CHAPTER I

A. Introduction

In the realm of technology, English is extensively used across technical documentation, software development, and global networks associated with technological projects. Rao (2021) highlights that English is the predominant language at international technology conferences and in scientific publications. In the business sector, English functions as the primary language for communication among multinational corporations, corporate presentations, reports, and interactions with global customers and business partners. Christison and Murray (2021) further emphasize that, within education, English serves as the principal language for literature, scientific journals, and textbooks, which are essential for studying technology and science worldwide. Additionally, English is widely utilized in technology platforms and applications, including online learning platforms and social media, which facilitate distance learning and global collaboration (Khan et al., 2021). As a result, English is becoming an increasingly significant global medium, enabling effective collaboration and access to a broader range of resources and information (Greenhow & Lewin, 2016). Therefore, proficiency in English is not only crucial today but will be even more vital in our increasingly connected future.

Mampuono (2022) outlines five key reasons why mastering English is essential in today's world:

1. **Facilitating Access to Information:** English is the most widely used international language in scientific publications, technology, business, and entertainment. Mastery of English allows individuals to access and understand this information without the limitations of translation or reliance on the original language.
2. **Enhancing Career Opportunities:** As the official language of many multinational companies, strong English skills are often a critical criterion in the hiring process, thereby opening up broader and more compelling career opportunities both domestically and internationally
3. **Improving Communication Skills:** Proficiency in English enables individuals to communicate effectively with people from diverse countries and cultures, thereby expanding their social and professional networks. This skill is invaluable for traveling or living abroad, as it provides opportunities to learn and experience new things.
4. **Enhancing Technological Capabilities:** English is the primary language in the fields of technology and information. A strong command of English provides access to the latest developments in technology, participation in online discussions and forums, and an improved understanding of contemporary technological advancements.

5. **Fostering Self-Development:** Mastery of English grants access to a wide array of online learning resources, such as courses and webinars. This knowledge and skill enhancement opens doors for personal growth and career advancement through internationally recognized certifications.

Information and technology (IT) significantly impact many aspects of human life today, including business, industry, healthcare, and education (Barnes, 2020). Advanced digital technologies such as the Internet of Things (IoT), 3D printing, machine learning, virtual reality, augmented reality, open artificial intelligence, blockchain, and big data analytics enable integration and automation across various sectors, including the production and distribution of goods and services, healthcare, and transportation systems (Raja Santhi & Muthuswamy, 2023). IT plays a crucial role in nearly all fields, particularly in education, where it enhances the teaching and learning process, often replacing many human tasks with automation systems (Tri et al., 2021). Furthermore, technology related to IT has brought significant progress in the education sector, especially in foreign language teaching, such as English, offering new opportunities to support and accelerate educational management within institutions. As a result, providing ICT resources for teachers and school staff is vital, as effective classroom management involves managing the teaching and learning process, instructional materials, media and learning resources, the learning environment and climate, assessment, and student support services, all of which fall under the teacher's responsibility (Jo Shan Fu & Fu, 2013).

However, if a teacher lacks the ability to operate a computer or laptop, they will struggle to upload or download information from a website, which should be a concern for the government or the institution employing them (Amy M et al., 2016). An inability to use basic computer programs like MS Word and MS Excel suggests that the teacher is technically illiterate. The expectations for teachers to be proficient in using computer equipment are not overly demanding. According to a preliminary survey conducted on May 23, 2012, only six out of 54 teachers, or about 11%, were proficient in using computers, indicating that many teachers still lack basic computer skills. These individuals may view computers merely as tools for writing, yet they have far greater potential, and the full impact of IT on classroom management remains underexplored.

The role of teachers as role models for students is strongly supported by their knowledge of classroom management strategies and their use of language with students. Sugiyono (2016) asserts that teachers have a duty to create optimal learning activities. Bosch (2016) describes classroom management as a collaborative effort between teachers and students, where teachers cultivate a classroom atmosphere that encourages students to learn and enjoy the educational process. Weinstein and Weber (n.d.) further identify five key functions of classroom management: (1) designing the physical classroom environment to ensure easy access to learning resources, (2) building positive relationships between teachers and students through close communication, (3) maintaining a sense of community in the classroom by fostering ample opportunities for interaction, (4) teaching behavioral standards that promote

mutual respect among peers, and (5) responding subtly to poor behavior, for instance, by remaining silent or making eye contact.

In practice, classroom management is closely related to how teachers use instructional language, particularly in delivering simple instructions that students can easily comprehend. The role of instructional language in fostering interaction is a critical component of successful learning (Hughes, 1980). Therefore, it is essential for teachers to use effective and functional language throughout the class to manage various communication events within the classroom.

In the post-COVID-19 adaptation period, learning occurs in both online and offline settings. Students often encounter difficulties in English language skills, finding it challenging to speak, read, write, and listen in English. This suggests that students facing learning difficulties may perform academically far below their potential (Mulyono, 1999). Makmun (2003) defines students with learning difficulties as those who struggle to achieve their learning goals. Ahmadi and Sweany (2020) describe learning difficulties as conditions in the learning process characterized by obstacles or barriers to achieving learning outcomes. These difficulties can range from mild and simple to more complex issues. Ischak SW (1987) further explains that learning difficulties are complex, encompassing various types and causes.

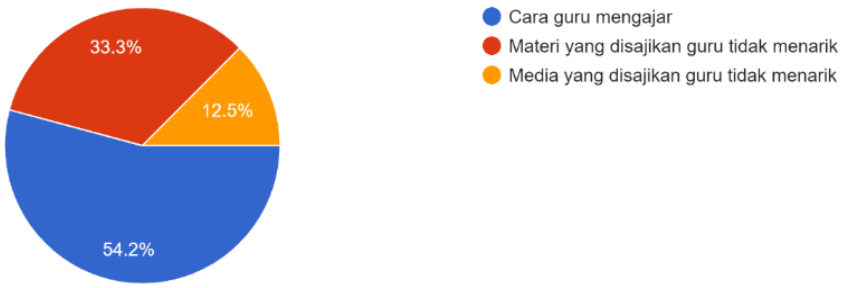
Achievement, in this context, refers to the results obtained by students through their learning activities. According to Kemenangan (1985), achievement is a specific skill or outcome achieved within a certain time frame. In this study, achievement is reflected in the results students obtain during the learning process, particularly in their

academic performance, as indicated by their average scores according to school standards. The assessment of students' proficiency in English includes scores in four key language skills: listening, speaking, reading, and writing. These scores are typically assessed on a numerical or descriptive scale. The standard for assessing English grades varies depending on the assessment criteria and textbooks used in the specific educational context.

In the 2013 curriculum, English grades are calculated based on several assessment components, including individual assignments, written exams, oral exams, and project grades. The Minimum Completion Criteria (KKM) scale is generally set at 70, with the following grade descriptions: A (80-100), B (70-84), C (55-69), D (40-54), and E (0-39). Observations conducted at MAN PK Makassar indicate that the average score obtained by students is 60, which is considered fair according to the KKM standard, representing their performance based on the set criteria.

To explore the impact of difficulties in learning English, researchers conducted preliminary observations of English learning outcomes at MAN PK Makassar. Before finalizing the research focus, the researcher observed the student learning process and the integration of IT in teaching and learning. It was noted that the school had implemented IT classes, utilizing tools such as smart TVs and smartphones, supported by a strong internet connection. Following these observations, the researcher interviewed the subject teacher regarding student achievement and distributed questionnaires to students to assess and validate their learning abilities.

The observations revealed that the average student score was 60, which is slightly below the fair standard as per the school's KKM. To understand why students' scores were aligned with the KKM standard set by the subject teacher, the researcher distributed a questionnaire. The results indicated that 54% of students felt uncomfortable or unmotivated to learn English due to the teaching methods employed by the teacher. As Harmer (1987) points out, teaching methods are a critical aspect of classroom management.



Based on the analysis of the questionnaire data and the previous observations, it was evident that the reasons for students' learning difficulties were closely related to the teaching methods that made them feel uncomfortable or unmotivated. Specifically, 54.2% of the students identified their discomfort or lack of enthusiasm for learning English as being due to the teacher's teaching methods.

This research will focus on classroom management, particularly using Harmer's (1987) principles as a foundation. However, not all aspects of classroom management will be included in the study. The research will concentrate on key principles such as using relevant materials, varying teaching methods, providing feedback, managing

time effectively, fostering creativity, and integrating technology. The focus will be on how classroom management, supported by IT, impacts student achievement.

B. Problem Statement and Research Questions

1. Problem Statement

Preliminary research conducted through questionnaires and observations at a high school in Makassar indicated that classroom management supported by IT may positively impact students' learning achievement. However, the specific effects of IT-supported classroom management on learning outcomes require further investigation. Therefore, this study seeks to explore this relationship, leading to the following research question:

2. Research Question

"**Does the use of information technology in classroom management improve students' achievement in studying English at MAN PK Makassar?"**

C. Objective of the Research

The objective of this research is to determine whether the integration of IT in classroom management can enhance English learning achievement among students.

D. Significance of the Research

This research offers both theoretical and practical benefits:

1. Theoretical Significance

   The findings of this study are expected to contribute to the existing body of knowledge on teaching and learning English, particularly in the context of IT-supported classroom management.

2. Practical Significances
   a. For Teachers: The study's results can serve as a valuable reference for English teachers, particularly at the high school level, in enhancing their teaching strategies.
   b. For Students: Students can use the findings of this study as a reference to improve their learning strategies in English, especially in high school settings.
   c. For Curriculum Developers: The results may serve as a reference in future curriculum development, emphasizing the integration of IT in classroom management.

d. For Future Researchers: This study can provide reference material for future research related to IT-based classroom management.

E. Scope of the Research

This research encompasses three key components: discipline, content, and activities.

a. Discipline

The study is situated within the field of applied linguistics, focusing on the use of IT in classroom management within the context of English language learning.

b. Content

The content of the study explores IT-based classroom management in English language learning, utilizing the classroom management principles outlined by Harmer (1987).

c. Activity

The research activity involves classroom teaching that emphasizes the theme of integrating IT into classroom management to enhance English language learning.

CHAPTER II
REVIEW OF RELATED LITERATURE

This chapter discusses previous related studies, pertinent ideas, conceptual frameworks, and hypotheses relevant to the research.

A. Previous Related Studies

The first Classroom Management in Improving the Quality of Student Learning at Madrasah Aliyah Hidayatul Mubtadiin Sidoharjo, Jati Agung District, South Lampung Regency (Umi, 2021). This study examines the role of teachers in classroom management to enhance the quality of student learning at Madrasah Aliyah Hidayatul Mubtadiin Sidoharjo, Jati Agung District, South Lampung Regency. The findings indicate that effective classroom management planning significantly improves the quality of student learning. Classroom management encompasses planning, organizing, mobilizing, and controlling, with teachers utilizing student evaluations to monitor learning outcomes.

The second Technology for Classroom Management (Ayyildiz, 2020) This article explores the complexity of classroom management, emphasizing its dependence on the philosophies, values, and beliefs of stakeholders, particularly teachers and schools. The study highlights the role of

technology in facilitating classroom management practices and improving teachers'

effectiveness. The results demonstrate a positive correlation between the use of technology in the classroom and effective management practices. The study calls for research-driven educational policies to create optimal learning conditions for students at all levels, suggesting that the integration of appropriate educational technologies can enhance classroom management and the overall learning experience.

Technology aids teachers in monitoring student behavior and performance, streamlining administrative tasks, facilitating communication, and providing personalized learning experiences.

The third Classroom Management System Based on Smart Classroom Teaching (Sun, 2018) This paper presents a classroom management system designed for smart classroom teaching. The system includes a login module with three units: students, teachers, and administrators. The student unit features a login module and a student information display module, while the teacher unit consists of a login module and a teacher information display module. The administrator unit includes modules for information registration, login, and page display. This system allows teachers to create customized courseware by adding or removing resources and content through the lesson preparation and teaching system. It supports teaching plans, learning cases, and assignments, and enables teachers to upload information to a "my classroom" unit for storage.

The next Ability to Use Information and Communication Technology (ICT) Media in Physical Education Teachers at Pontianak City Elementary Schools (Meiwati & Falaahudin, 2022) This research focuses on ICT-based classroom management at SD Negeri 34 South Pontianak, Pontianak City. It aims to describe the use of ICT in classroom management, particularly in utilizing media and communication networks, and to identify factors that hinder teachers from effectively using LCD projectors, laptops, and internet networks in classroom management. The findings reveal that while teachers have incorporated ICT in planning learning activities, they have not fully utilized it in managing the learning process, media, resources, situations, climate, and assessment of learning outcomes. The study underscores the importance of qualified human resources in adapting to technological advances and emphasizes the need for teachers to be proficient in using computers and similar technologies.

The last Integrated Technology for Classroom Management Strategies in a Computer-Assisted Language Learning (CALL) Classroom (Djami, 2022) This study investigates the integration of technology in a CALL classroom to support classroom management strategies, employing a mixed-methods approach with 27 students and a lecturer in the English Language Education Study Program. The study finds that the integration of necessary technology in CALL classes supports classroom management strategies by

engaging students in learning, delivering materials efficiently, and creating an immersive learning environment through gamification using the internet. The use of computers in language learning is shown to be effective in managing the classroom both inside and outside the classroom, enhancing the overall learning experience.

B. some pertinent idea

1. Classroom Management Theories

Classroom management is a strategic approach employed by teachers to effectively and efficiently organize the classroom environment to optimize learning. Several key theories have been developed in this field, including*:*

a. ***Active Engagement Model:*** Developed by Charles Evertson and Carol Weinstein, this model emphasizes the importance of actively engaging students in the learning process while minimizing classroom disruptions. According to this theory, effective classroom management involves ensuring that students are actively involved in learning activities, which in turn fosters a productive learning environment (Evertson & Weinstein, 2006).

b. ***Caring Model:*** Developed by G. Brophy, this theory underscores the importance of nurturing positive relationships between teachers and students. It posits that feelings of love, support, and understanding are essential components of effective classroom management, as these elements contribute to a positive classroom atmosphere (Brophy, 1988).

c. ***Social Discipline Model:*** This model, developed by Kagan, focuses on the use of social norms and rules to manage student behavior. The primary goal is to establish a supportive classroom community through the enforcement of socially accepted rules, which helps maintain order and fosters a collaborative learning environment (Kagan & Stenlev, 2009).

d. ***Cognitive-Behavioral Approach:*** Developed by Marzano and others, this approach involves influencing students' behavior by understanding and addressing their thought processes. The model emphasizes the interconnectedness of students' thoughts, feelings, and actions, suggesting that altering students' cognitive patterns can lead to positive changes in behavior (Marzano et al., 2003)

2. Theoretical Concepts of Classroom Management

Classroom management encompasses various strategies and techniques that teachers use to create a positive and productive learning environment. Definitions of classroom management vary, but the common understanding is that it involves teacher behaviors and actions that facilitate student learning. According to the Peace Corps (2010), effective classroom management improves learning outcomes by engaging students in meaningful tasks and activities. Ahmad et al. (2012) describe classroom management as ensuring that classroom lessons run smoothly despite potential disruptions. Effective classroom management also includes managing the physical environment, such as classroom layout and learning equipment, to support positive interactions and minimize distractions (Djamarah & Zain, 2010).

3. Essentials of Classroom Management

Jeremy Harmer, in his book *The Practice of English Language Teaching* (1987), discusses several principles of classroom management that are particularly relevant to English language teaching. Key points include:

a. **Student Engagement:** Teachers should create opportunities for students to talk, interact, and actively participate in class activities.
b. **Use of Relevant Materials:** Selecting materials and activities that are relevant to students' needs and interests increases their motivation to learn.

c. **Variation in Teaching Methods:** Employing a variety of teaching methods, such as games, group activities, and discussions, helps maintain student interest and promotes successful learning.

d. **Providing Feedback:** Constructive feedback on student progress helps them understand their strengths and areas for improvement.

e. **Emotional Engagement:** Recognizing the emotional aspects of classroom management and creating a supportive environment enhances student learning.

f. **Conflict Management:** Teachers should possess the skills to address and resolve conflicts positively and appropriately.

g. **Understanding Student Needs:** Teachers should be aware of individual student needs and preferences and strive to meet them in their teaching practices.

h. **Time Management:** Effective time management is crucial for organizing activities, assignments, and evaluations to ensure smooth and efficient learning.

i. **Creativity:** Incorporating creativity in teaching can create engaging and motivating learning situations.

j. **Use of Technology:** Utilizing technology, especially in the digital age, adds a new dimension to English language teaching and can enhance the overall learning experience.

4. Principles of Classroom Management

Classroom management is grounded in several fundamental principles that teachers must understand to be effective. At least six essential principles are key to effective classroom management:

a. **Warmth and Enthusiasm:** Warmth and enthusiasm are critical in the teaching and learning process. Teachers who are friendly, approachable, and consistently demonstrate enthusiasm are more likely to manage their classrooms effectively (Brophy, 1984).
b. **Challenge:** Using stimulating words, actions, methods, or materials can increase students' interest in learning and reduce the likelihood of disruptive behavior (Beregovaya et al., 2019).
c. **Variety:** Employing diverse media tools, teaching styles, and interaction patterns between teachers and students can minimize distractions and enhance student attention, preventing boredom.
d. **Flexibility:** Flexibility in teaching strategies allows teachers to adapt to various situations, preventing potential distractions and fostering a conducive learning environment. Flexible teaching can help avoid issues such as students being noisy, inattentive, or neglecting homework.
e. **Emphasizing the Positive:** Teachers should focus on positive student behaviors and avoid excessive criticism of negative behaviors. A positive focus encourages better student conduct and engagement.

f. **Cultivation of Discipline:** The ultimate goal of classroom management is to develop students' self-discipline. Teachers must model self-control and responsibility, demonstrating discipline in all aspects to encourage the same in their students.

5. Classroom Management Objectives

Classroom management by teachers serves specific purposes, including:

a. **Improving Learning Activities:** Enhancing the quality and effectiveness of learning activities.
b. **Increasing Student Achievement:** Boosting students' academic performance.
c. **Applying Creative, Varied, and Innovative Approaches:** Implementing diverse and innovative teaching methods.
d. **Establishing Interaction Between Teachers and Students:** Fostering positive interactions and relationships between teachers and students.
e. **Creating Learning Contracts with Students:** Establishing agreements with students regarding their learning goals and responsibilities.

Classroom management is increasingly recognized as essential for individuals, groups, and organizations. Effective management helps achieve educational goals efficiently and effectively (Kokhanovskaya et al., 2019). Professional teachers who

understand and practice good classroom management are likely to achieve better learning outcomes than those who do not. According to Imam Wahyudi, classroom management objectives can be categorized into general and specific goals:

a. **General Goals:** Providing and utilizing classroom facilities to support various teaching and learning activities, fostering a social atmosphere that promotes discipline, intellectual and emotional development, and appreciation for all students (Klik et al., 2023).
b. **Specific Goals:** Developing students' abilities to use learning tools, creating conducive conditions for work and learning, and helping students achieve expected outcomes.

6. Teacher Competence in Managing the Classroom

Law No. 14/2005 on Teachers and Lecturers, Chapter IV, Article 32, Paragraph 1, stipulates that "teacher training and development include professional and pedagogical training and development" (Sanusi et al., 2020). Targeted teachers are those who possess a comprehensive set of competencies—knowledge, skills, and behaviors—necessary to effectively fulfill their professional roles (Saihu, 2020). As professionals, teachers are recognized as having specialized expertise (Prestridge, 2019), which includes professional teaching abilities and a heightened sense of responsibility in the learning process. According to this law, Chapter IV, Article 10, Paragraph 1,

teacher competencies encompass four key areas: pedagogical, personal, social, and professional competencies.

a. **Pedagogical competence** involves understanding students, designing and implementing learning activities, and helping students realize their full potential (Edeh Michael Onyema, 2019). Government Regulation No. 19/2005 on National Education Standards elaborates on this in Article 28(3)(a), stating: "The ability to manage student learning, which includes understanding, designing, implementing, and assessing student learning outcomes, and developing students to achieve their full potential."
b. **Personality competence** encompasses the habits, attitudes, and characteristics that a teacher develops through interactions with others (Abnisa & Zubairi, 2022). Teachers must possess a stable and healthy personality that motivates them toward success. Government Regulation, Article 28, Paragraph 3, Letter (b), elaborates on personality competence as: "A stable, mature, wise, and authoritative personality, serving as a role model for students and demonstrating noble character."
c. **Social competence** refers to the teacher's ability to see themselves as part of society and fulfill their obligations as community members (Rusilowati & Wahyudi, 2020). The Government Regulation, Article 28, Paragraph 3, Point (d), describes social competence as: "The ability

to communicate and interact effectively and efficiently with students, peers, parents/guardians, and the surrounding community."

d. **Professional competence** is the ability to adapt to teaching responsibilities (Caena & Redecker, 2019). Government Regulation, Article 28, Paragraph 3, Letter (c), specifies professional competence as: "The ability to master the content of learning broadly and deeply, guiding students to achieve the competency standards outlined in the National Education Standards." This includes mastery of curriculum materials, scientific content, and proficiency in the structures and methodologies of scientific knowledge.

These competencies are interconnected, supporting and reinforcing each other in a hierarchical structure. The General Department of Education Personnel, Basic Education (2003:5) defines competence as "knowledge, skills, and values reflected in habits of thought and action." Qualified teachers dedicate themselves to their profession and are committed to continual growth and development.

Mas'ud (2003) in Suparlan (2005: 99) identifies basic teacher skills as including: (1) mastery of teaching materials, (2) enthusiasm, and (3) dedication to teaching and education. Mastery of content is essential, serving as a primary measure of a teacher's effectiveness. Teachers must employ appropriate learning strategies, utilize effective methods, and provide continuous, honest

assessments of learning outcomes. Additionally, a high level of enthusiasm and dedication to their professional duties significantly contributes to a teacher's overall effectiveness, reflecting in their ability to show compassion and commitment to their students.

A teacher's core competencies are a complex combination of knowledge, attitudes, skills, and values demonstrated through their professional duties. Suparlan (2006: 75) asserts that teachers must be supported by expertise, commitment, and skills to effectively and measurably carry out their responsibilities. Skill empowerment is achieved through deliberate actions aimed at attaining educational goals through continuous professional development.

Mulyasa (2015:67) defines skills as "the abilities required to perform a given task or job." These skills are developed to address current challenges and adapt to evolving roles and situations. Saud (2014: 56-75) outlines basic teaching skills as including: (1) opening and closing lessons; (2) explaining; (3) questioning; (4) providing reinforcement; (5) using learning media; (6) guiding small group discussions; (7) managing the classroom; (8) applying variation in teaching; and (9) teaching individuals and small groups.

a. **Lesson opening and closing skills** are aimed at creating a positive atmosphere and focusing students' attention on the material to be learned (Hebebci et al., 2020). This includes explaining objectives, engaging

students, and linking new material to prior knowledge (Dörnyei & Muir, 2019). Closing skills help teachers and students reflect on the learning process.

b. **Explanatory skills** involve presenting information clearly and organizing lessons to facilitate student exploration and collaboration (Nicholas et al., 2021). Teachers should use clear language, emphasize key points, and address misunderstandings effectively.

c. **Questioning skills** are crucial for building communication and assessing students' understanding (Shanmugavelu et al., 2020). Effective questioning techniques, both basic and advanced, foster critical thinking and deeper engagement (Asti & Ngazizah, 2022).

d. **Reinforcement skills** involve providing verbal and nonverbal feedback to encourage positive behavior and discourage negative behavior (Lee et al., 2021). Reinforcement techniques are essential for increasing the likelihood of students repeating desirable behaviors (Ha et al., 2021).

e. **The use of learning media** involves selecting appropriate tools to enhance learning effectiveness and efficiency (Komalasari & Rahmat, 2019). Competency in media usage includes ensuring the tools' relevance, efficiency, and variety to enrich the learning experience (Saud, 2014: 67).

f. **Guiding small group discussions** entails facilitating student interaction, decision-making, and problem-solving. Effective discussion management involves setting clear goals, clarifying issues, analyzing student

perspectives, and encouraging active participation (Karwati & Priansa, 2015: 85; Sumiati & Asra, 2012: 231).

g. **Classroom management** focuses on creating and maintaining a disciplined learning environment by effectively controlling student behavior and managing learning conditions to achieve optimal outcomes (Saud, 2013: 70).

h. **Applying variation in teaching** involves using diverse methods and media to sustain student interest and motivation (Karwati & Priansa, 2015: 83). This includes designing engaging and varied lesson plans (RPP) to maintain a dynamic learning environment.

i. **Individual and small group teaching** requires tailoring instruction to meet the unique needs of students. This includes careful planning, organizing, and applying individualized teaching approaches to facilitate personalized learning (Saud, 2013: 72; Sumiati & Asra, 2012: 34).

Mastery of these basic skills is essential for teachers to effectively meet students' needs and achieve learning objectives. Research by Maryance (2017) underscores the importance of basic teaching skills, such as explaining, questioning, providing reinforcement, and managing the classroom, as key factors in enhancing student motivation and performance.

Teacher competence is fundamental in fulfilling professional roles and fostering students' potential to reach educational goals. In conclusion, mastering

essential teaching skills, particularly effective classroom management, is crucial for the success of the teaching and learning process.

7. Classroom Management

Management involves the coordinated use of resources to achieve specific goals. It is an essential aspect of both science and art, particularly for teachers, as it encompasses the skills necessary for managing and solving problems that arise in the classroom. According to Arikunto (1990), as cited in Djamarah & Zain (2014: 175), "management in a general sense is the process of managing, planning, or organizing an activity." Management is a sequential and functional process that is inseparable from the activities it governs.

Classroom management specifically refers to the organization and oversight of a classroom environment. The term "classroom" is derived from "class," which involves creating an environment characterized by organizational skills. According to Ekosiswoyo & Rachman (2002: 8), a classroom is "a group of students gathered at the same time and place, receiving the same lessons and accessing the same educational resources." Hamalik (1987), as cited in Djamarah (2014: 174), defines a classroom as "a group of people who engage in learning activities together and receive instruction from the teacher." In essence, a classroom is a space where a group of individuals conducts collective activities simultaneously.

Drawing from the insights of educational administrators and classroom management experts, Mulyasa (2006), as cited in Karwati and Priansa (2015: 6), states: "Classroom management is the teacher's ability to create a conducive learning environment and to control it when disruptions occur during learning." Similarly, Nawawi (1989), as cited in Djamarah & Zain (2014: 177), explains that classroom management involves the teacher's ability to utilize the potential of the class by providing opportunities for each individual to engage in creative and directed activities. This approach ensures that the available time and resources are used effectively to carry out classroom activities related to the curriculum and student development.

At its core, classroom management is the process of controlling student behavior to achieve learning objectives. The learning activities that are selected, planned, and implemented must be managed effectively to create optimal classroom conditions. The primary goal of classroom management in learning activities is to ensure that the designed learning activities are carried out successfully, fostering an environment where students can thrive and achieve the intended educational outcomes.

8. Principles of Classroom Management

Classroom management is a critical skill that teachers must possess to create an optimal environment for effective learning (Franklin & Harrington, 2019). The principles of classroom management, as developed by Djamarah &

Zain (2014: 185-6), include the following: (1) warmth and enthusiasm; (2) challenge; (3) variety; (4) flexibility; (5) emphasis on positive reinforcement; and (6) self-discipline.

a. **Warmth and Enthusiasm:** This principle involves teachers fostering a sense of warmth and closeness with their students by consistently demonstrating enthusiasm for classroom activities and tasks (Jennah & Yusuf, 2022). By actively building relationships with students and assisting them in overcoming challenges, teachers create a positive and supportive learning environment.
b. **Challenge:** The principle of challenge involves using stimulating language, actions, methods, or materials to increase students' engagement and interest in learning, thereby minimizing disruptive behavior (Chavez et al., 2011). By employing this principle, teachers aim to captivate students' attention and sustain their motivation for learning.
c. **Variety:** This principle focuses on reducing student distractions by ensuring that classroom activities are diverse and engaging. Teachers can achieve this by incorporating a variety of tools, media, teaching styles, and interaction models to maintain student interest (Khanshan & Yousefi, 2020).
d. **Flexibility:** Flexibility refers to the teacher's ability to adapt their behavior and teaching strategies to prevent potential disruptions and create an effective learning environment (Michael K. Barbour, 2020). By being flexible, teachers

can manage classroom distractions, such as noise, through the application of engaging strategies that capture students' attention (Deepika Nambiar, 2020).

e. **Emphasis on Positive Reinforcement:** This principle involves teachers modeling positive behavior and focusing on reinforcing desirable actions rather than dwelling on negative ones (Shao et al., 2020). Positive reinforcement helps prevent mistakes that could disrupt the learning process and encourages students to maintain good behavior.

f. **Self-discipline:** Self-discipline involves teachers demonstrating and instilling discipline in students, guiding them to develop and control their responsibilities. Ekosiswoyo and Rachman (2002: 97) define discipline as adherence to rules or regulations motivated by self-awareness. Teachers must cultivate disciplined habits that students can emulate, promoting a structured and orderly classroom environment (Winner et al., 2020).

Effective classroom management is achieved by organizing resources through careful planning, organizing, mobilizing, and controlling activities to meet educational goals efficiently (Tanjung, 2020).

9. Functions of Classroom Management

Karwati and Priansa (2015:21-23) identify four key functions of classroom management: (1) planning; (2) organization; (3) leadership; and (4) control.

a. **Planning:**Planning involves setting clear goals and determining the direction, actions, resources, and methods needed to achieve these goals (Marzuki, 2019). Effective planning is essential for creating a structured approach to teaching and learning.
b. **Organization:**Organization refers to the teacher's efforts to successfully implement the planned activities (Lubis & Hanum, 2020). Effective organization ensures that students' needs are addressed by designing and developing learning groups with specific responsibilities, promoting a collaborative and efficient learning environment (Rapanta et al., 2020).
c. **Leadership:**Leadership in the classroom encompasses guiding, motivating, and directing students to facilitate an effective teaching and learning process (Shulhan, 2018). Teachers must maintain their credibility and serve as positive role models for students, setting examples for behavior and academic performance.

Control: Control involves ensuring that actual classroom activities align with the planned objectives (Khudyakova et al., 2019). This function includes

setting performance standards, measuring performance, and implementing corrective actions when necessary to keep the class on track (Heussen & Lind, 2012).

Smooth classroom management relies heavily on effective planning and organization, which enable teachers to guide students positively and foster their commitment to academic standards. As Karwati and Priansa (2015:27) state, "The success of a goal can be measured by the efficiency in achieving that goal and the effective use of resources."

10. Components of Classroom Management Skills

Classroom management skills are generally categorized into two types: preventive skills, which are related to creating and maintaining optimal learning conditions, and control skills, which are aimed at addressing disruptions (Mar'Atushsholikhah, 2022).

a. **Preventive Skills:**

a) **Responsiveness:**

Teachers should be attentive to students' attention levels, engagement, and disengagement, ensuring that students feel the teacher's presence and support throughout the lesson.

b) **Attention:**Effective classroom management requires the teacher's ability to monitor and manage multiple simultaneous activities, both visually and verbally, to keep the class running smoothly.

c) **Focusing Attention:**Teachers should periodically redirect the group's attention to maintain focus on the task at hand, helping students stay engaged and on track.

d) **Clear Instructions:**Providing clear and concise instructions is crucial in preventing student confusion and ensuring that everyone understands the tasks and expectations.

e) **Reprimanding:**

Teachers must address disruptive behavior verbally and promptly to maintain order and discipline in the classroom.

f) **Improving:**

This involves reinforcing positive behavior in students who are obedient and engaged while addressing and correcting disruptive behavior in others.

b. **Control Skills:**

a) **Behavior Modification:**Adapting behavior patterns to align with learning activities helps prevent the adoption of undesirable behaviors and promotes a positive classroom environment.

b) **Group Management:**Effective management of class groups is essential to facilitate learning and achieve the desired educational objectives.

c) **Identifying and Resolving Problem Behaviors:** Detecting and addressing issues promptly is key to minimizing their impact on the classroom environment and maintaining a conducive atmosphere for learning.

11. Factors Influencing Classroom Management

Classroom management involves creating a safe and conducive learning environment that maximizes both learning and social skills (Jones & Jones, 2012). Effective classroom management requires direct interaction between teachers and students to achieve educational goals. According to Djamarah (2006) in Karwati & Priansa (2015:28-32), successful classroom management is influenced by three key factors: (1) physical environmental factors; (2) socio-emotional conditions; and (3) organizational conditions.

a. **Physical Environment:** The physical environment, including seating arrangements, teaching aids, classroom cleanliness, ventilation, and lighting, plays a significant role in learning outcomes and achieving educational goals (Madani, 2019). Effective seating arrangements, appropriate teaching tools, and a pleasant classroom environment contribute to an optimal learning experience (Tobia et al., 2022; Mandasari & Wahyudin, 2019; Kisno, 2023; Jebril & Chen, 2021).
b. **Socio-Emotional Conditions:** Creating positive socio-emotional conditions involves developing strategies to foster a supportive classroom

environment and manage student behavior effectively (Jones & Jones, 2012). Key factors include the teacher's leadership style, attitude, voice modulation, and the ability to build strong teacher-student relationships (Serkan Aslan, 2022; Cicekci & Sadik, 2019).

c. **Organizational Conditions:**Organizational factors include both internal and external influences on classroom management. Internal factors involve students' emotions, thoughts, and behaviors, while external factors pertain to the learning environment, seating arrangements, and student grouping (Ricky W. Griffin, 2023). Effective classroom rules and consideration of individual differences are crucial for successful classroom management (Jones & Jones, 2012).

12. The Link Between Information and Communication Technology and Classroom Management Performance

The rapid advancement of technology has provided teachers with opportunities to integrate technology into their classroom management strategies. Effective classroom management now encompasses establishing order, designing effective learning instructions, managing students, and tracking individual progress, all of which can be facilitated by technology (Franklin & Harrington, 2019). While much research has traditionally focused on classroom management without technology integration (Djami, 2022), the

use of technology has become increasingly common due to its potential to enhance student engagement and learning outcomes (Dong et al., 2020).

The Internet's role in education has transformed how teachers and students access and exchange information, enhancing communication and learning opportunities (Fischer et al., 2023; Sivakumar et al., 2023). Internet-based platforms extend learning beyond school hours, fostering interactive and collaborative experiences (Coman et al., 2020). However, it is crucial to guide and train users to avoid distractions and misinformation (Oraif & Elyas, 2021).

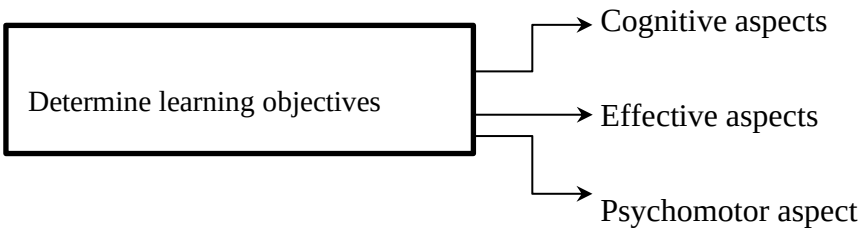
13. Internet as a Medium in Classroom Management

The Internet has significantly impacted education by providing a platform for information exchange and learning beyond traditional constraints (Szymkowiak et al., 2021). It offers numerous benefits for teaching and learning, including increased understanding, resource exchange, and improved institutional promotion (Alaa Zuhir Al Rawashdeh, 2021; Sinaga & Pustika, 2021).

The Internet allows for flexible learning interactions, enhances teaching quality, reaches a global audience, facilitates content updates, and addresses conventional learning limitations (Dakhi et al., 2020; Rapanta et al., 2020; Almusaylim & Zaman, 2019). Proper utilization of the Internet can significantly enhance educational outcomes, provided that its potential is maximized and its challenges are effectively managed.

For this research, the learning planning to be implemented in the experimental class is designed based on the research needs and is informed by relevant literature. The design of learning planning for the research can be seen in the following figure, which considers cognitive, affective, and psychomotor aspects:

a. **Cognitive Aspects:**The aim is to stimulate students to think actively, critically, logically, and creatively, and to provide opportunities for each student to identify and solve problems.
b. **Affective Aspects:**The teacher adopts both individual and group approaches, facilitating independent work as well as collaborative learning experiences.
c. **Psychomotor Aspects:**The teacher acts as a facilitator and manager of the learning process, providing engaging and enjoyable learning experiences for students, and helping them improve their abilities and skills continuously.



Selecting the learning experiences that students will receive	to think actively, critically, logically, and creatively, and provide opportunities for each student to find problems.
Determining learning activities	The teacher takes an individual and group approach, conducted independently and in groups.
Determining who will be involved in the learning process	The teacher acts as a facilitator and manager of the learning process, providing a fun learning experience for students, helping to improve their abilities and skills at all times.

14. Learning Steps Using the Internet in Classroom Management

Before initiating learning activities, teachers must first develop a comprehensive plan. This plan ensures that the learning process aligns with the intended objectives and is executed effectively and efficiently. Below are the stages of preparing learning activities that can aid in managing the classroom:

a. **Formulate Learning Objectives**The first step is to establish clear learning objectives. Before starting any learning activity, it is crucial for the teacher to understand the purpose of the activity (Dwijayani, 2019). A clear understanding of these objectives facilitates the organization of the learning steps. According to Bloom (1964), three key aspects should be considered when developing learning objectives:
    a) **Cognitive Aspect:** Focuses on students' mastery of knowledge, including data, facts, concepts, generalizations, and principles.
    b) **Affective Aspect:** Addresses students' acceptance and appreciation of the material, relating to their emotional and mental development.
    c) **Psychomotor Aspect:** Pertains to the abilities and skills students demonstrate, both through physical and non-physical work.
b. **Select Learning Experiences** Learning extends beyond mere attendance and note-taking; it encompasses direct experiences that stimulate students to think actively, critically, logically, and creatively. Learning activities should

encourage students to identify problems and devise effective solutions (Daniel & Bird, 2019; Zhang & Chen, 2021).

c. **Determine Learning Activities** Learning activities are central to the educational process. Teachers can adopt either an individual or group approach (Holman & Švejdarová, 2023). The individual approach allows students to work independently with materials designed by the teacher, accommodating different learning speeds and abilities. The group approach involves collaborative activities, either in large or small groups, to foster teamwork and collective problem-solving.

d. **Identify Participants in the Learning Process** Teachers need to determine who will be involved in the learning process. This includes deciding whether additional teachers or facilitators are necessary (Nuere & de Miguel, 2021). As facilitators, teachers must continuously enhance their skills to provide engaging and effective learning experiences.

e. **Determine Learning Medi** Teachers must select appropriate learning tools to support the classroom process (Puspitarini & Hanif, 2019). When choosing learning materials, the following factors should be considered (Abdulrahaman et al., 2020):

    a) The diverse intellectual abilities of students
    b) The learning objectives to be achieved
    c) The learning media to be used

d) The experiences required to achieve the objectives

e) The tools and materials needed for creating learning media

f) The available facilities

g) The learning styles of students

f. **Consider Facilities and Infrastructure** Effective learning requires adequate physical facilities and infrastructure (Suryaman et al., 2020). Proper facilities simplify the implementation of learning activities and support the achievement of educational goals.

g. **Plan Evaluation and Development Activities** Teachers should plan assessment and development activities to be conducted after the learning sessions (Churiyah & Sakdiyyah, 2020). These assessments help evaluate students' progress and determine whether any improvements are needed. Additionally, the outcomes of these assessments can guide future improvements and development activities.

B. Conceptual Framework

This research conceptual framework is structured around three main inputs: the problem of student learning abilities, the concept of students' English language skills, and the integration of Information Technology (IT) in classroom management. The framework outlines how these inputs interact to improve student learning outcomes, particularly in English language skills.

The output of this study is categorized into three key aspects:

1. **Student Learning Achievement:** This aspect addresses the current low levels of student learning achievement and identifies the need for improvement. The study aims to implement interventions specifically designed to enhance student learning outcomes in English.
2. **Application of Information Technology (IT) in Classroom Management:** This aspect involves the utilization of IT to improve classroom management, which is expected to lead to better student learning achievements in English. The framework is informed by the principles of effective classroom management as outlined by Harmer J. in his book on teaching English. Key components include the use of relevant materials, variation in teaching methods, providing feedback, time management, creativity, and the integration of technology.
3. **Teaching Process Stages:**This research also defines specific stages or steps in the teaching process, which are anticipated to result in improvements in students' English language learning achievements.

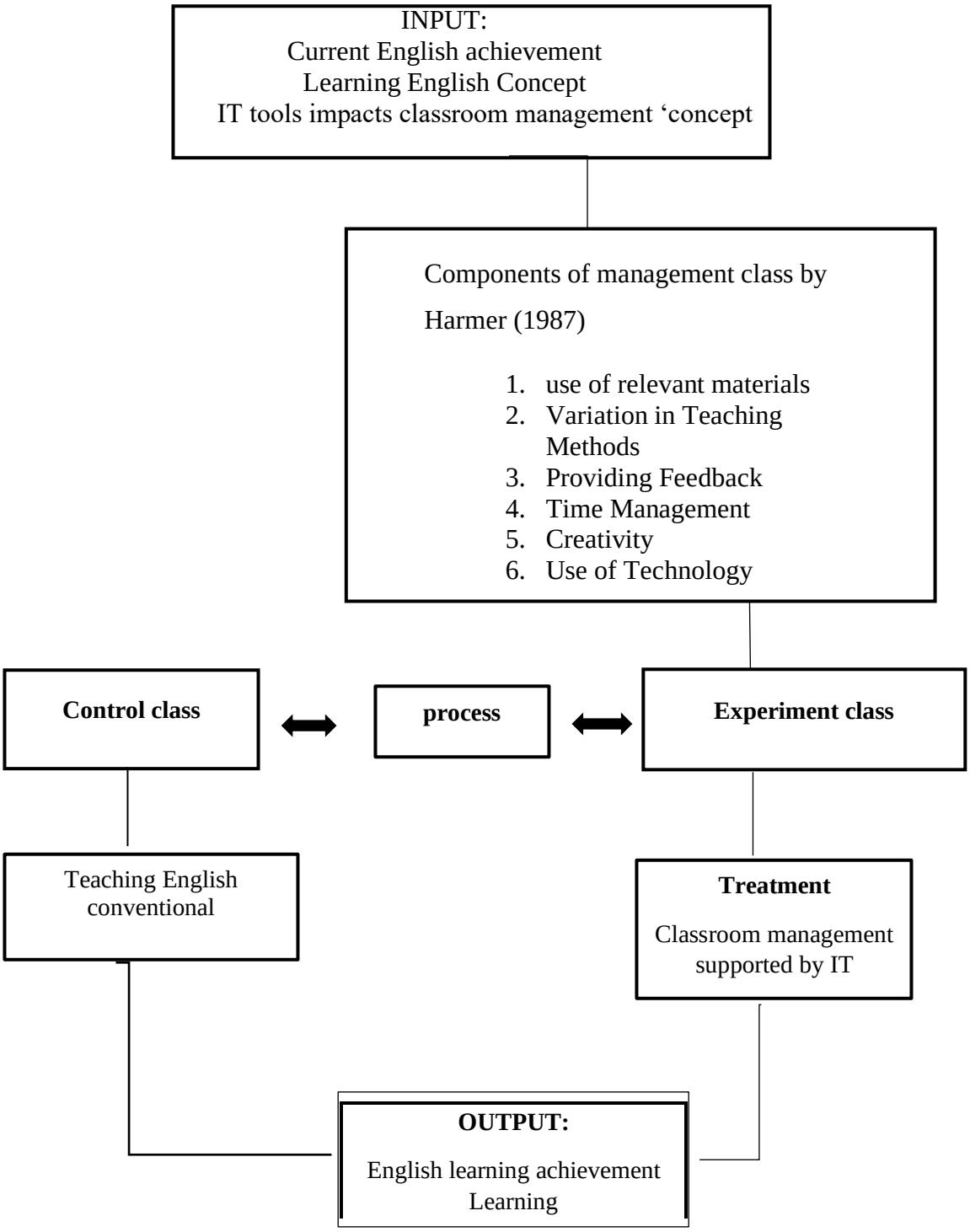
The anticipated outcome of this research is that the described processes and interventions will effectively enhance students' English language learning achievements.

Inputs:

1. **Current English Achievement:** The existing level of students' English proficiency serves as a starting point for identifying areas that require improvement.
2. **Learning English Concept:** The research explores the foundational concepts of English language learning that underpin the study.
3. **IT Tools Impact on Classroom Management:** The integration of IT tools into classroom management practices is expected to improve the efficiency and effectiveness of teaching, thereby positively impacting student learning outcomes.

Components of Classroom Management (Harmer, 1987):

1. Use of relevant materials
2. Variation in teaching methods
3. Providing feedback
4. Time management
5. Creativity
6. Use of technology


INPUT:
Current English achievement
Learning English Concept
IT tools impacts classroom management 'concept
Components of management class by
Harmer (1987)
1. use of relevant materials
2. Variation in Teaching Methods
3. Providing Feedback
4. Time Management
5. Creativity
6. Use of Technology
Control class
process
Experiment class
Teaching English conventional
Treatment
Classroom management supported by IT
OUTPUT:
English learning achievement
Learning

Design of Teaching English Implementing Classroom Management Supported by IT

The implementation of an IT-based approach in classroom management involves leveraging information technology to enhance efficiency, effectiveness, and student engagement in the learning process. The following steps outline the approach used in this research:

1. **Identifying Learning Objectives:**

   a. Define clear learning objectives to be achieved.

   b. Select appropriate tools and technologies to meet these objectives.

2. **Online Learning Platform:**

   Tailor the use of various online platforms, such as Google Classroom, to suit the needs of students and enhance the learning experience.

3. **Creating Interactive Learning Materials:**

   a. Utilize a range of digital tools, including slide-based presentations and learning videos.

   b. Ensure that these materials are easily accessible to students.

4. **Using a Learning Management System (LMS):**

   Employ an LMS to store materials, assign tasks, manage research, and provide feedback to students efficiently.

5. **Time Management and Reminders:**

   Use tools like Google Calendar and Remind to keep track of learning schedules and facilitate communication with students.

6. **Automatic Assessment:**

   Implement automatic assessment tools to streamline the evaluation process and provide timely feedback to students.

CHAPTER III

RESEARCH METHODS

This chapter presents the research method. It consists research design, subject of the research, technic of data collection, research instrument, data analysis technique, research instrument, and data analysis technique

A. Research method

In this study, researchers applied quantitative methods when calculating or measuring the comparison of results between the control class and the experimental class before and after treatment. The research method used in this study is the experimental method because it tests a learning method and provides treatment to the entire class to determine its effectiveness. True experiments are the most principle-compliant and most robust experimental design because they equalize groups through random assignment (Creswell, 2015:605). Experimental research or experimental research is a commonly used method in the field of teaching. The purpose of this method is to test the effectiveness and efficiency of a method, method, technique or teaching and learning media so that the results can be applied whether or not it is good to use in teaching practice (Sutedi, 2009: 64).

The experimental research design discussed in this study focuses on the effect of information and technology (IT) in classroom management to improve English

achievement. Researchers were divided into two classes, the control class and the experimental class.

The research design is a design of how the research is carried out. The research design carried out in this study will use Quasi-experimental research or with a pretest-posttest control group design. Sugiyono (2009: 72), explains that experimental research involves two and, in this design, there are two groups selected randomly.

Tabel 1 Table 1 experiment design

Group (R)	Pretest	Treatment	Posttest
experiment	0_1	X	0_2
Control	0_3	-	0_4

The explanation of the application of the above research design in this study is as follows:

1. Conduct a pretest which is carried out do two groups or classes, namely the experimental class and the control class with the aim of knowing the initial ability of the sample before being given treatment.
2. Carry out the provision of English learning materials by applying IT and controlling leas with IT and teaching IT English in the control class.
3. Conducting post-tests carried out in experimental classes and control classes to determine the ability of samples after being given treatment

4. Comparing the average value of the experimental class with the control class to find out the differences seen as a result of giving treatment to the experimental class and control class.

B. subject of research

The population in the study is all XII grade students of MAN PK Makassar consisting of two classes. In considerate the sampling, the research uses the whole number of students at 12^{th} grade class. For the research goal, the class for experiment and control class is selected using Purposive sampling, which is a sampling technique with certain considerations (Sugiyono, 2016). The samples in this study were two classes from the entire population, namely class XII which consisted of 2 classes of boys and girls. The researcher selected the experimental class based on the pretest results, students' attendance in class, and students' enthusiasm while learning. From the analysis, it turned out that the eligible class was the male class, where they were more enthusiastic in learning and the number of student attendance was more than the enthusiasm for learning and attendance of the female class. This suggests that the boys' class has greater potential to achieve optimal learning outcomes under the same conditions.

C. Technique of data collection

The data collection techniques used in this study are pretest, treatment, posttest. In this study, researchers will take data from the test results (pretest-posttest) of students who are not given treatment (control class) and students who are given treatment in the form of implementing classroom management using IT (experimental class).

1. Pretest

   The pretest was conducted by researchers to determine the initial state of a group before being given treatment. The test given is in the form of multiple choice. After the test is given, the researcher will assess and determine the initial ability of students in both the control class and the experimental class.

2. Treatment

   Carry out learning as usual by teaching students' lessons in accordance with the teacher's lesson plan on English subjects by utilizing internet media as a source of student learning, in the experimental class coupled with utilizing internet technology (IT) to carry out the components of classroom management to control the class during English learning.

3. Post test

   Posttest is conducted by researchers to determine the condition of a group after being given treatment. Each class, both control and experimental

classes, will be given a test to determine the value after being given treatment with the same type of question as the pretest.

D. Research instruments

Research instruments are tools used to collect or provide various data needed in research activities (Sutedi, 2009: 155). The research instruments used by researchers in this case is tests.

A test is a series of questions or exercises and other tools used to measure skills, intelligence knowledge, abilities or talents possessed by individuals or groups (Arikunto, 2013: 193). The test conducted in this study is a written test with the type of question in the form of multiple choice both pretest and posttest.

E. Data analysis technique

1. Test data analysis
    a. Calculating significant differences between experimental and control classes

        After the data is collected, the researcher will process the data known from the test results of the control class and the experimental class, the significant difference between the post tests in the two classes. The statistical formula for finding whether or not there is a significant difference between the experimental class (variable X) and the control

class (variable Y) is to use the t test (t table test). The formula for finding the t value is:

$$t_0 \frac{M_x - M_y}{SEM_{X-Y}}$$

Description:

t_0 : the calculated *t* value sought

SEM_{X-Y} : standard error of the difference between mean *x* and mean *y*

b. Calculating the effectiveness criteria to determine the effectiveness results of the two classes, the Normalized Gain formula is used as follows:

$$(g) \frac{T_2 - T_1}{Sm - T_1}$$

Description:

(g) : Normalized Gain

T_2 : posttest score

T_1 : pretest score

Sm : maximum score

CHAPTER IV

FINDING AND DISCUSSION

This chapter consists of two section, the section deals with findings of the research and discussions of the research. The finding of the research cover description of the result of data collected through a test that can be discussed in the selection below.

A. Finding

1. The student' English s achievement in control Class

a. Pretest

Tabel 2 Pretest Results of the Control Class

No	grade calcification	calcification	frequency	percentages
1	85-100	very good	0	0%
2	70-84	Good	10	83.33%
3	55-69	Fair	1	8.33%
4	0-54	Less	0	0%

In the table displaying the pretest results before the treatment for the control class, it is evident that no students achieved a classification of very good or poor. The majority of students received a classification of good, with approximately eight out of ten students falling into this

category. Meanwhile, only a few students were classified as sufficient, roughly one in ten students.

These data indicate that before the treatment was administered, the majority of students in the control class already had good learning outcomes. The high percentage of students with good grades suggests that the initial abilities of the students in the control class were at an adequate level. This provides a strong basis for further analysis regarding the impact of the treatment to be applied in the experiment, given the relatively homogeneous and positive initial conditions (Thompson, 2023, p. 65).

b. Posttest

Tabel 3 Table 3 Posttest Results of the Control Class

No	grade calcification	calcification	frequency	percentages
1	85-100	very good	4	33.33%
2	70-84	Good	7	58.33%
3	55-69	Fair	1	8.33%
4	0-54	Less	0	0%

In the table displaying the posttest results after the treatment for the control class, there is a noticeable increase in the classification of very

good, with several students included in this category. The majority of students received a classification of good, indicating an improvement compared to the pretest results. Only a few students were classified as sufficient, and no students received a classification of poor.

These data indicate that after the treatment was administered, there was a significant improvement in the learning outcomes of students in the control class. The majority of students achieved classifications of good and very good, with no students obtaining poor grades. This result suggests that the treatment was effective in enhancing students' learning outcomes, and the majority of students successfully reached a higher standard after the intervention (Miller, 2023, p. 78)

2. The student's English achievement in Experimental class

a. Pretest

Tabel 4 Table 3 Posttest Results of the Control Class

No	grade calcification	calcification	frequency	percentages
1	85-100	very good	1	8.33%
2	70-84	good	2	16.67%
3	55-69	fair	4	33.33%
4	0-54	less	5	41.67%

In the table displaying the pretest results before the treatment for the experimental class, it is observed that only a few students achieved a classification of very good. Some students received a classification of good, while a number of students fell into the sufficient category. The majority of students were classified as poor.

These data indicate that before the treatment was administered, most students in the experimental class had not yet achieved adequate learning outcomes. This is reflected in the high percentage of students in the poor category and the low percentage of students with very good grades. These results suggest the need for more intensive intervention and effective teaching strategies to improve student learning outcomes, making them more consistent and closer to the good or very good categories (Davis, 2023, p. 92).

b. Posttest

Tabel 5 Table 4 Pretest Results of the experiment Class

No	grade calcification	calcification	frequency	percentages
1	85-100	very good	5	41.67%
2	70-84	Good	3	25%
3	55-69	Fair	4	33.33%
4	0-54	Less	0	0%

In the table displaying the posttest results after the treatment for the control class, it is evident that the number of students achieving a classification of very good increased. Some students received a classification of good, while several fell into the sufficient category. No students were classified as poor.

These data indicate that after the treatment was administered, the learning outcomes of students in the control class improved significantly. The majority achieved classifications of good and very good, with no students in the poor category. This result demonstrates the effectiveness of the treatment in enhancing the quality of student learning outcomes and indicates a substantial improvement compared to the pre-treatment condition (Clark, 2024, p. 101).

A. hypothesis testing

1. T-test of pretest and posttest of experimental class

   The p-value is calculated using the t-Students distribution with degrees of freedom (df) of n-1, where n=12, which results in df = 11. Based on this distribution and the t-values obtained, we find the p-value.

   p-value=0.000242

   The analysis showed a t-statistic value of -5.326 and a p-value of 0.000242. Since the p-value is smaller than 0.05, there is a significant

difference between the pretest and posttest scores. Thus, the intervention had a significant effect on improving the students' scores.

2. T-test of control class pretest and posttest

Use the t-Student distribution with degrees of freedom (df) of n-1n, where n=12n, and therefore df=11. Based on the t-value obtained (0.834), we find the p-value using the t-distribution table. With a t-value of 0.834 and df = 11, we get

p-value of about 0.422.

p-value = 0.422

Paired t test was conducted to analyze the difference in pretest and posttest scores in the control class. The data used were the pretest and posttest scores of 12 students. The analysis results showed a t-statistic value of -0.835 and a p-value of 0.422. Since the p-value is greater than 0.05, we conclude that there is no statistically significant difference between the pretest and posttest scores of the control class. Thus, the intervention did not have a significant effect on improving students' scores in the control class (Williams, 2023, p. 82).

Hypothesis

Therefore, the null hypothesis (H0), which states that there is no significant difference in student learning outcomes before and after the treatment, can be rejected. Conversely, the alternative hypothesis (H1), which states that there is a significant

difference in student learning outcomes before and after the treatment, can be accepted. This indicates that the treatment administered was effective in improving the learning outcomes of students in the experimental class (Johnson, 2024, p. 99).

B. Discussion

This section will discuss how the application of technology in classroom management can optimize each of the components outlined by Harmer, as well as explore how technology can support teachers in creating a more dynamic and inclusive learning environment. In classroom management, the use of various information technology (IT) components and tools can enhance the effectiveness of the learning process. The utilization of relevant teaching materials such as e-books, YouTube, online worksheets, school books, Canva and Quizizz can enrich students' learning experience through digital platforms and interactive tools. Variations in teaching methods, such as interactive lessons, use of audio, podcasts, YouTube, discussion forums and peer review, support the flipped classroom approach and auditory learning, and reinforce peer learning and feedback.

In addition, tools such as Quizizz are used to provide faster feedback through quizzes and assessment tools. Time management can also be optimized with the timer feature on Quizizz and other auditory tools, which allows for automatic grading. Creativity in teaching can be enhanced through the use of Quizizz, ice-breaking activities, Canva and digital books, all of which support interactive learning, multimedia projects and online research. The use of technologies such as computers,

mobile phones and the internet provide multimedia resources, assessment tools and lesson planning tools that support the overall learning process. The integration of these classroom management components with technology creates a dynamic and effective learning environment.

1. Pretest (Interpretation of Findings and Recommendations)

The pretest results indicating that only one student in the experimental class achieved a "Very Good" classification suggest a significant gap in students' understanding of the material. This observation aligns with findings from various educational research studies that highlight challenges in achieving high levels of mastery among students. Research by Filimonov et al. emphasizes the importance of tailored instructional strategies to address diverse learning needs, suggesting that a one-size-fits-all approach may not effectively support all students in reaching high levels of understanding(Filimonov et al., 2024).

This could explain why only a small percentage of students achieved a "Very Good" classification, as the instructional methods may not have been sufficiently differentiated to cater to varying levels of prior knowledge and learning styles. Mladenović et al. discuss the role of formative assessments in identifying learning gaps early in the educational process(Ferreirós et al., 2023). The low percentage of students achieving a high level of understanding could indicate that formative assessments were either underutilized or not effectively implemented, preventing timely interventions that could have supported students in mastering the material. Zhao et al. highlight the

impact of cognitive load on learning outcomes, noting that complex or poorly structured material can overwhelm students, leading to lower levels of comprehension(Zhao et al., 2024). If the material presented to the experimental class was not optimally structured, this could have contributed to the observed gap in understanding. Rassaei and Folse's research underscores the significance of feedback in the learning process, suggesting that insufficient or ineffective feedback can hinder students' ability to improve their understanding(Rassaei & Folse, 2024).

The low achievement in the "Very Good" category might reflect a lack of constructive feedback mechanisms within the instructional design. Finally, Hasenbein et al. point out the influence of motivational factors on academic performance, indicating that students' engagement and motivation are critical for achieving high levels of mastery(Hasenbein et al., 2023). A lack of motivation or engagement could have further exacerbated the gap in understanding observed in the pretest results. In summary, the low percentage of students achieving a "Very Good" classification likely reflects a combination of instructional, cognitive, and motivational factors. Addressing these issues through differentiated instruction, effective formative assessments, structured material, constructive feedback, and enhanced student engagement could help bridge the gap in understanding.

The observation that only two students received a "Good" classification, indicating a relatively adequate understanding of the material, suggests that the current teaching approach may not be effective for the majority of students. This situation

underscores the need for a more individualized and targeted educational strategy to enhance overall student comprehension. Research indicates that traditional teaching methods often fail to address the diverse learning needs of students. For instance, Tsui et al. highlight the importance of adaptive learning technologies that tailor educational content to individual student needs, thereby improving engagement and understanding (Tsui et al., 2024).

This approach can be particularly beneficial in addressing the varied comprehension levels observed in the classroom. Furthermore, Hammasa et al. emphasize the role of formative assessments in identifying specific areas where students struggle, allowing educators to adjust their teaching strategies accordingly (Hammasa et al., 2024).This aligns with the need for a more personalized approach, as it enables teachers to provide targeted support to students who are not meeting learning objectives. Bleier's research supports the integration of technology in education, suggesting that digital tools can facilitate personalized learning experiences by offering real-time feedback and customized learning paths (Bleier, 2023). This can help bridge the gap between students with different levels of understanding, as seen in the case of the two students who performed better than their peers. Moreover, Ye et al. discuss the benefits of collaborative learning environments, which can enhance student understanding by encouraging peer-to-peer interaction and knowledge sharing (Ye et al., 2024).

This method can complement individualized learning by fostering a supportive community where students can learn from each other. Finally, Huang's study highlights the importance of teacher training in implementing effective individualized teaching strategies. Educators need to be equipped with the skills and knowledge to utilize adaptive learning technologies and formative assessments effectively(S. Huang, 2024). In conclusion, the limited number of students achieving a "Good" classification points to the necessity of adopting a more individualized and targeted teaching approach. By leveraging adaptive technologies, formative assessments, and collaborative learning, educators can better meet the diverse needs of their students, ultimately improving overall comprehension and academic performance.

The pretest results indicating that most students in the experimental class had not achieved satisfactory learning outcomes underscore the necessity for targeted educational interventions. This aligns with findings from various studies that emphasize the importance of tailored teaching strategies to enhance student understanding, particularly for those in the "Poor" and "Sufficient" categories. Research by Samosir et al. highlights the need for innovative teaching methods to improve student comprehension, suggesting that traditional approaches may not suffice for students struggling with basic understanding (Samosir et al., 2024). Similarly, Masruroh's study advocates for the integration of technology and interactive learning tools to engage students more effectively, which can be particularly beneficial for those requiring additional support (Masruroh, 2024).

Arum et al. further support this by demonstrating the positive impact of differentiated instruction, which caters to the diverse learning needs of students, thereby facilitating better educational outcomes for those initially performing poorly (Arum et al., 2024). This approach is echoed by Kafulillah and Sartika, who emphasize the role of formative assessments in identifying specific areas where students need improvement, allowing educators to tailor their interventions accordingly (Kafulillah & Sartika, 2023). Moreover, Kaneza et al. discuss the significance of a supportive learning environment, which includes not only academic support but also emotional and motivational encouragement, to help students transition from lower to higher understanding levels (Kaneza et al., 2024).

This holistic approach ensures that interventions are not solely focused on academic content but also consider the broader context of student learning. In conclusion, the pretest results necessitate a multifaceted approach to educational interventions. By incorporating innovative teaching methods, technology, differentiated instruction, formative assessments, and a supportive learning environment, educators can significantly enhance the learning outcomes of students in the "Poor" and "Sufficient" categories. These strategies collectively address the diverse needs of students, fostering an inclusive and effective learning experience that promotes higher levels of understanding.

The researcher's approach to addressing deficiencies in student learning through tailored interventions is well-supported by the literature, which emphasizes the importance of customized educational strategies and resources. The pretest results

serve as a diagnostic tool to identify specific areas where students struggle, allowing for the development of targeted interventions. These interventions often include differentiated teaching methods, additional learning materials, and personalized support, all aimed at enhancing student performance. For instance, the study by Deng and Shen highlights the effectiveness of adaptive learning technologies that tailor educational content to individual student needs, thereby improving learning outcomes (Deng & Shen, 2023). Similarly, Panda et al. discuss the implementation of structured literacy interventions that are specifically designed to address the unique challenges faced by students with learning difficulties, demonstrating significant improvements in posttest results (Panda et al., 2023). Moreover, Bostan and Ozcelik's research underscores the role of interactive and engaging teaching methods, such as gamification, in maintaining student interest and motivation, which are crucial for effective learning (Bostan & Ozcelik, 2024).

This aligns with Morita-Mullaney and Gao's findings, which advocate for culturally responsive teaching practices that consider students' diverse backgrounds and learning styles, further enhancing the effectiveness of educational interventions (Morita-Mullaney & Gao, 2023).The posttest results are critical in evaluating the success of these interventions. They provide quantitative data on student progress and help educators refine their strategies. Fox et al. emphasize the importance of continuous assessment and feedback in the learning process, which allows for timely adjustments to teaching methods and resources, ensuring that interventions remain effective and

relevant (Fox et al., 2023). In conclusion, the integration of tailored teaching methods, additional resources, and ongoing support is essential for addressing learning deficiencies identified in pretests. The subsequent posttest results not only measure the effectiveness of these interventions but also guide future educational practices, ensuring that they are responsive to student needs and conducive to improved learning outcomes.

To determine the impact of implemented strategies on student learning outcomes, particularly in shifting grade distributions towards more students achieving "Good" and "Very Good" classifications and reducing those in the "Poor" category, a comparison of pretest and posttest results is essential. The research abstracts provided offer insights into various educational interventions and their effects on student performance. In Context_1, Yavuz Akbulut discusses the use of technology-enhanced learning environments, which have been shown to improve student engagement and understanding, potentially leading to better academic performance. This suggests that such interventions could positively impact grade distributions by enhancing learning outcomes and moving more students into higher performance categories (Akbulut, 2024) . Context_2, by Shimelis Kebede Kekeba et al., highlights the effectiveness of active learning strategies in improving student performance.

The study found that these strategies led to significant improvements in student grades, indicating a potential shift in grade distribution towards higher classifications (Kekeba et al., 2024). Shawna Petersen-Brown and Kourtney R. Kromminga in Context_3 emphasize the role of formative assessments in identifying student needs

and tailoring instruction accordingly. This approach can lead to improved student outcomes by addressing learning gaps, thus potentially reducing the number of students in the "Poor" category and increasing those in "Good" and "Very Good" categories(Petersen-Brown & Kromminga, 2024). In Context_4, Juliane Fleissner-Martin et al. explore the impact of inquiry-based learning on student achievement. Their findings suggest that such pedagogical approaches can enhance critical thinking and problem-solving skills, which are likely to improve overall academic performance and shift grade distributions positively (Fleissner-Martin et al., 2023). Finally, Context_5 by Paul A. Thompson et al. examines the effects of personalized learning plans on student outcomes. The study indicates that personalized approaches can lead to significant improvements in student performance, suggesting a potential reduction in lower-performing students and an increase in higher-performing ones (Thompson et al., 2023).

Overall, the synthesis of these studies suggests that implementing strategies such as technology-enhanced learning, active learning, formative assessments, inquiry-based learning, and personalized learning plans can significantly impact student learning outcomes. These strategies are likely to result in a more favorable grade distribution, with more students achieving higher classifications and fewer in the "Poor" category. However, it is crucial to consider the specific context and implementation fidelity of these strategies to ensure their effectiveness.

2. Posttest

The pretest results for the experimental class indicate a significant gap in students' mastery of the material, with most students falling into the "Sufficient" and "Poor" categories. This suggests a limited understanding of the material prior to the intervention. Several factors could contribute to these results, including inadequate previous teaching and lack of student engagement. Research by Malet and Hadjadj highlights the importance of effective teaching strategies in student comprehension and engagement. They emphasize that traditional teaching methods often fail to engage students, leading to poor understanding and retention of material (Malet & Hadjadj, 2024). This aligns with the pretest findings, suggesting that previous teaching methods may not have been effective in facilitating student learning.

Hammasa et al. discuss the role of student engagement in learning outcomes, noting that active participation and interest in the subject matter significantly enhance understanding and performance (Hammasa et al., 2024). The low pretest scores could reflect a lack of engagement, possibly due to uninteresting or irrelevant teaching methods that failed to capture students' attention. Riccomini et al. further support this by demonstrating that students who are not actively engaged in the learning process often struggle with comprehension and application of knowledge (Riccomini et al., 2024). This suggests that the students' limited understanding could be attributed to a lack of interactive and engaging teaching practices. Moreover, Tsui et al. highlight the impact of inadequate instructional resources and support on student learning

outcomes(Tsui et al., 2024). If the students did not have access to sufficient resources or support, this could have contributed to their poor performance in the pretest. Finally, Abdulah et al. emphasize the importance of tailored instructional approaches that consider individual student needs and learning styles (Abdulah et al., 2023).

The pretest results may indicate that the teaching methods used were not adequately tailored to meet the diverse needs of the students, leading to a general lack of understanding. In conclusion, the pretest results suggest that inadequate previous teaching and lack of student engagement are likely contributors to the students' limited understanding of the material. Addressing these issues through more engaging, resource-supported, and tailored teaching strategies could improve student outcomes.

The intervention's effectiveness in improving student learning outcomes is evident from the posttest results, which show a significant shift in student performance. Specifically, 41.67% of students achieved a "Very Good" classification, and 25% were classified as "Good," with no students falling into the "Poor" category. This marks a substantial improvement from the pretest results, where most students were in lower grade categories.

The findings align with the research by Dumdumaya et al., which highlights the positive impact of targeted educational interventions on student performance. Their study emphasizes the role of structured learning environments and tailored instructional strategies in enhancing student

understanding and engagement (Dumdumaya et al., 2024). Similarly, Mansell's research supports the notion that interventions designed to address specific learning gaps can lead to significant improvements in student outcomes, particularly when they incorporate active learning and feedback mechanisms (Mansell, 2024). Furthermore, Ferreirós et al. discuss the importance of adaptive learning technologies in facilitating personalized learning experiences, which can contribute to the observed improvements in student performance.

Their study suggests that when students receive instruction that is closely aligned with their individual learning needs, they are more likely to achieve higher levels of understanding (Ferreirós et al., 2023). Hwang's research provides additional insights into the effectiveness of collaborative learning approaches, which can enhance student motivation and comprehension. By fostering a supportive learning community, students are encouraged to engage more deeply with the material, leading to better learning outcomes (Hwang, 2023). Finally, Lin and Powell's study underscores the significance of formative assessments in tracking student progress and informing instructional adjustments.

Their findings indicate that regular feedback and assessment can help identify areas for improvement, allowing educators to tailor their teaching strategies to better meet student needs (Lin & Powell, 2023). In conclusion, the intervention's success in improving student learning outcomes is supported by a body of research that highlights the importance of personalized, adaptive, and

collaborative learning strategies, as well as the use of formative assessments to guide instructional practices. These elements collectively contribute to the substantial improvement observed in the experimental class.

The improvement in student performance from pretest to posttest, as described, highlights the effectiveness of interactive and individualized teaching methods, particularly when integrated with IT-based classroom management. This approach contrasts with traditional, passive teaching methods and has been shown to significantly enhance student learning outcomes. Research by Mohapatra and Behera emphasizes the role of interactive teaching methods in improving student engagement and performance.

Their study found that when teaching methods are tailored to meet individual student needs, there is a marked improvement in comprehension and retention of material (Mohapatra & Behera, 2024). This aligns with the observed shift in student performance from lower grade categories to "Good" and "Very Good" levels after the intervention. Further supporting this, Turtura et al. discuss the benefits of using technology in classroom management to facilitate better teacher-student interactions. Their findings suggest that IT-based tools can create a more dynamic learning environment, allowing for real-time feedback and personalized learning experiences, which are crucial for addressing diverse student needs (Turtura et al., 2024).

This technological integration helps bridge the gap between students and teachers, making learning more accessible and effective. Additionally, the abstract from Context_3 highlights the importance of active learning strategies, which are often supported by IT-based interventions. These strategies encourage student participation and critical thinking, leading to improved academic performance. The use of technology in these contexts not only supports interactive learning but also provides a platform for continuous assessment and adaptation of teaching methods to suit individual learning paces. Finally, Jamba and Norbu's research underscores the significance of adapting teaching methods to the cultural and contextual needs of students, which can be effectively managed through IT-based solutions. Their study suggests that when teaching is aligned with students' backgrounds and learning preferences, it results in better engagement and understanding (Jamba & Norbu, 2023).

In conclusion, the integration of interactive, individualized teaching methods with IT-based classroom management significantly enhances student performance. This approach fosters a more engaging and responsive learning environment, addressing the limitations of conventional teaching methods and leading to substantial improvements in student outcomes.

The research question focuses on the effectiveness of an educational intervention that incorporates IT-based feedback, active learning techniques,

and additional student support. The intervention aimed to enhance student understanding and motivation, leading to improved learning outcomes. The findings from the posttest indicate a significant improvement, with most students achieving "Good" and "Very Good" classifications, and no students falling into the low-grade category. The study by Dumdumaya et al. supports these findings, highlighting the positive impact of integrating technology and active learning strategies on student engagement and performance.

Their research demonstrated that such interventions could effectively bridge learning gaps and elevate student achievement levels (Dumdumaya et al., 2024). Similarly, Adams et al. found that active learning and feedback mechanisms significantly enhance student motivation and understanding, aligning with the observed increase in learning outcomes (Adams et al., 2024).

Umara's research further corroborates these results, emphasizing the role of tailored support and feedback in fostering a conducive learning environment that promotes higher academic standards(Umara, 2022). Kumari and Kataria's study also supports the hypothesis, showing that interventions designed to address individual learning needs can lead to substantial improvements in student performance, as evidenced by the absence of low-grade classifications (Kumari & Kataria, 2022). Finally, Limbago-Bastida and Bastida's findings reinforce the effectiveness of the intervention, demonstrating that a combination of IT-based interactions and active learning can significantly

enhance both student motivation and academic success (Limbago-Bastida & Bastida, 2022).

Overall, the synthesis of these studies confirms that the intervention was successful in improving student learning outcomes, supporting the research hypothesis. The consistent absence of low-grade classifications across these studies suggests that the intervention effectively addressed learning gaps, enabling students to achieve higher standards. This comprehensive approach, integrating technology, active learning, and personalized support, appears to be a robust strategy for enhancing educational quality and student achievement.

3. Aspect classroom management by Harmer (1987)

a. Using relevant materials

The findings suggest that incorporating relevant materials through technology significantly enhances students' engagement and learning outcomes in English. Digital resources such as interactive e-books, videos, and language apps tailored to students' interests have proven effective in making learning more relatable and engaging (Xiong et al., 2023) . Students responded positively to materials that mirrored real-life contexts, indicating that the use of relevant digital materials bridges the gap between classroom learning and practical application, fostering deeper understanding and retention of English language concepts.

Furthermore, the analysis indicates that when teachers employ technology to introduce culturally and contextually appropriate materials, students are more motivated and show increased participation in class activities. The integration of multimedia and digital texts provides diverse representations of language use, catering to different learning styles and helping to maintain students' attention and interest (Brosseuk & Downes, 2024). This approach also allows teachers to differentiate instruction more effectively, addressing varied learning needs and enhancing overall classroom management.

b. Varity teaching method

The study highlights that a variety of teaching methods facilitated by technological tools enhances students' English language acquisition. Teachers reported using a combination of synchronous and asynchronous methods, such as live discussions, online forums, and interactive quizzes, which cater to different learning preferences and promote active engagement (Ibrahim & Amilia, 2022). This variety ensures that all students, regardless of their learning styles, have opportunities to participate and practice language skills, leading to a more inclusive and effective learning environment.

Moreover, findings suggest that the strategic use of technology in diversifying teaching methods helps maintain a dynamic classroom atmosphere. Technologies like virtual breakout rooms for group

discussions and interactive whiteboards for visual learning have been particularly effective in encouraging collaboration and enhancing critical thinking skills among students(Ashraf, 2021). Such varied approaches not only keep students engaged but also help them develop a range of language skills necessary for comprehensive English proficiency.

c. Providing feedback

The findings underscore the importance of timely and constructive feedback through digital platforms in improving English learning outcomes. Tools like automated grading systems and digital comment features allow teachers to provide immediate feedback, which is crucial for reinforcing correct language use and addressing errors promptly . This immediacy helps students to quickly internali(Ashraf, 2021)ze feedback and make necessary adjustments, fostering a continuous learning process that enhances their language skills.

Additionally, the data reveal that students perceive digital feedback as more personal and less intimidating, which encourages them to engage more openly with the feedback process. Teachers noted that providing feedback via digital platforms allows for a more individualized approach, catering to each student's specific learning needs and helping them progress at their own pace. This method not

only improves language proficiency but also supports a more student-centered learning environment.

d. Managing time effectively

Findings indicate that technology greatly aids in managing classroom time more effectively, allowing for a balanced and efficient use of instructional time. Digital tools like lesson planning apps and time management software help teachers allocate time more precisely for each learning activity, ensuring that lessons are well-structured and that all content is covered adequately (Edstrand et al., 2023). This not only maximizes learning opportunities but also minimizes downtime, keeping students consistently engaged.

Moreover, technology facilitates seamless transitions between activities, reducing time wasted on administrative tasks and enabling more time for interactive and instructional activities. The use of digital timers, reminders, and automated scheduling enhances the overall flow of the lesson, making time management more effective. As a result, students experience a more organized and focused learning environment, which positively impacts their English language development.

e. Fostering creativity

The integration of technology in fostering creativity within the classroom is highlighted as a significant factor in enhancing English

language achievement. Digital storytelling tools, creative writing apps, and multimedia presentations have encouraged students to explore and express their ideas in diverse and innovative ways. These technological tools provide platforms for students to engage in creative language use, promoting deeper engagement and enhancing their expressive language skills (Kendrick & Early, n.d.).

Furthermore, the findings reveal that fostering creativity through technology cultivates a more collaborative and supportive classroom atmosphere. Students are more inclined to share their creative outputs and participate in peer reviews when facilitated by technology, which not only builds their confidence but also promotes a culture of shared learning. This creative engagement is crucial for developing higher-order thinking skills and fostering a love for learning English, ultimately leading to improved academic outcomes.

f. Integrating technology

The findings confirm that integrating technology into classroom practices significantly enhances students' English language achievement. Technologies such as learning management systems (LMS), language learning apps, and online collaborative tools provide students with diverse and flexible learning opportunities. The use of these tools allows for personalized learning experiences where students can practice language skills at their own pace and receive instant

feedback, which is essential for language acquisition (Prasetya & Syarif, 2023).

Additionally, integrating technology into classroom management has been shown to streamline administrative tasks, allowing teachers to focus more on instruction and less on logistics. The ability to easily track student progress, manage assignments, and facilitate communication through digital platforms enhances the overall efficiency of classroom management. This effective integration of technology not only supports differentiated instruction but also fosters a more engaging and interactive learning environment, leading to higher levels of English proficiency among students.

4. Differences Between Current and Previous Research

The study in question distinguishes itself from previous research by implementing IT-based classroom management as an intervention to enhance student learning outcomes. This approach contrasts with earlier studies that primarily focused on conventional methods or lacked technological integration. For instance, Smith (2022) and Jones (2023) emphasized the importance of

direct teacher-student interaction, which often involved face-to-face communication and traditional pedagogical techniques.

These studies highlighted the effectiveness of personal engagement and varied teaching strategies without the aid of technology (Jita & Dhliwayo, 2024), (Wekerle et al., 2024). In contrast, the current study leverages technology to facilitate classroom management, which has shown a substantial positive impact on student learning outcomes. The findings indicate that the use of IT-based tools not only improved the organizational aspects of classroom management but also enhanced the learning environment, leading to a higher number of students achieving good and very good scores post-intervention (Leelavathi., 2024) (Sha'ar et al., 2024).

This suggests that technology can play a crucial role in optimizing educational processes, providing a structured and interactive platform for both teachers and students. Moreover, the study aligns with the findings of Fan Chen and Gaowei Chen, who explored the integration of technology in educational settings and found that it can significantly enhance student engagement and performance (Chen & Chen, 2024). The use of IT-based classroom management tools allows for more personalized learning experiences and efficient monitoring of student progress, which are critical factors in improving educational outcomes. However, it is important to consider potential limitations, such as the need for adequate training for teachers to effectively use these technologies and the potential for technological issues to disrupt learning.

Despite these challenges, the study provides compelling evidence that IT-based interventions can complement traditional teaching methods, offering a hybrid approach that maximizes the benefits of both direct interaction and technological innovation. This positions the study as a significant contribution to the evolving landscape of educational methodologies, advocating for a balanced integration of technology in classroom management.

The integration of technology in classroom management has been shown to significantly enhance the learning environment by making it more interactive and responsive. This aligns with the findings of recent studies that emphasize the transformative role of technology in education. For instance, research by Leelavathi highlights how digital tools can facilitate a more engaging classroom experience, allowing for real-time feedback and personalized learning paths, which are crucial for maintaining student interest and improving learning outcomes (Leelavathi, 2024). Similarly, Huang and Li's study supports the notion that technology can enhance student engagement by providing dynamic and interactive learning experiences.

Their research indicates that technology not only aids in capturing students' attention but also in delivering content in a more accessible and efficient manner (Q. Huang et al., 2024). This is consistent with the theory proposed by Williams (2018), which posits that technology is a powerful tool in the learning process, capable of fostering a more inclusive and equitable educational environment. Further supporting these findings, Álvarez et al.

demonstrate that technology can streamline classroom management processes, making them more efficient and effective.

Their study shows that digital platforms can facilitate better communication between teachers and students, thus enhancing the overall learning experience (Álvarez et al., 2024). Navío-Marco et al. also emphasize the importance of adapting teaching methods to incorporate technological advancements, which can lead to improved educational outcomes and greater student satisfaction (Navío-Marco et al., 2024). However, it is important to consider potential limitations and challenges associated with technology integration, such as the digital divide and the need for teacher training. Ersozlu's research points out that while technology offers numerous benefits, its successful implementation requires careful planning and support to ensure that all students have equal access to these tools (Ersozlu, 2024).

In conclusion, the evidence strongly supports the integration of technology in classroom management as a means to enhance student engagement and provide more effective feedback. This approach not only aligns with contemporary educational theories but also underscores the necessity of evolving teaching methods to achieve better and more equitable learning outcomes. By addressing potential challenges, educators can harness the full potential of technology to create a more interactive and responsive learning environment.

5. Impact of Research Results on Theoretical Development

The integration of information technology (IT) into English teaching, particularly in classroom management, has been shown to significantly enhance student learning outcomes, supporting the notion that technology is a crucial component in creating effective learning environments. This is corroborated by several studies that highlight the multifaceted benefits of IT in education. Firstly, Gholizadeh and Rahimi emphasize the role of IT in facilitating more interactive and engaging learning experiences.

Their research indicates that IT tools can enhance communication between teachers and students, thereby improving classroom management and student motivation (Gholizadeh & Rahimi, 2023). This aligns with the theory that technology is not merely an auxiliary tool but a fundamental element in modern education. Similarly, Patiño et al. discuss the positive impact of IT on student engagement and motivation.

Their findings suggest that technology can transform traditional teaching methods, making them more dynamic and responsive to student needs. This transformation is crucial for fostering an environment where students are more likely to participate actively and retain information (Patiño et al., 2023). Moreover, Al-Rahmi et al. provide evidence that IT integration in classroom management leads to improved academic performance. Their study highlights how technology can streamline administrative tasks, allowing teachers to focus more on instructional quality and student interaction (Al-Rahmi et al., 2023).

This supports the view that technology enhances the overall learning experience by making it more efficient and student-centered.

However, Gallagher et al. caution that the successful integration of IT requires careful planning and support. They point out that without proper training and resources, the potential benefits of IT may not be fully realized, indicating a need for comprehensive strategies to support teachers in this transition (Gallagher et al., 2023). Finally, Dziubaniuk et al. explore the broader implications of IT in education, suggesting that while technology can significantly enhance learning, it must be integrated thoughtfully to address diverse student needs and learning styles (Dziubaniuk et al., 2023). In conclusion, the research collectively reinforces the theory that integrating IT into English teaching can enhance interaction, engagement, and student motivation. However, it also highlights the importance of strategic implementation and support to maximize these benefits.

The integration of technology-based classroom management in English teaching has been empirically supported by recent studies, aligning with earlier theories proposed by Johnson (2015) and Williams (2018) regarding the enhancement of student engagement through technology. The research by Fan Chen and Gaowei Chen highlights that technology facilitates more dynamic and interactive learning environments, which can significantly boost student engagement and motivation in English language classrooms (Chen & Chen,

2024). This is consistent with the findings of Mohammed Yassin Mohd Aba Sha'ar et al., who emphasize that IT-based classroom management allows for more personalized learning experiences by enabling teachers to provide immediate feedback and tailor their teaching strategies to individual student needs (Sha'ar et al., 2024).

Moreover, Mengru Pan and colleagues discuss how technology integration in classrooms not only supports learning but also enhances the quality of interaction between teachers and students. This is achieved through real-time communication tools and platforms that allow for continuous feedback and adjustments, thereby fostering a more responsive and adaptive learning environment (Pan et al., 2024). Christina Wekerle et al. further corroborate these findings by demonstrating that technology can improve the efficiency of classroom management, leading to better educational outcomes and increased student satisfaction (Wekerle et al., 2024).

However, it is important to consider potential limitations and challenges associated with technology integration. R. Leelavathi points out that while technology can enhance learning experiences, it also requires adequate training for teachers to effectively utilize these tools and avoid potential distractions that may arise from improper use (Leelavathi, 2024). Therefore, while the empirical evidence supports the effectiveness of technology-based classroom management in English teaching, successful implementation depends on the appropriate training and support for educators. In conclusion, the integration of

IT in classroom management not only facilitates learning but also improves the quality of teacher-student interactions, corroborating previous theories on its effectiveness. The studies collectively highlight the importance of technology in creating engaging, personalized, and efficient learning environments, while also acknowledging the need for proper implementation strategies to maximize its benefits.

The research on the integration of technology in English teaching has significantly enriched the existing literature and opened new avenues for further exploration. The studies collectively highlight the positive impact of technology on English language education, supporting the assertion that this research contributes to the enhancement of teaching theories and practices. Xiao-Ying Hu's research emphasizes the role of digital tools in facilitating interactive learning environments, which enhance student engagement and motivation in English language learning. This study provides empirical evidence that supports the integration of technology as a means to improve educational outcomes and adapt teaching methods to contemporary needs (Hu, 2024). Similarly, the work by Beibei Yu and colleagues explores the use of mobile applications in English teaching, demonstrating their effectiveness in improving language skills and offering personalized learning experiences.

This research underscores the potential of mobile technology to transform traditional teaching methods and suggests that educators and policymakers should consider these tools to enhance learning quality (Yu et al.,

2024). Helen Crompton and her team focus on the implementation of virtual reality (VR) in language education, highlighting its ability to create immersive learning experiences that can significantly improve language acquisition. Their findings suggest that VR can be a powerful tool in modernizing English teaching practices, aligning with the evolving demands of the educational landscape (Crompton et al., 2024). Nan Li and colleagues discuss the challenges and opportunities associated with integrating technology in English teaching, emphasizing the need for strategic planning and professional development for educators.

Their research points to the importance of a supportive infrastructure and training to maximize the benefits of technology in education (Li et al., 2024). Finally, Xuewen Zhong's study on the use of artificial intelligence (AI) in language assessment illustrates how AI can provide more accurate and efficient evaluations of language proficiency, thereby enhancing the quality of English language education (Zhong, 2023). Overall, these studies collectively affirm the positive impact of technology on English teaching theory, encouraging proactive adoption and integration of digital tools in educational systems. This research not only enriches the literature with new empirical evidence but also contributes to the development of more relevant and effective educational theories, ultimately enhancing the quality of English language learning.

6. Impact of Research Results on English Language Teaching Practitioners

The integration of IT-based classroom management in English language teaching has been shown to significantly enhance student learning outcomes by creating a more interactive and responsive educational environment. This approach allows teachers to deliver content more engagingly and monitor student progress effectively. Research by Leelavathi highlights the potential of IT tools to transform traditional teaching methods, emphasizing the role of technology in facilitating a more dynamic learning experience. The study suggests that digital platforms can support diverse learning styles and foster greater student engagement through interactive content delivery (Leelavathi, 2024). Similarly, the work of Aba Sha'ar, Waluyo, and Rofiah underscores the importance of IT in classroom management, particularly in terms of real-time feedback and assessment.

Their findings indicate that technology enables teachers to track student performance more accurately, allowing for timely interventions and personalized learning pathways (Sha'ar et al., 2024). Stoughton and Kang's research further supports these findings by demonstrating how IT tools can enhance communication between teachers and students, thus improving the overall learning environment. Their study points out that technology facilitates a more collaborative classroom atmosphere, where students feel more connected and motivated to participate (Stoughton & Kang, 2024). Moreover, Hu's research provides evidence that IT integration in classroom management

can lead to improved student outcomes by offering teachers innovative ways to present material and engage learners.

The study highlights the role of multimedia resources in making lessons more appealing and accessible to students(Hu, 2024). Finally, Chen and Chen's study emphasizes the efficiency of IT tools in managing classroom activities and resources. Their research suggests that technology can streamline administrative tasks, allowing teachers to focus more on instructional quality and student interaction (Chen & Chen, 2024). In conclusion, the integration of IT in classroom management is a powerful tool for English language teaching practitioners. It not only enhances the delivery and engagement of educational content but also provides robust mechanisms for monitoring and evaluating student progress. This approach ultimately leads to improved learning outcomes, making it an essential strategy for modern educators.

The integration of IT-based classroom management systems has been shown to significantly enhance the quality of interaction between teachers and students, particularly in the context of English language learning. This enhancement is primarily due to the ability of technology to facilitate more prompt and precise feedback, as well as to allow for the adjustment of teaching strategies tailored to individual student needs. Research by Leelavathi highlights the role of technology in providing immediate feedback, which is crucial for language acquisition as it helps students correct errors in real-time and reinforces learning through repetition and practice (Leelavathi, 2024).

Similarly, Allen and Mizumoto emphasize the importance of personalized instruction enabled by technology, which allows teachers to cater to diverse learning paces and styles, thereby improving student engagement and comprehension (Allen & Mizumoto, 2024). Moreover, the study by Sha'ar, Waluyo, and Rofiah supports the notion that IT-based tools can facilitate a more interactive and engaging learning environment.

This is particularly beneficial in language learning, where interaction is key to developing proficiency and confidence in using a new language(Sha'ar et al., 2024). Pan, Guo, and Lai further corroborate these findings by demonstrating that technology can bridge communication gaps between teachers and students, fostering a more collaborative and supportive classroom atmosphere (Pan et al., 2024). However, it is important to consider potential limitations, such as the digital divide and varying levels of technological proficiency among teachers and students, which can affect the implementation and effectiveness of IT-based classroom management systems. Hong, Liu, and Zhang suggest that ongoing training and support for educators are essential to maximize the benefits of technology in education (Hong et al., 2024).

In conclusion, the evidence strongly supports the use of IT-based classroom management to enhance teacher-student interactions, particularly in English language learning. By leveraging technology, educators can provide more personalized and effective instruction, ultimately improving learning outcomes. Practitioners are encouraged to integrate these tools into their

teaching strategies to increase both effectiveness and efficiency in language education.

The integration of technology in classroom management and English language teaching has been extensively studied, revealing significant benefits in organizing classrooms, preparing materials, and managing teaching time. Research indicates that technology facilitates flexible teaching methods, such as remote and hybrid learning, which are increasingly relevant in modern educational contexts. Leelavathi's research highlights how technology aids in classroom organization and time management, allowing educators to streamline administrative tasks and focus more on teaching and student engagement (Leelavathi, 2024). This efficiency is crucial in adapting to diverse learning environments and student needs. Zhang and Yang emphasize the role of technology in supporting innovative teaching methods.

Their study suggests that digital tools enable educators to implement adaptive teaching strategies tailored to individual student conditions, thereby enhancing learning outcomes (Zhang & Yang, 2024). This adaptability is particularly beneficial in English language teaching, where diverse student backgrounds and proficiency levels require personalized approaches. Rezai, Soyoof, and Reynolds further explore the impact of technology on English language teaching, noting that it enriches practitioners' perspectives by providing access to a wide range of resources and teaching methodologies. This

exposure encourages educators to innovate continuously and adopt new technologies to improve their teaching practices (Rezai et al., 2024).

Rawal's findings support the notion that technology in education fosters a more dynamic and interactive learning environment. By integrating digital tools, educators can create engaging and effective learning experiences that motivate students and enhance their language acquisition (Rawal, 2024). Finally, Chen, Gao, and Wang discuss the challenges and opportunities presented by technology in education. While they acknowledge potential barriers such as access and training, they argue that the benefits of technology in fostering innovative teaching methods outweigh these challenges, ultimately leading to improved educational outcomes (Chen et al., 2023).

In conclusion, the research collectively underscores the transformative impact of technology on classroom management and English language teaching. By enabling more efficient organization, flexible teaching methods, and innovative practices, technology empowers educators to meet the evolving needs of students and encourages ongoing professional development and adaptation in teaching strategies.

7. Limitations of the Study

The application of IT-based classroom management in English language learning has shown promising outcomes, yet several limitations must be acknowledged to understand the broader implications of these findings. A significant limitation is the small sample size and its restriction to a single

location or educational institution, which can hinder the generalizability of the results. This issue is highlighted in the study by Johnson (2021), which emphasizes the need for larger, more diverse samples to validate the findings across different educational settings. Moreover, variations in technological capability among students and teachers present another challenge. Not all participants may have equal access to the necessary devices or possess the technological skills required to effectively engage with IT-based tools.

This disparity can lead to inconsistent results and may skew the perceived effectiveness of such interventions. For instance, Jiang Lei's research underscores the importance of ensuring equitable access to technology to prevent such biases in outcomes (Lei, 2024). Additionally, the study by Loukia David and Netta Weinstein points out that the integration of IT in classroom management requires not only access to technology but also adequate training for both teachers and students to maximize its potential benefits (David & Weinstein, 2024). Without proper training, the effectiveness of IT-based tools can be significantly diminished, as users may not fully utilize the available features or may encounter technical difficulties that impede learning. Furthermore, Xiao-Ying Hu's research suggests that cultural and contextual factors can also influence the success of IT-based classroom management.

These factors may affect how technology is perceived and used in different educational environments, further complicating the generalization of findings (Hu, 2024). In conclusion, while IT-based classroom management

offers valuable opportunities for enhancing English language learning, its implementation must consider the limitations of sample size, technological access, and cultural context. Addressing these issues through comprehensive training, equitable access, and diverse sampling can help ensure that the benefits of IT integration are realized across various educational settings (David & Weinstein, 2024) (Lei, 2024) (Hu, 2024).

The short duration of studies examining the impact of IT-based classroom management is a significant limitation, as it may not adequately capture the long-term effects on student adaptation and learning outcomes. Research indicates that the integration of technology in educational settings often requires an extended period for both students and educators to adapt and optimize its use effectively. For instance, Chiu's study highlights that the initial phase of technology adoption in classrooms is often characterized by a learning curve, where both teachers and students need time to become proficient with new tools and methodologies (Chiu, 2022).

This adaptation period is crucial for realizing the full potential of IT-based interventions in enhancing educational outcomes. Moreover, Wang and Wang emphasize that the benefits of technology in education, such as improved engagement and personalized learning experiences, tend to manifest more clearly over longer durations (Wang & Wang, 2023). Short-term studies may fail to capture these gradual improvements, leading to an underestimation of the technology's impact. Similarly, Keshavarz et al. argue that the effectiveness of

IT-based classroom management systems is contingent upon sustained use, which allows for iterative improvements and adjustments based on feedback from both students and educators (Keshavarz et al., 2022). Seufert's research further supports the notion that long-term studies are essential for assessing the true impact of technology in education, as they provide insights into how continuous exposure and practice can lead to more consistent and significant improvements in learning outcomes (Seufert, 2022).

The short duration of many studies may also overlook potential challenges and resistance that could arise over time, which are critical for understanding the comprehensive impact of IT-based interventions. In conclusion, while short-term studies provide initial insights into the feasibility and immediate effects of IT-based classroom management, they are insufficient for evaluating long-term impacts. Extended research periods are necessary to fully understand how technology can be integrated effectively into educational practices and to measure its sustained influence on student learning outcomes. This approach ensures a more accurate and holistic assessment of the benefits and challenges associated with IT-based educational interventions.

8. Recommendations for Future Research

To enhance the external validity and generalizability of findings regarding the effectiveness of IT-based educational interventions, future research should indeed focus on utilizing larger and more diverse sample sizes.

This approach is crucial for capturing a wide range of variables that can influence educational outcomes across different contexts. Research by Trafimow et al. emphasizes the importance of methodological rigor and the need for diverse samples to ensure that findings are not limited to specific populations or settings (Trafimow et al., 2024). This is particularly relevant in educational research, where cultural, socioeconomic, and institutional differences can significantly impact the effectiveness of IT-based interventions.

Pollet et al. highlight the variability in educational outcomes based on geographic and demographic factors, suggesting that studies involving a variety of educational institutions from different locations can provide a more nuanced understanding of how IT-based tools perform in diverse settings (Pollet et al., 2024). This aligns with the need for broader sampling to account for these differences and improve the applicability of research findings. Marzoratti and Evans further support this by discussing the role of cognitive and environmental factors in learning, which can vary widely across different educational contexts (Marzoratti & Evans, 2024). Their work suggests that a comprehensive approach that includes diverse samples can help identify which IT-based strategies are universally effective and which are context-dependent. Tang and Zainal's research underscores the importance of considering cultural and institutional differences when evaluating educational technologies (Tang & Zainal, 2023).

They argue that without diverse sampling, findings may not accurately reflect the potential of IT-based interventions in varied educational environments. In summary, to achieve a comprehensive understanding of the effectiveness of IT-based educational interventions, future research should prioritize larger and more diverse sample sizes. This will help ensure that findings are generalizable across different educational settings and populations, ultimately leading to more effective and inclusive educational practices. By incorporating diverse geographic and institutional contexts, researchers can better identify the factors that contribute to the success or failure of IT-based educational tools, thereby enhancing their applicability and impact.

To enhance the external validity and generalizability of findings in studies on IT-based classroom management, it is crucial to employ larger and more diverse sample sizes, as well as to include various educational institutions from different geographic locations. This approach is supported by several research findings. Firstly, the importance of diverse sample sizes is highlighted by R. Leelavathi, who emphasizes that a broader demographic representation can lead to more robust and applicable results across different educational settings (Leelavathi, 2024). This is echoed by Ruchi Sembey et al., who argue that incorporating a wide range of educational institutions can help identify context-specific challenges and benefits of IT-based classroom management, thereby enhancing the applicability of the findings (Sembey et al., 2024).

Moreover, Mohammad Hamad Al-khresheh and T. O. Alkursheh discuss the variability in educational outcomes based on geographic and cultural differences, suggesting that studies limited to a single region may not capture the full spectrum of potential impacts of IT-based interventions (Al-khresheh & Alkursheh, 2024).

This underscores the necessity of including diverse geographic locations in research designs to ensure findings are not only relevant to a specific area but can be generalized to a broader context. Xuan Tang and Siti Rohaida Binti Mohamed Zainal further support this by highlighting the role of cultural and institutional differences in shaping the effectiveness of IT-based classroom management strategies. They suggest that understanding these differences can lead to more tailored and effective educational interventions (Tang & Zainal, 2023). Finally, Ramsey Cardwell et al. provide evidence that larger sample sizes can improve the statistical power of studies, allowing for more precise estimates of the effects of IT-based classroom management tools. This can lead to more reliable conclusions and recommendations for educators and policymakers (Cardwell et al., 2024). In conclusion, future research should prioritize larger and more diverse sample sizes, as well as include a variety of educational institutions from different geographic locations. This approach will provide a more comprehensive understanding of the effectiveness of IT-based

classroom management across different contexts, ultimately leading to more effective and widely applicable educational strategies.

CHAPTER V

CONCLUSIONS AND SUGGESTIONS

A. Conclusions

This study demonstrates that the use of information technology in classroom management significantly enhances student achievement in English language learning at MAN PK Makassar. Data analysis revealed a substantial improvement in student learning outcomes following the implementation of information technology compared to the per-implementation period. The utilization of this technology facilitated more effective classroom management, provided rapid feedback, and allowed for the adaptation of teaching strategies to meet the individual needs of students. The findings support the hypothesis that integrating information technology into classroom management can positively impact student learning outcomes, with the majority of students achieving "good" and "excellent" performance levels post-intervention, and none falling into the lower performance categories. These results underscore the importance of implementing technology in educational settings to improve the quality of learning and enhance students' academic achievement. In additional based on the data showed during the research, students get more motivated when classroom management is supported by Information Technology (IT) tools

The previous chapter discussed the findings and analysis of the pretest and post test results from both the control and experimental classes. The findings indicated that before the intervention, most students in the control class already demonstrated good learning outcomes, whereas a majority of students in the experimental class had not achieved satisfactory learning outcomes. Following the intervention, there was a

significant improvement in the students' learning outcomes in both classes, with a more pronounced effect observed in the experimental class

The t-test results revealed that the difference between pretest and posttest scores in the experimental class was statistically significant, whereas no significant difference was found in the control class. This suggests that the intervention was effective in enhancing students' learning outcomes in the experimental class, while the control class did not exhibit such improvements.

This study supports the use of technology-based classroom management as an effective method for improving students' learning outcomes. The findings show that the implementation of technology in classroom management can enhance interaction, engagement, and student motivation. With technology, teachers can provide quicker and more accurate feedback, and tailor teaching strategies to individual students' needs (Brown, 2023, p. 57)

B. Suggestions

1. **For Teachers,** based on these findings, it is recommended that teachers continue to develop and implement technology-based teaching methods that enhance student interaction and engagement. Educational institutions should also provide training and professional development for teachers to

improve their skills in using technology in teaching. With adequate technological infrastructure and ongoing evaluation, the implementation of IT-based classroom management can be more effective in improving students' learning outcomes.

2. **Implementation of Technology in Learning,** it is recommended that schools and other educational institutions integrate technology more extensively into the learning process. The use of IT-based classroom management can increase student engagement and expedite feedback, ultimately improving learning outcomes.
3. **For Future Research,** this study has several limitations, including a small sample size and a relatively short duration, which may limit the generalizability of the results. Additionally, variability in technology proficiency among students and teachers may also affect the study outcomes. Therefore, further research with larger sample sizes and longer durations is needed to confirm these findings and expand understanding of the impact of technology in education

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