control group in pre-test and post-test.

Table 4.4

Mean scores analysis of Writing skills pre-test post-test of Control group

	Pre-test	**Post-test**
Type of Test	Writing skills test	Writing skills test
Total number of participants	30	30
Mean score	24.60	26.36

Table 4.4 presents the analysis of mean scores of writing skill test for pre-test and post-test of the control group. The mean value for pre-test (24.60) and post-test (26.36) depicts depict that there is no statistically significant difference of students' writing skills in pre-test and post-test. Findings of study fail to reject the null hypothesis because p-value is .073 that evidence there is no significant difference of the score. Results suggest that traditional method of teaching to control group did not improve the writing skill of the students. Furthermore, traditional method of teaching does not enable the students to improve their writing skill at university level. In fact, current study provided the evidence that traditional method of teaching at university level is not an effective strategy to tailor the diverse background of the students and educational needs. Comparatively, it is unhealthy teaching approach to students at higher education than adaptive method. In education sector, practice of traditional method of teaching to students is not a healthy way of delivering knowledge.

Table 4.5

Analysis of City University of New York pre-test of the control group and experimental group

Type of Test	Group	N	Mean	Df	t-value	p-value
CATW **pre-test**	Experimental	30	62.16	58	-1.984	.052
	Control	30	57.46			

Table 4.5 describes the comparison of mean score of pre-test CATW between the students of experimental group and control group. Findings of the study reported that p-value is .052 and t-value is -1.984 that suggest there is no significant mean score difference on CATW between the students of control group and experimental group. According to the findings of the analysis, the control group and the experimental group both performed at the same level of comprehension on the CATW pre-test. As a result, the results of the study did not provide sufficient evidence to reject the null hypothesis. In addition, there is no significant difference in relation to pre-test scores on CATW among students of experimental group and control group.

Table 4.6

Analysis of City University of New York post-test of the control group and experimental group

Type of Test	Group	N	Mean	Df	t-value	p-value
CATW post-test	Experimental	30	81.66	58	7.484	.001
	Control	30	62.10	54		

Table 4.6 describes the mean score difference of CATW of post-test between the students of experimental group and control group. According to the p-value that is <.001 and t-value is 7.484, suggested that mean score difference is statistically significant between the students of experimental and control group in post-test performance on CATW. Results of study rejected the null hypothesis. Students' performance of experimental group was reported greater on CATW as compared to students of control group. Post-test comparison of writing skills of students of experiment group and control group reveal that students improve application writing, essay writing, letter writing, paragraph writing, dialogue writing and composition writing. Comparatively, students of experimental group presented positive improvement in developing their communication skill in writing as compared to traditional method in classroom. It is found that Adaptive Teaching is need of students in this digital era in higher education. Practically, adaptive approach of teaching enables the students to enhance their language skill.

Table 4.7

Analysis of Writing skills test pre-test of experimental group and control group

Type of Test	Group	N	Mean	Df	t-value	p-value
Writing skills pre-test	Experimental	30	25.75	58	-1.279	.206
	Control	30	25.97			

Table 4.7 presents the comparative analysis for the writing skills pre-test of the control group and experimental group. P-value (.206) and t-value (-1.279) show that there was no significant difference on writing skills pre-test mean scores of the control group and experimental group. The results of the comparative analysis indicate that the control group and the experimental group both performed at the same level during the pre-test. As a result, the null hypothesis about the writing skills pre-test was not rejected. In addition, there is no statistically significant mean score difference of students' writing skills test with respect to experimental group and control group. Comparison of writing skills among students was not significant statistically.

Table 4.8

Analysis of Writing skills test post-test of experimental group and control group

Type of Test	Group	N	Mean	Df	t-value	p-value
Writing Skill post-test	Experimental	30	37.03	58	11.693	.001
	Control	30	26.36			

Table 4.8 describes the difference of mean score of writing skill of post-test between the students of experimental group and control group. The p-value (.001) and t-value (11.693) indicates that the mean score difference of writing skill is statistically

significant between the students of experimental group and control group. Findings of the study rejected the null hypothesis. According to comparison, it has been analyzed that the students of experimental group increased their performance in writing skills in post-test as compared to control group. Mean score analysis (37.03) shows that the performance of under-graduate students from the experimental group was better in writing skills post-test performance as compared to under-graduate students from the control group performance (26.36).The reason to improve writing skills of students in experiment is that they were learning through adaptive approach of teaching that is perceived the effective tool of teaching as compared to others. So, positive learning behavior was observed among students of experimental group. The effect of Adaptive Teaching is significant for improving the writing skill. No doubt, Adaptive Teaching is the emerging trend of present era in the field of higher education as an effective pedagogy.

Table 4.9

Analysis of retention rate of CATW through adaptive approach of teaching in experimental group

	Post-test	**Post-test**
Type of Test	CATW	CATW
Total number of participants	30	30
Mean score	65.30	81.66

Table 4.9 shows the retention rate of the students on CATW assessment in writing with respect to post-test that was conducted after 1 month of experiment and conducted after two months. The mean score of CATW was as greater in post-test-2 measurement. Mean score in post-test-1 (M=65.30) and post-test -2 (M=81.66), t (29) =-7.905, p<. 001.Outcomes of the study rejected the null hypothesis, because students showed their keen interest in experiment by improving their retention rate. Positive improvement was noticed among students on CATW through adaptive approach of teaching in experiment.

Students showed higher level of performance in post-test-2 as compared to post-test-1. This improvement of students indicate that Adaptive Teaching leaning environment predicts their academic skills.

Table 4.10

Analysis of retention rate of writing skill through adaptive approach of teaching in experimental group

	Post-test	Post-test
Type of Test	Writing Skill	Writing Skill
Total number of participants	30	30
Mean score	28.90	37.03

Table 4.10 describes the retention rate of students with respect to their learning about writing skill. The mean score is increased in post-test-2 compared to post-test-1 in experimental group. Students' retention rate improved on learning about writing skill in post-test-1 (M=28.90) to post-test-2 (M=37.03), t (29) =-15.568, p<.001.Findings of the study rejected the null hypothesis, because there is significant difference of writing skills was observed among students of experiment group from post-test-1 to post-test-2. In post-test-2 retention rate was increased on writing skills among students as compared to pos-test-1. So, it was assessed that Adaptive Teaching is influential for the students at university to improve their communication skills.

Table 4.11

Analysis of effect size of intervention on the experimental group

Type of Test	Cohen's d Value
CATW	1.48
Writing Skill Test	3.66

Table 4.11 presents the analysis for the effect size of intervention (experiment) on the writing abilities and writing skills of the experimental group. The fact that the Adaptive Teaching strategy had a significant impact on the writing abilities of undergraduate students who took part in the intervention of the study is demonstrated by the fact that the effect size value for CATW was 1.48. Due to the fact that the CATW value (1.48), which is more than the value of 0.8, which is believed to be the large effect size value of Cohen's d formula, the effect size is determined to be large. The effect size value of 3.66 for the writing skills test indicates a substantial impact of the Adaptive Teaching style on the writing abilities of undergraduate students who participated in the study's intervention. As writing skills test effect size value (3.66) is also greater than (0.8) effect size value so it also analyzed a large effect size. From the analysis of effect size values, it has been analyzed that the Adaptive Teaching approach had a large effect on both the CATW (writing abilities) and writing skills of under-graduate students. So, the results suggest that there is strong effect on experimental group with respect to CATW and writing skill test. The results of study rejected the null hypothesis, because adaptive strategy significantly affect the students learning toward language development in a positive way.

Table 4.12

Analysis of writing abilities of experimental group and control group

Writing Skills Test	Group	N	Mean	Df	t-value	p-value
Q1	Experimental	30	3.73	58	-14.061	.001
	Control	30	1.86			
Q2	Experimental	30	3.90	58	-6.141	.001
	Control	30	2.40			
Q3	Experimental	30	3.86	58	-8.025	.001
	Control	30	2.10			
Q4	Experimental	30	3.73	58	-6.835	.001
	Control	30	2.06			
Q5	Experimental	30	3.93	58	-8.863	.001
	Control	30	1.96			
Q6	Experimental	30	3.70	58	-8.22	.001
	Control	30	1.93			
Q7	Experimental	30	3.76	58	-7.938	.001
	Control	30	2.13			
Q8	Experimental	30	3.83	58	-10.146	.001
	Control	30	1.70			

Q9	Experimental	30	4.00	58	-9.709	.001
	Control	30	1.90			
Q10	Experimental	30	3.83	58	-10.614	.001
	Control	30	1.90			
Q11	Experimental	30	3.96	58	-8.957	.001
	Control	30	1.93			
Q12	Experimental	30	4.06	58	-6.094	.001
	Control	30	2.40			
Q13	Experimental	30	3.73	58	-10.531	.001
	Control	30	1.86			
Q14	Experimental	30	3.66	58	-7.978	.001
	Control	30	2.13			
Q15	Experimental	30	3.76	58	-9.848	.001
	Control	30	1.83			
Q16	Experimental	30	3.63	58	-7.592	.001
	Control	30	1.96			
Q17	Experimental	30	3.73	58	-9.940	.001
	Control	30	1.63			
Q18	Experimental	30	3.80	58	-13.409	.001
	Control	30	1.73			

Q19	Experimental	30	4.20	58	-17.879	.001
	Control	30	1.66			
Q20	Experimental	30	4.06	58	-11.629	.001
	Control	30	2.06			
Q21	Experimental	30	3.93	58	-12.322	.001
	Control	30	1.73			

Table 4.12 shows the mean score difference of writing abilities between students of experimental group and control group. Findings suggest that there is significant mean score difference between experimental group and control group on writing abilities among students. Mean score analysis was based on items of the questionnaire. Each item of the questionnaire of writing abilities was found significantly different among students between the experimental group and control group. Students of experimental group show the greater level of writing abilities as compared to students of control group; it means adaptive approach plays an important role in predicting the academic performance of the students on writing abilities. The overall analysis of writing abilities between the control group and experimental group highlights that under-graduate students from the experimental group were able to perform writing abilities more effectively as compared to under-graduate students from the control group. So, null hypothesis for writing abilities was rejected and significant difference was found between the performance of the control group and the experimental group. Academically, practice of adaptive strategy is the standardized and effective approach of teaching at different level of education. Finally, the outcomes of the study got the attention toward its implementation in education sector. This is the mean score analysis of writing abilities questionnaire (item wise mean score difference between students of experimental group and control) on each item of writing abilities questionnaire students improved in experimental group.

Table 13

Analysis of under-graduate students' perception about the experiment

Statements	Mean value	Decision
Narrative writing is a skill that I have acquired.	3.86	Agreed at moderate level
I learned how to establish narrative suspense.	4.53	Agreed at high level
I write narratives well.	4.60	Agreed at high level
I can write narrative conclusions.	4.12	Agreed at high level
I have received instruction on how to compose the introductory section of a written piece.	5.00	Agreed at high level
I have been instructed on how to appropriately explain a subject or a problem within a text that is factual.	4.50	Agreed at high level
I have received instruction on the process of constructing paragraphs in an objective and informative writing.	4.68	Agreed at high level
I have been instructed on how to argue in a text that contains facts.	5.00	Agreed at high level
I have received instruction on how to establish coherence in factual written material.	4.50	Agreed at high level
I have received instruction on the principles of organizing and structuring a document based on factual information.	5.00	Agreed at high level
I possess the ability to compose the introductory section of an informative piece of writing.	5.00	Agreed at high level

I possess the ability to engage in conversations about many subjects or matters using objective and accurate written materials.	5.00	Agreed at high level
In factual writing, I am able to construct paragraphs.	4.55	Agreed at high level
I have acquired the skill of modifying my wording in my written communication.	4.88	Agreed at high level
Informal language was taught to me.	5.00	Agreed at high level
I have received instruction on the topic of formal language.	4.80	Agreed at high level
I have received instruction on how to transform the language used in an informal writing into a more formal style.	5.00	Agreed at high level
I comprehend the key aspects that need enhancement in the textual language in order to achieve a favorable grade.	4.76	Agreed at high level
I possess a comprehensive understanding of the key elements and principals involved in the construction and organization of a text.	4.96	Agreed at high level
I may integrate useful stuff in writing.	4.66	Agreed at high level
I am responsible for enhancing the linguistic quality of the content for which we have gotten comments.	4.96	Agreed at high level
I am involved in enhancing the organization and coherence of the texts for which we have gotten feedback.	4.50	Agreed at high level

I am involved in enhancing the quality of the texts that we have received comments on.	4.70	Agreed at high level
After reading the criticism, I feel compelled to believe that I can enhance my writing skills.	4.73	Agreed at high level
The comments I receive prompts me to consider that I can enhance the structure of my texts.	4.83	Agreed at high level
When producing texts, I assess my language based on the criteria emphasized by the teacher.	4.96	Agreed at high level
I assess my ability to incorporate appropriate content in accordance with the exercise's specifications while I work on composing texts.	4.93	Agreed at high level
Part of being a writer for me is actively working on assessing my own work.	4.99	Agreed at high level
I find it beneficial to receive feedback from my peers regarding my written work.	5.00	Agreed at high level
I learned essay writing.	4.66	Agreed at high level
I have received instruction on the proper technique for composing a summary.	5.00	Agreed at high level
I have received instruction on how to compose a thorough and well-developed paragraph.	4.71	Agreed at high level
Forms of words have been taught to me.	4.46	Agreed at high level
I was instructed on how to properly utilize the various parts of speech in my writing.	4.83	Agreed at high level
I can write a comprehensive paragraph	4.46	Agreed at high level
I can effectively communicate my thoughts my	4.73	Agreed at high level

writing		
I can share my ideas through my writing	4.33	Agreed at high level

Table 4.13 shows the level of students' response on the statements of the questionnaire. Results depict that students are agreed at high level on the statements of questionnaire of writing skill. Only one statement where students showed the moderate level. In the light of the results, it was analyzed that students improved their skill in writing. Their responses were agreed at high level and as well as mean score was also high on the all the statements of the questionnaire. The experiment looked at how the experimental groups felt about different types of intervention tasks and found that they had similar scores. The decision regarding the responses was made in accordance with three decision values that were agreed upon by the researcher in accordance with these rating scale values.

- 4.00 to 5.00 (Agreed at a high level)
- 3.99 to 2.00 (Agreed at moderated level)
- 1.99 and below (Agreed at the lower level)

A mean score analysis was performed on perception statements, and the results showed that undergraduate students from the experimental group agreed at a higher level for the bulk of the activities. This was due to the fact that they were motivated by the adaptive method to teaching. The majority of undergraduate students comprehended all ideas presented through the Adaptive Teaching strategy and believed that all requisite audio-visual aids were accessible during the experiment. About the first statement, undergraduate students showed a moderate degree of agreement (3.86) with the notion that they are provided with consistent feedback about each and every activity that they carry out during the experiment. For the remaining statements, under-graduate students agree at a high level, which indicates that they were very pleased with the Adaptive Teaching approach, all of the activities that were carried out during the experiments, the teaching method that utilized audio visual aids, and the feedback that was provided on the activities that were carried out during the experiment.

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CHAPTER 5

SUMMARY, FINDINGS, DISCUSSION, CONCLUSIONS AND RECOMMENDATIONS

This chapter presents a summary of the entire study, highlights the key findings derived from data analysis, and provides conclusions based on the research objectives. It also offers recommendations for educational practice, policy and future research. This chapter begins with a brief restatement of the research problem, objectives, and methodology to provide context for interpreting the results. It then discusses the major findings in relation to the existing literature and theoretical framework. Finally, it draws conclusions and suggests practical measures and areas for further investigation to improve educational outcomes related to the topic under study.

5.1 Summary

In Pakistan, education system is improving gradually. Students' diverse background at universities become a challenge for teachers. Classroom comprises of diverse students based on gender, family background, age, exposure, and language. It is very difficult to facilitate all sorts of students with individual differences. Students have challenges in writing due to limited vocabulary, inadequate grammar, poor spelling, insufficient preparation, and a lack of exposure to books and reading resources. Writing, on the other hand, has traditionally been one of the most challenging aspects of learning English, particularly for students who are enrolled in higher education. At university level students face difficulties in developing language skills especially in writing skills. Research gap was found in improving language skills through adaptive approach of teaching. Therefore, the main theme of the study was based on the effect of Adaptive Teaching for improving language skills of under-graduate students. According to this teaching approach having subject matter knowledge is not enough for students. But an effective student must be equipped with writing and writing skills to deliver that information. Because Adaptive Teaching provides personalized learning, which aims to give each student a path to learning that is efficient, effective, and unique. Based on this

approach study was designed; a) to investigate the effect of Adaptive approach of teaching on writing skill, b) to compare the mean score of CATW in writing and writing skill in pre-test and post-test of experiment group, c) to analyze the mean score difference of CATW in writing and writing skill between experimental group and control group, d) to examine the retention rate of writing skills through adaptive approach of teaching in experimental group. Objectives were followed through null hypotheses whereas null hypotheses were tested for objectives. Quasi -experimental pre-test post-test group was followed for the study. The nature of the study was experimental that was completed through quasi experimental research design. Pre-test and post-test were administered for experimental and control groups. Adaptive Teaching was taken as independent variable and writing skills was as dependent variable. The population of the study was comprised on BS students first semester from management science department. The population of the study was comprised on 120 students of first semester from management science department of Khawaja Fareed University of Engineering and Information Technology. The 30 students were selected for experimental group and 30 were taken for control group as a sample of study was selected through purposive sampling technique after pre-test. Experimental group was taught through adaptive approach of teaching and control group was taught through traditional approach. Both groups were taught by researcher. The research instrument was comprised on the test item of writing skills. Steps of adaptive approach of teaching; align, engage, motivate, analyze, and support to teach experimental group. Structures of language, grammar, and process are the components of writing skills that was improved. CATW was used in pre-test and post-test. Pilot study was based on 12 students for experimental group. The duration of the experiment was 16 weeks. Reliability of the writing was tested through Cronbach's alpha. Cronbach's alpha is a statistic commonly used to measure the internal consistency or reliability of a set of items in a test or questionnaire. It indicates how closely related the items are as a group—essentially assessing whether they all measure the same underlying construct. To check the validity, instructors and experts in English subject were approached for both tests. After the completion of experiment, data were collected through CATW of language skills (writing), Writing Skills Test, and Self-reported protocol and perception scale. Collected data were analyzed by calculating mean scores to answer the research

objectives and by applying t-test to test null hypotheses for writing ability and writing skills.

5.2 Findings

Findings from mean scores analysis and comparative analysis are presented below;

1. It was found from the analysis of mean scores of CATW pre-test scores (57.46) and post-test scores (62.16) for the experimental group that undergraduate students from the experimental group were able to perform better in the post-test as compared to pre-test. Findings of the study reveal that the mean score of CATW was increased among students of experimental group in post-test measurement. Findings of the study supported the researcher hypothesis that was stated that there is significant mean score difference of CATW among the students of experimental group. Difference is statistically significant in pre-test and post-test. Results suggest that Adaptive Teaching improved students' language skill in application writing, essay writing, letter writing, paragraph writing, dialogue writing and composition writing in post-test. Students performed better in post-test on CATW. $p < .001$, t -8.249, M= 57.46, 62.16(Table, 4.1).

2. It was found from the analysis of mean scores of writing skills test pre-test (24.60) and post-test (37.03) from the experimental group. So, the findings of the study reveal that mean score of writing skill among students of experimental group was enhanced in post-test. Results suggest that Adaptive Teaching predicts better writing skill among students. The Adaptive Teaching meets the diverse need of students according to their interest so, students showed the greater level of writing skills in post-test measurement. Findings of the study accepted the researcher hypothesis that was claimed there is significant mean score of writing skills among students of experimental group in pre-test and post-test. $p < .001$, t -20.331, M= 24.60, 37.03 (Table, 4.2).

3. Results suggest that there is no mean score difference among students of control group and experimental group. It was found from the analysis of the mean scores of CATW pre-test (62.16) and post-test (81.66) for the control group that undergraduate students from the control group were at the same level during pre-test and post-test. Conventional

method or traditional method of teaching is perceived inappropriate way of delivering lecture to students. p.116, t -1.621, M=62.16, 81.66 (Table 4.3).

4.Moreover, it was found from the analysis of the mean scores of writing skills test pre-test (24.60) and post-test (26.36) for the control group that undergraduate students from the control group were able to perform better in post-test than pre-test and their writing skills were enhanced during semester activities. Findings depict that traditional method of teaching to control group did not improve the writing skill of the students. There is no significant mean score difference of writing skill among the students of control group with respect to pre-test and post-test. p.073, t.-1.859, M=24.60, 26.36 (Table 4.4).

5. Results of comparative analysis indicated that the p-value (.052) for the CATW pre-test is greater than (0.05) so the null hypotheses is failed to reject. Moreover, findings of current study evidence that there is no mean score difference in pre-test of experimental group and pre-test of control group among students on CATW. p.052, t -1.984, M=62.16, 57. 46 (Table 4.5).

6. In addition, comparative analysis showed that the p-value (.001) for CATW post-test is less than (0.05) so the null hypotheses is rejected that there is significant difference between mean scores on writing ability post-test of the control group and experimental group. Adaptive approach of teaching enables the students to enhance their writing skill as compared to traditional method of teaching. Findings of the study denotes that the students of experimental group improved their writing skill in application writing, essay writing, letter writing, paragraph writing, dialogue writing and composition writing as compared to control group in post-test. p<.001, t 7.484, M=81.66, 62.10 (Table 4.6).

7. It was found from the comparative analysis that the p-value (.206) for the writing skills pre-test is higher than (0.05) so the null hypotheses was failed to reject that there is no significant difference between mean scores on writing skills pre-test of the control group and experimental group. p.206, t -1.279, M=25.75, 25.97 (Table 4.7).

8. Analysis showed that the p-value (.001) for writing skills post-test is less than (0.05) which shows that the null hypothesis was rejected and there is significant difference

between mean scores on writing skills post-test of the control group and experimental group. Findings of study evidence that the mean score analysis (37.03) shows that the performance of undergraduate students from the experimental group was better in writing skills post-test performance as compared to under-graduate students from the control group performance (26.36). The effect of Adaptive Teaching is significant for improving the writing skills. Findings of the study supported the researcher hypothesis. p<.001, t 11.693, M=37.03, 26.36 (Table 4.8).)

9. Shows the retention rate of the students on CATW with respect to post-test that was conducted after 1 month of experiment and conducted after two months. The mean score of CATW was greater in post-test-2 measurement. Mean score in post-test-1 (M=65.30) and post-test -2 (M=81.66), t (29) =-7.905, p<.001 (Table 4.9).

10. Study describes the retention rate of students with respect to their learning about writing skill. The mean score is increased in post-test-2 compared to post-test-1 in experimental group. Students' retention rate improved on learning about writing skill in post-test-1 (M=28.90) to post-test-2 (M=37.03), t (29) = -15.568, p<.001. (Table 4.10). The current study uncovered that student's retention rate was increased on CATW and writing skills test. It shows that adaptive learning of the students in classroom empowers their learning ability. Retention rate was increased among the students of experimental group because they were learning through adaptive teaching. Their writing skill was improving. (Table 4.9 and 4.10).

11. It was found that Cohen's d value for CATW is larger that depicts the Adaptive Teaching approach had a large effect on the writing ability of undergraduate students. (Table 4.11)

12. Findings suggest that there is significant mean score difference between experimental group and control group on writing abilities among students. Mean score analysis was based on items of the questionnaire. Each item of the questionnaire of writing abilities was found significantly different among students between the experimental group and control group. Students of experimental group show the greater level of writing abilities

as compared to students of control group; it means adaptive approach plays an important role in predicting the academic performance of the students on writing abilities. The overall analysis of writing abilities between the control group and experimental group highlights that under-graduate students from the experimental group were able to perform abilities practices more effectively as compared to under-graduate students from the control group. So null hypothesis for writing abilities was rejected and significant difference was found between the performance of the control group and the experimental group (Table 4.12)

5.3   Discussion

Results of the study were discussed in the light of the objectives of the study:

1: From the analysis of effect size values, it has been analyzed that the Adaptive Teaching approach had a large effect on both the CATW (writing abilities) and writing skills of under-graduate students. So, the results suggest that there is strong effect on experimental group with respect to CATW and writing skills test.

2: Moreover, in post-test comparison of mean score of CATW assessment in writing among students of experimental group improved their writing skills as compared to students of control group. It means that Adaptive Teaching is a significant positive predictor of language development. Results of the current study connected with the findings of the previous study that suggest use of adaptive approach in higher education improves the efficiency of writing skill among students (Hubalovsky et al., 2019). In addition, the level of writing skills of students of experimental group was greater as compared to the students of control group in post-test. It shows that students who were learning with Adaptive Teaching of experimental group in post-test perform better on language skill as compared the control group. Moreover, results of the current study are line up with findings of the previous research that depicts practice of adaptive approach is continuously increasing the quality of education. The findings show that students actively participate in classroom activities when they experience the adaptive approach by their instructors (Martin et al., 2020). Furthermore, previous study supported the outcomes of

the current study by revealing that academic performance was significantly predicted by adaptive approach teaching (Normadhi et al., 2019). Undergraduate students of BS program of management sciences improve their writing skill after leaning through adaptive approach of teaching. Findings of the previous study reveal that Adaptive Teaching facilitates the students in education according to their strengths (Cavanagh et al., 2020). A previous study was conducted to assess the use of Adaptive Teaching techniques in classroom discussions and its impact on students' academic progress in elementary scientific education. The previous evidence that adaptive classroom discourse affects students' learning. The experiment of study revealed that for an effective teaching-learning process a relationship between content knowledge and writing skills is important which is also supported by (Hardy et al., 2022). So undergraduate students must be treated in a way they can build a relationship between their content knowledge and writing skills. Academic activities can be arranged in a way that can depict the best use of content knowledge and writing skills. Reported analysis of the study highlights that undergraduate students who have learned through Adaptive Teaching approach are more successful in performing the writing activities as compared to under-graduate students learned through traditional teaching approach. These findings are in the support of Adaptive Teaching approach principles which bring about the development of writing capabilities. In addition, there was no mean score difference of CATW and writing skill in pre-test-and post-test among students of control group. Similarly, there was no significant mean score difference of CATW in pre-test of experimental group and control group. Spruell (2020), conducted a study to examine the influence of personalized educational technologies on academic achievement. This quantitative study compared the academic performance, retention, and success rates of students who received adaptive learning training with those who received standard education. The students that utilized adaptive learning technologies did significantly better than the other group when compared to their overall performance. Students in adaptive learning programs were satisfied with adaptive learning technology. Adaptive learning demonstrated superior performance compared to standard methods in the classroom. White (2020), assessed the efficacy of adaptive learning technology in comparison to traditional teaching methods in an under-graduate management information course. Evidence indicates that students

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achieve higher performance levels when using adaptive learning technology compared to standard teaching methodologies.

3: Adaptive Teaching improves the writing skill among students at university level. It describes teachers' practices of adjusting their instruction to students' diverse needs and levels of understanding (Hardy et al., 2022). Findings of the study suggest that CATW assessment in writing test score was increased among students after learning through the adaptive approach of teaching. In post-test students improved their language skill; application writing, essay writing, letter writing, paragraph writing, dialogue writing and composition writing. Results of the current study suggest that writing skill of students was also enhanced in post-test of experimental group, it means Adaptive Teaching enables the learner to improve language skill. Functional English subject is the essential part of educational curricula at university level. A previous study was conducted to investigate the effect of adaptive learning in developing communication skills. The scores of the experimental group compared to the control group on the post-test communication skills scale showed differences that were statistically significant in favor of the experimental group. The evidence of current study is associated with this recent research (Al-Saraya, 2023). Findings of the this study were associated with the results of the previous study that was suggested that adaptive approach of teaching empowers students' languages skill and knowledge by delivering information according to their needs (Taylor, 2022). Moreover, another study supported the findings of the current study by revealing that adaptive approach of teaching improves students' academic and linguistic skills at university level (Arghode et al., 2017).

4: Analysis of retention rate of CATW through adaptive approach of teaching in experimental group reported that positive improvement was observed among students on CATW assessment in writing test through adaptive approach of teaching in experiment. Students showed higher level of performance in post-test-2 as compared to post-test-1. This improvement of students indicate that Adaptive Teaching leaning environment predicts their academic skills. Moreover, there is significant difference of writing skills was analyzed among students of experiment group from post-test-1 to post-test-2. In post-test-2 retention rate was increased on writing skills among students as compared to

pos-test-1. So, it was examined that Adaptive Teaching is influential for the students at university to improve their communication skills. Students of experimental group show the greater level of writing abilities as compared to students of control group; it means adaptive approach plays an important role in predicting the academic performance of the students on pedagogical abilities. The overall analysis of writing abilities between the control group and experimental group highlights that under-graduate students from the experimental group were able to perform pedagogical practices more effectively as compared to under-graduate students from the control group.

To sum up, bringing a change in the teaching-learning approach with respect to language development and writing development is necessary for every teachers-students education program. It requires time efforts in terms of resources, teachers' training, student's willingness, students' motivation but nothing is impossible for a quality teaching-learning process. Moreover, there is not a single activity that can be appropriate for critical thinking development, but different types of activities according to sources, learning level of students and learning environment can be used to enhance the writing abilities of students. So, this research provides evidence for the idea that Adaptive Teaching may assist university students in improving their writing skills. Future researches can conduct different researches by highlighting the effectiveness of language skills and writing skills among under-graduate students. Future researches can also focus to conduct experimental research to explore the effectiveness of language skills and writing skills among undergraduate students.

5.3 Conclusions

Based on findings it was concluded that;

1. It has been analyzed that the Adaptive Teaching approach had a positive effect on both the CATW test and writing skills of under-graduate students. Adaptive approach improved students' writing skill.

2. It has been examined CATW post-test analysis showed that most of the undergraduate students from the experimental group were able to perform better in language (writing

skills) statements. writing skills post-test analysis showed that the majority of undergraduate students from the experimental group were able to effectively organize the content while answering writing questions. The Adaptive Teaching approach has a significant effect on the development of the writing ability of undergraduate students at the university level. The Adaptive Teaching approach has a significant effect on the development of writing skills of undergraduate students at the university level.

3. It was concluded no significant difference was found between the pre-test mean scores on the writing ability test and writing skills test between the students of the control group and the experimental group. A statistically significant mean score difference was found between the post-test mean scores on the writing ability of students of the control group and the experimental group. A statistically significant positive difference was found between the post-test mean scores on writing skills of the control group and the experimental group. A significant difference was found between the self-reported analysis mean scores on all planning practices of the control group and experimental group during lesson plan presentation. Analysis of perceptions analyzed that majority of the undergraduate students from the experimental group were satisfied with the Adaptive Teaching approach, activities performed during the experiment Adaptive Teaching steps used by the researcher during the experiment. Perception analysis displayed that majority of undergraduate students from the experimental group found Adaptive Teaching approach as an effective learning approach and willing to use this teaching approach in their future teaching practices.

4. Retention rate of CATW through adaptive approach of teaching in experimental group reported that positive improvement was observed among students on CATW test through adaptive approach of teaching in experiment. Adaptive approach was found an effective strategy of teaching as compared to conventional method.

5.4 Recommendations

Following are some recommendations made by the researcher in light of the findings of the research:

1. Analysis of finding shows that Adaptive Teaching approach has a significant effect on language abilities and writing skills development of undergraduate students.so it is recommended that there is dire need to adopt adaptive teaching approach at university level to enhance cognitive characteristics, personalized learning and language skills of undergraduate students.

2. Students' score of CATW skills was improved in pre-test to post-test of experimental group due to adaptive teaching. Teachers utilize the adaptive approaches to allow students to practice and think in their preferred ways, so improving their communication skills and facilitating the learning process. Adaptive Teaching empowers the students' communication skills (writing) as compared the conventional method of teaching. So, Adaptive Teaching used in higher education. Adaptive teaching empowers the student's communication skill(writing) as compared the conventional method of teaching. So, Adaptive Teaching should be used in higher education.

3. It is found from the study that undergraduate students from the experimental group performed better due to adaptive teaching lesson plan presentation as compared from control group. So, it is recommended by employing this strategy, education sector may establish a learning environment that is more captivating, adaptable, and accommodating, effectively catering to the varied requirements of university students. And also focus on the implementation of adaptive teaching approach with learning module, question answer sessions, practice exercises and discussion activities.

4. Analysis of the student's perception found that students' retention rate was increased in post-test of experimental group so, teachers should utilize Adaptive Teaching because the writing skills is the fundamental part to the educational process to meet the diverse demand, needs, interest and learning preference of

students, needed to be utilized by Higher Education Commission (HEC) of Pakistan.

5.5 Recommendations for Future Studies

Findings of the study reveal that adapting approach of teaching at the university level improved language skill of undergraduate students so, here are some recommendations for future researchers:

1. Researchers may use by conducting case studies on the development and adoption of adaptive learning systems on a larger scale; it would be possible to demonstrate support for their utilization in education sectors.

2. This study was conducted in the Management Science department of Khwaja Fareed University of Engineering and Information Technology Rahim Yar Khan, whereas a future study by selecting under-graduate students from any other university can also be conducted.

3. This study was conducted by choosing the ''Functional English'' subject, a future study by choosing any other writing subject can also be conducted.

5.5.1 Implementation for Future Researches

The impact of adaptive teaching on Higher Education Commission (HEC) educational policies in Pakistan reflects a broader global shift toward personalized learning, technology integration, and inclusive pedagogy. HEC's policy shift post-COVID-19 emphasizes hybrid learning, making room for adaptive technologies and pedagogies. Adaptive teaching has begun to influence HEC policies, particularly in the areas of digital learning, assessment reform, and teacher training. While progress is ongoing, a more systematic policy framework and investment strategy are needed to fully realize its benefits across Pakistan's higher education landscape. The implementation of adaptive teaching at the university level can significantly influence educational policies in various ways. Adaptive teaching pushes universities to move from a one-size-fits-all approach to a student-centered model. This shift demands systemic policy changes across

curriculum design, assessment, faculty roles, technology infrastructure, equity, and accreditation. Forward-looking educational policies will need to be more flexible, data-driven, and student-focused to fully harness the benefits of adaptive teaching. Adaptive teaching—where instruction is tailored to meet the diverse needs of students—has the potential to significantly reshape school policies in the future. Policies may allow for modular or competency-based learning, where students progress based on mastery rather than age or grade level. Schools might adopt flexible pacing, enabling students to accelerate or slow down as needed. With increased use of learning analytics and AI in adaptive teaching, schools will need robust data privacy policies, including transparency about how student data is collected, stored, and used.

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CUNY ASSESSMENT TEST OF LANGUAGE SKILLS (WRITING)

Dear Students,

This is a test just to check the writing ability. It will not affect your grade in this course. Please take your time to fill up the following questions as it will help you a design innovative approach of teaching for the concerned people who need the adaptive learning. Your contribution will be appreciated. Your information will be kept confidential and only will be used for the purpose of study.

Make a best answer for each item honestly. If you do not understand what is being asked in an item, please ask the test administrator for the clarification.

DO NOT GUESS SHOT IN THE DARK. THINK IT AND THEN ANSWER

DO NOT OPEN THIS BOOKLET UNTIL YOU ARE TOLD TO DO SO

Write your name only ……………………………………….

Your age: …………………………………………………….

Degree Program: …………………………………………………

Semester: …………………………………………….................

Date: month/day/year ……………………………….................

Test Duration: 1hour 45 minutes

General Information:

1.The duration of this paper is 1 hour 45 minutes.
2.The maximum marks for each question are shown.
3. Read each question carefully.
4. Answer both questions.
5. Dictionaries, electronic grammar and spell checkers are not permitted.

Section I:

You will be assessed on:

1.   Communicating information, ideas and opinions clearly, coherently and accurately

2.   Communicating with appropriate detail to suit purpose and audience

3.   Using appropriate format, structure and language for purpose and audience

4.   Writing consistently and accurately in complex sentences, using paragraphs where appropriate

5.   Using correct spelling, punctuation and grammar

Question 1

You bought a new phone from a shop in town but it broke within the first few weeks. When you contacted the shop, they were very unhelpful. They did not offer to repair or exchange it or give a refund.

Your Task: Write a letter of complaint to the shop manager. In your letter you should Explain!

1. Why are you writing?
2. What is wrong with the phone?
3. How the shop responded when you contacted them?
4. What action would you like the shop to take?

Write your Letter here!

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Question 2

Write a short Paragraph for those peoples who are not technology experts explaining how Technology (like mobile phones, internet, social media, and apps) benefits society.

In your paragraph you may wish to include the following points:

- Technology in personal life
- Technology in business
- Technology in the world as a whole
- What life could be like without modern technology?

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Question 3

Write down an Application for issuing a character certificate by a University

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Write down an Application for the post of the subject specialist

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Section II:

Question 4

Write an Essay (150-200 words) exploring the role of environmental conservation in the 21ˢᵗ century.

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Question 5

Create a short dialogue between two characters discussing the benefits and challenges of remote learning.

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Section III:

Question 6

Read carefully the Composition passage and produce the best answers according to requirements.

Title: "The Evolution of Online Education: Bridging Gaps and Shaping Future"

In recent years, the landscape of education has undergone a profound transformation, with online learning emerging as a powerful force in higher education. As Bachelor of Science (BS) students, we find ourselves at the forefront of this educational revolution, experiencing firsthand the benefits and challenges that come with the dynamic shift towards digital learning. One of the primary advantages of online education for BS students is the flexibility it offers. The traditional constraints of time and location no longer bind us as tightly. Lectures, assignments, and discussions can be accessed from the comfort of our homes, allowing us to tailor our study schedules to match our individual preferences and lifestyles. This flexibility is especially valuable for those juggling academic pursuits with work or other commitments.

Furthermore, online education has opened up a wealth of resources that were previously confined to the physical boundaries of educational institutions. Virtual laboratories, interactive simulations, and multimedia presentations enhance our learning experiences, providing a more immersive and engaging educational journey. BS students, can explore complex scientific concepts through virtual experiments, collaborate with peers on projects across geographical boundaries, and access a vast repository of information at our fingertips. However, the transition to online education is not without its challenges. The lack of face-to-face interaction can lead to feelings of isolation, and the responsibility to stay motivated and disciplined rests more squarely on the shoulders of the individual learner. Effective time management becomes crucial as the boundaries between personal and academic spaces blur.

To address these challenges, educational institutions and BS programs are increasingly adopting innovative strategies. Virtual labs and collaborative tools are being integrated into curricula, providing opportunities for hands-on experiences and fostering teamwork. Moreover, mentorship programs and virtual office hours help bridge the gap between students and educators, ensuring that support and guidance are readily available. As BS students navigate this evolving educational landscape, it is essential to develop a set of skills that goes beyond traditional academic knowledge. Adaptability, resilience, and strong digital literacy are becoming increasingly important. The ability to navigate online platforms, critically evaluate digital information, and collaborate effectively in virtual spaces are skills that will serve us well in both our academic and professional endeavors. In conclusion, the shift towards online education for BS students represents a significant chapter in the ongoing story of educational evolution. While challenges persist, the benefits are substantial. As we embrace this digital era, let us actively participate in shaping the future of education, advocating for inclusive and innovative practices that empower BS students to thrive in an ever changing world.

Questions:

1.   What major transformation has the educational landscape undergone recently, as discussed in the composition?

----

2.   How does online education provide flexibility for BS students, and why is this flexibility considered advantageous?

----

3.   In what ways does the composition suggest that online learning benefits BS students in terms of resources and accessibility?

----

4.   Identify one specific advantage and one challenge mentioned in the composition
regarding the shift to online education for BS students.

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5.   What role do virtual labs and collaborative tools play in enhancing the educational
experience for BS students in an online setting?

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6.   Discuss the challenges associated with the lack of face-to-face interaction in
online education, as highlighted in the composition.

----

7.   Why is time management emphasized as crucial for BS students engaged in
online education?

----

8.   What skills does the composition identify as essential for BS students navigating online education, and how are these skills relevant to both academic and professional pursuits?

Writing Skills Test

Write your last name only---

Your age: ---

Degree Program: ---

Semester: ---

Today's date: month/day/year---

Direction:

•   Read the questions carefully & make sure that your answer is readable

•   Be clear and precise while writing your answer

•   If you don't know answer of any question, go ahead for next question

•   If you save the time at the end of the test go back to the questions you left out

•   Don't worry about marks, this test will not affect your classroom learning and grade for this course

---

Section I: This section contains MCQs. Read the statement carefully and encircle the correct answer. Remember that you have to select only 1 option from the possible given options.

1.   **The lake is (situated) near the mountain.**

      a.   Verb

      b.   Noun

      c.   Adverb

      d.   Pronoun

2.   **Sit down (and) rest a while.**

      a.   Interjection

      b.   Adjective

      c.   Verb

      d.   Conjunction

3.   **Zaryab runs (very) fast.**

      a.   Adverb

      b.   Pronoun

      c.   Preposition

      d.   Verb

4.   **Maira is an (active) child.**

      a.   Interjection

      b.   Noun

      c.   Adverb

      d.   Adjective

5.   **She was hiding (under)the table.**

    a.   Preposition

    b.   Noun

    c.   Adjective

    d.   Pronoun

6.   **My mom ----------flowers in the garden at the moment.**

    a.   Plants

    b.   Is planting

    c.   Have planted

    d.   Has planting

7.   **The train ---------the station at 11am.**

    a.   Left

    b.   Was leaving

    c.   Had left

    d.   None of these

8.   **Yesterday, I --------pizza at an Italian restaurant. It was delicious.**

    a.   Ate

    b.   Eaten

    c.   Eating

    d.   Has eaten

9.   **By next month, she -------all the books for her research.**

    a.   Will, have read

    b.   Will, read

    c.   Would have read

d. Would, read

10. When you arrive, I --------already --------cooking dinner.

    a.   Will, have started

    b.   Would, start

    c.   Would, have started

    d.   Will, start

11. Couldn't sleep anymore so I got up (two verbs: ''sleep'' and ''Got up'').

    a.   Intransitive

    b.   Transitive

    c.   Both of them

    d.   None of these

12. A good letter need not have:

    a.   Proper salutation

    b.   Clarity of subject

    c.   Clarity of language

    d.   Latin quotation

13. Which sequence is followed in a letter?

    a.   Salutation, the main body, complimentary close

    b.   The main body, salutation, complimentary close

    c.   Complimentary address, body, salutation

    d.   Body, complimentary close, salutation

14. In which letter 'yours affectionately' is written?

    a.   Informal

    b.   Formal

c. Both

d. None of these

15. Observe the punctuation marks and select the correct sentence.

a. All that I am, all that I hope to be, I owe to my angel mother.

b. All that I am; all that I hope to be, I owe to my angel mother!

c. All that I am, all that I hope to be; I owe to my angel mother.

d. All that I am –all that I hope to be; I owe to my angel. mother.

16. I bought ------horse, -------ox and ------buffalo.

a. a, an, a

b. an, an, a

c. the, a, an

d. the, an, an

17. The mad dog bit the beggar.

a. The beggar is biting by the mad dog

b. The beggar is bitten by the mad dog

c. The beggar was bitten by the mad dog

d. The mad dog was bitten the beggar

18. They have not completed the assignment

a. The assignment was not being completed by them

b. The assignment has not completed by them

c. The assignment has not been completed by them

d. The assignment is not being completed by them

19. The order and content of the paragraph is similar to that of ------

a. Articles

       b.   Thesis

       c.   Essay

       d.   Summary

20.   **How much words could be spoken by a person in a minute?**

       a.   70 -80

       b.   90-100

       c.   125-150

       d.   120- 140

Section II: Certain questions are asked in this section. Write the answers briefly in the given space. If you don't know the answer of any question leave and go ahead to next question.

1.   **Briefly describe the types of Sentences.**

----

2.   **Mention any three types of Phrases with examples.**

(i)---

(ii)--

(iii)---

----

3.   Differentiate between Definite and Indefinite articles.

----

4.   Enlist the tips of Application Writing.

----

5.   Define Presentation skills and also write down the techniques of presentation skills.

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6.   What is the concept of   Psycho-mechanism?

----

7.   What is Letter writing? Write down the parts of a letter.

----

8.   **Describe the categorical types/forms of Formal letter.**

----

9.   **Explain the concept of Present Continuous Tense.**

SELF-REPORTED PROTOCOL TO ASSESS THE WRITING SKILLS OF UNDERGRADUATE STUDENTS

Teacher Name: ---------------------------------

Date:---

Time:---Class Duration:----------------------------

Subject:--Topic:--

Teaching Method:------------------------------------

Please rate your abilities in each item given below scaling between 1 to 5. Encircle your choice.

1. never or almost never true to me.

2. usually not true to me.

3. some what true to me.

4. usually true to me.

5. always or almost always true to me.

S.NO.	Statement	1	2	3	4	5
1	I possess the ability to systematically structure my thoughts when composing a text.					
2	I am proficient in constructing coherent and well-developed paragraphs by employing logical reasoning to support my main argument.					
3	I possess the ability to compose a concise statement that accurately specifies the subject matter.					
4	I possess the ability to compose a proficient academic paragraph.					
5	I am proficient at utilizing a diverse range of phrase structures.					
6	I possess the ability to effectively utilize terminology and word structure in my writing.					
7	I possess the ability to utilize correct spelling, capitalization, and punctuation in a suitable manner.					
8	I possess the ability to compose a precise and concise description of the information I have read in the English language.					
9	I possess the ability to produce a precise restatement of material that I have comprehended in the English language.					
10	I possess the ability to compose precise and exact quotations.					
11	I possess the ability to select a suitable academic study topic.					
12	I am proficient in writing high-quality academic research papers.					

13	Using English, I am able to compose an essay.					
14	I possess the ability to select a suitable research question that will effectively direct my research activity.					
15	In the writing that I do, I am able to employ my own independent thoughts.					
16	I possess the ability to discern the issues present in my work and determine the areas that want enhancement.					
17	I possess the ability to write proficiently while adhering to strict time limitations.					
18	I possess the ability to revise my written work in order to enhance the choice of words, grammar, punctuation, and spelling.					
19	My thoughts are able to be organized in writing.					
20	I possess the ability to effectively employ the systematic organization of paragraphs in my writing.					
21	I am able to compose a summary on any subject.					

PERCEPTION OF UNDERGRADUATE STUDENTS ABOUT THEIR LEARNING EXPERIENCE WITH ADAPTIVE APPROACH TEACHING METHOD

This rating scale asks you about your experiences of "Functional English" subject through Adaptive Approach Teaching Method. Please read the statements carefully and rate the statements according to your best responses. Remember it is only a perception about your experiences as it will not affect your grades for this subject.

1. Totally disagree, 2. Disagree, 3. Disagree more than agree, 4. Neither disagree nor agree, 5.Agree more than disagree, 6.Agree, 7.Totally agree

S.NO.	Statement	1	2	3	4	5	6	7
1	Narrative writing is a skill that I have acquired.							
2	I learned how to establish narrative suspense.							
3	I write narratives well.							
4	I can write narrative conclusions.							
5	I have received instruction on how to compose the introductory section of a written piece.							
6	I have been instructed on how to appropriately explain a subject or a problem within a text that is factual.							
7	I have received instruction on the process of constructing paragraphs in an objective and informative writing.							

8	I have been instructed on how to argue in a text that contains facts.						
9	I have received instruction on how to establish coherence in factual written material.						
10	I have received instruction on the principles of organizing and structuring a document based on factual information.						
11	I possess the ability to compose the introductory section of an informative piece of writing.						
12	I possess the ability to engage in conversations about many subjects or matters using objective and accurate written materials.						
13	In factual writing, I am able to construct paragraphs.						
14	I have acquired the skill of modifying my wording in my written communication.						
15	Informal language was taught to me.						
16	I have received instruction on the topic of formal language.						
17	I have received instruction on how to transform the language used in an informal writing into a more formal style.						
18	I comprehend the key aspects that need enhancement in the textual language in order to achieve a favorable grade.						
19	I possess a comprehensive understanding of the key elements and principles involved in the						

	construction and organization of a text.						
20	I may integrate useful stuff in writing.						
21	I am responsible for enhancing the linguistic quality of the content for which we have gotten comments.						
22	I am involved in enhancing the organization and coherence of the texts for which we have gotten feedback.						
23	I am involved in enhancing the quality of the texts that we have received comments on.						
24	After reading the criticism, I feel compelled to believe that I can enhance my writing skills.						
25	The comments I receive prompts me to consider that I can enhance the structure of my texts.						
26	When producing texts, I assess my language based on the criteria emphasized by the teacher.						
27	I assess my ability to incorporate appropriate content in accordance with the exercise's specifications while I work on composing texts.						
58	Part of being a writer for me is actively working on assessing my own work.						
29	I find it beneficial to receive feedback from my peers regarding my written work.						
30	I learned essay writing.						

31	I have received instruction on the proper technique for composing a summary.							
32	I have received instruction on how to compose a thorough and well-developed paragraph.							
33	Forms of words have been taught to me.							
34	I was instructed on how to properly utilize the various parts of speech in my writing.							
35	I can write a comprehensive paragraph							
36	I can effectively communicate my thoughts my writing							
37	I can share my ideas through my writing							

COURSE OUTLINE

Khawaja Fareed University of Engineering&

Information Technology Rahim Yar Khan

Course: Functional English – **ENGL-1118** **Session:** Spring 2022

Class: BBA (4th semester)

Instructor: Iram Shahzadi

Weekly Lecture Plan

Sr. #	Week	Topics
1	Week 1	**1. Parts of speech** ● Noun and its kinds ● Types of Noun ● Present Tense
2	Week 2	● The adverb and adjective ● Singular and Plural ● Past Tense
3	Week 3	● Conjunction, preposition, interjection **Graded Assignment 01**
4	Week 4	● Describe the Transitive and Intransitive verbs

		● Future Tense
5	Week 5	● Use of Article **Graded Quiz 01**
6	Week 6	● Phrase and clause ● Punctuation and spelling
7	Week 7	● Paragraph and sentences **Graded Assignment 02**
8	Week 8	● Revision
9	Week 9	**Mid-Term**
10	Week 10	● Importance of listening skills ● Tenses practices present, past and Future
11	Week 11	● Composition practices
12	Week 12	● Translation(practice) **Graded Assignment 01**
13	Week 13	● Active and passive (practice)
14	Week 14	● Listening skills Theory(practice) **Graded Quiz 01**
15	Week 15	● Application practice and letter practice
16	Week 16	● Presentation skills (practice) **Graded Assignment 02**

17	Week 17	● Revision
18	Week 18	**Final Exam**

COURSE PLANNER

Course Outline

(EXPERIMENTAL GROUP)

KHAWAJA FAREED UNIVERSITY OF ENGINEERING AND INFORMATION TECHNOLOGY RAHIM YAR KHAN

Department of English

Course Title: Functional English	Course Code: ENGL-1118
Program: BBA First	
Teacher Name: Ms. Iram Shahzadi	

LEARNING OUTCOMES OF THE COURSE

After studying the course the students will be able to;

1. Describe the importance of parts of speech and specifically focus on the concept of nouns.

2. Understand aims and objectives of different types of nouns, broadening their understanding of this essential linguistic component.

3. Comprehend the concept of present tense, past tense, future tense and gain a comprehensive understanding of their rules and usage.

4. Differentiate between adverbs and adjectives, understanding their distinct roles in sentences.

5. Apply effectively the role of conjunctions in connecting words, phrases, or clauses, enhancing the overall coherence of sentences.

6. Explore the role of prepositions in providing spatial and temporal relationships within sentences.

7. Students will understand the role of articles (definite and indefinite) in sentences, learning how they impact meaning.

8. Understand the structure and elements of a paragraph, as well as discuss sentence construction and variety.

9. Assess students' proficiency in applying knowledge of paragraph sentence, Punctuation and spelling.

Books Recommenced

1. "Functional English Grammar: An Introduction for Second Language Teachers" by Graham Lock.

2. "English Grammar in Use" by Raymond Murphy.

3. "Oxford English Grammar Course: Advanced" by Michael Swan and Catherine Walter.

4. Washington University: Writing Complete, Grammatically Correct Sentences:

Ø http://faculty.washington.edu/ezent/imsc.htm#FRAG

5. Punctuation BBC World Service. (2011) Learning English:

Ø http://www.bbc.co.uk/worldservice/learningenglish/grammar/learnit/learnitv302.shtml

Reported speech

6. Ø www.storyarts.org

https://www.hec.gov.pk/english/services/universities/RevisedCurricula/Documents/2011-2012/Education/English1_Sept13.pdf

Schedule of semester

Start of Semester: 22nd January, 2022

Mid Term Exam: 14th -18th March

End of Classes: 15th May, 2022

Final Exam: 21st – 31st May, 2022

Student's Activities

1. Students would be required to participate in discussion during and after the presentation by the teacher
2. Students would be required to select a topics of their own choice for the presentations and present it in front of class

Evaluation Criteria

Activity	Marks	Due Date (Expected)
Mid Term	20	14- 18 March ,2022
Final Term	60	21-31 May,2022
Presentations	5+5=10	1-15th May 2022
Class Participation (discussion)&Attendance	5+5=10	After the completion of every lecture

Course Contents

Week 1: Understanding Nouns and Present Tense

Day 1-2: Introduction to Parts of Speech and Noun

Content:

1. **Definition and Importance of Parts of Speech:**

● Parts of speech are essential building blocks of language, each serving a unique role in sentence construction.

- Discuss how a solid grasp of parts of speech enhances communication skills and enables effective expression.

2. **Diving into the Concept of Nouns:**

   - Nouns are a fundamental part of speech that denote people, places, things, or ideas.

   - Explore the importance of nouns as the subject or object in a sentence.

Day 3-4: Types of Noun

Content:

1. **Common Nouns:**

   - Common nouns refer to general, non-specific entities (e.g., dog, city).

   - Discuss how common nouns are not capitalized unless they begin a sentence.

2. **Proper Nouns:**

   - Proper nouns specify unique individuals or places (e.g., John, Paris).

   - Explain the convention of capitalizing proper nouns.

3. **Collective Nouns:**

   - Collective nouns represent groups of people, animals, or things (e.g., team, herd).

   - Discuss how collective nouns can function as a single entity.

4. **Abstract Nouns:**

   - Abstract nouns denote intangible concepts or qualities (e.g., love, courage).

- Explore how abstract nouns express emotions, ideas, or states.

Day 5-7: Present Tense

Content:

1. **Introduction to Present Tense:**

   - Present tense refers to actions that continueto happen from time to time.

   - Discuss how present tense helps convey events in real-time.

2. **Rules of Present Tense Verbs:**

   - Present tense verbs undergo minimal changes, often involving the addition of '-s' or '-es.'

   - Provide examples of regular and irregular verbs in present tense.

3. **Usage of Present Tense:**

   - Present tense is used for general truths, habitual actions, and current situations.

   - Discuss how to identify and apply present tense in various contexts.

By the end of Week 1, students should have a solid understanding of nouns, their types, and the usage of present tense verbs, laying a strong foundation for further language learning.

Week 2: Exploring Adverbs, Adjectives, Singular & Plural, and Past Tense

Day 1-2: The Adverb and Adjective

Content:

1. **Differentiating Adverbs and Adjectives:**

- Adjectives describe or modify nouns by providing more information about their qualities.

- Adverbs, on the other hand, modify verbs, adjectives, or other adverbs, often answering questions like how, when, or where.

2. **Roles and Placements in Sentences:**

- Discuss how adjectives enhance the details of a noun, making the writing more vivid.

- Explore how adverbs contribute to the description of actions, providing additional context.

Day 3-4: Singular and Plural

Content:

1. **Rules for Forming Singular and Plural Nouns:**

- Singular nouns refer to one person, place, thing, or idea, while plural nouns indicate more than one.

- Discuss the general rules for forming plurals, including adding '-s' or '-es.'

2. **Irregular Plurals:**

- Introduce irregular plurals, where the spelling changes (e.g., mouse/mice, child/children).

- Discuss common irregular plural nouns.

Day 5-7: Past Tense

Content:

- Provide examples of regular verbs in past tense.

2. **Irregular Verbs in Past Tense:**

- Irregular verbs do not follow the standard '-ed' rule; their past tense forms are unique.

3. **Introduction to Past Tense:**

   - Past tense is used to describe actions that occurred in past.

   - Discuss how past tense helps convey events in the past.

4. **Regular Verbs in Past Tense:**

   - Regular verbs typically form past tense by adding '-ed' to the base form.

   - Discuss common irregular verbs and their past tense forms.

5. **Practice Exercises:**

   - Engage students with exercises to identify and form past tense verbs.

By the end of Week 2, students should have a solid understanding of adverbs, adjectives, the formation of singular and plural nouns, and the usage of past tense, laying the groundwork for more advanced language skills.

Week 3: Developing into Conjunctions, Prepositions, and Interjections

Day 1-2: Conjunctions

Content:

1. **Definition of Conjunctions:**

   - Conjunctions are words that connect or join words, phrases, or clauses in a sentence.

   - Discuss how conjunctions contribute to the overall flow and coherence of written and spoken language.

2. **Importance of Conjunctions:**

- Conjunctions help express relationships between different elements in a sentence.

- Explore how conjunctions enhance clarity and cohesion in writing.

Day 3-4: Preposition

Content:

1. **Definition of Prepositions:**

   - Prepositions are words that show the relationship between a noun (or pronoun) and other elements in a sentence.

   - Discuss how prepositions provide information about location, direction, time, and relationships.

2. **Role of Prepositions in Sentences:**

   - Explore how prepositions help establish the spatial or temporal context of an action or object.

   - Provide examples of common prepositions and their usage.

Day 5-7: Interjections

Content:

1. **Definition and Function of Interjections:**

   - Interjections are exclamatory words or phrases used to express strong emotions or sudden exclamations.

   - Discuss how interjections add emotional tone to communication.

2. **Placement of Interjections:**

   - Interjections are often set apart from the rest of the sentence by punctuation.

- Explore the placement of interjections and their impact on the overall tone of a sentence.

Graded Assignment 01: Assessing Understanding

1. **Conjunctions Section:**

   - Provide sentences with missing conjunctions; ask students to fill in the blanks with the appropriate conjunctions.

   - Include sentences that require connecting words, phrases, or clauses.

2. **Prepositions Section:**

   - Present sentences with gaps where prepositions should be placed; students must fill in the missing prepositions.

   - Include a mix of spatial, temporal, and directional prepositions.

3. **Interjections Section:**

   - Ask students to identify and punctuate interjections in given sentences.

   - Provide sentences that require appropriate interjections based on context.

This graded assignment will allow you to gauge students' understanding and application of conjunctions, prepositions, and interjections.

Week 4: Understanding Transitive and Intransitive Verbs, and Future Tense

Day 1-2: Transitive and Intransitive Verbs

Content:

1. **Definition of Transitive Verbs:**

   - Transitive verbs require a direct object to complete their meaning.

- Provide examples and illustrate how transitive verbs transfer action to an object.

2. **Definition of Intransitive Verbs:**

   - Intransitive verbs do not require a direct object; they can stand alone in a sentence.

   - Give examples and explain how intransitive verbs convey complete meaning without additional elements.

3. **Differentiating Transitive and Intransitive Verbs:**

   - Discuss examples where the same verb can be transitive or intransitive based on context.

   - Engage students in identifying and categorizing verbs in sentences.

Day 3-4: Future Tense

Content:

1. **Introduction to Future Tense:**

   - Future tense is used to describe actions that will happen after the present moment.

   - Discuss how future tense helps convey upcoming events or predictions.

2. **Formation of Future Tense Verbs:**

   - Most verbs in future tense are formed by adding 'will' or 'shall' before the base form.

   - Explore the formation of regular and irregular verbs in future tense.

3. **Usage of Future Tense:**

- Discuss scenarios and contexts where future tense is appropriate.

- Provide examples of statements, questions, and negative forms in future tense.

Week 5: Mastering the Use of Articles

Day 1-3: Use of Articles

Content:

1. **Introduction to Articles:**

   - Articles are small words (a, an, the) that precede nouns to provide information about the noun's definiteness or indefiniteness.

   - Discuss the importance of articles in clarifying meaning.

2. **Definite and Indefinite Articles:**

   - 'A' and 'an' are indefinite articles, used for non-specific nouns.

   - 'The' is the definite article, indicating a specific noun that is known to the reader or listener.

3. **Role of Articles in Sentences:**

   - Explore how the choice or omission of articles can alter the meaning of a sentence.

   - Discuss scenarios where articles are not necessary.

Graded Quiz 01: Evaluate students' grasp of article usage

Quiz Format:

1. **Fill in the Blank:**

- Provide sentences with missing articles; students must choose the correct 'a,' 'an,' or 'the' to complete each sentence.

2. **Identify the Error:**

   - Present sentences with incorrect article usage; students identify and correct the errors.

3. **Article or No Article:**

   - Offer sentences where students decide whether an article is needed or if the noun should stand alone.

This graded quiz will gauge students' mastery of article usage, ensuring they can appropriately apply definite and indefinite articles in various contexts.

Week 6: Exploring Phrases, Clauses, Punctuation, and Spelling

Day 1-3: Phrases and Clauses

Content:

1. **Differentiating Phrases and Clauses:**

   - A phrase is a group of words that functions as a single unit within a sentence but lacks a subject and a verb.

   - A clause, on the other hand, contains both a subject and a verb and can stand alone as a complete thought.

2. **Roles in Sentence Structure:**

   - Discuss how phrases and clauses contribute to the overall structure and meaning of sentences.

   - Explore their roles in enhancing sentence complexity and clarity.

Day 4-7: Punctuation and Spelling

Content:

1. **Importance of Proper Punctuation:**

   - Proper punctuation enhances clarity and ensures that the intended meaning of a sentence is conveyed.

   - Discuss common punctuation marks (periods, commas, semicolons, colons, etc.) and their usage.

2. **Importance of Spelling:**

   - Correct spelling is crucial for effective written communication.

   - Explore how misspellings can lead to confusion and impact the overall impression of a piece of writing.

3. **Common Punctuation Rules:**

   - Discuss rules for punctuating different sentence structures (declarative, interrogative, imperative, and exclamatory).

   - Provide examples and engage in practical exercises.

4. **Spelling Strategies:**

   - Introduce strategies for improving spelling, such as breaking words into syllables, using mnemonic devices, and practicing regularly.

   - Conduct spelling exercises to reinforce proper spelling techniques.

Week 7: Crafting Paragraphs and Sentences

Day 1-3: Paragraphs and Sentences

Content:

1. **Structure and Elements of a Paragraph:**

   - A paragraph is a collection of related sentences that develop a central idea.

   - Discuss the essential elements of a paragraph: topic sentence, supporting sentences, and concluding sentence.

2. **Sentence Construction:**

   - Review the basics of sentence structure, including subjects, predicates, and various sentence types (simple, compound, complex).

   - Explore how varying sentence structure adds interest and rhythm to writing.

3. **Crafting Well-Structured Paragraphs:**

   - Discuss techniques for crafting coherent and unified paragraphs.

   - Provide examples and encourage students to apply these techniques in their writing.

Graded Assignment 02: Evaluate students' ability to craft well-structured paragraphs and sentences

Assignment Instructions:

1. **Paragraph Writing:**

   - Ask students to compose a well-structured paragraph on a given topic, ensuring it includes a clear topic sentence, supporting details, and a concluding sentence.

2. **Sentence Variety Exercise:**

   - Provide a set of sentences and ask students to rewrite them using different sentence structures to demonstrate variety.

3. **Punctuation and Spelling Assessment:**

- Include a section where students correct punctuation and spelling errors in provided sentences.

This graded assignment will evaluate students' comprehensive understanding and application of paragraph and sentence construction, as well as their mastery of punctuation and spelling rules.

Week 8 Revision

Week 9 Mid-Term

Week 10: Importance of Listening Skills and Tenses Practices (Present, Past, and Future)

Day 1-3: Importance of Listening Skills

Day 1:

- Introduction to the importance of listening skills in effective communication.

- Discuss the impact of active listening on academic and professional success.

- **Day 2-3:**

- Practical exercises on active listening.

- Group discussions on the role of listening in various contexts.

Day 4-7: Tenses Practices (Present, Past, and Future)

- **Day 4:**

- Review of present tense concepts.

- Exercises on forming present tense sentences.

- **Day 5:**

  - Introduction to past tense.

  - Practice exercises for forming past tense verbs.

- **Day 6:**

  - Overview of future tense.

  - Exercises on constructing sentences in future tense.

- **Day 7:**

  - Integrated practice with sentences involving present, past, and future tenses.

Week 11: Composition Practices

Day 1-7: Composition Practices

- **Day 1-3:**

  - Understanding the structure of a composition (introduction, body, conclusion).

  - Practice in organizing thoughts and ideas for coherent compositions.

- **Day 4-7:**

  - Writing exercises focusing on various types of compositions (narrative, descriptive, argumentative).

  - Peer review and constructive feedback.

    Peer review and constructive feedback.

Week 12: Translation (Practice) and Graded Assignment 01

Day 1-3: Translation (Practice)

- **Day 1-2:**

    - Introduction to translation as a language skill.

    - Practice translating sentences between the target language and the native language.

- **Day 3:**

    - Advanced translation exercises involving paragraphs and short texts.

Day 4-7: Graded Assignment 01

- Submission and assessment of the graded assignment on translation skills.

Week 13: Active and Passive (Practice)

Day 1-7: Active and Passive (Practice)

- **Day 1-3:**

    - Explanation of active and passive voice in sentences.

    - Practice exercises on converting sentences between active and passive voice.

- **Day 4-7:**

    - Advanced exercises involving longer sentences and paragraphs.

    - Review and discussion of common pitfalls in using active and passive voice.

Week 14: Listening Skills Theory (Practice) and Graded Quiz 01

Day 1-3: Listening Skills Theory (Practice)

- **Day 1-2:**

- Theoretical understanding of listening skills - types, barriers, and strategies.

- Listening comprehension exercises.

- **Day 3:**

  - Discussion on effective note-taking during listening.

  - Practical exercises on note-taking.

Day 4-7: Graded Quiz 01

- Conduct and assessment of the graded quiz on listening skills theory.

Week 15: Application Practice and Letter Practice

Day 1-7: Application Practice and Letter Practice

- **Day 1-4:**

  - Application writing techniques.

  - Practical exercises on drafting applications for various purposes.

- **Day 5-7:**

  - Letter writing formats and styles.

  - Practice in composing formal and informal letters.

Week 16: Presentation Skills (Practice) and Graded Assignment 02

Day 1-3: Presentation Skills (Practice)

- **Day 1-2:**

  - Introduction to effective presentation skills.

- Practice sessions on voice modulation, body language, and visual aids.

- **Day 3:**

    - Peer presentations with constructive feedback.

    - Tips for handling Q&A sessions.

Day 4-7: Graded Assignment 02

- Submission and assessment of the graded assignment on presentation skills.

Week 17: Importance of Listening Skills and Tenses Practices (Present, Past, and Future)

Day 1: Introduction to Listening Skills and Definition of Active Listening

Content:

1. **Introduction to Listening Skills:**

    - Emphasize the role of listening skills in effective communication.

    - Discuss how listening skills are crucial in academic, professional, and personal settings.

2. **Definition of Active Listening:**

    - Active listening is a communication skill that involves fully focusing, understanding, and responding to a speaker.

    - Discuss the components of active listening: attending, understanding, responding, and remembering.

3. **Importance of Active Listening:**

    - Explain how active listening fosters better understanding and relationships.

- Discuss the impact of active listening on problem-solving and conflict resolution.

Day 2: Practical Exercises on Active Listening

Content:

1. **Listening Comprehension Exercises:**

   - Provide audio clips or written passages for students to practice active listening.

   - Include exercises with varying levels of complexity and nuances.

2. **Group Discussions on Active Listening:**

   - Divide students into groups for discussions on their experiences with active listening.

   - Encourage sharing of challenges and strategies for improvement.

Day 3: Tenses Practice - Review of Present Tense Concepts and Exercises

Content:

1. **Review of Present Tense:**

   - Recap the key features of present tense, including the base form of verbs and the addition of '-s' or '-es.'

   - Discuss common present tense scenarios.

2. **Exercises on Forming Present Tense Sentences:**

   - Provide sentences with missing verbs; students must fill in the correct present tense form.

   - Include both regular and irregular verbs in the exercises.

Day 4: Introduction to Past Tense and Practice Exercises

Content:

1. **Introduction to Past Tense:**

   - Define past tense and explain its usage in indicating actions or events that have already occurred.

   - Discuss the formation of regular past tense verbs by adding '-ed.'

2. **Practice Exercises for Forming Past Tense Verbs:**

   - Offer sentences for students to practice forming past tense verbs.

   - Include examples of irregular past tense verbs for a comprehensive understanding.

Day 5: Overview of Future Tense and Practice Exercises

Content:

1. **Overview of Future Tense:**

   - Define future tense and discuss its role in expressing actions or events yet to occur.

   - Introduce the use of 'will' or 'shall' before the base form of verbs.

2. **Exercises on Constructing Sentences in Future Tense:**

   - Provide sentences for students to practice forming future tense sentences.

   - Include both regular and irregular verbs in the exercises.

Day 6: Integrated Tenses Practice

Content:

1. **Application Exercises Involving Integrated Tenses:**

- Provide paragraphs or short passages with sentences in different tenses.

- Students must identify the tense of each sentence and demonstrate an understanding of tense continuity.

Day 7: Reflection and Recap

Content:

1. **Reflection on Listening Skills:**

   - Encourage students to reflect on the practical exercises and group discussions related to active listening.

   - Discuss any insights gained and challenges faced during the week.

   -

2. **Recap of Tenses Practice:**

   - Summarize the key concepts of present, past, and future tenses.

   - Address any questions or concerns raised by students.

Week 18   Final Exam

ADAPTIVE TEACHING LESSON PLANS (Experimental Group)

Adaptive Teaching Lesson 1

Teacher's Name: Iram Shahzadi	Class: BS Management Sciences
Subject: Functional English	Duration: 90 minutes
Topic: Letter Writing (Formal)	Teaching Method: Adaptive Approach

General Objectives: (Align)

1. To enable the students to learn how to speak words and sentences correctly.

2. To enable the students to write and speak English correctly.

3. To develop their skills.

4. To develop mental ability of the students.

Specific Objectives

i. To enable the students to develop the skill of writing letter effectively.

ii. They are able to write more letter of the same type.

iii. They are able to get difference between formal and informal letter format.

Previous Knowledge:

Student must have general formalities with the letter, sentence formation, reading skills, writing skills etc.

Teaching Aids:

Charts, models, duster, pointer, black board etc.

Introduction (Motivate)

Sr. No.	Teacher's Question	Student's Answer
1	In olden days, how people communicate with each other?	By writing letter
2	To whom you can write letters?	Friends Family, School

Now today we will study about "Letter Writing" (formal).

Presentation: (Engage)

Teaching Points	Teacher's Action	Student's Action	Black Board Work
Meaning	The letters that follow a certain formality and set pattern are formal letters are short and to the point.	Students are able to know about the topic. Understanding the concept taught.	Topic: " Formal Letters"
Types of formal	A Variety of letters that falls within the category of formal letters are ☐ Business letter ☐ Official letter ☐ Social letter ☐ Circular letter	Try to understand the topic taught.	Types of letters ☐ Business letter ☐ Official letter ☐ Social letter

letter	☐ Employment letter		☐ Circular letter ☐ Employmen t letter
Sender's Address	The most essential part also known as the return address. It is the mainly address of the sender. The address and contact detail of the person sending the letter are written here.	Note down in their note book.	
Date	Candidate while writing the letter in the exam can follow any of the formats to write the date. MM/DD/YY.	Watching carefully	
Signature Line	Senders Name, Signature and Designation	Listening carefully	

Subject(Analyze)	This highlight the aim of writing the letter the subject of the formal letter should be very brief (6 to 8 words) and must be preceded by words subject. The receiver through the subject understands the purpose of the letter.	Listening carefully	And note down in their note book.
Salutation	If the name of the recipient is known salutation start with "Dear followed by Ms/Mrs/Miss etc". If the person is unknown the recipient can be addressed as Dear Sir/Dear Madam.		Watching the board carefully and see whole format.
Body	Introduction: That states the main point. Middle Part: Supporting points and detail to justify the need and importance of letter writing. Conclusion: That request for some action or what		Understand the whole format and its points.

	is expected.		
Complementary Closure	This is to end the letter with respected in a polite manner such as "Yours faithfully"		Understanding
Signature Line	The signature line may also include a second line for the title or designation of the sender.		Listening carefully.

Homework: (Feedback)(Support)

Q.1 Write down the parts of Application writing?

Lesson Plan (Control Group)

"Phrases and Clauses"

Teacher's Name: Iram Shahzadi	Class: BS Management Sciences
Subject: Functional English	Duration:90 minutes
Topic: Phrases and Clauses	Teaching Method: Traditional Approach

General Objectives

1. To enable students to listen English language with Understanding
2. To enable them to express themselves in English language.
3. To create interest among students to understand the concept of grammar.

Specific Objectives

1. The students will be able to recall the meaning and definition of Clause and phrase.
2. Students will be able to differentiate clause and phrase.
3. Students can use phrase and in their own sentences clause.
4. The students will be able to write English.

Teaching Material required

White board, pointer, Duster, Written Material, Books etc.

Previous knowledge

They have general Knowledge about the Sentence and their Construction.

Previous knowledge Testing

Pupil - Teacher's Activity	Student's Activity
1. He gave me a Chain golden 2. He gave me a gold chain of 3. He gave me a chain which is made up of gold. What is the difference between these three Sentences	No Response

Announcement of the Topic

Well, students today we will talk about Phrases and clauses and how to Change phrase into clause and clause in to phrase.

Presentation

The Student teacher is going to take the help of the students. She will use white board,Pointer, written material in between for making the things Clear. She will write down the main points on the white board.

Teaching Point	Pupil -Teacher's Activity	Student's Activity	White board Activity
Introduction	Phrase: A Phrase is a collection of words that may have nouns or verbs but it does not have a subject and a Verb. The following are examples of phrases. 1. Learning from the books. 2. Before the first test. 3. Smashing into a fence. In the above examples we	Students will listen carefully	A phrase is a collection of words that may have noun or verbals.

	find either a noun or a pronoun that is a Subject attached to a Predicate verb.		
Type of Clause Dependent Clause Independent Clause	There are 2 types of clause. 1. Independent clause. 2. Dependent Clause If a clause can't make a Complete sentence by itself even though it has a Subject doing a verb, that is dependent clause for example Since she laughs at different moments. It could stand by itself and form a complete sentence with punctuation For example: I despite individual of low character	Students will write down all the examples and type of clauses in their notebooks.	A clause is a collection of words that has a subject that is actively doing a verb.

Recapitulation

Q.1.   What is the meaning of Phrase?

Q.2.   What is the meaning of Clause?

Q.3.   Give 2-2 example of each

Home work

Q.1.   Give 2-2 examples of Dependent and Independent Clause?

Q.2   What is meaning of independent Clause?

RUBRICS SELF REPORTED PROTOCOL TO ASSESS THE WRITING SKILLS OF UNDERGRADUATE STUDENTS

1=never or almost never true of me.

2=usually not true of me.

3=somewhat true of me.

4=usually true of me.

5=always or almost always true of me.

	Development of the writers' Ideas	Language Use: Sentences and Word Choice	Language Use: Grammar, Usage, and Mechanics
5	Ideas are well developed, and approaches to development (e.g., summarizing, evaluating, narrating) are usually used skillfully to support and convey the writers' ideas. Reasons and specific details and examples from the text and from the writers' reading and experience are usually used effectively to develop ideas.	Sentences are usually well controlled, and there is some effective variety in structure. Word choice is usually specific and usually effective in conveying the writers' ideas	Though there may be a few errors in grammar, usage, and mechanics, good command of language is apparent, and meaning is usually clear.
4	Most ideas are competently developed and approaches to development (e.g., summarizing, evaluating, narrating) are competently used to support and convey the writer ideas. Reasons and specific details and examples from the text and from the writers' reading and experience are competently used to develop ideas.	Most sentences demonstrate competent control, and there is enough structural variety to support the clarity of the ideas. Word choice is somewhat general but clearly conveys meaning.	Language use is competent. Grammar, usage, and mechanics are generally correct and meaning is usually clear.

3	Development of ideas is general or uneven, but approaches to development sometimes support the clarity of writers' ideas. The response uses some reasons and specific details and examples from the text and from the writers' reading and experience to develop ideas.	Sentence control is uneven, but there is some structural variety to support the clarity of ideas. Word choice is simple but usually clear enough to convey meaning.	Command of language is uneven. Grammar, usage, and mechanics are generally correct, but some errors are distracting and may occasionally impede understanding.
2	Development of ideas is weak, and there may be little use of relevant approaches to development. If present, reasons, details, and examples from the text and from writers' reading and experience are brief, general, inadequately developed, or not clearly relevant.	Sentences demonstrate weak control, and there is little, if any, sentence variety to provide clarity. Word choice is simple, and sometimes meaning is not clear.	The response demonstrates a weak command of language. Grammar, usage, and mechanics are sometimes correct, but errors are often distracting, and some impede understanding.
1	There is minimal or no development of ideas and little, if any, use of relevant approaches to development. If any reasons, details, and examples from the text or from the writers' reading and experience are present, these elements are brief, general, undeveloped, or irrelevant.	Sentences demonstrate minimal or no control. Word choice is often unclear and often obscures meaning.	The response demonstrates minimal command of language. Grammar, usage, and mechanics are often incorrect, and errors frequently impede understanding.

KHAWAJA FAREED UNIVERSITY OF ENGINEERING AND INFORMATION TECHNOLOGY RAHIM YAR KHAN

CERTIFICATE FOR INSTRUMENT/TOOL VALIDATION

Writing Skills Test

For the research Entitled as

Effect of Adaptive Teaching For Improving Language Skills Of Undergraduate Students

By

Ms. Iram Shahzadi

Ph.D Scholar

Department of Teacher Education, Faculty of Education, International Islamic University, Islamabad, Pakistan

This is certify that the Writing Skills Test developed by the scholar towards her research has been validated by me. I find it that it has been adequately designed to assess the writing skills of the undergraduate students.

It is considered that the instrument developed for the research is according to the objectives of the research and it also assures content validity. It can be used for experiment by the researches with fair amount of confidence.

Name: _Dr. Naeem Ullah_

Designation: _Assistant Professor_

Institution: _Department of Education_

Signature: _____

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Name: Dr. Jam M. Zafar

Designation: Assistant Professor

Institution: Department of Education

Signature: KFUEIT Rahim Yar Khan -

HoD (UG Program)
Department of Education
Khwaja Fareed University
of Engineering & Information
Technology Rahim Yar Khan

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Name: DY. TARIQ ALI

Designation: Assistant Professor

Institution: Humanities & Arts, KFUEIT

Signature:

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Name: Dr. Shazia Andleeb

Designation: Assistant Professor

Institution: Kfueit / English Dept

Signature: Shazia