THE USE OF CHATGPT AND CLASSPOINT ONLINE APPS TO ENHANCE ENGLISH TEACHERS' EFFICIENCY IN CONDUCTING FORMATIVE ASSESSMENT

Submitted in Partial Fulfillment of the Requirements for the Degree of Master of Education (M.Pd.) at the Postgraduate Program of State Islamic Institute of Parepare (IAIN Parepare)

A THESIS

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If any plagiarism is found in this thesis, I understand that the academic degree I obtained will be revoked by law.

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ABSTRACT

Name	:	Aswar
Reg. Num.	:	2220203879102002
Title	:	The Use of ChatGPT and ClassPoint Online Apps to Enhance English Teachers' Efficiency in Conducting Formative Assessment

The high administrative workload often hinders teachers from developing and implementing innovative and interactive formative assessments. Advances in technology, particularly artificial intelligence and digital learning platforms offer potential solutions to improve English teachers' efficiency in formative assessment. This study aims to examine the use of ChatGPT and ClassPoint to improve English teachers' efficiency in formative assessment at junior high schools and to analyze teachers' perceptions of using these two technologies.

This research employs a quantitative approach with a pre-experimental one-group pretest-post-test design, involving 9 English teachers from 7 schools. Data were collected through pretests and post-tests to measure the improvement English teachers' efficiency in formative assessment, as well as questionnaires to assess teachers' perceptions of using ChatGPT and ClassPoint. Statistical analysis utilized a paired t-test to compare pretest and post-test results, while perception data were analyzed using descriptive statistics.

The study results showed a significant improvement of the English teachers' efficiency in formative assessment, with the average score increasing from 14.89 (pretest) to 31.11 (post-test), supported by a t-statistic value of -17.65 and a p-value < 0.01. The questionnaire analysis revealed very positive responses from teachers, with an average of 90% of respondents strongly agreeing that these technologies are beneficial. Specifically, 89% of respondents stated that ChatGPT helped in creating diverse questions, 91% agreed it sped up the question-making process, and 93% affirmed that ClassPoint facilitated the implementation of formative assessments. These findings indicated that the integration of ChatGPT and ClassPoint effectively improved English teachers' efficiency in formative assessment, and creating a more efficient and interactive assessment process.

Keywords: *Formative Assessment, ChatGPT, ClassPoint, Teachers' Efficiency, Teachers' Perception*

ABSTRAK

Name	:	Aswar
Reg. Num.	:	2220203879102002
Title	:	Penggunaan Aplikasi Daring ChatGPT dan ClassPoint untuk Meningkatkan Efisiensi Guru Bahasa Inggris dalam Penilaian Formatif

Beban kerja administratif yang tinggi sering kali menghambat guru dalam mengembangkan dan menerapkan penilaian formatif yang inovatif dan interaktif. Kemajuan teknologi, khususnya kecerdasan buatan dan platform pembelajaran digital, menawarkan solusi potensial untuk meningkatkan efisiensi guru Bahasa Inggris dalam penilaian formatif. Penelitian ini bertujuan untuk mengkaji penggunaan ChatGPT dan ClassPoint dalam meningkatkan efisiensi guru Bahasa Inggris di sekolah menengah pertama dalam penilaian formatif serta menganalisis persepsi guru terhadap penggunaan kedua teknologi ini.

Penelitian ini menggunakan pendekatan kuantitatif dengan desain pra-eksperimen one-group pretest-post-test, melibatkan 9 guru Bahasa Inggris dari 7 sekolah. Data dikumpulkan melalui pretest dan post-test untuk mengukur peningkatan efisiensi guru Bahasa Inggris dalam penilaian formatif, serta angket untuk menilai persepsi guru terhadap penggunaan ChatGPT dan ClassPoint. Analisis statistik dilakukan menggunakan uji t-berpasangan untuk membandingkan hasil pretest dan post-test, sementara data persepsi dianalisis menggunakan statistik deskriptif.

Hasil penelitian menunjukkan peningkatan signifikan dalam efisiensi guru Bahasa Inggris dalam penilaian formatif, dengan skor rata-rata meningkat dari 14,89 (pretest) menjadi 31,11 (post-test), didukung oleh nilai t-statistik sebesar -17,65 dan nilai $p < 0,01$. Analisis angket mengungkapkan respons yang sangat positif dari para guru, dengan rata-rata 90% responden sangat setuju bahwa teknologi ini bermanfaat. Secara spesifik, 89% responden menyatakan bahwa ChatGPT membantu dalam membuat beragam pertanyaan, 91% setuju bahwa teknologi ini mempercepat proses pembuatan soal, dan 93% mengakui bahwa ClassPoint memfasilitasi pelaksanaan penilaian formatif. Temuan ini menunjukkan bahwa integrasi ChatGPT dan ClassPoint secara efektif meningkatkan efisiensi guru Bahasa Inggris dalam penilaian formatif, menciptakan proses penilaian yang lebih efisien dan interaktif.

Kata Kunci: Penilaian Formatif, ChatGPT, ClassPoint, Efisiensi Guru, Persepsi Guru

تجريد البحث

الإسم : أسوار

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موضوع الرسالة : استخدام تطبيقي ChatGPT و ClassPoint لتحسين كفاءة معلمي اللغة الإنجليزية في إجراء التقييمات التكوينية

غالبًا ما تعيق أعباء العمل الإدارية العالية المعلمين في تطوير وتنفيذ التقييمات التكوينية المبتكرة والتفاعلية. تقدم التطورات التكنولوجية، لا سيما الذكاء الاصطناعي ومنصات التعلم الرقمية، حلولاً محتملة لتحسين كفاءة معلمي اللغة الإنجليزية في إجراء التقييمات التكوينية. تهدف هذه الدراسة إلى فحص استخدام منصتي ChatGPT و ClassPointفي تحسين كفاءة معلمي اللغة الإنجليزية في المدرسة المتوسطة في التقييم التكويني وتحليل تصورات المعلمين حول استخدام هاتين التقنيتين.

استخدمت هذه الدراسة منهجًا كميًا باستخدام تصميم ما قبل الاختبار التجريبي وبعده لمجموعة واحدة، وشملت 9 معلمين للغة الإنجليزية من 7 مدارس. جُمعت البيانات من خلال الاختبار القبلي والبعدي لقياس مدى تحسن كفاءة معلمي اللغة الإنجليزية في التقييم التكويني، بالإضافة إلى استبيان لتقييم تصورات المعلمين تجاه استخدام برنامجي ChatGPT و .ClassPoint تم إجراء تحليل إحصائي باستخدام اختبار التاء المزدوج للمقارنة بين نتائج الاختبار القبلي والبعدي، في حين تم تحليل بيانات الإدراك باستخدام الإحصاءات الوصفية.

أظهرت النتائج تحسنًا ملحوظًا في كفاءة معلمي اللغة الإنجليزية في إجراء التقييم التكويني، حيث ارتفع متوسط الدرجات من 14.89 (الاختبار القبلي) إلى 31.11 (الاختبار البعدي)، مدعومًا بقيمة إحصائية t -17.65 وقيمة .p <0.01 كشف تحليل الاستبيان عن استجابة إيجابية للغاية من المعلمين، حيث وافق 90% من المشاركين في المتوسط بشدة على أن التكنولوجيا كانت مفيدة. وعلى وجه التحديد، ذكر 89% من المستجيبين أن ChatGPT يساعد في إنشاء مجموعة متنوعة من الأسئلة، ووافق 91% منهم على أن التكنولوجيا تسرّع عملية إنشاء الأسئلة، وأقر 93% منهم بأن ClassPoint يسهل إجراء التقييمات التكوينية. تشير النتائج إلى أن التكامل بين ChatGPTو ClassPoint يحسن بشكل فعال من كفاءة معلمي اللغة الإنجليزية في إجراء التقييم التكويني، مما يخلق عملية تقييم أكثر كفاءة وتفاعلية.

الكلمات الرئيسية: التقييم التكويني ,ClassPoint, ChatGPT ,كفاءة المعلم، تصور المعلم .

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CHAPTER I
INTRODUCTION

A. *Background of the Research*

Education is a key element in shaping and developing human resources, where education functions as a medium for transmitting knowledge, skills, and values, and as a determining factor in shaping an individual's character, ethics, and positive attitudes[1]. In other words, education is a fundamental component that plays a vital role in the formation and development of human resources. Its role is not merely limited to being a means of transferring knowledge and technical skills but also serves as a vessel for instilling values that shape one's character. Through education, a person is not only equipped with academic competencies but also formed in their ethics and positive attitudes, enabling them to become a well-rounded and qualified individual capable of contributing to society. Recent global studies have emphasised this crucial role, particularly as education systems worldwide adapt to rapidly changing technological landscapes[2]. Based on all the statements, it can be concluded that education is a fundamental component in shaping and developing human resources. Education not only serves as a medium for transmitting knowledge and technical skills but also plays a crucial role in instilling values that shape character, ethics, and positive attitudes in individuals. The importance of education is increasingly emphasized in current global studies, especially as education systems worldwide must adapt to rapid technological advancements.

In education, there is a process of forming individuals who are not only intellectually intelligent, and capable of scientific and philosophical thinking, but

[1] Ramadhani, N., & Musyarapah. (2024). Tujuan Pendidikan Islam dalam Membentuk Generasi Berakhlak Mulia. *Jurnal Pendidikan Nusantara*, *3*(2), 78–91. https://doi.org/10.55080/jpn.v2i2.88.

[2] Latif, Putra, W. U., & Nanny Mayasari. (2023). Kurikulum Berorientasi Karier di Perguruan Tinggi Jawa Barat: Menghubungkan Pendidikan dengan Tuntutan Dunia Kerja Melalui Pembelajaran Praktis dan Keterampilan Industri. *Jurnal Pendidikan West Science*, *1*(08), 528–537. https://doi.org/10.58812/jpdws.v1i08.599.

also able to develop their spirituality and form fundamental basic abilities, both cognitive and emotional, directed towards human nature and others[3]. In other words, education is a process of shaping individuals that includes intellectual intelligence, scientific and philosophical thinking abilities, spiritual development, as well as basic cognitive and emotional skills that lead to human qualities. Teachers, as the main agents in the educational process, play an important role in shaping the quality of learning. The quality of learning is one aspect of the quality of education. The quality of education itself is the school's ability to manage from operational aspects to components related to the school; therefore, the quality of learning is the school's ability to conduct its teaching[4].

In the education world, Teacher assessment competence is a crucial aspect of an effective learning process. Effective assessment practices can improve student achievement when implemented properly[5]. Proper assessment not only measures student achievement but also guides teaching strategies[6]. Teacher assessment competence is fundamental in the educational process, especially in the context of English language learning at the junior high school level. Given the role of English as a global language and a 21st-century skill, improving the assessment competence of English teachers is essential to prepare students for the challenges of the future[7]. However, teachers often face a heavy administrative workload, which includes lesson planning, processing assessment results, and filling out reports. A study by Puskurbuk (2019) found that, in general, teachers in Indonesia are still focused on preparing administrative documents. Horn and Banerjee (2009) criticized the practices of teachers in developing countries, which often seem to prioritize

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[3] Tutuk Ningsih, "Implementasi Pendidikan Karakter untuk Meningkatkan Mutu di Sekolah," *Book* 7, no. 1 (2015): 61. https://eprints.uinsaizu.ac.id/2464/1/BUKU%20IMPLEMENTASI%20PENDIDIKAN%20KARAKTER.pdf

[4] Ketut Bali Sastrawan, "Profesionalisme Guru dalam Upaya Meningkatkan Mutu Pembelajaran," *Jurnal Penjaminan Mutu* 2, no. 2 (2016): 65, https://doi.org/10.25078/jpm.v2i2.73.

[5] Anindito Aditomo, "Panduan Pembelajaran dan Asesmen Pendidikan Anak Usia Dini, Pendidikan Dasar, dan Pendidikan Menengah Edisi Revisi Tahun 2024," 2024, 1–72.

[6] W. James Popham, "Assessment Literacy for Teachers: Faddish or Fundamental?," *Theory into Practice* 48, no. 1 (2009): 4–11, https://doi.org/10.1080/00405840802577536.

[7] Sandra Lee McKay, *English as a Global Language*, *Handbook of Research in Second Language Teaching and Learning: Volume III*, vol. 3, 2016, https://doi.org/10.4324/9781315716893-3.

meeting administrative teaching requirements while neglecting the actual instruction of students, which requires more thorough preparation[8]. This workload can distract teachers from focusing on the development and implementation of innovative and interactive formative assessments, thus hindering their ability to provide effective evaluations. In other words, excessive administrative workloads make it difficult for teachers to adapt to more dynamic teaching approaches. In this context, it is crucial to consider how technologies like ChatGPT and ClassPoint can offer solutions to overcome administrative workloads and improve English teachers' efficiency in formative assessment. Studies show that assessment tools utilizing artificial intelligence (AI) can reduce preparation time while maintaining assessment quality, and may even improve it. Furthermore, AI-supported educational assessment tools provide numerous benefits, including improved accuracy and efficiency of assessments, generating personalized feedback for students, and allowing teachers to adjust their teaching strategies to meet the unique needs of each student[9]. With advancements in technology, particularly in artificial intelligence, there is significant potential to assist teachers in designing more efficient and interactive assessment tools.

Teachers and Lecturers, the competencies that teachers must possess include the ability to develop evaluation tools for student learning outcomes, which should prioritize authentic assessment. The integration of technology in education not only includes the use of hardware and software but also involves a paradigm shift in teaching and assessment methods[10]. With the rapid advancement of technology, assessment tools for learning outcomes can now leverage the latest technology, enabling faster evaluation through computation, automation, and communication, which can be conducted anytime and anywhere. The appropriate use of technology

[8] Dinn Wahyudin et al., "Kajian Akademik Kurikulum Merdeka," *Kemendikbud*, 2024, 1–143.

[9] Valentine Joseph Owan et al., "Exploring the Potential of Artificial Intelligence Tools in Educational Measurement and Assessment," *Eurasia Journal of Mathematics, Science and Technology Education* 19, no. 8 (2023), https://doi.org/10.29333/ejmste/13428.

[10] Ryan Gabriel Siringoringo and Muhamad Yanuar Alfaridzi, "Pengaruh Integrasi Teknologi Pembelajaran terhadap Efektivitas dan Transformasi Paradigma Pendidikan Era Digital," *Jurnal Yudistira: Publikasi Riset Ilmu Pendidikan dan Bahasa* 2, no. 3 (2024): 66–76, https://doi.org/10.61132/yudistira.v2i3.854.

can also overcome the assessment workload on teachers by simplifying the assessment process[11]. A teacher should possess eight competencies in utilizing technology, namely: 1. adapting to internet trends, 2. mastering core and additional knowledge, 3. being innovative and creative in presenting material, 4. being able to motivate students, 5. designing engaging learning experiences, 6. managing an effective learning system, 7. appropriately selecting teaching materials, and 8. managing the learning process effectively[12]. These competencies align with the TPACK (*Technological Pedagogical and Content Knowledge*) Framework and the current Digital Assessment Framework, which emphasize the importance of technological knowledge in modern teaching practices[13].

Concerning the statement above, the use of digital assessment tools, particularly in formative assessment, can reduce errors, speed up the assessment process, and provide faster feedback to students, thereby supporting more effective and efficient learning. Formative assessment is a crucial component of the learning process, especially in junior high school education, particularly in English language teaching. With technological advancements, particularly in the field of artificial intelligence and digital learning platforms, there is potential for solutions that can improve English teachers' efficiency in formative assessment. One of the technologies that can be utilized is ChatGPT and the ClassPoint online apps.

ChatGPT, an AI-based language model, has the potential to assist teachers in designing diverse and contextual questions, as well as providing fast and personalized feedback[14]. Chat GPT is a chatbot featuring a generative language model developed by OpenAI. This model is an advancement in AI technology

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[11] Evi Sapinatul Bahriah, Lathifa Utami Dewi, and Dedi Irwandi, "Pengaruh Media Penilaian Formatif Online Quizizz Terhadap Hasil Belajar Siswa Materi Sistem Periodik Unsur," *JRPK: Jurnal Riset Pendidikan Kimia* 11, no. 1 (2021): 19–26, https://doi.org/10.21009/jrpk.111.04.

[12] Muhsin Hanis and Din Wahyudin, "Pemanfaatan Artificial Intelligence (AI) dalam Penyusunan Asesmen Pembelajaran bagi Guru Sekolah Dasar," *Jurnal Ilmiah Profesi Pendidikan* 9, no. 2 (2024): 1199–1207, https://doi.org/10.29303/jipp.v9i2.2252.

[13] Elya Umi Hanik et al., "Integrasi Pendekatan TPACK (Technological, Pedagogical, Content Knowledge) Guru Sekolah Dasar SIKL dalam Melaksanakan Pembelajaran Era Digital," *JEID: Journal of Educational Integration and Development* 2, no. 1 (2022): 15–27, https://doi.org/10.55868/jeid.v2i1.97.

[14] Tom B. Brown et al., "Language Models Are Few-Shot Learners," *Advances in Neural Information Processing Systems* 2020-Decem (2020). https://splab.sdu.edu.cn/GPT3.pdf

designed to generate text by mimicking the language used by humans in speaking or writing. We can interact with Chat GPT to obtain information, answer questions, or engage in virtual conversations with an AI-based system. GPT stands for Generative Pretrained Transformer[15]. The ability of language models like ChatGPT to generate varied and contextual content demonstrates its significant potential in helping teachers create more effective and personalized assessments. Meanwhile, ClassPoint, as an online classroom management application, offers features that can facilitate assessment administration, result analysis, and data visualization[16]. ClassPoint is a web-based application that is available for free to teachers and students. This application can be used by teachers to create quizzes during the teaching and learning process, and students can answer more engaging questions with features such as multiple choice, short answer, competition mode, and more. With this application, teachers can easily create quizzes as it is integrated with PowerPoint. In other words, this technology could assist teachers in collecting, analyzing, and utilizing assessment data to improve learning. Technologies like ClassPoint can also be used to improve formative assessment practices.

In line with the statement regarding the integration of technology in education, particularly AI-based tools like ChatGPT and assessment platforms like ClassPoint offers great potential in enhancing teachers' formative assessment practices. However, there is a knowledge gap among teachers regarding effective ways to leverage technology to enhance English teachers' efficiency in conducting formative assessment. This situation is exacerbated by the lack of training in educational technology, especially involving AI-based technologies. As a result, English teachers' formative assessments have become less efficient, particularly due to the high administrative workload, such as creating lesson plans, filling out reports,

[15] Rhiyanto, D. F. P., & Rachmadiarti, F. (2023). Pengembangan Media Pembelajaran Powerpoint Interaktif Add-Ins ClassPoint Materi Bioteknologi untuk Meningkatkan Motivasi Belajar pada Peserta Didik Kelas XII SMA/MA. *Berkala Ilmiah Pendidikan Biologi (BioEdu), 12*(2), 452-465. https://ejournal.unesa.ac.id/index.php/bioedu.

[16] Stull, J., Varnum, S. J., Ducette, J., & Schiller, J. (2011). The Many Faces of Formative Assessment. *International Journal of Teaching and Learning in Higher Education*, *23*(1), 30-39. https://eric.ed.gov/?id=EJ938576

and managing various other time-consuming administrative tasks. This condition is further supported by findings from preliminary studies conducted by the researcher.

Based on the statements, the researcher was interested in studying the use of ChatGPT and ClassPoint technology to enhance English teachers' efficiency in carrying on formative assessment. The focus of this research was how the teachers created formative questions and conducted formative assessment by using ChatGPT and ClassPoint technology. Therefore, the title of this research was "The Use of ChatGPT and ClassPoint Online Apps to Enhance English Teachers' Efficiency in Conducting Formative Assessment."

B. *Research Question*

Problem formulation was crucial as it provided a clearer direction. Referring to the previously explained background, the research questions could be formulated as follows:

1. Could the use of ChatGPT and ClassPoint enhance English teachers' efficiency in conducting formative assessments?
2. What were English teachers' perceptions of using ChatGPT and ClassPoint to enhance their efficiency in conducting formative assessments?

C. *Purpose of the Research*

The objectives of the research to be conducted are as follows:

1. To determine whether the use of ChatGPT and ClassPoint could enhance English teachers' efficiency in conducting formative assessment.
2. To find out English teachers' perception of using ChatGPT and ClassPoint to enhance their efficiency in conducting formative assessments.

D. *Significant of Research*

The benefits of this research were expected to be valuable to all parties involved, particularly in the field of education. Some of the benefits include:

1. Theoretical Benefits

Theoretically, this research was expected to contribute to and advance scientific knowledge, particularly for all English teachers in Budong-Budong

Subdistrict. This contribution related to the use of ChatGPT and ClassPoint which could be utilized by English teachers to enhance their efficiency in conducting formative assessment.

2. Practical Benefits

a) For Students

For students, this research was expected to provide new knowledge about ChatGPT and ClassPoint, which could be utilized as learning tools in the classroom. It was hoped that the use of this technology would improve students' interest in learning, particularly in English subjects.

b) For Teacher

This research was expected to benefit educators by enhancing their efficiency through the use of modern technologies, such as ChatGPT and ClassPoint, which could assist teachers, particularly in creating questions and conducting formative assessments.

c) For Researcher

This research was also expected to provide new knowledge for the researcher, expand insights and thinking, and serve as a first step for the researcher to complete their education.

CHAPTER II
REVIEW OF RELATED LITERATURE

In an increasingly digital era, the integration of technology in education has become a necessity, including in the aspect of learning assessment. Formative assessment, as an integral component of the learning process, requires a more efficient and effective approach to meet the demands of modern education. This chapter presents a comprehensive review of the literature related to the use of artificial intelligence technology and interactive learning platforms in enhancing English teachers' efficiency in conducting formative assessment, particularly in the context of English language learning at the junior high school level.

This literature review is systematically structured to provide a comprehensive understanding of the research variables and their interrelationships. It begins with an overview of relevant previous studies, followed by an in-depth discussion of key concepts such as efficiency, ChatGPT, Inknoe ClassPoint, teacher competency, assessment, evaluation, education, and educational technology. Subsequently, a conceptual framework is presented to connect all these variables, concluding with the research hypotheses to be tested.

Through this literature review, it is expected to provide a strong theoretical foundation for understanding how the use of ChatGPT and ClassPoint could contribute to enhance English teachers' efficiency in conducting formative assessment at junior high schools, as well as providing a solid basis for the analysis and interpretation of research findings.

A. *Previous Related Research Findings*

Many studies have been conducted by previous researchers related to technology employed in enhancing English teachers' efficiency in conducting formative assessment. Some of them are as follows:

Firstly, Soegiarto, I., et al. by the title "*Learning Innovation Based on Artificial Intelligence (AI) Technology in Official Schools in the Era of Industrial Revolution 4.0 and Society 5.0*". This article discusses how innovations in teaching

based on Artificial Intelligence (AI) technology in official schools can contribute to addressing the dramatic changes in an increasingly complex job market, especially in the era of Industrial Revolution 4.0 and Society 5.0. This study employs a qualitative research method with a content analysis approach. The findings indicate that AI has become a major force in education, particularly in official schools, opening opportunities for personalized learning, in-depth data analysis, the development of relevant curricula, and administrative efficiency. Additionally, the article highlights several challenges, such as ethics and data privacy, as well as the need for appropriate teacher training to navigate this transformation. In facing the Industrial Revolution 4.0 and Society 5.0, official schools are expected to be wise and creative in utilizing AI to provide education that prepares students for a connected future and adapts to the evolving times[17].

In the era of Industry 4.0 and Society 5.0, education is undergoing a fundamental transformation, driving the more comprehensive integration of Artificial Intelligence (AI) technology. Technological innovation is no longer a mere complement; it has become an urgent necessity to prepare educators and learners for the complexities of future challenges. Recent studies highlight AI's significant potential to reshape the educational landscape, particularly in enhancing administrative efficiency and the teaching-learning process. For educators, AI is not just a tool but a strategic partner in designing, managing, and optimizing educational experiences. In the context of ongoing research on the use of ChatGPT and ClassPoint to enhance English teachers' efficiency in conducting formative assessments, there is a strong correlation with global trends in leveraging AI technology in education. This study specifically aims to address a fundamental challenge faced by teachers: the high administrative workload that often diverts their focus from the core teaching-learning process. Through a pre-experimental approach with a one-group pre-test and post-test design, this research seeks to comprehensively examine how AI technology can transform how English teachers

[17] Soegiarto, I., Hasnah, S., Nuraisyah Annas, A., Sundari, S., & Dhaniswara, E. (2023). Inovasi Pembelajaran Berbasis Teknologi Artificial Intelligences (AI) pada Sekolah Kedinasan di Era Revolusi Industri 4.0 dan Society 5.O. *Innovative: Journal of Social Science Research*, *3*(5), 10546–10555. Retrieved from https://j-innovative.org/index.php/Innovative/article/view/6132

design, implement, and evaluate formative assessments. Involving nine teachers from seven junior high schools in Budong-Budong District, the study not only measures efficiency but also explores educators' in-depth perceptions of implementing cutting-edge technology in their teaching practices. The research questions—related to both efficiency improvements and teachers' perceptions—indicate a comprehensive effort to understand digital transformation in education. Clearly formulated hypotheses reflect a serious intention to test the significance of AI technology, aiming to contribute empirical findings toward developing a more efficient and responsive formative assessment model. The significance of this research lies in its ability to evaluate technology while also fostering dialogue on how AI can become a strategic partner for educators. In a broader context, this study contributes to the adaptation of educational systems to meet the demands of the digital era, where adaptability and technological utilization are key prerequisites for educational success. By positioning English teachers as the research subjects, the study indirectly promotes awareness of the importance of technological literacy among educators. It emphasizes not just the adoption of technology but also understanding, integrating, and transforming pedagogical practices through digital innovation. This research aspires to establish a collaborative model between teachers and AI technology, where the two are no longer seen as separate entities but as a unified ecosystem that complements one another in creating more dynamic, personalized, and meaningful learning experiences. Thus, this study on the use of ChatGPT and ClassPoint is not merely a study on efficiency but a portrayal of educational transformation in the digital era, where technology and humanity merge to create a smarter, more responsive, and dignified future for education.

Then, Wiwin Rif'atul Fauziyati, by the title "*The Impact of Artificial Intelligence (AI) in Islamic Education Learning*". Her study aims to describe the impact of using Artificial Intelligence (AI) in Islamic education learning. The research employs a descriptive qualitative method, which is used to analyze and explain the effects of AI integration in Islamic education. Primary sources for this study are derived from literature, scientific journals, and online news related to the research problem. Data collection methods include reading, reviewing, and taking

notes on various relevant materials from literature, scientific journals, and online news. These sources are then filtered and synthesized into a theoretical framework, leading to a comprehensive conclusion. The findings of the study indicate that the use of AI in Islamic education has significant potential to enhance efficiency and effectiveness in learning processes. However, it also highlights some negative aspects of AI's impact on educational activities. In the long term, AI can become a highly valuable tool to support Islamic education learning, provided it is utilized wisely and integrated effectively into the educational system[18].

In the journey of contemporary educational transformation, the integration of Artificial Intelligence (AI) has emerged as a complex phenomenon that extends beyond mere technological innovation. These two studies, differing in focus but complementing each other, offer a multidimensional perspective on how advanced technology can redefine pedagogical practices in the digital era. The first study, focusing on Islamic education, employs a descriptive qualitative method to explore the comprehensive impact of AI in a religious context. Through an in-depth literature review, it provides insights into how technology can interact with both the spiritual and academic dimensions of education. Meanwhile, the second study, on the use of ChatGPT and ClassPoint to enhance English teachers' efficiency in formative assessment, takes a more measured and specific approach. Using a pre-experimental design and focusing on nine teachers from seven junior high schools, this research aims to translate AI's conceptual potential into practical, measurable applications. The fundamental similarity between the two studies lies in their shared spirit of exploration: understanding how AI can empower the educational process. Both studies assert that technology is not a threat but a strategic partner with the potential to optimize teaching and learning experiences.

However, their differences enrich the narrative of digital transformation in education. The study on Islamic education adopts a holistic approach, examining AI's conceptual positive and negative impacts. It compiles and analyzes primary

[18] Fauziyati, W. R. . (2023). Dampak Penggunaan Artificial Intelligence (AI) dalam Pembelajaran Pendidikan Agama Islam. *Jurnal Review Pendidikan dan Pengajaran (JRPP)*, *6*(4), 2180–2187. Https://doi.org/10.31004/jrpp.v6i4.21623

sources from literature, scientific journals, and online resources, resulting in a comprehensive mapping of the technology's potential and challenges. In contrast, the study on English teachers' formative assessment takes concrete steps to test AI's effectiveness in a specific context. By using ChatGPT and ClassPoint, this research empirically measures how technology can improve teachers' efficiency, particularly in designing and implementing assessments. The Islamic education study highlights that AI holds great potential to enhance learning efficiency and effectiveness, while emphasizing the importance of thoughtful and integrated use. This reflects an awareness of the complexity of technology, which encompasses not just technical capabilities but also ethical and pedagogical dimensions. The formative assessment study goes further by testing concrete hypotheses about improving teacher performance. Through a one-group pre-test and post-test design, it provides empirical evidence of how AI can directly help teachers manage administrative burdens and improve the quality of assessments. Both studies recognize that AI is not just a technological tool but a transformative potential capable of redefining educational practices. They offer different but complementary perspectives on how technology can be integrated into the educational ecosystem. Their methodological differences enrich our understanding. The qualitative study on Islamic education provides a conceptual framework, while the pre-experimental study on formative assessment offers concrete evidence of practical implementation. In a broader context, these studies contribute to systematic efforts to understand and shape the future of education. They not only document change but actively participate in redesigning how technology can become a strategic partner in empowering educators. In conclusion, despite their differing approaches and focuses, these studies represent essential fragments of the broader narrative of digital transformation in education. They reflect a comprehensive effort to understand, adapt, and optimize the potential of Artificial Intelligence in creating smarter, more responsive, and more meaningful learning experiences. The journey of integrating AI into education cannot be understood through a single perspective. It requires a multidimensional approach that captures the technological, pedagogical, ethical, and human complexities. These studies demonstrate that the future of education lies

in our ability to see technology not as a replacement but as an extension of human capability in intellectual and spiritual empowerment.

Then, Siti Joanna Matlan and Siti Mistima Maat in their research titled "*The Use of the Quizizz Application as an Alternative for Formative Assessment in Teaching and Learning Mathematics*". Gamification improves the teaching and learning (T&L) process by making it more interactive and creating a more enjoyable learning atmosphere. Quizizz is one example of a gamification application that can be utilized in both face-to-face and online classes. The primary requirement is that both teachers and students have internet access and devices for its implementation. Quizizz is an online quiz platform where students can engage individually or in groups. This quantitative study, conducted through a questionnaire, aims to assess students' perceptions of using the Quizizz application in mathematics T&L. The study included 53 students from various technical courses at an Industrial Training Institute in the East Region of Malaysia. Descriptive analysis of the data revealed a high overall perception of the Quizizz application among students, with an average score of 91.87%. The feedback on using such applications in mathematics teaching and learning was positive, particularly in boosting student motivation towards learning mathematics. The gamification approach has demonstrated a beneficial impact[19].

The research concludes that gamification, exemplified by the use of the Quizizz application, significantly improves the teaching and learning process in mathematics. The study, conducted with 53 students from various technical courses at an Industrial Training Institute in the East Region of Malaysia, revealed a high overall perception of the Quizizz application, with an average score of 91.87%. This indicates that students view the application positively, particularly in terms of its ability to increase motivation for learning mathematics. Overall, the findings suggest that incorporating gamification strategies like Quizizz into educational practices can effectively engage students and foster a more enjoyable and

[19] Siti Joanna Matlan and Siti Mistima Maat, "Penggunaan Aplikasi Quizizz sebagai Alternatif Penilaian Formatif dalam Pengajaran dan Pembelajaran Matematik," *Jurnal Dunia Pendidikan* 3, no. 4 (2021): 217–27, https://doi.org/10.55057/jdpd.2021.3.4.18.

interactive learning environment, ultimately leading to improved educational outcomes in mathematics.

And last, Vera Mandailina, Syaharuddin Syaharuddin, and Abdillah Abdillah in their research titled "*Training on the Application of Artificial Intelligence Technology to Improve Teachers' Competence in Developing Learning Tools*". Artificial Intelligence (AI) has become a crucial learning tool for teachers. Consequently, this activity aims to implement AI technology to improve the competence of Madrasah Aliyah (MA) teachers in preparing educational resources. A total of 20 MA teachers participated in this training, where they were introduced to various AI tools, including ChatGPT, Gemini, and Perplexity. The training methodology combined theoretical and practical instruction on utilizing AI to aid in the development of learning tools. Evaluation results revealed a positive response from participants, with an average score of 85.3.

However, participants noted that the training duration was insufficient for thoroughly exploring the material. Additionally, challenges such as poor internet connectivity disrupted the training sessions but were mitigated by sharing mobile phone networks. These findings suggest that to achieve optimal outcomes, it is essential to extend the training duration and improve the content with more practical themes. As a result, it is anticipated that the application of AI will become more effective in improving teachers' competence in creating innovative and effective educational tools[20].

The research concludes that integrating Artificial Intelligence (AI) technology into training programs significantly improves the competence of Madrasah Aliyah (MA) teachers in developing educational resources. With 20 MA teachers participating in the training and being introduced to AI tools such as ChatGPT, Gemini, and Perplexity, participants demonstrated a positive response, reflected in an average evaluation score of 85.3. However, the study identified that the training duration was inadequate for a comprehensive exploration of the

[20] Vera Mandailina, Syaharuddin Syaharuddin, and Abdillah Abdillah, "Pelatihan Penerapan Teknologi Artificial Intelligence untuk Meningkatkan Kompetensi Guru dalam Menyusun Perangkat Pembelajaran," *Darma Diksani: Jurnal Pengabdian Ilmu Pendidikan, Sosial, dan Humaniora* 4, no. 1 (2024): 26–37, https://doi.org/10.29303/darmadiksani.v4i1.4928.

material, and challenges such as poor internet connectivity impacted the sessions. These findings underscore the need to extend training duration and enrich the curriculum with more practical applications to maximize effectiveness. Ultimately, the successful application of AI is expected to empower teachers to create innovative and effective learning tools, thereby improving the overall quality of education.

In the landscape of contemporary education, four previous studies and the current researcher form a comprehensive narrative about the digital transformation through Artificial Intelligence (AI). Each study, while focusing on different aspects, fundamentally explores how technology can become a strategic partner in empowering educators. The research by Soegiarto et al. opens a window of understanding about how AI-based innovations can contribute to dramatic changes in the increasingly complex labor market. They view AI not merely as a tool, but as a major force in education, creating opportunities for personalized learning and in-depth data analysis. In contrast, the study by Wiwin Rif'atul Fauziyati explores the impact of AI in the context of Islamic education, offering a more philosophical and ethical perspective on the integration of technology. Meanwhile, Siti Joanna Matlan's research takes a more practical approach by investigating the potential of gamification through the Quizizz app. Involving 53 students from the Industrial Training Institute, this study demonstrates that technology can significantly boost learning motivation, creating a more interactive and enjoyable learning environment. Vera Mandailina and her colleagues went a step further by conducting direct training for 20 Madrasah Aliyah teachers, empirically testing how AI can enhance teachers' competencies in developing educational tools. The current researcher, working with 9 English teachers across 7 junior high schools in the Budong-Budong district, becomes a crucial node in this narrative. Using a pre-experimental method and focusing on the use of ChatGPT and ClassPoint for formative assessment, this study not only documents change but also actively participates in redesigning how technology can become a strategic partner for educators.

Despite their different methodologies and focuses, the four previous studies and the current one share the same spirit of exploration. In other words, they seek to understand how AI can empower the educational process. They consistently assert that technology is not a threat, but an extension of human capability that can optimize the learning-teaching experience.

The challenges identified are not only technical but also pedagogical and ethical. Each study highlights the need for wise integration, comprehensive training, and awareness of the complexity of technology. They do not see AI as a quick fix, but as an ecosystem that requires collaboration between humans and technology.
In a broader context, these studies contribute to a systematic effort to understand and shape the future of education. They offer a multidimensional perspective on how technology can be a catalyst for transformation, not just a mechanical tool. From personalized learning to overcoming administrative burdens, from boosting student motivation to enhancing teacher competencies, AI is presented as a strategic partner with the potential to reshape the educational landscape. The current research in the Budong-Budong district adds a layer of complexity to this narrative. By empirically testing teachers' efficiency in formative assessment using ChatGPT and ClassPoint, it provides concrete evidence of the transformative potential of technology. This study not only asks whether technology can enhance efficiency but also explores how technology can change pedagogical practices.

B. *Some Pertinent Ideas*

1. Efficiency

   a. Understanding The Concept of Efficiency

   Efficiency generally refers to achieving the desired results using the least amounts of resources possible. In this context, resources can include time, effort, cost, or other materials. Efficiency means maximizing output or results with limited input, ensuring no wastage[21]. The concept of efficiency has evolved significantly from its early roots in industrial engineering to its

[21] Endang Sih Pujiharti, "Peran Sumber Daya Pendidik dalam Perspektif Ekonomi Pendidikan," *Jurnal Manajemen Pendidikan Islam* 1, no. 2 (2022): 35–50.

current application across various fields, including education, technology, and organizational management. This evolution is marked by an increased focus not only on resource optimization but also on the quality and sustainability of outcomes[22].

In its most basic form, efficiency can be understood through the relationship between input and output. A process or system is considered efficient when it produces maximum output with minimal input, or when it achieves the desired results using optimal resource utilization[23].

Based on the statements, efficiency refers to achieving the desired outcomes using the least amount of resources possible, such as time, effort, cost, or other materials. It means maximizing output with limited input while avoiding waste. The concept of efficiency has evolved from its origins in industrial engineering to applications across various fields, including education, technology, and organizational management. This development is marked by a greater focus on resource optimization as well as the quality and sustainability of outcomes. Essentially, efficiency can be understood as the relationship between input and output, where a process is considered efficient if it produces maximum output with minimal input, or achieves the desired results through optimal resource utilization.

b. Efficiency in the Context of Education

In the educational context, efficiency takes on particular significance as it relates to both administrative processes and pedagogical outcomes. Educational efficiency encompasses the optimization of teaching and learning processes, resource allocation, and the achievement of educational objectives[24].

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[22] Indrayani, H. (2012). Penerapan teknologi informasi dalam peningkatan efektivitas, efisiensi dan produktivitas perusahaan. *Jurnal El-Riyasah*, *3*(1), 48-56. http://dx.doi.org/10.24014/jel.v3i1.664

[23] Dika Husni Sanjaya, "Analisis Value for Money dalam Pengukuran Kinerja Dinas Kesehatan Kota Surabaya," *Jira: Jurnal Ilmu dan Riset Akuntansi* 8, no. 12 (2019): 1–16, http://jurnalmahasiswa.stiesia.ac.id/index.php/jira/article/view/2719/2729.

[24] Abd. Muiz, Anisah, R., Khoiruddin, U., & Indrioko, E. (2024). Kebijakan Pendidikan dalam Mengatasi Masalah Kualitas, Kuantitas Efektivitas dan Efisiensi. *IHSAN : Jurnal Pendidikan Islam*, *2*(3), 46–64. https://doi.org/10.61104/ihsan.v2i3.272.

The concept of educational efficiency has become increasingly important in contemporary education systems, especially as institutions face growing pressure to deliver high-quality education while managing limited resources. Educational efficiency can be measured through various metrics, including student achievement levels, resource utilization, time management, and cost-effectiveness of educational programs. These measurements help institutions identify areas for improvement. Modern educational efficiency is closely linked to the integration of technology, as digital tools and platforms offer new ways to streamline educational processes while maintaining or enhancing educational outcomes. Technology can facilitate efficient lesson planning, assessment, and administration, enabling educators to focus more on student engagement and personalized learning[25].

c. Efficiency in Assessment and Evaluation

Assessment efficiency refers to the ability to conduct meaningful educational evaluations while minimizing resource expenditure. This includes considerations of time, effort, and material resources required for both teachers and students during the assessment process. The evolution of assessment practices has been significantly influenced by the need for greater efficiency, leading to the development of various innovative assessment methods and tools. These innovations aim to overcome administrative burdens while maintaining the quality of assessments. Technology has played a crucial role in enhancing assessment efficiency, particularly through the introduction of automated assessment systems, digital assessment platforms, and adaptive testing technology. These tools have revolutionized the way educators conduct assessments and evaluations. Recent research indicates that efficient assessment practices can have a significant impact on teaching

[25] Febrianti, I., Tuffahati, J., Rifai, A., Affandi, R. H., Pradita, S., Akmalia, R., & Siahaan, A. (2023). Pengaruh Penggunaan Teknologi Informasi dalam Manajemen Perencanaan Pendidikan untuk Meningkatkan Efisiensi Pendidikan. *Academy of Education Journal*, *14*(2), 506–522. https://doi.org/10.47200/aoej.v14i2.1763.

and learning outcomes. When assessments are conducted efficiently, teachers can spend more time on instruction and student support[26].

d. Technology Integration and Efficiency

The integration of technology in education has been a major driver of increased efficiency. Digital tools and platforms offer new possibilities for streamlining educational processes while enhancing the quality of educational delivery. Mobile learning technology has further improved educational efficiency by providing flexible access to learning resources and enabling more efficient communication between educators and students[27].

Artificial Intelligence (AI) and machine learning technologies have emerged as powerful tools for enhancing educational efficiency. These technologies can automate routine tasks and provide personalized learning experiences[28].

e. Efficiency in Teacher Competency Development

Professional development and the improvement of teacher competencies are increasingly focused on efficiency, especially in the areas of assessment and evaluation. This focus helps ensure that teachers can manage their responsibilities effectively. Developing teacher assessment competencies requires efficient training methods and tools that can help educators master new assessment techniques without adding to their existing workload. Technology-based professional development has emerged as an efficient way to improve teacher competencies, offering flexible, accessible, and targeted training opportunities. Recent studies show that efficient professional development programs can have a significant impact on teacher

[26] Riyuzen, S. P. (2018). Buku Manajemen Peningkatan Mutu Sekolah. https://repository.radenintan.ac.id/12195/1/Manajemen%20Peningkatan%20Mutu%20Sekolah.pdf

[27] Fauzi, A. A., Kom, S., Kom, M., Budi Harto, S. E., Mm, P. I. A., Mulyanto, M. E., ... & Rindi Wulandari, S. (2023). *Pemanfaatan Teknologi Informasi di Berbagai Sektor pada Masa Society 5.0*. PT. Sonpedia Publishing Indonesia. https://bit.ly/3NCMoJh

[28] Eriana, Emi S., and Afrizal Zein. *Artificial Intelligence (AI)*. Eureka Media Aksara, 2023. https://repository.penerbiteureka.com/media/publications/567027-artificial-intelligence-ai-9482959d.pdf

performance and student learning outcomes, especially when they incorporate practical, technology-based solutions[29].

2. ChatGPT

a. Artificial Intelligence (AI)

Artificial Intelligence (AI), known in Indonesian as (*Kecerdasan Buatan*), is a field within computer science focused on creating systems and machines that can perform tasks typically requiring human intelligence. AI employs algorithms and mathematical models to allow computers and other systems to learn from data, identify patterns, and make informed decisions.

Several key concepts are associated with AI, including machine learning, neural networks, and natural language processing, among others. The advancement of AI has significantly influenced various sectors such as voice recognition, facial recognition, autonomous vehicles, healthcare, and many others[30].

In the realm of education, artificial intelligence (AI) holds significant promise for helping teachers create more efficient and effective learning materials. One application of AI in education is through the analysis of learning data. AI can gather, analyze, and interpret information about students' learning progress, both individually and collectively. This data enables teachers to better understand the learning needs of each student and to design more appropriate learning materials. Furthermore, AI can facilitate the development of adaptive learning systems that tailor the content, difficulty level, and teaching methods to suit each student's abilities and requirements. Consequently, teachers can produce more personalized and relevant learning materials, thereby improving learning efficiency and enhancing educational outcomes.

[29] Siti Khodijah, *Telaah Kompetensi Guru di Era Digital dalam Memenuhi Tuntutan Pendidikan Abad Ke-21*, *Journal of Islamic Education Policy*, vol. 3, 2018, https://doi.org/10.30984/j.v3i1.860.

[30] Eriana and Zein, "Artificial Intelligence."

b. Definition of ChatGPT

ChatGPT is a natural language AI chatbot that allows you to ask any question and receive an answer. Using the ChatGPT chatbot is straightforward; you simply type your query and get information in return. The key is to be imaginative and explore how ChatGPT reacts to various prompts. If the output isn't what you expected, you can modify your request or provide additional instructions. ChatGPT retains the context of your prior questions, enabling you to refine your inquiries rather than starting from scratch each time. For instance, asking 'Explain how the solar system was formed' will generate a more detailed response with additional paragraphs compared to simply asking 'How was the solar system formed,' even though both questions will produce fairly thorough answers. You can improve the interaction by specifying the style or tone, such as saying, 'Explain how the solar system was formed as if you were a high school teacher[31].

c. Function of ChatGPT

1) ChatGPT can be used for a variety of purposes, including language translation, creating original content, assisting programmers with coding issues, simplifying complex concepts, and generating drafts or outlines for articles. Its capabilities can significantly ease the workload for users. Moreover, ChatGPT has several additional functions, detailed below. 2) Enhancing Customer Service: Many companies are now using ChatGPT to improve their customer service. They often integrate their customer service applications with OpenAI's technology. 3) Offering Suggestions or Recommendations: Like a human, ChatGPT can provide recommendations for the latest movies, clothing, or nearby restaurants that users can visit anytime. This AI technology evaluates and responds to users' preferences and requirements. 4) Increasing Productivity: When utilized effectively, ChatGPT can greatly boost user productivity. The AI system delivers necessary information and answers within seconds. 5) Assisting in Education: ChatGPT

[31] Eriana and Zein.

is also beneficial in the educational sector. Teachers and students can access a wide range of information with the help of this artificial intelligence tool. For example, it can assist with solving math problems. 6) Conducting Conversations: Another engaging feature of ChatGPT is its ability to conduct automated conversations. Users can pose various questions, and the AI will respond as if interacting with a human. 7) Providing Diverse Information: Users can easily access different types of information through AI technology. By asking questions, they receive answers tailored to their inquiries. However, it's important to note that the information provided by the AI is only accurate up to 2021, which means users will not get the latest updates, such as asset price forecasts or weather predictions[32].

d. Advantages of ChatGPT

The primary benefit of using ChatGPT lies in its ability to deliver a wide range of information both accurately and swiftly. Additionally, this technology can provide relevant recommendations and suggestions tailored to the user's preferences. Below are some advantages of ChatGPT: 1) *Quick Responses*: ChatGPT is capable of supplying all the answers users require within just a few seconds. This feature is intentionally designed to improve responsiveness. 2) *Filtering Inappropriate Requests*: Another strength of this tool is its capacity to screen out unsuitable user requests, such as inquiries on how to harass others. ChatGPT will recognize such requests as harmful and will decline to provide answers. It will also explain the negative implications of such behaviours. 3) *Natural Language Communication*: ChatGPT is designed to communicate and respond using natural, user-friendly language. The way it conveys answers or information is straightforward, enabling users to engage in conversation as they would with another person. 4) Sensitivity to *Different Queries*: To provide accurate answers, ChatGPT is built to be

[32] Wahid Suharmawan, "Pemanfaatan ChatGPT dalam Dunia Pendidikan," *Education Journal : Journal Educational Research and Development* 7, no. 2 (2023): 158–66, https://doi.org/10.31537/ej.v7i2.1248.

sensitive to variations in queries. This allows users to pose different questions that retain the same meaning and context[33].

e. Disadvantages of ChatGPT

In addition to its advantages, there are also several drawbacks: 1) Limited Understanding: Unlike humans, who can research valid information from various sources, ChatGPT can only respond based on user queries. Therefore, even though this feature can provide answers tailored to users' needs, human oversight and intervention are still necessary. 2) Not Yet Able to Replace Creative Workers: As previously mentioned, one of ChatGPT's abilities is generating content and copywriting. However, creating content and copywriting involves more than just stringing words together. Skills such as avoiding duplication, applying empathy, incorporating variety, and conveying emotions in the text remain crucial in content creation. These aspects are essential for personalizing the output according to the target audience. Thus, this tool can be effectively used as an additional resource in the workplace, but human creativity is still irreplaceable by AI. 3) Inaccuracy of Responses: Another drawback of ChatGPT is the accuracy of its answers. The system is trained to understand various topics based on data from the internet, which means that it may occasionally provide inaccurate information. This can affect the responses, leading to potential errors. Users need to verify all answers from the chatbot. 4) Inability to Distinguish Between Facts and Opinions: Since ChatGPT is trained on internet data, there are instances where it cannot differentiate between facts and opinions. Therefore, users should always verify the information provided and not accept it uncritically. 5) Requires a Stable Internet Connection: The final drawback of ChatGPT is its need for a stable Internet connection. Accessing the service requires internet connectivity. It is crucial to ensure your internet connection is stable so that the chatbot can function optimally. Poor internet service may result in bugs and prevent the chatbot from delivering the expected answers[34].

[33] Wahid Suharmawan,
[34] Wahid Suharmawan,

f. How to Use ChatGPT

Here are the steps to use ChatGPT: 1) First, open your browser on your phone or PC. 2) Visit the website https://chat.openai.com. 4) Then, sign up by clicking on "Create an OpenAI account." 5) Register using your email, Microsoft, or Google account. 6) Next, OpenAI will send a verification code to your WhatsApp. 7) Once you receive the code, enter it, and you will be redirected to the platform's dashboard. 8) Enter your desired command. 9) Wait a few seconds for the AI to respond. 10) You're done![35].

Based on the statement, Artificial Intelligence (AI) has great potential to improve the quality of question creation in the field of education by analysing learning data. AI assists teachers in designing questions that are relevant and aligned with students' learning needs, as well as developing more adaptive and varied questions. One well-known application of AI is ChatGPT, a natural language-based chatbot. ChatGPT can be used for various purposes, including assisting in education by providing information, answering questions, and simplifying complex concepts. Although it has many advantages, such as quick responses and the ability to communicate in natural language, ChatGPT also has several drawbacks, including limited understanding and the potential for inaccuracies in its answers. Users need to verify the information provided by this AI to ensure its accuracy. Thus, ChatGPT can serve as an effective supplementary tool to support teachers in the creation of formative questions.

3. Inknoe ClassPoint

ClassPoint is a tool designed for teachers to improve their lessons and help students tackle more challenging questions, including multiple-choice, short answer, word cloud, and slide image questions. This application integrates seamlessly with PowerPoint, making it easy for teachers to create quizzes. Many users prefer Microsoft PowerPoint because of its simplicity and editability. It allows for the addition of various colors, backgrounds, images, animations, and audio to the tests

[35] Wahid Suharmawan

being presented. Incorporating ClassPoint into the educational process will certainly make it easier for teachers to conduct assessments[36].

ClassPoint is a digital classroom solution created by Inknoe that enables teachers to add annotations to PowerPoint slides, broadcast slideshows, and generate interactive questions for engaging students and gathering their responses digitally. With just one click, regular PowerPoint slides can be transformed into interactive quizzes. During the slideshow, all students can participate and respond to quiz questions using their devices. Responses can be collected or displayed live. Teachers also have the option to create quiz competitions within PowerPoint, making the learning experience feel more like a game for students. This approach not only makes learning enjoyable but also allows for automatic assessment and ranking of students, with the ability to export their answers for further analysis. Featuring a variety of pen tools, teachers can easily illustrate ideas on slides and quickly add unlimited whiteboard slides as needed. When exiting the slideshow, digital ink and whiteboard content are automatically saved. All student responses can be stored and accessed directly from within PowerPoint. Additionally, annotations on slides and digital whiteboards can be saved as part of the PowerPoint presentation. ClassPoint seamlessly integrates with various video conferencing platforms like Microsoft Teams, Google Meet, and Zoom, enhancing interactivity during online presentations and ensuring student engagement in a virtual setting[37].

The first step teachers should take is to download the application onto their laptop or personal computer. After the application is installed, ClassPoint will automatically connect with the PowerPoint software already available on the device. Students do not need to download the application; instead, they can join ClassPoint via their browser by typing ClassPoint.app/join.

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[36] Ni'mah, A. M., & Supriyo, S. (2024). Pengembangan Media Pembelajaran Interaktif Berbasis ClassPoint pada Materi Relasi dan Fungsi di SMPN 4 Pasuruan. *Jurnal Penelitian Pembelajaran Matematika Sekolah (JP2MS)*, *8*(1), 46-55. https://doi.org/10.33369/jp2ms.8.1.46-55.

[37] W-SMKN, T. D. (2023). Penggunaan Aplikasi Inknoe ClassPoint sebagai Media Pembelajaran Luring dalam Upaya Meningkatkan Hasil Belajar Perbaikan Peralatan Listrik Kelas Xi Tkl 2 Semester Gasal 2022/2023 DI SMK Negeri 1 Klego. *SPEED-Sentra Penelitian Engineering dan Edukasi*, *15*(2). http://dx.doi.org/10.55181/speed.v15i2.787.

ClassPoint includes numerous features, such as:

a) Class Code,
b) Annotation Tools,
c) Digital Whiteboard,
d) Polling Options,
e) Name-Picking Feature,
f) Word Cloud Quizzes,
g) short answer quizzes,
h) Slide Drawing Quizzes,
i) Image Upload Quizzes, and
j) Multiple-choice quizzes.

These features are visually appealing and can be integrated with other virtual learning tools like Zoom, enhancing the audio-visual experience for students[38].

Based on the statement above, ClassPoint is a tool designed to assist teachers in improving the effectiveness of learning and assessment. Its seamless integration with PowerPoint allows educators to create interactive quizzes featuring various question types, such as multiple-choice and short-answer, which can boost student engagement. Features like slide annotations, a digital whiteboard, and the ability to collect student responses in real time contribute to a more interactive and engaging learning process. Additionally, ClassPoint supports remote teaching by integrating with video conferencing platforms, facilitating student participation in virtual environments. With all these features, ClassPoint not only simplifies the assessment process for teachers but also creates a more enjoyable and effective learning experience for students.

4. Teachers Competence

The concept of "competence" is derived from the English word "competence," meaning "ability or skill." Competency refers to an educator's ability to effectively apply and utilize teaching and learning situations by employing

[38] Siti Istiqomah et al., "Penerapan Media Presentasi ClassPoint untuk Meningkatkan Hasil Belajar Mata Pelajaran Bahasa Inggris Peserta Didik Di MTsN 9 Jombang" 3, no. 1 (2024): 1–16, https://doi.org/10.5281/zenodo.10842750.

carefully prepared principles and techniques for presenting lessons, which helps students easily grasp the material. Competence encompasses the knowledge, skills, and fundamental values that are reflected in one's habitual thinking and actions. Thus, teacher competence signifies the various abilities educators possess in fulfilling their teaching roles[39].

In a broader sense, competence includes all the skills someone has to educate, which involves pedagogical knowledge (the science of teaching and understanding how to nurture and raise a child), didactic knowledge (insight into general teaching interactions, lesson preparation, and achieving effective learning outcomes), and methodological knowledge (understanding how to teach specific subjects to students).

According to Government Regulation No. 14 of 2005, Article 8 outlines the competencies that a teacher must have. There are four essential competencies that every teacher should possess: pedagogical competence, personal competence, professional competence, and social competence.

a. Teacher Pedagogical Competence

Pedagogy is the study of education. The term pedagogy originates from the Greek words "paedos," which means boy, and "agogos," which means to lead or guide. Thus, pedagogy refers to a person who assists a boy in ancient Greece, whose job was to escort their master's child to school. Figuratively, pedagogy refers to an expert who guides children toward specific life goals.

Based on the statements, Pedagogy is the study of education and the guidance of children, derived from a Greek term meaning "to escort a child." Pedagogy encompasses the knowledge and skills involved in teaching and guiding children toward specific life goals, making it essential in the educational process to help them achieve their maximum potential.

[39] Desi Nova Natalia Gultom, "Buku Standar Kompetensi Mengajar Guru," *Buku Profesi Keguruan* 2, no. 07 (2022): 1–106.

b. Teacher Personality Competence

Personality competence pertains to the qualities associated with a teacher's behavior, which should exemplify virtuous values evident in their everyday actions. This concept is deeply intertwined with the philosophy of life that aspires for teachers to serve as role models who embody these admirable values[40].

Based on the statements, this aspect is crucial in education because it reflects the behaviors and values that a teacher must possess. A teacher with good personality competence not only serves as an instructor but also as a role model for students. By instilling noble values in their daily lives, teachers can inspire and shape the character of students, thereby creating a positive learning environment that supports the moral and ethical development of students.

c. Teacher Social Competence

Social skills are derived from the terms "skilful" and "social." The word "skilful" is used to indicate a learning process, progressing from being unskilled to skilled. "Social" is used because the purpose of this training is to teach the ability to interact with others. Thus, social skills training is aimed at helping individuals develop the ability to engage effectively with those around them, enhancing their competence in both formal and informal interactions.

Social skills refer to the ability to interact and communicate effectively, whether through verbal means (direct physical interaction) or nonverbal methods (such as sign language). This also involves the capacity to display appropriate behaviour and build positive relationships with others, allowing individuals to act in line with societal expectations.

Based on the statement, emphasizes that social competence for teachers involves the ability to communicate and interact effectively with others, both through verbal and nonverbal communication. Social skills training helps teachers develop these abilities, enabling them to build positive relationships and demonstrate appropriate behaviour. This is important in both formal and informal

[40] Gultom.

contexts, allowing teachers to meet social expectations and contribute to a conducive learning environment.

d. Professional Competence of Teachers

Professionalism originates from the term "profession," which signifies a specific field of work that an individual aspires to pursue. A profession is defined as a particular job or position that necessitates specialized knowledge and skills acquired through rigorous academic training. Thus, a profession demands specific expertise, which means that it cannot be undertaken by just anyone; it requires thorough preparation through dedicated education and training[41].

A professional is someone engaged in a job or activity that provides a source of income, requiring a level of expertise, skill, or competency that adheres to established quality standards or norms and necessitates professional training.

Based on the explanation provided, we can conclude the meaning of a teacher's professional competence as follows:

A teacher's professional competence is 1) A set of specialized knowledge and skills possessed by a teacher. 2) Acquired through intensive and in-depth academic education and training. 3) Meeting certain quality standards or norms in the field of education. 4) Not something that just anyone can do without a proper educational background in teaching. 5) The foundation for teachers to perform their teaching duties as a source of income. 6) Requiring teachers to continuously develop themselves and update their knowledge and skills in line with developments in the field of education[42].

Based on all statements, Teacher competence is a set of complex and multidimensional abilities and skills, encompassing pedagogical, personal, social, and professional aspects. According to Government Regulation No. 14 of 2005, Article 8, these four competencies serve as the foundation for a teacher to effectively carry out their duties. This competence not only includes mastery of knowledge and teaching techniques but also the ability to be a role model, interact effectively with various parties, and continuously develop oneself following

[41] Gultom.
[42] Gultom.

advancements in the field of education. A competent teacher must be able to apply principles and teaching techniques that facilitate students' understanding of the material, possess a personality that reflects noble values, communicate effectively, and have specialized skills acquired through education and intensive training. Thus, teacher competence is not merely a formal qualification but a continuous process aimed at enhancing one's quality as a professional educator who meets certain quality standards in the field of education.

5. Evaluation

Etymologically, the term "evaluation" originates from the English word *evaluation*, derived from the root word *value*, which means "worth" or "price." In Arabic, the term for value is *alqiamah* or *al-taqdir*, which signifies assessment or evaluation. Meanwhile, the literal term for educational evaluation in Arabic is often referred to as *al-taqdir al-tarbiyah*, meaning assessment in the field of education or evaluation of matters related to educational activities.

In general, evaluation can be defined as a systematic process to determine the value of something (rules, activities, decisions, performances, processes, people, objects, etc.) based on specific criteria through assessment. To determine the value of something by comparing it to a standard, an evaluator may directly compare it with general criteria or measure the object being evaluated and then compare the results to specific criteria.

In another sense, evaluation, measurement, and assessment are hierarchical activities. These three activities, especially in the context of the learning process, are interrelated and must be carried out sequentially. Within this context, there are two terms that are often perceived as similar but are actually different: assessment and measurement.

Measurement refers to the act or process of determining the quantity of something, often requiring tools or instruments. On the other hand, evaluation or assessment focuses on determining the quality or value of something. Learning and teaching evaluations are processes used to determine the value of learning and teaching outcomes, conducted through either assessment or measurement. Meanwhile, measurement in the learning process refers to the process of comparing

the level of success in learning and teaching against predetermined quantitative benchmarks. In contrast, assessment refers to the process of making qualitative judgments about the success of learning and teaching.

Through evaluation, students can understand the extent of their achievements during their educational journey. In situations where students achieve satisfactory results, it acts as a stimulus and motivator for them to improve their performance further. Conversely, when results are unsatisfactory, students are encouraged to improve their learning activities. However, it is crucial for teachers or educators to provide positive reinforcement to ensure students do not lose hope[43].

6. Assessments

The definition of educational assessment is quite diverse, but generally, it states that assessment is a way to place learners in a context that can reveal what they know and can do, as well as highlight what they don't know and can't do yet. Such a broad definition of educational assessment indicates that understanding someone's learning progress can be achieved both formally and informally, at any time, without time constraints. Within the context of teaching and learning activities in schools, the two commonly known types of educational assessment are formative assessment and summative assessment.

a. Formative assessment

Formative assessment is the teacher's assessment of students, primarily aimed at providing useful information to improve the quality of subsequent learning. This implies that in formative assessment, teachers gather information and interpret evidence of learning outcomes to identify what students need to know further and then adapt their teaching accordingly. This is often referred to as an "assessment for learning".

b. Summative Assessment

A summative assessment is conducted to determine what a student has already learned or is capable of doing at the end of a designated period of learning. Its purpose is to provide information about the achieved performance; often called

[43] Mahirah, B. (2017). Evaluasi Belajar Peserta Didik (Siswa). *Idaarah: Jurnal Manajemen Pendidikan, 1*(2). Doi: Https://Doi.Org/10.24252/Idaarah.V1i2.4269.

"assessment of learning". In this type of assessment, students are required to demonstrate everything they have mastered during a specific timeframe, such as in a National Final Examination.

However, the purpose of educational assessment extends beyond formative and summative assessment. Educational assessment encompasses various aspects both within and outside the school environment, which are equally important as evidence of accountability in human resource development activities[44].

To elaborate further, educational assessment encompasses at least five objectives as follows:

1) Providing feedback.

One primary purpose of assessment is to provide feedback to learners/students. Some experts regard this as the paramount objective of assessment because it focuses on fulfilling students' needs and expectations. Students should understand the information and use it for their next learning steps. The information provided isn't merely scores or percentages of correct answers. Instead, assessors need to interpret these to understand students' strengths and weaknesses. This is a characteristic of formative assessment, which can take various forms, such as quizzes, exams, observations, activity records, discussions with students, and more, all aimed at collecting information and providing feedback.

2) Determining what to learn next

This type of assessment is still formative but more focused. It is commonly used for topics where understanding is progressive. For example, in mathematics, if a student can list the sequence of natural numbers (1, 2, 3...), it indicates readiness for learning addition. Similarly, if a student can arrange numbers in reverse order (10, 9, 8...), they are ready for subtraction. Once the addition is mastered, teaching multiplication becomes the next step.

3) Diagnosing learning difficulties and misconceptions

[44] Sumintono, B., & Widhiarso, W. (2015). *Aplikasi Pemodelan RASCH pada Assessment Pendidikan*. Trim komunikata. http://eprints.um.edu.my/id/eprint/14228

Formative assessment can also be used by teachers to detect learning difficulties and identify misconceptions in students. Misconceptions can lead to misunderstandings about a concept. For instance, in physics, students may believe that an object's density depends on its size, assuming that larger objects are heavier and will sink in water. However, this does not apply to ice, regardless of its size, as its density is lower than that of water. Diagnosing misconceptions is useful for teachers to help students more accurately, by reteaching the same concept and correcting the misconceptions.

4) Assessing learning progress and development.

Formal education systems, such as schools, are designed in tiers based on abilities or age, with specific achievement requirements for students at each level. Educational assessment is used in this context to measure the extent of students' learning progress compared to their peers at the same level in different regions or countries (for instance, in exams like TIMSS and PISA). This is an example of a summative assessment that's also normative. Its purpose is not to provide specific information about what a student knows, but to offer an overview and comparative performance information at specific educational stages among students within a country, for instance. Such summative assessments can be diagnostic, involving large samples, and can take the form of national activities like national final exams.

5) Serving as an evaluation and accountability tool for programs

Another purpose of assessment is to improve the quality of teaching in schools, compared to understanding individual students' learning needs. Every education system needs information about the effectiveness of ongoing teaching activities, for instance in our country through the National Final Examination. This not only assesses national teaching quality and compares performance between regions but also fulfills accountability aspects as public funds are utilized. Such assessments are summative due to their mass scale and wide reach, which usually involve standardized tests[45].

[45] Sumintono and Widhiarso.

Based on the all statements, educational assessment has diverse definitions, but fundamentally, it is a way to understand students' knowledge and abilities, as well as identify gaps that need to be addressed. There are two common types of assessments: formative assessment, which aims to provide feedback to improve the quality of learning, and summative assessment, which evaluates students' learning outcomes at the end of a specific period.

Furthermore, educational assessment has five important objectives: 1) providing useful feedback to students for their next learning steps; 2) determining the next material to be learned based on students' progress; 3) diagnosing learning difficulties and misconceptions that students may experience; 4) assessing students' learning progress and development normatively compared to their peers; and 5) serving as an evaluation and accountability tool for broader educational programs. Thus, assessment is not only for evaluating individual learning outcomes but also for improving teaching quality and ensuring accountability in the use of public funds.

7. Education

a. Education in a Broad Sense

In the Education System Law No. 20 of 2003, it is stated that education is "a conscious and planned effort to create a learning environment and learning process so that learners actively develop their potential to have spiritual religious strength, self-control, personality, intelligence, noble character, and the skills needed for themselves and society." According to the definition in the Indonesian Language Dictionary (KBBI), the word "education" (pendidikan) comes from the root word "educate" (didik) and is formed with the prefix "pe" and the suffix "an," thus implying a method, way, or act of guiding.

Education can be defined as a way of changing ethics and behavior by individuals or society in an effort to achieve independence in maturing or developing humanity through education, learning, guidance, and nurturing.

In a broad sense, education is life itself. This means education encompasses all learning experiences that occur throughout life in all places and situations that

positively influence the growth of every individual being. Education takes place throughout life (lifelong education).

Literally, education means the act of educating, carried out by an educator for learners. It is expected that adults can serve as role models for children by providing examples, teaching, guidance, and the cultivation of ethics and morals, as well as exploring the knowledge of each individual.

b. Definition of Education in a Narrow Sense

Education in a narrow sense refers to a school. This system applies to people with the status of students, namely school pupils, or learners in a university (formal educational institutions). The father of education, Ki Hajar Dewantara, with his famous guiding principles, namely, 'Ing Ngarso Sung Tulodo' (setting an example in front), 'Ing Madyo Mangun Karso' (in the middle, building and giving spirit), 'Tut Wuri Handayani' (from behind, providing support) (Febriyanti, 2021). If we understand the meaning of these mottos, it can be concluded that the role of the teacher is foundational and crucial in driving the progress of National Education. Education represents all efforts made by an institution to provide learners with the hope that they will possess good competence and a full awareness of their social ties and issues. In teaching activities at schools or formal institutions, there is a limit to the length of study or duration of learning, which varies, such as three years, six years, and so on.

c. Education Based on a Scientific Approach

The term 'Scientific Approach' can be broken down into two words: 'approach' and 'scientific.' In foreign languages, the word 'approach' refers to a way of thinking or an idea used to achieve a particular goal. Meanwhile, the word 'scientific' in foreign languages is translated as 'scientific,' which means something that can be repeated openly by anyone, anywhere, and at any time. Therefore, a scientific approach is an idea to achieve a goal that can be used by anyone, anywhere, and at any time. Based on this definition, it can be concluded that in teaching, the scientific approach can be used by all educators in every subject area to achieve specific instructional objectives. Its implementation, such as scientific techniques, psychomotor development, and scientific attitudes, is essential in the

learning process. From this perspective, Education based on a Scientific Approach is a form of teaching grounded in a particular discipline, such as Psychology, Politics, Sociology, Economics, Anthropology, and others[46].

8. Educational Technology

Technology is understood as a set of scientific methods to achieve practical goals. In other words, technology is applied science that provides useful and necessary goods or tools for the sustainability and comfort of human life[47]. The word "technology" literally comes from the Latin word *texere*, which means to weave or construct, so the term "technology" should not be limited to the use of machines, even though in a narrow sense it is often used in everyday life. Technology originates from the Greek word "technologia," where *techne* means art, skill, or craft, and *logia* means word, study, or body of knowledge. Technology is knowledge about creating something. Thus, technology is a means, tool, or method used to convey messages and solve problems through knowledge to achieve a specific goal, becoming a discipline in its own right[48].

Education is a process that encompasses three dimensions: the individual, the society or national community of that individual, and the entire content of reality, both material and spiritual, which plays a role in determining the nature, destiny, and form of both humans and society[49]. Education is a purposeful interaction process. Interaction occurs between teachers and students, aiming to improve mental development so that individuals become independent and whole. Generally, education can be described as an action that enables learning and growth. Education is an interaction process that promotes learning.

Educational technology involves the development, application, and evaluation of systems, techniques, and tools to improve and improve the human

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[46] Pristiwanti, D., Badariah, B. ., Hidayat, . S. ., & Dewi, R. S. . (2022). Pengertian Pendidikan. *Jurnal Pendidikan dan Konseling (JPDK)*, *4*(6), 7911–7915. https://doi.org/10.31004/jpdk.v4i6.9498

[47] Mesra, R., Pratiwi, D., Handayani, R., Wiguna, I. B. A. A., Suyitno, M., Sampe, F., ... & Aina, M. (2023). *Teknologi Pendidikan*. Sada Kurnia Pustaka.

[48] Ahmad Suryadi, "Teknologi dan Media Pembelajaran Jilid 1," *CV Jejak*, no. Jilid 1 (2020): 121, http://dx.doi.org/10.31219/osf.io/vzkx3.

[49] Nurkholis, N. (2016). Pendidikan dalam Upaya Memajukan Teknologi. *Jurnal Kependidikan*, *1*(1), 24–44. https://doi.org/10.24090/jk.v1i1.530

learning process. The focus here is on the learning process itself, as well as the tools that can aid that process. Thus, educational technology encompasses both software and hardware. Software includes analysing and designing the sequence or steps of learning based on the objectives to be achieved, with appropriate presentation methods and assessment of success[50].

In this context, educational technology can be understood as everything that is practically useful in realizing the goals of education, namely to improve the nation's intellectual life. With technology, many needs and objectives in education can be achieved more efficiently. This efficiency is understood as a balance between effort, cost, and time with the results achieved.

As an administrative tool, technology offers a variety of tools and applications that facilitate the administrative management of education, thereby reducing the costs associated with educational administration. As a learning medium, many learning tools have been developed to support the learning process. Nowadays, many learning activities are conducted online by utilizing various technologies in the form of practical applications like Zoom, Skype, Google Meet, and others. Furthermore, numerous learning media can be created by leveraging technological advancements, one of which is the use of Artificial Intelligence (AI)-based technology.

For instance, this research uses AI tools like ChatGPT and ClassPoint to improve teachers' formative assessment competencies. Educational technology offers many benefits for both educators and students. For educators, it helps facilitate the achievement of educational goals, makes it easier for them to design more varied and engaging lessons, and supports them in effectively communicating or delivering learning materials. For students, educational technology provides various learning options, making the material more enjoyable and helping them better understand the content presented[51].

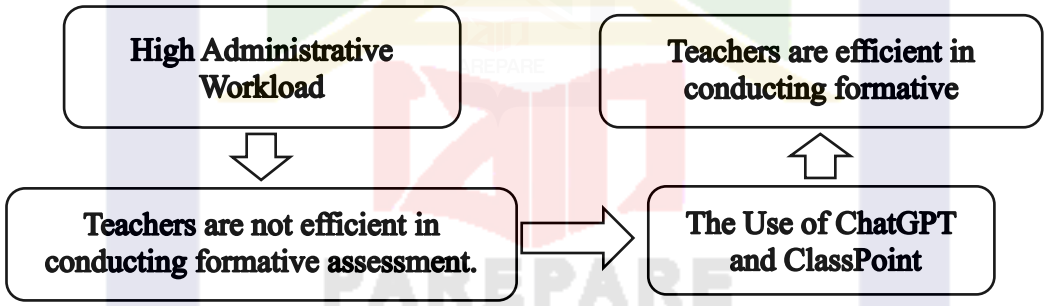
[50] Suryadi, "Teknologi dan Media Pembelajaran Jilid 1."
[51] Mesra, R., at, al. (2013) "Teknologi Pendidikan"

C. *Conceptual Framework*

The conceptual framework presents, either through visuals or narrative, the core subject of the study, including the key components, variables, or constructs, along with their expected interconnections. This framework may range from simple to complex, intuitive to theoretical, and descriptive to causal (Miles et al., 2014)[52].

This study constructs a conceptual framework based on the relationship between the use of ChatGPT and ClassPoint technology to enhance English teachers' efficiency in conducting formative assessments of junior high school. The framework is built on the issue of high administrative workload, which limits innovation and interactivity in formative assessments, both in creating formative questions and in implementing formative assessments. Utilizing ChatGPT as an aid for developing formative questions and ClassPoint as an interactive assessment platform, is expected to improve the efficiency of teachers' formative assessments. The following will illustrate the conceptual framework of this study:

Figure. 1: Conceptual Framework



D. *Hypothesis*

Based on the conceptual framework previously presented, this study proposes two hypotheses related to the efficiency of English teachers in conducting formative assessments using ChatGPT and ClassPoint at junior high school. These hypotheses are developed considering the potential of technology to help overcome

[52] Pahleviannur, M. R., De Grave, A., Saputra, D. N., Mardianto, D., Hafrida, L., Bano, V. O., ... & Sinthania, D. (2022). *Metodologi Penelitian Kualitatif*. Pradina Pustaka.Book Chapter, *Metoden, Kollegial Supervision*, 2023, https://doi.org/10.2307/jj.608190.4.

teachers' administrative workload and enhance English teachers' efficiency in conducting formative assessment competence.

In these theses, the hypotheses would be described as follows:

1. H_0 (Null Hypothesis): ChatGPT and ClassPoint did not enhance English teachers' efficiency in conducting formative assessments.
2. H_1 (Alternative Hypothesis): ChatGPT and ClassPoint enhanced English teachers' efficiency in conducting formative assessments.

CHAPTER III
METHODOLOGY OF THE RESEARCH

This chapter presents the methodology employed in this research to investigate the efficiency of using ChatGPT and ClassPoint in improving English teachers' formative assessment competence. The research methodology is systematically organized into several sections: research design, location and duration of the research, population and sample, research instruments, procedure of collecting data, and technique of data analysis.

A. *Research Design*

Research design is a procedure or guideline used in a research study. Research design must be specific, clear, and detailed, firmly determined from the beginning, and serve as a step-by-step guide (Sugiyono, 2017:37) [53]. The definition of research design is a plan of action that guides the process from research questions to conclusions, determining the scope of generalization (Nachmias & Nachmias, 1976)[54].

The use of a method in research was essential, as it enabled researchers to collect and analyse data more efficiently. In this study, the type of research used was quantitative, with a pre-experimental design that applies a pretest and post-test on a single group[55].

The pre-experimental arises due to the absence of a control variable and the sample not being selected randomly. This kind of research was chosen because the research will be conducted using an experimental group without a control group,

[53] Lailatussaadah, L. (2015). Upaya Peningkatan Kinerja Guru. *Intelektualita*, *3*(1). http://dx.doi.org/10.22373/ji.v3i1.196L Lailatussaadah, "Upaya Peningkatan Kinerja Guru. Intelektualita," *Intelektualita* 3, no. 1 (2020): 15–25.

[54] Nur'aini, R. D. (2020). Penerapan Metode Studi Kasus YIN dalam penelitian arsitektur dan Perilaku. *INERSIA lnformasi dan Ekspose Hasil Riset Teknik Sipil dan Arsitektur*, *16*(1), 92-104. https://doi.org/10.21831/inersia.v16i1.31319.

[55] A. O. Olowoyeye, K. O. Musa, and O. T. Aribaba, "Outcome of Training of Maternal and Child Health Workers in Ifo Local Government Area, Ogun State, Nigeria, on Common Childhood Blinding Diseases: A Pretest, Post-Test, One-Group Quasi-Experimental Study," *BMC Health Services Research* 19, no. 1 (2019): 1–11, https://doi.org/10.1186/s12913-019-4272-1.

starting with a pretest to measure the initial competence of teachers in formative assessment, both in creating formative questions and conducting formative assessments[56]. The mechanism of this research is as follows[57]:

Table. 1: Research Design

Pretest	Treatment	Post-test
O1	X	O2

A quantitative method with a pre-experimental was chosen due to its simplicity in control and direct focus on the effects of the intervention, without requiring random or control groups that would be difficult to implement with 9 (*nine*) teachers. This design allows for practical and relevant data collection to measure the impact of technology use in formative assessment[58]. Furthermore, an in-depth approach to specific situations can limit the generalizability of results, while this research aims to produce data that can be more broadly applied to educational practices in junior high schools[59]. Thus, this method provides an objective and systematic analysis of the effectiveness of technology, potentially making a significant contribution to educational practice.

B. *Location and Duration of the Research*

This research was conducted in Budong-Budong Subistrict, which is one of the districts in Central Mamuju Regency, West Sulawesi Province. The choice of this location was based on the results of a preliminary observation conducted by the researcher, where relevant phenomena related to the focus of this study were identified.

In terms of duration, the research took place over one month, from August 2024 to October 2024. This time frame covered several research stages, including

[56] Nursholihat, K., Sujana, A., & Karlina, D. (2017). Peranan Media Komik terhadap Literasi Sains Siswa SD Kelas V pada Materi Daur Air (Penelitian Pre-Experimental terhadap Siswa Kelas V SD Kecamatan Paseh Kabupaten Sumedang). *Jurnal Pena Ilmiah, 2*(1), 711-720. doi:https://doi.org/10.17509/jpi.v2i1.10110.

[57] Sugiyono, D. (2013). Metode Penelitian Pendidikan Pendekatan Kuantitatif, Kualitatif dan R&D. Bandung : Alfabeta., 2013

[58] D. Sugiyono

[59] Creswell, J. W., & Creswell, J. D. (2017). *Research design: Qualitative, quantitative, and mixed methods approaches*. Sage publications. https://shorturl.at/LsQFX

the preliminary observation phase for gathering initial data, conducting observations of English teachers, and the data analysis phase.

C. *Population and Sample*

1. Population

Population refers to the generalization area consisting of objects or subjects with specific quantities and characteristics determined by the researcher for the study and from which conclusions are drawn. In other words, the population includes all elements that are the focus of the research, whether individuals, objects, or certain events. The population must possess measurable or observable characteristics aligned with the research objectives[60].

The population in this research was all junior high schools in the Budong-Budong subdistrict Mamuju Tengah Regency West Sulawesi Province. The table below shows the list of populations in this research:

Table. 2: Population

Number of Populations	Populations	Subdistrict
1	UPTD SMPN 1 Budong-Budong	Budong-Budong
2	UPTD SMP 2 Budong-Budong	
3	UPTD SMP 3 Budong-Budong	
4	UPTD SMP 4 Budong-Budong	
5	UPTD SMP 5 Budong-Budong	
6	UPTD SMP 6 Budong-Budong	
7	UPTD SMP 7 Budong-Budong	

2. Sample

A sample is a part of the population that possesses similar characteristics to the population as a whole. The sample is selected to represent the population so that the research results can be generalized. The selection of the sample must be done

[60] Sugiyono,

carefully to ensure that the sample truly represents the population, allowing the conclusions drawn from the sample to apply to the entire population.

The sample in this research was all English Teachers in Junior High Schools in Budong-Budong Subdistrict Mamuju Tengah Regency West Sulawesi Province. The table below shows the list of samples in this research:

Table. 3: Samples

Number of Samples	Samples	Populations
1	Harianto, S.Pd., Gr.	UPTD SMPN 1 Budong-Budong
2	Rohani, S.Pd.	
3	ABD. Rahman, S.Pd.	UPTD SMPN 2 Budong-Budong
4	Muhammad Syachrir, S.Pd.	
5	Heriadi, S.Pd.I	UPTD SMPN 3 Budong-Budong
6	Susanti S, S.Pd.	UPTD SMPN 4 Budong-Budong
7	Rosmawati, S.Pd.	UPTD SMPN 5 Budong-Budong
8	Nur Awaliah, S.Pd., Gr.	UPTD SMPN 6 Budong-Budong
9	Ahmadi Wijaya, S.Pd.	UPTD SMPN 7 Budong-Budong

D. *Research Instrument*

1. Competency Test

A test is a method or procedure used to assess or measure something based on established guidelines or rules. It is essential to distinguish between the terms test, testing, testee, and tester. Testing refers to the process of administering the test. The testee is the participant who completes the test, and whose abilities are being evaluated. On the other hand, the tester is the person responsible for administering the test to the participants[61]. In line with that statement, a competency test is a form of assessment designed to measure and evaluate an individual's abilities, skills, and knowledge in a specific field. In the context of education and the teaching

[61] Wulan, A. R. (2007). Pengertian dan Esensi Konsep Evaluasi, Asesmen, Tes, dan Pengukuran. *Jurnal, FPMIPA Universitas Pendidikan Indonesia*, *6*. https://s.id/YaAX8

profession, a competency test aims to assess a teacher's capability to perform their professional duties effectively.

Based on the statements, in this research, the researcher would conduct a competency test for teachers, where teachers were asked to create questions and carry-on formative assessments. This process would provide an overview of the English teachers' efficiencies in conducting formative assessment both creating formative questions and carrying on formative assessment.

Teachers would be given a time limit for creating formative questions. The quality of the produced questions would be evaluated based on several important criteria, including clarity of language, variety of question types, difficulty level, and relevance to the established learning objectives. Additionally, in this research, the researcher would also observe the methods used by teachers in the entire process of creating questions and conducting assessments to determine whether they rely more on manual methods or utilize technology. All activities that done was to measure the English teachers' efficiencies in formative assessment.

2. Questionnaire

A questionnaire is a data collection technique that involves providing a series of written questions or statements to respondents for them to answer. A questionnaire is also an efficient data collection technique when researchers clearly understand the variables to be measured and know what is expected from the respondents[62]. Then, a questionnaire is a technique for collecting data indirectly. questionnaire is a research method that must be answered by respondents to express their views on a particular issue[63].

In this research, the researcher would use a Likert's scale questionnaire that contained closed-ended questionnaire statements about the use of ChatGPT, and ClassPoint to enhance English teachers' efficiency in formative assessment. In applying Likert's scale questioners, the researcher would use a scale from 1 to 5 option categories.

[62] Sugiyono,

[63] Agung Widhi Kurniawan and Zarah Puspitaningtyas, "2742. Metode Penelitian Kuantitatif (Agung Widhi Kurniawan).Pdf," 2016.

The category of Likert's scale options could be seen as follows:

Table. 4: Likert's Scale

Scale	Items
1	Strongly Agree
2	Agree
3	Neutral
4	Disagree
5	Strongly Disagree

The purpose of this questionnaire is to provide supporting data for the research, where the questionnaire is used to measure teachers' perceptions after the treatment has been given. The following of questionnaire question list:

Table. 5: Questionnaire

No.	List of Questions	Category Options				
		SA	A	N	D	SD
1	ChatGPT helps me create diverse and engaging formative questions.					
2	The use of ChatGPT speeds up my process of creating formative questions.					
3	I find it easier to create questions aligned with learning objectives using ChatGPT.					
4	ClassPoint provides ease in conducting formative assessments in the classroom.					
5	I find it easier to provide feedback to students using the features in ClassPoint.					
6	This ClassPoint technology improves student engagement in the formative assessment process.					
7	The use of ClassPoint makes me more skilled in managing student assessments.					
8	Overall, the use of ChatGPT and ClassPoint has a positive impact on my learning process.					

3. Question Creation Rubric

The term "rubric" originates from the Latin word meaning "red." According to the online Merriam-Webster dictionary, its primary definition is "an authoritative rule," while another definition describes it as "a guide outlining specific criteria for evaluating or scoring academic papers, projects, or tests[64]. Another definition states that a rubric is an evaluation tool that outlines specific expectations related to descriptive criteria for a task in a grid layout and assesses performance on that task based on those expectations[65].

Based on the statements, a rubric is a tool used to assess and evaluate work results, such as assignments or projects, by establishing clear criteria. The question creation rubric will be shown as follows:

Table. 6: Formative Assessment Rubric

Assessment Aspect	**Poor** (Score 1)	**Fair** (Score 2)	**Good** (Score 3)	**Very Good** (Score 4)
Question Creation Method				
Multiple Choice				
Essay				
Short Answer				
Question Combination				
Assessment Method				
Interaktif				
Feedback				

This rubric assessed English teachers' efficiency in conducting formative assessment both creating formative questions and carrying on formative assessments. The assessment is based on several important aspects including:

[64] Susan M. Brookhart, "How to Create and Use Rubric for Formative Assessment and Grading" ASCD Member Book. (2013) https://shorturl.at/CEGm4

[65] Jacqueline M. Olson and Rebecca Krysiak, "Rubrics as Tools for Effective Assessment of Student Learning and Program Quality," *Curriculum Development and Online Instruction for the 21st Century*, no. January (2021): 173–200, https://doi.org/10.4018/978-1-7998-7653-3.ch010.

a. Question Creation Method: This aspect assessed whether the teachers use innovative technology in question creation. The following score level of the question creation method:

1) Very good (score 4): A highly innovative method using AI (ChatGPT)

2) Good (score 3): An innovative method using a combination of manual and general technology

3) Fair (score 2): A somewhat innovative method using general technology

4) Poor (score 1): A less innovative method using manual methods.

b. Multiple Choice: The teacher can create good, clear multiple-choice questions that align with the learning objectives. The following score level of the variety of the multiple-choice questions:

1) Very good (score 4): Relevant questions, optimal time (≤ 10 minutes)

2) Good (score 3): Relevant questions, longer time (11-20 minutes)

3) Fair (score 2): Relevant questions, very long time (21-30 minutes)

4) Poor (score 1): Relevant questions, inefficient time (> 30 minutes).

c. Essay: The teacher can design essay questions with a good structure that is clear and aligned with the learning objectives. The following score level of the level of essay questions:

1) Very good (score 4): Relevant questions, optimal time (≤ 15 minutes)

2) Good (score 3): Relevant questions, longer time (16-25 minutes)

3) Fair (score 2): Relevant questions, very long time (26-35 minutes)

4) Poor (score 1): Relevant questions, inefficient time (> 35 minutes).

d. Short Answer: The teacher can create short answer questions that are accurate, clear, and aligned with the learning objectives. The following score level of the short answer questions:

1) Very good (score 4): Relevant questions, optimal time (≤ 10 minutes)

2) Good (score 3): Relevant questions, longer time (11-20 minutes)

3) Fair (score 2): Relevant questions, very long time (21-30 minutes)

4) Poor (score 1): Relevant questions, inefficient time (> 30 minutes)

e. Question Combination: The teacher can create a good combination of various types of questions (multiple choice, essay, short answer) that align with the learning objectives. The following score level of the Question Combination:

1) Very good (score 4): Relevant question combination, optimal time (≤ 25 minutes)

2) Good (score 3): Relevant question combination, longer time (26-40 minutes)

3) Fair (score 2): Relevant question combination, very long time (41-55 minutes)

4) Poor (score 1): Relevant question combination, inefficient time (> 55 minutes).

f. Assessment Method: this aspect discusses whether teachers use innovative technology in the assessment method for questions. The following score level of the assessment method:

1) Very good (score 4): A highly innovative method that maximally utilized AI (ClassPoint)

2) Good (score 3): An innovative method using a combination of manual methods and general technology

3) Fair (score 2): A somewhat innovative method using general technology

4) Poor (score 1): A less innovative method using manual methods.

g. Interactive: this aspect discusses whether the assessment method is interactive. The following score level of the interactive aspect:

1) Very good (score 4): Very interactive, all students are actively engaged

2) Good (score 3): Interactive, most students are involved

3) Fair (score 2): Somewhat interactive, a few students are involved

4) Poor (score 1): Less interactive, most students are not engaged

h. Feedback: this aspect discusses whether the teacher provides effective feedback to the students. The following score level of the feedback aspect:

1) Very good (score 4): Provides very effective feedback, optimal time (≤ 10 minutes)

2) Good (score 3): Provides good feedback, longer time (11-20 minutes)

3) Fair (score 2): Provides adequate feedback, very long time (21-30 minutes)

4) Poor (score 1): The feedback provided is less effective, and inefficient time (> 30 minutes).

E. *Procedure of Collecting Data*

In collecting the data, the researcher would conduct pretest, treatment, and post-tests as instruments for collecting the data from the sample. The procedure for collecting data in this research would be described as follows:

1. Pretest

In this pretest stage, the researcher had the respondents create formative questions and conduct formative assessments. The purpose of this pretest was to know the English teachers' efficiency in formative assessment preliminary knowledge before giving treatment. The following procedure of the pretest:

a) The researcher greets the participants and explains the purpose of the pretest.
b) The researcher provides instructions on how to create formative questions, explaining to the respondents to create 3 (three) multiple-choice questions, 3 (three) essay questions, 3 (three) short answer questions, and 9 (nine) combination questions consisting of multiple-choice, essay, and short answer. Before starting, the researcher shows the rubric for the formative question creation assessment to them.
c) The researcher collects the formative questions created by the respondents in soft and hard files.
d) After the respondents finished creating the questions, the researcher had them conduct the formative assessment in the class, and then the researcher observed whether the respondents were innovative and interactive in their assessments before giving treatment.
e) After all is finished, the researcher thanks the respondents and provides information about the next steps.
f) The researcher begins analysing the results of the questions created by the respondents based on the assessment rubric. The results will then be processed using descriptive statistics.

2. Treatment

In this study, the researcher would conduct the treatment for 6 (six) meetings based on the research activity rundown. In the treatment, the researcher gave the respondent training about how to use ChatGPT and ClassPoint in formative

assessment. The following treatment activity will be described:

a) Introduction to ChatGPT and ClassPoint technology
b) How to install ChatGPT
c) How to install ClassPoint
d) Creating formative questions with ChatGPT
e) Using ChatGPT and ClassPoint simultaneously
f) Conducting assessments with ClassPoint

3. Post-Test

In this post-test stage, the researcher had the respondents back create formative question and conduct formative assessment. The purpose of this post-test was to know the English teachers' efficiency in formative assessment improvement after giving treatment. The following procedure of the pretest:

a) The researcher greeted the participants and explained the purpose of the pre-test.
b) The researcher provided instructions on how to create formative questions, explaining to the respondents to create 3 (three) multiple-choice questions, 3 (three) essay questions, 3 (three) short answer questions, and 9 (nine) combination questions consisting of multiple choice, essay, and short answer. Before starting, the researcher showed the rubric for the formative question creation assessment to them.
c) The researcher collected the formative questions created by the respondents' soft and hard files.
d) After the respondents finished creating the questions, the researcher had them conduct the formative assessment in the class, and then the researcher observed whether the respondents were innovative and interactive in their assessments after giving treatment.
d) After the respondent finished conducting formative assessment, the researcher gave the teachers a questionnaire to measure the teachers' perceptions after giving treatment.
e) Then, the researcher collected the questionnaire that had been done by the teachers.

f) After all was finished, the researcher thanked the respondents and provided information about the next steps.

g) The researcher began analysing the results of the questions created by the respondents based on the formative assessment rubric. The results would then be processed using descriptive statistics.

F. *Technique of Data Analysis*

Technique of data analysis is defined as the effort to process data into information so that the characteristics or properties of the data can be easily understood and utilized to answer the research questions[66].

In this study, the data analysis techniques used include descriptive statistics and paired t-tests. Descriptive statistics will be presented in the form of mean, median, mode, standard deviation, and frequency percentage distribution which serve to provide a general overview of the data obtained from respondents. These calculations are used to observe the data distribution and the general tendencies of the variables measured. Then, all statistics will be made in Excel office 2021.

In addition, a t-test will be used to compare two groups or conditions in this study. This t-test helps determine whether there is a significant difference between these groups in terms of mean values. The results of this analysis will be used to support a deeper interpretation of the data. Descriptive statistics will be shown as follows:

1. Mean

The average (mean) is commonly represented in statistics using the symbol ($\bar{X}$), pronounced as 'ex-bar.' The average (mean) is a technique for explaining a group based on the average value of that group.

The formula will be shown as follows:

$$\bar{x} = \frac{\sum x_i}{n}$$

[66] Kurniawan and Puspitaningtyas, "2742. Metode Penelitian Kuantitatif (Agung Widhi Kurniawan).Pdf."

Description:

$\bar{X}$ = Mean

$\sum x_i$ = Data Values

n = Number of Data Points

2. Median

The median is the value of the data that lies in the middle after the data has been arranged in order, dividing it into two halves. The median serves as a technique for explaining a group based on the central value of the arranged data, from the smallest to the largest, or vice versa, from the largest to the smallest (Sugiyono, 2007, p. 48). The median is symbolized as (M_e) or (M_d).

The formula will be shown as follows:

$$\text{Me} = \frac{1}{2}(n+1)$$

Description:

Me = Median Position

n = Total Number of Data

3. Mode

The mode is a technique for explaining a group based on the value that is currently popular (the mode) or the value that frequently appears in that group (Sugiyono, 2007, p. 47). The mode can be used to analyse the most commonly occurring phenomena or the most frequently used values. The mode is symbolized as (M_o)[67].

4. Standard Deviation

Variance is one of the statistical techniques used to explain the homogeneity of a group. Variance is the sum of the squares of all individual values' deviations from the group's mean. The square root of the variance is called the standard deviation[68].

$$S \sqrt{\frac{\sum(Xi - X)^2}{(n-1)}}$$

[67] Program Doktor et al., "Statistika Penelitian," 2020.

[68] Doktor et al.

Description:

S = Sample Standard Deviation.

n = Number of Samples[69]

5. Paired T-Test

The paired t-test is one of the hypotheses testing methods where the data used is not independent (paired).

The formula will be shown as follows:

$$t = \frac{\overline{D}}{SD/\sqrt{n}}$$

Description:

t = calculated t-value

$\overline{D}$ = Mean difference between two paired data sets.

SD = Standard deviation of the differences between two data sets.

n = Number of paired data[70].

5. Frequency Percentage Distribution

In questionnaire analysis, frequency (f) is the number of occurrences of a specific category or response in the data. The formula for calculating frequency (f) is simple[71]:

f =Number of responses in a specific category.

For example, if 9 respondents answered 'Agree' to a particular question, then the frequency (f) for the 'Agree' category is 9. Frequency is often used together with percentage (%), which is calculated using the formula:

$$\text{Percentage} = \frac{F}{N} \quad X\ 100$$

Description:

F = Frequency of a specific category and N = Total number of respondents.

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[69] Doktor et al.

[70] Chriestie Montolalu and Yohanes Langi, "Pengaruh Pelatihan Dasar Komputer dan Teknologi Informasi bagi Guru-Guru dengan Uji-T Berpasangan (Paired Sample T-Test)," *D'CARTESIAN* 7, no. 1 (2018): 44, https://doi.org/10.35799/dc.7.1.2018.20113.

[71] Frikson Jony Purba, "Analisis Respon Mahasiswa terhadap Penggunaan Google Classroom sebagai Media Pembelajaran," *Jurnal Curere* 4, no. 2 (2020): 11, https://doi.org/10.36764/jc.v4i2.385.

CHAPTER IV
FINDINGS AND DISCUSSION

A. *Finding*

This chapter presents the results and discussion of the research on the use of ChatGPT and ClassPoint to enhance English teachers' efficiency in conducting formative assessments at junior high schools in Budong-Budong Subdistrict, Mamuju Tengah Regency. This study analysed English teachers' efficiency in conducting formative assessment either in creating formative question or carrying on formative assessment. At the beginning of the study, a pretest was conducted to measure the initial efficiency of English teachers in both creating formative questions and conducting formative assessments before using technology. Afterwards, teachers were provided training and guidance on utilising ChatGPT for formative question creation and ClassPoint for conducting formative assessment. After the implementation of these two technologies, a post-test was conducted to assess the changes in English teachers' efficiency.

The results of the pretest and post-test score analysis will be explained in detail, followed by an analysis of a questionnaire measuring teachers' perceptions of both technologies. The aim of this study is to assess the impact of technology use in improving the efficiency of English language teachers in conducting formative assessments. This research was conducted in response to issues observed in the field, where teachers face high workloads, particularly related to administrative tasks. This excessive workload limits teachers' time and energy to implement innovation and interactivity in formative assessments, even though these two aspects should be an essential part of an efficient learning process. Through the results and discussions presented, it is hoped that valuable insights will be provided for English language teachers to develop more efficient and effective formative assessment methods in the future, thus overcome administrative workload and enhancing the quality of teaching. Next, the data analysis results that support this study's findings will be presented.

1. English Teachers' Efficiency in Pretest Activities

This section explained the results of the English teacher's efficiency in conducting formative assessment, both in creating formative questions and carrying on formative assessments, before using ChatGPT and ClassPoint technology. Through pretests, the teachers' efficiency was evaluated in terms of their speed and ability to compose various types of questions and apply formative assessment methods. The following is an analysis of the pretest results related to the teachers' efficiency in conducting formative assessments, based on the assessment rubric:

a. Question-Making Methods

During the pretest stage, most teachers used manual question-making methods or general technology that was not particularly innovative. This is reflected in the relatively low scores in the question-making methods category. Most teachers did not utilize AI technology like ChatGPT to speed up and simplify the question-making process, resulting in suboptimal time efficiency and innovation.

b. Multiple Choice Question Creation

The average time needed to create multiple-choice questions was over 30 minutes, which fell into the "inefficient" category. Teachers often used manual methods in creating questions, which took a long time to align the questions with the learning objectives.

c. Essay Question Creation

Teachers took between 35–50 minutes to create essay questions, categorized as "inefficient." The structure of the questions was often unclear because more time was spent on content creation than on aligning the questions with learning objectives.

d. Short Answer Question Creation

At this stage, creating short answer questions took 20–30 minutes. Manual methods were still dominant, resulting in longer question creation times.

e. Combination of Questions

The time needed to create a combination of questions (multiple choice, essay, and short answer) reached 40–55 minutes. Most teachers struggled to design various types of questions efficiently, with minimal use of technology.

f. Assessment Methods

Before using ClassPoint, the assessment methods employed by teachers were mostly manual and lacked innovation. The majority of teachers relied on traditional methods to evaluate learning outcomes, which did not make full use of technology.

g. Interactivity

Initially, the assessment methods applied did not actively involve students. The learning process was not very interactive, and only a few students participated actively in formative assessment activities.

h. Feedback

The time spent providing feedback to students ranged from 20–30 minutes. Feedback efficiency was suboptimal because technology that could facilitate quick feedback delivery was not used.

Based on the datum, we can conclude that during the pretest phase, the assessment results of English teachers' in conducting formative assessment showed relatively low scores, with total scores ranging from 11 to 18. Most respondents scored between 13 and 16, indicating that English teachers' efficiency in conducting formative assessment before using technology was still considered "fair." These scores suggest that the respondents tended to struggle with composing questions optimally, particularly in terms of technology use and time efficiency. Then, based on the assessment rubric, the average teacher spent a relatively longtime creating questions, most of the time exceeding the efficiency threshold. For instance, creating multiple-choice and essay questions often took more than 30 minutes, which was considered inefficient. The use of technology in the question creation process was also minimal, with many teachers relying more on manual methods or general technologies that were less innovative. The aspects of interactivity and providing feedback to students were also considered suboptimal, as most respondents did not use technology to facilitate formative assessment interactively. For clarity, the following English teachers' efficiencies test scores either in creating formative questions or carrying on assessment formative in the pretest phase:

Table. 7: Teachers Efficiency Test in Pretest Phase

NO. Respondents	Teachers Efficiency Test Score								Total
	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	
1	2	2	2	2	2	1	1	1	13
2	2	2	2	3	2	1	1	1	14
3	3	3	3	3	3	1	1	1	18
4	2	2	2	3	3	1	1	1	15
5	2	2	2	3	2	1	1	1	14
6	2	2	2	3	3	2	1	1	16
7	2	2	2	3	3	1	1	1	15
8	3	3	3	3	3	1	1	1	18
9	2	2	1	2	1	1	1	1	11

2. English Teachers' Efficiency in Pretest Activities

This section explained the results of the English teacher's efficiency in conducting formative assessment, both in creating formative questions and carrying on formative assessments, after using ChatGPT and ClassPoint technology. Through post-test, the teachers' efficiency was evaluated in terms of their speed and ability to compose various types of questions and apply formative assessment methods. The following is an analysis of the post-test results related to the teachers' efficiency in conducting formative assessments, based on the assessment rubric:

a. Question-Making Methods

After the intervention using ChatGPT, there was a significant improvement in the question-making methods. Teachers began to use AI technology to generate questions more quickly and innovatively. The scores indicated that using ChatGPT helped teachers improve the efficiency and quality of question creation, including producing more varied questions that aligned with learning objectives.

b. Multiple Choice Question Creation

After using ChatGPT, the time required to create multiple-choice questions dropped to 10–15 minutes. This time fell within the optimal category, showing that AI technology could speed up the question-creation process without sacrificing quality.

c. Essay Question Creation

Using ChatGPT reduced the time needed to create essay questions to about 15–20 minutes, which was categorized as efficient. Teachers were able to create more structured essay questions that were relevant to learning, demonstrating that AI technology helped improve the efficiency and quality of question creation.

d. Short Answer Question Creation

The time required to create short answer questions drastically decreased to less than 10 minutes after using ChatGPT, showing a significant improvement in efficiency.

e. Combination of Questions

The time for creating a combination of questions was reduced to 20–25 minutes after the intervention, indicating improved efficiency in using technology to help teachers design various types of questions more quickly and aligned with learning objectives.

f. Assessment Methods

After using ClassPoint, the assessment methods became more innovative. The technology helped teachers conduct more structured and efficient assessments using features like automated grading or live quizzes. This demonstrates that technology was better utilized to improve the efficiency and quality of assessments.

g. Interactivity

After using ClassPoint, interactivity in learning increased significantly. The interactive features in ClassPoint allowed students to be more engaged in assessment activities, such as through quizzes and live classroom activities. With greater student involvement, learning became more engaging and effective.

h. Feedback

With ClassPoint, teachers could provide feedback in less than 10 minutes, showing an improvement in efficiency. The technology allowed for quick and relevant feedback, enhancing the effectiveness of communicating information to students.

After the intervention involving the use of ChatGPT and ClassPoint, there was a significant improvement in the post-test results, with total scores ranging from 29 to 32. Almost all respondents achieved the maximum score across various assessment aspects, indicating a substantial increase in efficiency. For instance, Respondent 1, who previously scored 13 in the pretest, enhanced to 31 in the post-test, showing progress in almost all categories.

In terms of time efficiency, the majority of respondents were able to complete question creation in a more optimal timeframe. According to the rubric, the time taken to create multiple-choice, essay and short-answer questions was generally below the established efficiency thresholds (≤ 15 minutes for multiple-choice, ≤ 20 minutes for essays, and ≤ 10 minutes for short answers). This indicates that using ChatGPT for question creation can significantly expedite the process of composing formative questions. Moreover, the implementation of ClassPoint helped teachers provide quicker and more effective feedback, with feedback time generally falling within the efficient category (≤ 10 minutes). For clarity, the following are the scores of English teachers' efficiency in conducting formative assessments, both in creating questions and administering assessments, during the post-test phase:

Table. 8: Teachers Efficiency Test in Post-Test Phase

No. Respondents	Teachers Efficiency Test Score								Total
	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	
1	4	4	4	3	4	4	4	4	31
2	4	4	4	4	4	4	4	4	32
3	4	3	4	4	4	4	4	4	31
4	4	4	4	4	4	4	4	4	32
5	4	4	4	4	4	4	4	4	32
6	4	4	4	4	3	3	4	3	29
7	4	4	4	4	4	4	4	4	32
8	4	4	4	4	4	4	3	4	31
9	3	4	3	4	4	4	4	4	30

Overall, the pretest and post-test results based on the assessment rubric showed a significant improvement toward English teachers' efficiencies both

creating formative question and carrying on formative assessment. This improvement was evident not only in the higher scores but also in better time efficiency in creating and carrying on formative assessment. The use of technology proved effective in overcoming teachers' workload and enhancing the quality of formative assessments, making them more innovative and interactive.

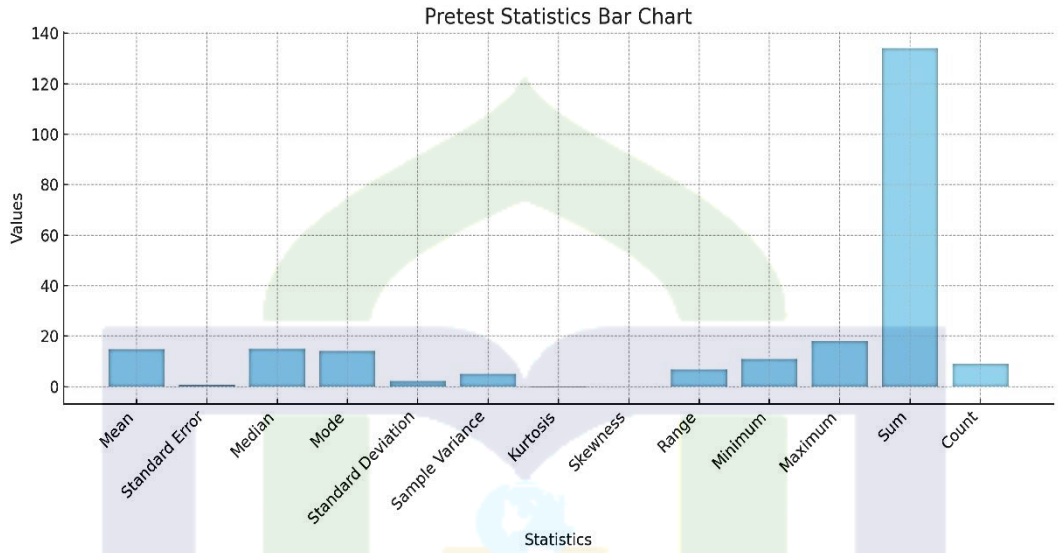
3. Pretest Statistic Analysis Result

In the pretest stage, the average score obtained by the respondents was 14.89, with a minimum score of 11 and a maximum score of 18. The standard deviation of 2.26 indicates a variation in scores among the respondents. These results suggested that before using technologies like ChatGPT and ClassPoint, English teachers' efficiency in conducting formative assessment both creating formative question and carrying on formative assessments were still relatively low, with some teachers showing better results than others. For clarity, it can be seen in Appendix 8 in the table A5.

The results of the descriptive statistical analysis on the pretest data reveal an interesting distribution pattern in English teachers' efficiency in conducting formative assessment both creating formative question and carrying on formative assessments. The alignment between the mean of 14.89, the median of 15.00, and the mode of 14.00 suggests a relatively normal and balanced data distribution. In terms of variability, the standard deviation of 2.26 and variance of 5.11 provide insights into the spread of efficiencies among respondents. The data distribution characteristics are further supported by a skewness value of -0.07, which is close to zero, indicating a tendency toward a symmetrical distribution. The kurtosis value of -0.15 shows a slightly flatter spread compared to a normal distribution, suggesting that the variation in English teachers' efficiencies were evenly distributed without excessive concentration on any specific value. These statistical data serve as an important foundation for further analysis on the effectiveness of the planned intervention. With nine respondents and a total score of 134.00, the analysis results provide a solid quantitative basis for the next stage of the study, which will measure the impact of technology on enhancing English teachers'

efficiency in conducting formative assessment both creating formative question and carrying on formative assessments. The following bar chart of pretest statistic:

Bar Chart. 1: Pretest Statistic



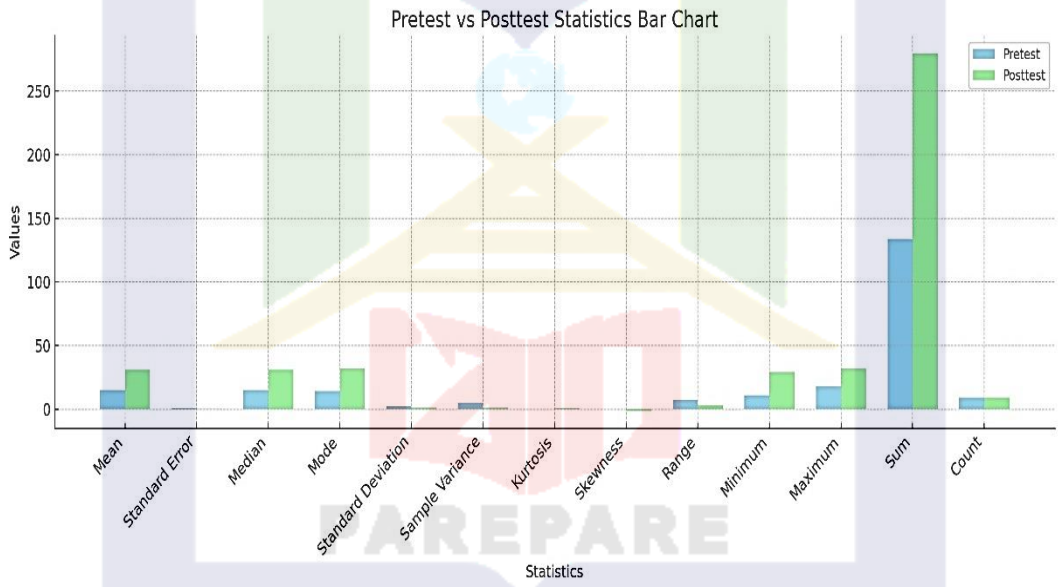
4. Post-Test Statistic Analysis Result

After training and the application of technology toward enhancing English teachers' efficiencies in conducting formative assessment, the post-test scores showed a significant improvement. The average post-test score was 31.11, with a minimum score of 29 and a maximum score of 32. The lower standard deviation of 1.05 indicates that the post-test results were more consistent compared to the pretest. This improvement suggested that technologies like ChatGPT and ClassPoint positively contributed to English teachers' efficiency to create better and more efficient formative assessments. For clarity, it can be seen in Appendix 8 in the table A6.

The results of the post-test descriptive statistical analysis indicated the effectiveness of using ChatGPT and ClassPoint toward the English teachers' efficiencies improvement in formative assessment. The central values shown by the mean of 31.11, median of 31.00, and mode of 32.00 reflect a high level of efficiency achievement in designing and implementing formative assessments after using these technologies. The effectiveness of the training and the application of these technologies is evidenced by a standard deviation of 1.05 and a variance of 1.11,

demonstrating a high consistency in formative assessment. The narrow range of 3 points, with a minimum score of 29.00 and a maximum score of 32.00, indicates that ChatGPT and ClassPoint use successfully created a standardized level of assessment efficiency among teachers. The left-skewed distribution (skewness of -1.09) and the slightly sharper peak than normal (kurtosis of 0.61) further support evidence that the majority of teachers achieved high efficiency in formative assessments after using these technologies. The total score of 280.00 from nine respondents illustrates a substantial collective achievement in enhancing formative assessment efficiency among junior high school English teachers. The following bar chart post-test statistic:

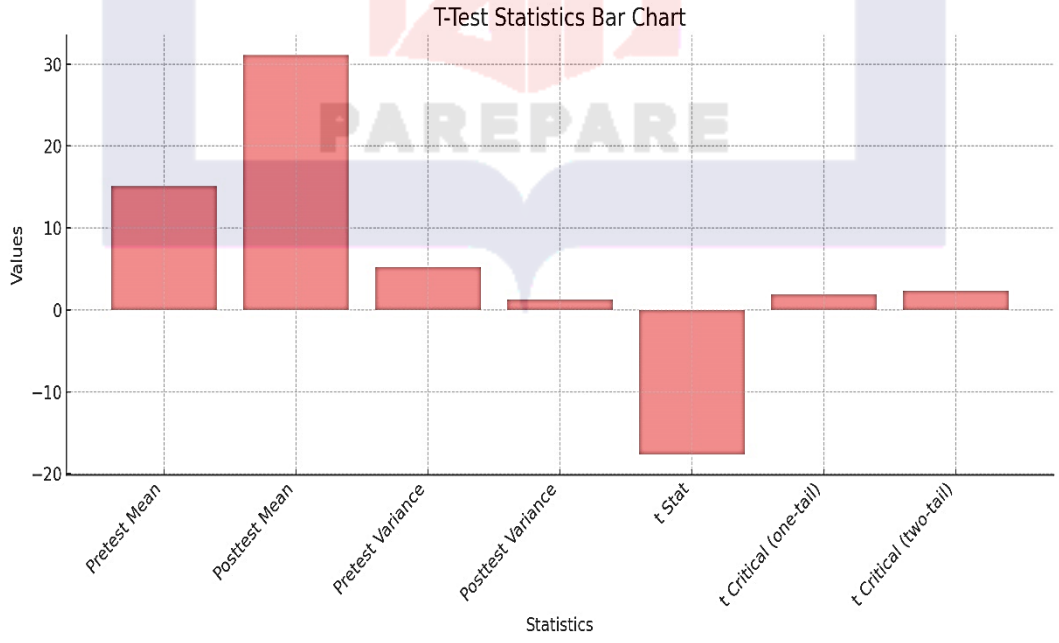
Bar Chart. 2: Post-Test Statistics



To ensure that this improvement was statistically significant, a paired t-test was conducted. The results showed a t-statistic of -17.65 with a two-tailed p-value (P(T<=t) two-tail) of 0.00, which is less than the significance level of 0.05. This indicates a significant difference between the pretest and post-test scores, demonstrating that the use of technologies like ChatGPT and ClassPoint was effective in enhancing English teachers' efficiency in conducting formative assessment both creating formative question and carrying on formative assessments. For clarity, it can be seen in Appendix 8 in the table A7.

The researcher concludes that the distribution of pretest scores, with a mean of 14.89 and a standard deviation of 2.26, indicates a relatively large initial variation in teachers' formative assessment. The symmetrical distribution pattern (skewness -0.07) and slightly flatter spread (kurtosis -0.15) suggest an even distribution of efficiency at the initial stage. After the use of ChatGPT and ClassPoint, there was a substantial improvement with a mean of 31.11 and a reduction in the standard deviation to 1.05. The left-skewed distribution (skewness -1.09) indicates a concentration of achievement at a higher efficiency level. Furthermore, the t-test results show a highly significant difference (t-stat = -17.65, $p < 0.05$) between efficiencies before and after the use of technology. The change in variance from 5.27 to 1.27 confirms the increased consistency in formative assessment. These comprehensive statistical data support the use of ChatGPT and ClassPoint to enhance English teachers' efficiency in conducting formative assessment both creating formative question and carrying on formative assessment at junior high school. This significant and consistent improvement was validated through a series of mutually reinforcing descriptive and inferential statistical analyses. For Clarity, the following bar chart t-test statistic:

Bar Chart. 3: T-Test Statistics



The results of this analysis reinforce that the application of technology in the process of creating and assessing formative assessments can overcome teachers' administration workloads and assist them in developing questions that are more aligned with learning objectives. With ChatGPT, the question-creation process becomes faster and more varied, while ClassPoint facilitates the implementation of interactive assessments. These two technologies have proven to not only improve time efficiency but also improve the quality of questions created by teachers, thus addressing the issue of a lack of innovation in formative assessments in the classroom.

4. Questionnaire Analysis Result

From the questionnaire analysis, teachers' perceptions of the use of ChatGPT and ClassPoint in formative assessments were very positive. The average response percentage for each question was 90%, indicating that most respondents felt that the integration of these technologies provided significant benefits in the learning process.

On the first question (Q1), 89% of respondents stated that ChatGPT helps them create diverse and engaging formative assessments. This indicates that the use of artificial intelligence technology can support teachers' creativity in designing varied questions, thus facilitating more effective and adaptive teaching.

For the second question (Q2), 91% of respondents agreed that ChatGPT speeds up the process of creating formative assessments. This result reflects the time efficiency gained from using ChatGPT, overcoming teachers' workloads and allowing them to focus more on other aspects of teaching.

The third question (Q3) showed that 87% of respondents found it easy to create questions aligned with learning objectives using ChatGPT. Although still in the positive category, this percentage is slightly lower compared to other questions, indicating that there are still some challenges in ensuring that the questions generated truly align with the desired learning objectives.

The highest result was seen in the fourth question (Q4), where 93% of respondents strongly agreed that ClassPoint facilitates the implementation of formative assessments in the classroom. This high acceptance indicates that

ClassPoint's features are considered highly helpful for teachers in managing and conducting assessments more efficiently.

On the fifth question (Q5), 89% of respondents agreed that the analysis feature in ClassPoint helps them better understand student assessment results. This technology is considered capable of providing deeper insights into student performance, enabling teachers to deliver more targeted interventions.

Similarly, 89% of respondents agreed that the use of this technology (Q6) improves student engagement in the formative assessment process. This suggests that the features available in this technology can attract students' interest and encourage more active participation during the assessment process.

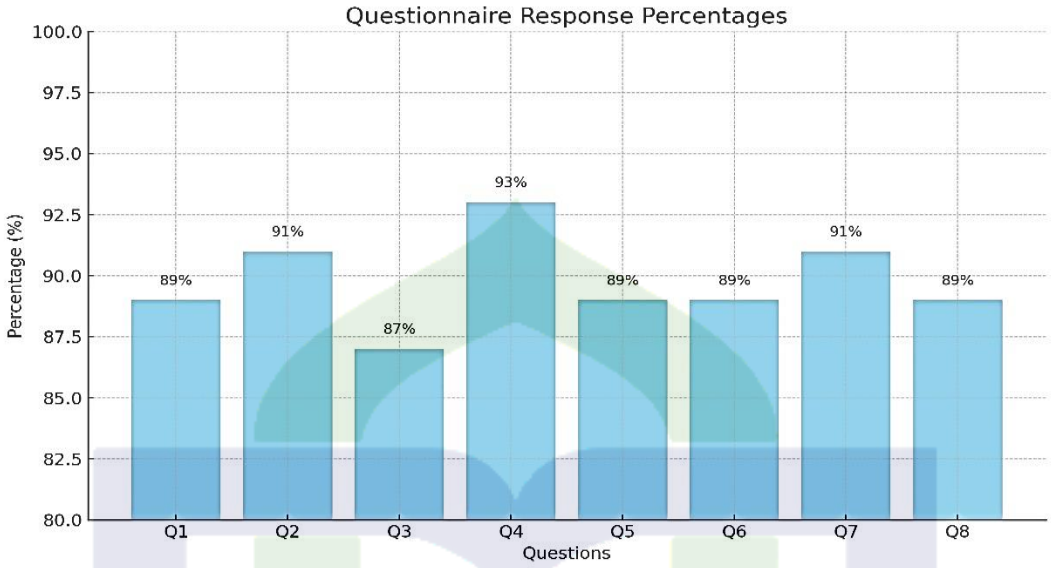
For the seventh question (Q7), 91% of respondents agreed that the feedback they provide through ClassPoint is more effective and constructive. This is crucial to ensure that students understand their strengths and weaknesses, allowing the learning process to continuously improve.

Finally, on the eighth question (Q8), 89% of respondents agreed that, overall, the use of ChatGPT and ClassPoint has a positive impact on their teaching process. This result confirms that the integration of technology can create a more dynamic, interactive, and effective learning environment. For clarity, it will be shown in the following table and bar chart:

Table. 9: Questionnaire Percentage

No. Respondents	Questionnaire							
	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8
1	5	5	5	5	5	5	5	5
2	4	4	4	4	4	4	4	4
3	5	5	5	5	5	5	5	5
4	4	5	4	4	4	4	5	4
5	4	4	4	5	4	4	4	4
6	4	5	4	5	5	5	5	5
7	4	4	4	4	4	4	4	4
8	5	4	4	5	5	5	5	4
9	5	5	5	5	4	4	4	5
Total	**40**	**41**	**39**	**42**	**40**	**40**	**41**	**40**
Percentage	**89%**	**91%**	**87%**	**93%**	**89%**	**89%**	**91%**	**89%**
Average	**90%**							

Bar Chart. 4: Bar Chart of Response Percentage

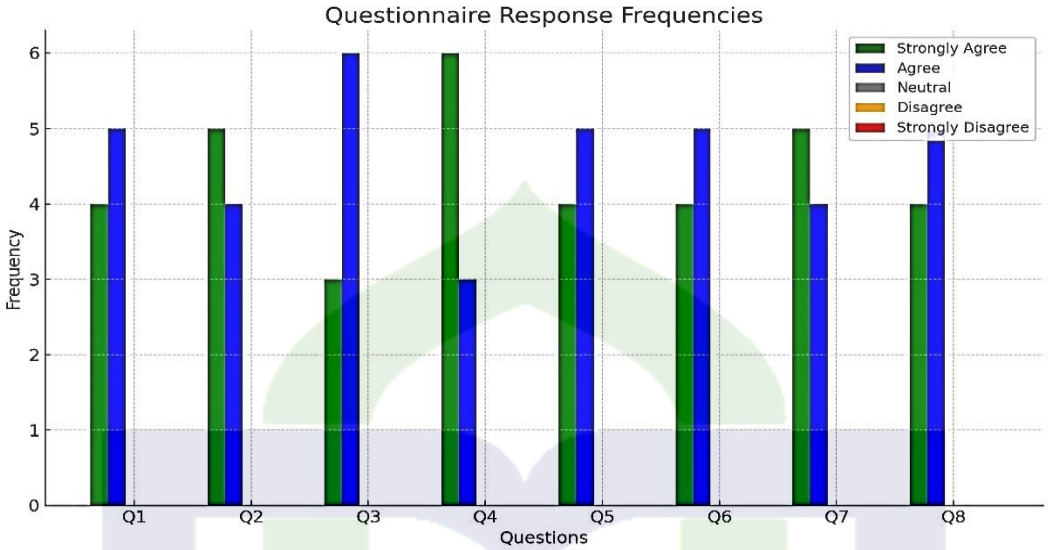


Overall, the results of this questionnaire show that the majority of respondents have given positive feedback on the use of ChatGPT and ClassPoint in formative assessments. With the dominance of "Strongly Agree" and "Agree" responses across all questions. For clarity, the following questionnaire table and bar chart will be shown:

Table. 10: Questionnaire Score

NO. Respondents	Questionnaire							
	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8
1	5	5	5	5	5	5	5	5
2	4	4	4	4	4	4	4	4
3	5	5	5	5	5	5	5	5
4	4	5	4	4	4	4	5	4
5	4	4	4	5	4	4	4	4
6	4	5	4	5	5	5	5	5
7	4	4	4	4	4	4	4	4
8	5	4	4	5	5	5	5	4
9	5	5	5	5	4	4	4	5
Frequencies	**Q1**	**Q2**	**Q3**	**Q4**	**Q5**	**Q6**	**Q7**	**Q8**
Strongly Agree	4	5	3	6	4	4	5	4
Agree	5	4	6	3	5	5	4	5
Neutral	0	0	0	0	0	0	0	0
Disagree	0	0	0	0	0	0	0	0
Strongly Disagree	0	0	0	0	0	0	0	0

Bar Chart. 5: Questionnaire Response Frequencies



The table concludes that the integration of these technologies had successfully enhanced English teachers' efficiency in conducting formative assessment both creating formative question and carrying on formative assessment in the classroom. These findings support the research hypothesis that technologies such as ChatGPT and ClassPoint could enhance English teachers' efficiency in conducting formative the efficiency and the technologies were effective in overcoming teachers' administration workloads.

B. *Discussions*

This study aims to examine the use of ChatGPT and ClassPoint to enhance English teachers' efficiency in conducting formative assessments at junior high schools in Mamuju Tengah Regency, West Sulawesi Province. The main focus of the research is to evaluate whether using these technologies can enhance English teachers' efficiency in conducting formative assessments, both in creating formative questions and carrying out assessments. The background issue driving this research is the high administrative workload of teachers, which often hampers their efficiency in conducting assessments. To address the main research question regarding the use of ChatGPT and ClassPoint to enhance English teachers' efficiency in conducting formative assessments, as well as the second question

about teachers' perceptions of using these technologies, this study adopts a quantitative approach with a pre-experimental one-group pretest-post-test design. This method allows the researchers to observe changes in English teachers' efficiency before and after the intervention and analyze their perceptions of the technologies used[72].

This study highlights a significant transformation in the efficiency of English teachers in Budong-Budong Subdistrict in conducting formative assessments through the utilization of ChatGPT and ClassPoint technologies. The findings reveal a profound paradigmatic shift in educational assessment practices, where artificial intelligence (AI) has transitioned from being a supplementary tool to a strategic partner in teaching and evaluation processes. Prior to the technological intervention, English teachers faced substantial challenges in efficiently creating test items and conducting formative assessments. Traditional manual processes were time-consuming: creating multiple-choice questions took up to 30 minutes, essay questions required 35–50 minutes, and mixed-format tests demanded 40–55 minutes. This high administrative workload significantly restricted teachers' capacity for pedagogical innovation. This context aligns with the findings of Soegiarto et al.,[73] who emphasized that the Industrial Revolution 4.0 and Society 5.0 demand fundamental transformations in educational practices. Their research underscores that AI is not merely a supporting technology but an urgent necessity to prepare educators for the complexities of future challenges. The technological intervention in this study provides concrete empirical evidence of AI's transformative potential. With the integration of ChatGPT, the time required to create multiple-choice questions dropped dramatically to 10–15 minutes, essay questions to 15–20 minutes, and short-answer questions to less than 10 minutes.

[72] Nizar, A. (2014). Metode Penelitian Pendidikan Pendekatan Kuantitatif. *Kualitatif, PTK, dan Penelitian Pengembangan, Bandung: Cipta Pustaka Media*. http://repo.uinsyahada.ac.id/951/1/Ahmad%20Nizar%20Rangkuti%20-%202016%20-%20Metode%20Penelitian%20Pendidikan%20.pdf

[73] Soegiarto, I., Hasnah, S., Nuraisyah Annas, A., Sundari, S., & Dhaniswara, E. (2023). Inovasi Pembelajaran Berbasis Teknologi Artificial Intelligences (AI) pada Sekolah Kedinasan di Era Revolusi Industri 4.0 dan Society 5.O. Innovative: Journal of Social Science Research, 3(5), 10546–10555. Retrieved from https://j-innovative.org/index.php/Innovative/article/view/6132

This reduction in time goes beyond technical efficiency; it liberates teachers' cognitive space to focus on more meaningful pedagogical aspects. Wiwin Rif'atul Fauziyati's research [74] on the impact of AI in Islamic education offers a complementary perspective. Both studies share a fundamental view that technology is not a threat but a strategic partner with the potential to optimize teaching and learning experiences. The difference lies in this study's provision of concrete evidence through a pre-experimental design with rigorous quantitative measurements. The increase in teachers' efficiency scores, from an average of 14.89 in the pretest to 31.11 in the post-test, indicates a significant transformation. A paired t-test with $p < 0.05$ confirms that this improvement is not coincidental but the measurable result of technological intervention. This supports the argument that AI has the capacity to redefine pedagogical practices. ClassPoint introduces a new dimension of interactivity in formative assessments. Its features enable teachers to provide feedback in less than 10 minutes and foster a more dynamic assessment environment. 93% of respondents agreed that this technology facilitates the implementation of formative assessments in classrooms, indicating a high level of acceptance for technological innovations. Siti Joanna Matlan's study[75] on the use of Quizizz in mathematics learning provides additional context. Both studies share a fundamental philosophy about gamification and technology in education: that technology does not merely automate processes but transforms learning experiences into more interactive and engaging activities. The study by Vera Mandailina et al.[76] on AI training for teachers further reinforces this narrative. They demonstrate that technology integration requires a comprehensive approach, extending beyond merely introducing tools to transforming teachers' pedagogical

[74] Fauziyati, W. R. . (2023). Dampak Penggunaan Artificial Intelligence (AI) dalam Pembelajaran Pendidikan Agama Islam. Jurnal Review Pendidikan dan Pengajaran (JRPP), 6(4), 2180–2187. Https://doi.org/10.31004/jrpp.v6i4.21623

[75] MATLAN, Siti Joanna; MAAT, Siti Mistima. Penggunaan Aplikasi Quizizz sebagai Alternatif Penilaian Formatif dalam Pengajaran dan Pembelajaran Matematik. Jurnal Dunia Pendidikan, [S.l.], v. 3, n. 4, p. 217-227, dec. 2021. ISSN 2682-826X. Available at: <https://myjms.mohe.gov.my/index.php/jdpd/article/view/16270>. Date accessed: 30 nov. 2024.

[76] Mandailina, V., Syaharuddin, S., & Abdillah, A. (2024). Pelatihan Penerapan Teknologi Artificial Intelligence untuk Meningkatkan Kompetensi Guru dalam Menyusun Perangkat Pembelajaran. *Darma Diksani: Jurnal Pengabdian Ilmu Pendidikan, Sosial, dan Humaniora*, *4*(1), 26–37. https://doi.org/10.29303/darmadiksani.v4i1.4928

competencies. The findings of this study have significant implications. First, they demonstrate that teachers' administrative workload can be substantially reduced through intelligent technology. Second, they show that AI can act as a catalyst for pedagogical innovation rather than a mere mechanical substitute for manual processes. This article does not merely document changes but actively participates in redesigning how technology can serve as a strategic partner in empowering educators. It reflects systematic efforts to understand and shape the future of education in the digital era.

An important aspect to highlight is how ChatGPT and ClassPoint have transformed from mere technological tools into intellectual partners for teachers. Tasks such as creating test items, which previously took tens of minutes, can now be completed in just minutes without compromising pedagogical substance. The diversity of test items generated through ChatGPT demonstrates the potential of AI technology in creating more adaptive and comprehensive assessment instruments. 89% of respondents stated that this technology helped them design more varied and engaging assessments, indicating that AI not only automates but also fosters pedagogical creativity. Statistical analysis revealed a significant reduction in score variance from 5.27 to 1.27, indicating increased consistency in formative assessment practices among teachers. This reflects the impact of technology in driving standardization of assessment quality, an achievement challenging to attain through conventional methods. The interactivity brought by ClassPoint represents a methodological revolution in formative assessment. This technology does not merely measure learning outcomes but transforms assessment processes into participatory experiences where students actively engage. 89% of teachers acknowledged increased student engagement, highlighting technology's potential to create more dynamic learning environments. The capability for quick and constructive feedback is one of the primary strengths of this technology. 91% of respondents indicated that feedback through ClassPoint was more effective, enabling teachers to provide precise guidance in a short amount of time. This is a significant breakthrough in overcoming the time and resource constraints that have long hindered educators. This study carries profound methodological implications

for teachers' professional development. It does not merely introduce new technology but encourages transformative thinking paradigms where teachers are viewed as techno-pedagogical innovators rather than mere curriculum implementers. The challenges of implementing this technology must still be considered. While most teachers responded positively, there remains a need for continuous training and adaptation. Vera Mandailina's research on AI training for teachers provides insight that technological transformation requires a comprehensive approach beyond the mere introduction of tools. From a theoretical perspective, this study strengthens the argument that AI in education is not about replacing teachers but expanding their professional capacities. Technology serves as an intellectual extension that liberates teachers from routine administrative burdens, allowing them to focus on transformative teaching aspects. The unique contribution of this study lies in its empirical measurement of technology's impact in the specific context of formative English assessments. Compared to previous studies that tend to be conceptual, this study provides concrete evidence of AI's practical potential.

The hypothesis of this research represents the culmination of an in-depth exploration of technological transformation in educational practices. The proposed null hypothesis (H0) states that the use of ChatGPT and ClassPoint will not significantly enhance the efficiency of English teachers in conducting formative assessments. Conversely, the alternative hypothesis (H1) asserts the belief that these technologies hold real potential to transform assessment paradigms. Empirical analysis provides robust evidence to reject the null hypothesis. The first evidence is seen in the dramatic change in teacher efficiency scores. The average pre-test score of 14.89 experienced a substantial increase to 31.11 in the post-test. This improvement of 16.22 points is not merely a statistical figure but a concrete representation of the transformation in pedagogical capacity. Statistical significance is reinforced through a paired t-test, yielding a p-value of <0.05, definitively demonstrating that the observed changes are not due to chance but are the result of measurable technological interventions. Equally compelling is the reduction in score variance from 5.27 to 1.27, indicating increased consistency in

assessment practices among teachers. Qualitative data provide deeper dimensions to the quantitative findings. A total of 93% of respondents stated that technology significantly facilitated the formative assessment process. Additionally, 89% of teachers acknowledged that ChatGPT helped them design more varied and engaging assessment instruments. Furthermore, 91% noted that feedback via ClassPoint was far more effective than conventional methods. Time efficiency stands out as the most tangible indicator of transformation. Processes such as question creation, which previously took tens of minutes, can now be completed in mere minutes. Multiple-choice questions that once required 30 minutes can now be finalized in 10–15 minutes. Essay questions that used to take 35–50 minutes can now be completed within 15–20 minutes. Even short-answer questions now take less than 10 minutes. The conclusion of the study firmly declares that the alternative hypothesis (H1) is accepted. The use of ChatGPT and ClassPoint has been proven to significantly enhance the efficiency of English teachers in conducting formative assessments. However, this conclusion goes far beyond a mere statistical statement. The findings of this research provide a fundamental contribution to our understanding of technology integration in education. AI technology is no longer viewed as an external tool but as a strategic partner capable of empowering educators. It does not replace teachers but liberates them from administrative burdens, enabling them to focus on more meaningful pedagogical aspects. The theoretical implications of this research are highly significant. It opens the door to a new paradigm in the relationship between humans and technology within the educational ecosystem. In the era of Industry 4.0 and Society 5.0[77], technology is no longer an optional choice but an urgent necessity. Teachers are no longer mere curriculum implementers but techno-pedagogical innovators who can leverage technology to create more dynamic and meaningful learning experiences.

The theoretical and practical implications of this study extend far beyond merely improving teachers' efficiency in formative assessments. At a theoretical

[77] Budihardjo, B., Pambudi, N. A., & Efendi, A. (2021, October). Urgensi Penggunaan Aplikasi Android-Geofinder berbasis Geographic Information System (GIS) dalam Mendukung Prilaku Konservatif Lingkungan Hidup bagi Mahasiswa. In *Prosiding SNPBS (Seminar Nasional Pendidikan Biologi dan Saintek)* (pp. 183-190).

level, this research makes a substantial contribution to our understanding of artificial intelligence (AI) integration in education. Epistemologically, the study challenges traditional concepts of the role of technology in teaching. Artificial intelligence is no longer seen merely as a technical aid but as an intellectual partner capable of expanding and enriching pedagogical practices. ChatGPT and ClassPoint do not merely automate processes; they open up space for creativity and innovation previously constrained by administrative burdens. From a sociotechnological perspective, the research maps a fundamental transformation in the relationship between educators, technology, and the teaching-learning process. In the era of Industry 4.0 and the Society 5.0 concept[78], the boundaries between technology and human practices are increasingly blurred. Teachers are no longer passive recipients of technology but active agents who can utilize, adapt, and transform technological tools. The practical implications of this study are both concrete and urgent. First, it offers a tangible model of how AI technology can reduce teachers' administrative burdens. Time saved in question creation can be redirected to more strategic activities, such as designing innovative teaching strategies, providing individualized guidance, and developing more personalized learning methods. Second, this research paves the way for the professional development of teachers in the digital era. Teacher training is no longer just about mastering curriculum content but also about technological literacy and the ability to adapt to AI tools. The capacity to understand, integrate, and transform technology is becoming a key competency for future educators. The geographic setting of this research—Budong-Budong Subdistrict, with its limited technological infrastructure—serves as an interesting example of the potential for equitable education quality through technology. The study demonstrates that geographic and economic constraints need not be barriers to accessing quality educational technology. However, the study also critically acknowledges several challenges that need attention. The integration of AI in education raises complex

[78] Tahar, A. ., B. Setiadi, P. ., & Rahayu, S. . (2022). Strategi Pengembangan Sumber Daya Manusia dalam Menghadapi Era Revolusi Industri 4.0 Menuju Era Society 5.0 . *Jurnal Pendidikan Tambusai*, *6*(2), 12380–12394. https://doi.org/10.31004/jptam.v6i2.4428

ethical questions: How do we maintain the originality of assessments? How can data privacy be protected? How can fairness in assessments be ensured? These are not just technical questions but philosophical inquiries into the relationship between technology, education, and humanity. Future research is recommended to conduct comprehensive studies on the long-term impact of AI technology in education. This should go beyond measuring efficiency to investigate how such technology influences learning quality, student outcomes, and the overall transformation of the pedagogical experience. The fundamental conclusion of this study is a paradigmatic assertion: technology is not merely an instrument but a strategic partner in shaping the future of education. Teachers are at the forefront of this transformation—not as victims of technology but as active innovators shaping a more dynamic, inclusive, and meaningful learning ecosystem.

In the context of deeper implications, this study reveals several critical dimensions of educational transformation in the digital era. One of the most compelling aspects is how AI technology not only changes the technical mechanisms of assessment but also transforms the epistemology of teaching itself. Previously, teachers were constrained by administrative routines that consumed much of their time and energy. Tasks such as creating test questions, analyzing results, and providing feedback often eroded their pedagogical creativity. ChatGPT and ClassPoint create new opportunities for teachers to break free from these administrative constraints, enabling a deeper focus on the transformative aspects of teaching. AI technology in this context acts as a capacity enhancer, not a replacement. It does not aim to diminish the role of teachers but rather to expand the horizons of pedagogical possibilities. The ability to produce varied questions quickly, provide precise feedback, and foster a more interactive assessment environment represents a methodological revolution in educational practice. The significance of this research lies in its ability to provide empirical evidence of the transformative potential of technology. The increase in teacher efficiency scores from 14.89 to 31.11 is not just a statistical achievement but a narrative of

professional empowerment. It signifies that technology can catalyze change[79], allowing teachers to revolutionize their pedagogical practices. However, the study also critically acknowledges the complexity of technology integration. It is not merely a matter of technical implementation but a philosophical transformation in understanding the role of technology in education. The fundamental question raised is: How can AI become a meaningful intellectual partner in the teaching-learning process? The geographic context of Budong-Budong Subdistrict adds another dimension to the study's findings. In a region with limited technological infrastructure, the quality of education has been accelerated through innovative AI-based solutions. This underscores the potential for equitable education quality, even in resource-constrained settings. The most pressing practical implication is the need for ongoing professional development for teachers. Technological literacy is no longer an optional skill but a core competency for future educators[80]. The ability to understand, adapt, and transform AI technology has become a prerequisite for remaining relevant in an ever-evolving educational ecosystem. This study also opens up a broader research agenda. Questions about the long-term impact of AI on learning quality, student creativity, and the transformation of pedagogical experiences require deeper exploration. This is not merely a study of efficiency but an initial mapping of the future of education.

The fundamental conclusion is that we are at a historical turning point in the relationship between technology, education, and humanity. AI is no longer viewed as a threat or an external tool but as a strategic partner in creating more meaningful, personalized, and transformative learning experiences.

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[79] Jenita, J., Harefa, A. T. ., Pebriani, E. ., Hanafiah, H., Rukiyanto, B. A. ., & Sabur, F. . (2023). Pemanfaatan Teknologi dalam Menunjang Pembelajaran: Pelatihan Interaktif dalam Meningkatkan Kualitas Pendidikan. *Community Development Journal: Jurnal Pengabdian Masyarakat*, *4*(6), 13121–13129. https://doi.org/10.31004/cdj.v4i6.23614

[80] Kurniawaty, I., & Faiz, A. . (2022). Urgensi Digital Literasi Menuju Masyarakat Global Citizen. *Jurnal Pendidikan Tambusai*, *6*(2), 12187–12193. https://doi.org/10.31004/jptam.v6i2.4397

CHAPTER V
CONCLUSION AND SUGGESTIONS

A. *Conclusion*

Based on the data analysis conducted in the study "The Use of ChatGPT and ClassPoint Online Apps to Enhance English Teachers' Efficiency in Conducting Formative Assessment," significant results were found toward enhancing English teachers' efficiency in conducting formative assessment both creating formative question and carrying on formative assessment. This was evidenced by statistical tests showing a meaningful difference between pretest and post-test scores. The t-test analysis showed a substantial increase from an average pretest score of 15.13 to a post-test score of 31.13, with a p-value < 0.05. The mean difference of 15.98 points indicates that the use of ChatGPT and ClassPoint significantly positively impacted English teachers' efficiency in conducting formative assessment. This improvement in efficiency was reflected in the teachers' ability to produce a more diverse range of questions and conduct more effective formative assessments. This aligns with the research objective of addressing the issue of administrative workload that previously hindered innovation in the assessment process. Furthermore, statistical data showed consistent improvement across all assessment aspects, with the standard deviation decreasing from 2.26 in the pretest to 1.05 in the post-test. This indicates that the increase in efficiency occurred uniformly among the respondents. Regarding teachers' perceptions of using ChatGPT and ClassPoint, the questionnaire results showed a very high level of acceptance, with an average approval rate of 90%. The absence of negative responses (0% disagreement) indicates positive acceptance of integrating this technology into the assessment process. Ease of use received the highest response, with an approval rate of 93%, showing that both platforms can be easily adopted by teachers. The consistent positive responses ranging from 87-93% across all dimensions confirm the overall usefulness of these platforms.

Based on these results, it can be concluded that the alternative hypothesis (H1) was accepted, stating that the use of ChatGPT and ClassPoint can enhance English teachers' efficiency in conducting formative assessment. This improvement is not only reflected in the numerical scores but also in the positive perception of the teachers towards using these platforms. The findings of this study provide empirical evidence that integrating AI technology and interactive learning platforms could be an effective solution to address teachers' administrative workload challenges while improving the quality of formative assessments. This increased efficiency enables teachers to focus more on pedagogical aspects and the development of innovative assessment methods. The successful implementation of ChatGPT and ClassPoint in enhancing English teachers' efficiency also indicated the potential for further development in using technology to support the learning process. These results open opportunities for further exploration and development of similar technology integration in educational contexts.

Overall, this study validates the use of ChatGPT and ClassPoint as reliable tools for enhancing English teachers' efficiency in conducting formative assessment both creating formative question and carrying on formative assessment. This success provides a strong foundation for broader implementation and the development of similar strategies in other educational institutions.

B. *Suggestion*

Based on the research findings toward the use of ChatGPT and ClassPoint to enhance English teachers' efficiency in formative assessment at Junior High School English teachers, the following recommendations are suggested:

a. For Schools

Schools should conduct regular training on the use of ChatGPT and ClassPoint, provide adequate infrastructure, and facilitate discussion forums among teachers to maximise the benefits of these platforms in enhancing the quality of formative assessments.

b. For Teachers

Teachers should consistently optimize the use of ChatGPT and ClassPoint to develop a variety of formative assessment instruments, conduct interactive assessments, and actively collaborate in sharing best practice experiences with colleagues.

c. For Future Researchers

Future studies should use a larger sample size with a mixed-method approach and a longer duration to explore specific aspects such as creativity in question creation, the quality of feedback, and the effectiveness of formative assessments across different learning contexts.

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APPENDICES

Appendix 1: Research Permit Application Letter

KEMENTERIAN AGAMA REPUBLIK INDONESIA
INSTITUT AGAMA ISLAM NEGERI PAREPARE
PASCASARJANA
Jalan Amal Bakti No. 8 Soreang, Kota Parepare 91132 Telepon (0421) 21307, Fax. (0421) 24404
PO Box 909 Parepare 91100 website: www.iainpare.ac.id, email: mail@iainpare.ac.id

Nomor : B-994/In.39/PP.00.09/PPS.05/08/2024 09 Agustus 2024
Lampiran : -
Perihal : Permohonan Izin Penelitian

Yth. **Bapak Bupati Mamuju Tengah**
Cq. **Pelayanan Terpadu Satu pintu (PTSP)**

Di

Tempat

Assalamu Alaikum Wr. Wb.

Sehubungan dengan rencana penelitian untuk Tesis mahasiswa Pascasarjana IAIN Parepare tersebut di bawah ini :

Nama	:	ASWAR
NIM	:	2220203879102002
Program Studi	:	Tadris Bahasa Inggris
Judul Tesis	:	**The Use of ChatGPT and ClassPoint Online Apps to Enhance English Teachers' Efficiency in Conducting Formative Assessment**

Untuk keperluan Pengurusan segala sesuatunya yang berkaitan dengan penelitian tersebut akan diselesaikan oleh mahasiswa yang bersangkutan. Pelaksanaan penelitian ini direncanakan pada bulan **Agustus s/d Oktober** Tahun **2024**

Sehubungan dengan hal tersebut diharapkan kepada bapak/ibu kiranya yang bersangkutan dapat diberi izin dan dukungan seperlunya.

Assalamu Alaikum Wr. Wb.

Direktur,

Dr. H. Islamul Haq, Lc.,M.A
NIP. 198403 201503 1 004

Appendix 2: Research Confirmation Letter

PEMERINTAH KABUPATEN MAMUJU TENGAH
DINAS PENANAMAN MODAL DAN PELAYANAN TERPADU SATU PINTU
Alamat : Jl. Daeng Maccirinnae Tobadak, Kec. Tobadak, Kab. Mamuju Tengah 91563
Pos-el : dpmptsp.mateng@gmail.com

SURAT KETERANGAN PENELITIAN
Nomor B/500.16.7.4/119/DPMPTSP/VIII/2024

Dasar :
1. Peraturan Menteri Dalam Negeri Republik Indonesia Nomor 3 Tahun 2018 tentang Penerbitan Surat Keterangan Penelitian.
2. Peraturan Bupati Mamuju Tengah Nomor 31 Tahun 2023 tentang Penyelenggaraan Perizinan Berusaha Perizinan dan Non Perizinan pada Kepala Dinas Penanaman Modal, Pelayanan Terpadu Satu Pintu Kabupaten Mamuju Tengah;
3. Surat Dari Institut Agama Islam Negeri Pare-Pare Nomor: B-994/In.39/PP.00.09/PPS.05/08/2024 Tentang Permohonan Rekomendasi Izin Penelitian

MEMBERITAHUKAN BAHWA :

Nama	**ASWAR**
NIM	2220203879102002
Program Studi	**Tadris Bahasa Inggris**
Alamat	**Dusun Kire Utara**
No. HP	082293666476
Untuk	Melakukan Penelitian/Pengumpulan Data dengan Judul "THE USE OF CHATGPT AND CLASSPOINT ONLINE APPS TO ENHANCE ENGLISH TEACHERS' EFFICIECY IN CONDUCTING FORMATIVE ASSESSMENT" Lokasi Penelitian Di SMP Sekecematan Budong-Budong Waktu/Lama Penelitian, 1 Bulan

Sehubungan dengan hal tersebut diatas, pada prinsipnya Kami menyetujui Kegiatan tersebut dengan ketentuan :

1. Sebelum dan sesudah melaksanakan kegiatan, kepada yang bersangkutan diharapkan melapor kepada Bupati Mamuju Tengah, Cq. Dinas Penanaman Modal dan Pelayanan Terpadu Satu Pintu Kab. Mamuju Tengah.
2. Penelitian tidak Menyimpang dari Izin yang diberikan.

Dokumen ini telah ditandatangani secara elektronik yang diterbitkan oleh Balai Sertifikasi Elektronik (BSrE), BSSN

3. Mentaati semua peraturan perundang-undangan yang berlaku dan mengindahkan adat istiadat setempat.
4. Menyerahkan 1 (satu) Examplar copy hasil penelitian Kepada Bupati Mamuju Tengah Cq. Dinas Penanaman Modal dan Pelayanan Terpadu dan Satu Pintu Kab. Mamuju Tengah.
5. Surat Izin akan dicabut dan dinyatakan tidak berlaku apabila ternyata pemegang surat izin ini tidak mentaati ketentuan tersebut diatas.

Demikian rekomendasi ini dibuat untuk digunakan sebagaimana mestinya.

Tobadak, 15 Agustus 2024
Kepala Dinas Penanaman Modal dan Pelayanan Terpadu Satu Pintu,

Drs. SALMAN ALI, M.Pd.
Pembina Utama Muda/IVc
NIP. 19641203 199512 1 003

Appendix 3: Certificate of Abstract

KEMENTERIAN AGAMA REPUBLIK INDONESIA
INSTITUT AGAMA ISLAM NEGERI PAREPARE
UNIT PELAKSANA TEKNIS BAHASA
Jalan Amal Bakti No. 8 Soreang, Kota Parepare 91132 Telepon (0421) 21307, Fax. (0421) 24404
PO Box 909 Parepare 91100,website: www.iainpare.ac.id, email: mail@iainpare.ac.id

SURAT KETERANGAN
Nomor: B-205/In.39/UPB.10/PP.00.9/10/2024

Yang bertanda tangan dibawah ini,

Nama	: Hj. Nurhamdah, M.Pd.
NIP	: 19731116 199803 2 007
Jabatan	: Kepala Unit Pelaksana Teknis (UPT) Bahasa

Dengan ini menerangkan bahwa berkas sebagai berikut atas nama,

Nama	: Aswar
Nim	: 2220203879102002
Berkas	: Abstrak

Telah selesai diterjemahkan dari Bahasa Indonesia ke Bahasa Inggris dan Bahasa Arab pada tanggal 30 Oktober 2024 oleh Unit Pelaksana Teknis Bahasa IAIN Parepare.

Demikian surat keterangan ini dibuat untuk dapat dipergunakan sebagaimana mestinya.

Parepare, 30 Oktober 2024
Kepala,

KEMENTERIAN AGAMA UPT. BAHASA INSTITUT AGAMA ISLAM NEGERI PAREPARE

Hj. Nurhamdah, M.Pd.
NIP 19731116 199803 2 007

Appendix 4: Formative Assessment Rubric Guide

Table A1: Assessment Rubric Guide on Pretest

RESEARCH RUBRIC OF
ASSESSMENT FORMATIVE ON PRETEST

Research Title : The Use of ChatGPT and ClassPoint Online Apps to Enhance English Teachers' Efficiency in Conducting Formative Assessment

Researcher Data :
Name : ASWAR
Student ID : 2220203879102002
Study Program : Tadris Bahasa Inggris Graduate Program of the State Islamic Institute of Pare-Pare (IAIN Pare-Pare)

Respondent Identity :
Name : .....
Employee ID : .....
School : .....
Contact Person : .....
Date and Time : .....

Assessment Rubric for Question Creation and Assessment Methods

Aspects	Descriptions	Score 4 (Very Good)	Score 3 (Good)	Score 2 (Fair)	Score 1 (Poor)
Question Creation Method	Do teachers use innovative technology in question creation?				
Multiple Choice	Teachers can construct good, clear multiple-choice questions that align with the learning objectives.				
Essay	Teachers can design essay questions with a good structure, clarity, and alignment with the learning objectives.				
Short Answer	Teachers can create short answer questions that are accurate, clear, and aligned with the learning objectives.				

Short Answer	Teachers can create accurate, clear short-answer questions aligned with learning objectives.	Relevant questions, optimal time (≤ 10 minutes).	Relevant questions, longer time (11–20 minutes).	Relevant questions, much longer time (21–30 minutes).	Relevant questions, inefficient time (> 30 minutes).
Question Combination	Teachers can create a good mix of questions (multiple choice, essay, short answer) aligned with learning objectives.	Relevant combination, optimal time (≤ 25 minutes).	Relevant combination, longer time (26–40 minutes).	Relevant combination, much longer time (41–55 minutes).	Relevant combination, inefficient time (> 55 minutes).
Evaluation Method	Does the teacher use innovative technology in the assessment method?	Highly innovative method using AI (ClassPoint) to the fullest.	Innovative method using a mix of manual and general technology.	Fairly innovative method using general technology.	Less innovative method using manual techniques.
Interactivity	Is the assessment method interactive?	Very interactive, with all students actively engaged.	Interactive, with most students engaged.	Fairly interactive, with some student engagement.	Poorly interactive, with most students not engaged.
Feedback	Does the teacher provide effective feedback to students?	Very effective feedback, optimal time (≤ 10 minutes).	Good feedback, longer time (11–20 minutes).	Fair feedback, much longer time (21–30 minutes).	Feedback is less effective, and inefficient time (> 30 minutes).

Appendix 5: Formative Assessment Rubric Guide

Table A2: Assessment Rubric Guide on Post-Test

RESEARCH RUBRIC OF
ASSESSMENT FORMATIVE ON POST-TEST

Research Title : The Use of ChatGPT and ClassPoint Online Apps to Enhance English Teachers' Efficiency in Conducting Formative Assessment

Researcher Data :
Name : ASWAR
Student ID : 2220203879102002
Study Program : Tadris Bahasa Inggris
Graduate Program of the State Islamic Institute of Pare-Pare (IAIN Pare-Pare)

Respondent Identity :
Name : .....
Employee ID : .....
School : .....
Contact Person : .....
Date and Time : .....

Assessment Rubric for Question Creation and Assessment Methods

Aspects	Descriptions	Score 4 (Very Good)	Score 3 (Good)	Score 2 (Fair)	Score 1 (Poor)
Question Creation Method	Do teachers use innovative technology in question creation?				
Multiple Choice	Teachers can construct good, clear multiple-choice questions that align with the learning objectives.				
Essay	Teachers can design essay questions with a good structure, clarity, and alignment with the learning objectives.				
Short Answer	Teachers can create short answer questions that are accurate, clear, and aligned with the learning objectives.				

Short Answer	Teachers can create accurate, clear short-answer questions aligned with learning objectives.	Relevant questions, optimal time (≤ 10 minutes).	Relevant questions, longer time (11–20 minutes).	Relevant questions, much longer time (21–30 minutes).	Relevant questions, inefficient time (> 30 minutes).
Question Combination	Teachers can create a good mix of questions (multiple choice, essay, short answer) aligned with learning objectives.	Relevant combination, optimal time (≤ 25 minutes).	Relevant combination, longer time (26–40 minutes).	Relevant combination, much longer time (41–55 minutes).	Relevant combination, inefficient time (> 55 minutes).
Evaluation Method	Does the teacher use innovative technology in the assessment method?	Highly innovative method using AI (ClassPoint) to the fullest.	Innovative method using a mix of manual and general technology.	Fairly innovative method using general technology.	Less innovative method using manual techniques.
Interactivity	Is the assessment method interactive?	Very interactive, with all students actively engaged.	Interactive, with most students engaged.	Fairly interactive, with some student engagement.	Poorly interactive, with most students not engaged.
Feedback	Does the teacher provide effective feedback to students?	Very effective feedback, optimal time (≤ 10 minutes).	Good feedback, longer time (11–20 minutes).	Fair feedback, much longer time (21–30 minutes).	Feedback is less effective, and inefficient time (> 30 minutes).

Appendix 6: Research Questionnaire

Table A3: Questionnaire

RESEARCH QUESTIONNAIRE ON FORMATIVE ASSESSMENT

Research Title : The Use of ChatGPT and ClassPoint Online Apps to Enhance English Teachers' Efficiency in Conducting Formative Assessment

Researcher Data :

Name : ASWAR

Student ID : 2220203879102002

Study Program : Tadris Bahasa Inggris Graduate Program of the State Islamic Institute of Pare-Pare (IAIN Pare-Pare)

Respondent Identity :

Name : .....

Employee ID : .....

School : .....

Date and Time : .....

Please check (√) the answer that corresponds with your knowledge about the efficiency of using ChatGPT and ClassPoint concerning your formative assessment competencies, both in creating questions and conducting assessments. The questionnaire used in this test is a Likert scale questionnaire with five categories of options. Then, this questionnaire aims to know the teachers' perception after being given treatment. For clarity, the following questionnaire questions:

SA : Strongly Agree
A : Agree
N : Neutral (Occasionally)
D : Disagree
SD : Strongly Disagree

No.	List of Questions	Category Options				
		SA	A	N	D	SD
		5	4	3	2	1
1	ChatGPT helps me create diverse and engaging formative questions.					
2	The use of ChatGPT speeds up my process of creating formative questions.					

3	I find it easier to create questions aligned with learning objectives using ChatGPT.					
4	ClassPoint provides ease in conducting formative assessments in the classroom.					
5	I find it easier to provide feedback to students using the features in ClassPoint.					
6	This ClassPoint technology enhances student engagement in the formative assessment process.					
7	The use of ClassPoint makes me more skilled in managing student assessments.					
8	Overall, the use of ChatGPT and ClassPoint has a positive impact on my learning process.					

Appendix 7: Training Program Rundown

Table A4: Activities Rundown

TRAINING PROGRAM RUNDOWN: CHATGPT AND CLASSPOINT

I. UPTD SMPN 1 BUDONG-BUDONG

Full Date	Time	Activities
I. PRETEST		
Friday, 23rd August 2024	08:00 - 10-00	Testing teachers' competence in creating formative assessments by providing a time limit according to the assessment rubric in the research. Then, teachers' competence in conducting formative assessments in the classroom will be tested.
II. TREATMENT		
Monday, 02nd September 2024	08:00 - 09-00	Introduction to ChatGPT and ClassPoint technology
		How to install ChatGPT
		How to install ClassPoint
Tuesday, 03rd September 2024	08:00 - 10-00	Creating formative questions with ChatGPT
		Using ChatGPT and ClassPoint simultaneously
		Conducting assessments with ClassPoint
III. POST-TEST		
Friday, 20th September 2024	08:00 - 10-00	Testing teachers' competence in creating formative assessments by providing a time limit according to the assessment rubric in the research. Then, teachers' competence in conducting formative assessments in the classroom will be tested whether their formative assessment will be innovative and interactive after giving treatment.
IV. QUESTIONNAIRE		
Saturday, 28th September 2024	09:00 – 09:30	After giving treatment, the researcher gave them a questionnaire to know the teachers' perceptions of using ChatGPT and Classpoint.

II. UPTD SMPN 2 BUDONG-BUDONG

Full Date	Time	Activities
PRETEST		
Saturday, 24th August 2024	08:00 - 10-00	Testing teachers' competence in creating formative assessments by providing a time limit according to the assessment rubric in the research. Then, teachers' competence in conducting formative assessments in the classroom will be tested.
TREATMENT		
Wednesday, 04th September 2024	08:00 - 09-00	Introduction to ChatGPT and ClassPoint technology
		How to install ChatGPT
		How to install ClassPoint
Thursday, 05th September 2024	08:00 - 10-00	Creating formative questions with ChatGPT
		Using ChatGPT and ClassPoint simultaneously
		Conducting assessments with ClassPoint
POST-TEST		
Saturday, 21th September 2024	08:00 - 10-00	Testing teachers' competence in creating formative assessments by providing a time limit according to the assessment rubric in the research. Then, teachers' competence in conducting formative assessments in the classroom will be tested whether their formative assessment will be innovative and interactive after giving treatment.
IV. QUESTIONNAIRE		
Saturday, 28th September 2024	10:30 - 11:00	After giving treatment, the researcher gave them a questionnaire to know the teachers' perceptions of using ChatGPT and Classpoint.

III. UPTD SMPN 3 BUDONG-BUDONG

Full Date	Time	Activities
PRETEST		
Monday, 26th August 2024	08:00 - 09-00	Testing teachers' competence in creating formative assessments by providing a time limit according to the assessment rubric in the research. Then, teachers' competence in conducting formative assessments in the classroom will be tested.
TREATMENT		
Friday, 06th September 2024	08:00 - 09-00	Introduction to ChatGPT and ClassPoint technology
		How to install ChatGPT
		How to install ClassPoint
Saturday, 07th September 2024	08:00 - 10-00	Creating formative questions with ChatGPT
		Using ChatGPT and ClassPoint simultaneously
		Conducting assessments with ClassPoint
POST-TEST		
Monday, 23rd September 2024	08:00 – 09:00	Testing teachers' competence in creating formative assessments by providing a time limit according to the assessment rubric in the research. Then, teachers' competence in conducting formative assessments in the classroom will be tested whether their formative assessment will be innovative and interactive after giving treatment.
IV. QUESTIONNAIRE		
Monday, 30th September 2024	08:00 - 08:15	After giving treatment, the researcher gave them a questionnaire to know the teachers' perceptions of using ChatGPT and Classpoint.

IV. UPTD SMPN 4 BUDONG-BUDONG

Full Date	Time	Activities
PRETEST		
Tuesday, 27th August 2024	08:00 - 09-00	Testing teachers' competence in creating formative assessments by providing a time limit according to the assessment rubric in the research. Then, teachers' competence in conducting formative assessments in the classroom will be tested.
TREATMENT		
Monday, 09th September 2024	08:00 - 09-00	Introduction to ChatGPT and ClassPoint technology
		How to install ChatGPT
		How to install ClassPoint
Tuesday, 10th September 2024	08:00 - 10-00	Creating formative questions with ChatGPT
		Using ChatGPT and ClassPoint simultaneously
		Conducting assessments with ClassPoint
POST-TEST		
Tuesday, 24th September 2024	08:00 - 09-00	Testing teachers' competence in creating formative assessments by providing a time limit according to the assessment rubric in the research. Then, teachers' competence in conducting formative assessments in the classroom will be tested whether their formative assessment will be innovative and interactive after giving treatment.
IV. QUESTIONNAIRE		
Monday, 30th September 2024	10:15 - 10:30	After giving treatment, the researcher gave them a questionnaire to know the teachers' perceptions of using ChatGPT and Classpoint.

V. UPTD SMPN 5 BUDONG-BUDONG

Full Date	Time	Activities
I. PRETEST		
Wednesday, 28th August 2024	08:00 - 09-00	Testing teachers' competence in creating formative assessments by providing a time limit according to the assessment rubric in the research. Then, teachers' competence in conducting formative assessments in the classroom will be tested.
II. TREATMENT		
Wednesday, 11th September 2024	08:00 - 09-00	Introduction to ChatGPT and ClassPoint technology
		How to install ChatGPT
		How to install ClassPoint
Thursday, 12th September 2024	08:00 - 10-00	Creating formative questions with ChatGPT
		Using ChatGPT and ClassPoint simultaneously
		Conducting assessments with ClassPoint
III. POST-TEST		
Wednesday, 25th September 2024	08:00 - 09-00	Testing teachers' competence in creating formative assessments by providing a time limit according to the assessment rubric in the research. Then, teachers' competence in conducting formative assessments in the classroom will be tested whether their formative assessment will be innovative and interactive after giving treatment.
IV. QUESTIONNAIRE		
Monday, 30th September 2024	09:00 - 09:15	After giving treatment, the researcher gave them a questionnaire to know the teachers' perceptions of using ChatGPT and Classpoint.

VI. UPTD SMPN 6 BUDONG-BUDONG

Full Date	Time	Activities
PRETEST		
Thursday, 29th August 2024	08:00 - 09-00	Testing teachers' competence in creating formative assessments by providing a time limit according to the assessment rubric in the research. Then, teachers' competence in conducting formative assessments in the classroom will be tested.
TREATMENT		
Friday, 13th September 2024	08:00 - 09-00	Introduction to ChatGPT and ClassPoint technology
		How to install ChatGPT
		How to install ClassPoint
Saturday, 14th September 2024	08:00 - 10-00	Creating formative questions with ChatGPT
		Using ChatGPT and ClassPoint simultaneously
		Conducting assessments with ClassPoint
POST-TEST		
Thursday, 26th September 2024	08:00 - 09-00	Testing teachers' competence in creating formative assessments by providing a time limit according to the assessment rubric in the research. Then, teachers' competence in conducting formative assessments in the classroom will be tested whether their formative assessment will be innovative and interactive after giving treatment.
IV. QUESTIONNAIRE		
Saturday, 28th September 2024	08:00 - 08:15	After giving treatment, the researcher gave them a questionnaire to know the teachers' perceptions of using ChatGPT and Classpoint.

VII. UPTD SMPN 7 BUDONG-BUDONG

Full Date	Time	Activities
PRETEST		
Friday, 30th August 2024	08:00 - 09-00	Testing teachers' competence in creating formative assessments by providing a time limit according to the assessment rubric in the research. Then, teachers' competence in conducting formative assessments in the classroom will be tested.
TREATMENT		
Tuesday, 17th September 2024	08:00 - 09-00	Introduction to ChatGPT and ClassPoint technology
		How to install ChatGPT
		How to install ClassPoint
Wednesday, 18th September 2024	08:00 - 10-00	Creating formative questions with ChatGPT
		Using ChatGPT and ClassPoint simultaneously
		Conducting assessments with ClassPoint
POST-TEST		
Friday, 27th September 2024	08:00 - 09-00	Testing teachers' competence in creating formative assessments by providing a time limit according to the assessment rubric in the research. Then, teachers' competence in conducting formative assessments in the classroom will be tested whether their formative assessment will be innovative and interactive after giving treatment.
IV. QUESTIONNAIRE		
Monday, 30th September 2024	11:00 - 11:15	After giving treatment, the researcher gave them a questionnaire to know the teachers' perceptions of using ChatGPT and Classpoint.

Appendix 8: Pretest and Post-Test Analysis Scores

Tabel A5: Pretest Score

Mean	14,89
Standard Error	0,75
Median	15,00
Mode	14,00
Standard Deviation	2,26
Sample Variance	5,11
Kurtosis	-0,15
Skewness	-0,07
Range	7,00
Minimum	11,00
Maximum	18,00
Sum	134,00
Count	9,00

Tabel A6: Post-Test Score

Mean	31,11
Standard Error	0,35
Median	31,00
Mode	32,00
Standard Deviation	1,05
Sample Variance	1,11
Kurtosis	0,61
Skewness	-1,09
Range	3,00
Minimum	29,00
Maximum	32,00
Sum	280,00
Count	9,00

Tabel A7: T-Test Score

	Pretest	Post-Test
Mean	15,13	31,13
Variance	5,27	1,27
Observations	8,00	8,00
Pearson Correlation	-0,01	
Hypothesized Mean Difference	0,00	
df	7,00	
t Stat	-17,65	
P(T<=t) one-tail	0,00	
t Critical one-tail	1,89	
P(T<=t) two-tail	0,00	
t Critical two-tail	2,36	

Appendix 9: IJHESS Journal LoA

IJHESS
e-ISSN 2685-6689
International Journal of Health, Economics, and Social Sciences

Alamat: Jl. Rusdi Toana No.1 Kota Palu – Sulawesi Tengah, Indonesia
E-mail: pptij@jurnal.unismuhpalu.ac.id
Website: https://jurnal.unismuhpalu.ac.id/index.php/IJHESS

Letter of Acceptance

Date 05 November 2024
International Journal of Health, Economics, and Social Sciences (IJHESS)

Dear Author(s)

Aswar[1*], Abdul Haris Sunubi[2], Magdahalena Tjalla[3], Zulfah Fakhruddin[4], Ambo Dalle[5]
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It's my pleasure to inform you that, after the peer review, your paper **The Efficiency of Using Chatgpt And Classpoint Online Apps in Improving English Teachers' Formative Assessment Competence** has been **ACCEPTED** with content unaltered to publish with **International Journal of Health, Economics, and Social Sciences (IJHESS)** in **Volume 7 Issue 1 (January 2025)**.

Thank you for making the journal a vehicle for your research interests

With regards
Yours sincerely

IJHESS

Dr. Ahmad Yani
Editor in Chief

Appendix 10: Requirements for Journal Validation Statement from LP2M

KEMENTERIAN AGAMA REPUBLIK INDONESIA
INSTITUT AGAMA ISLAM NEGERI PAREPARE
LEMBAGA PENELITIAN DAN PENGABDIAN KEPADA MASYARAKAT (LP2M)
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SURAT PERNYATAAN
No. B.660 /In.39/LP2M.07/11/2024

Saya yang bertanda tangan di bawah ini :

Nama	: Muhammad Majdy Amiruddin, M.MA.
NIP	: 19880701 201903 1 007
Jabatan	: Kepala Pusat Penerbitan & Publikasi LP2M IAIN Parepare
Institusi	: IAIN Parepare

Dengan ini menyatakan bahwa naskah dengan identitas di bawah ini :

Judul	:	The Efficiency of Using ChatGPT and ClassPoint in Improving English Teachers' Formative Assessment Competence
Penulis	:	Aswar
Afiliasi	:	IAIN Parepare
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Benar telah diterima pada Jurnal IJHESS **Volume 7, Nomor 1, Tahun 2025** yang telah terakreditasi **SINTA 5**.

Demikian surat ini disampaikan, atas partisipasi dan kerja samanya diucapkan terima kasih.

An. Ketua LP2M
Kepala Pusat Penerbitan & Publikasi

Muhammad Majdy Amiruddin, M.MA.
NIP.19880701 201903 1 007

Appendix 11: Journal

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OPEN ACCESS JOURNALS

The Efficiency of Using Chatgpt And Classpoint Online Apps in Improving English Teachers' Formative Assessment Competence

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ABSTRACT

The high administrative workload often hinders teachers from developing innovative and interactive formative assessments. This study aims to examine the efficiency of using ChatGPT and ClassPoint in improving the formative assessment competencies of English teachers at junior high schools and to analyze teachers' perceptions of these technologies. This research employs a quantitative approach with a pre-experimental one-group pretest-post-test design, involving 9 English teachers from 7 schools. Data were collected through pretests and post-tests to measure teachers' formative assessment competencies and questionnaires to assess their perceptions. Statistical analysis utilized a paired t-test to compare pretest and post-test results, while descriptive statistics analysed perception data. The study results showed a significant improvement in teachers' formative assessment competencies, with scores increasing from 14.89 (pretest) to 31.11 (post-test), supported by a t-statistic value of -17.65 and a p-value < 0.01. The questionnaire analysis revealed highly positive responses, with over 90% of teachers strongly agreeing on the benefits of these technologies in creating diverse questions, speeding up the assessment process, and facilitating interactive formative assessments. These findings indicate that integrating ChatGPT and ClassPoint effectively enhances teachers' formative assessment competencies.

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INTRODUCTION

Education is vital for shaping and developing human resources, serving as a medium for disseminating knowledge, skills, and values. In this context, teachers play a pivotal role in the educational landscape and significantly impact the quality of learning (Smith & Johnson, 2023). A teacher's ability to assess effectively is crucial for facilitating an efficient learning environment, as well-implemented assessment strategies can enhance student performance (Anderson & Brown, 2022).

In junior high English instruction, the ability of teachers to assess is especially important. Given the global significance of English and its status as a critical skill for the 21st century, enhancing the assessment capabilities

of English teachers is essential for equipping students to face future challenges (Wilson et al., 2024). Nonetheless, research by Puskurbuk (2019) indicates that many teachers in Indonesia continue to emphasize administrative tasks. Horn and Banerjee (2009) highlight this issue in developing nations, where teachers may focus more on fulfilling administrative requirements than on engaging with students directly.

Technological advancements, especially in artificial intelligence, provide valuable tools for educators to create more effective and engaging assessments. For instance, ChatGPT, an AI language model, can help teachers formulate diverse and contextually relevant questions while delivering prompt, personalized feedback (Thompson, 2024). Additionally, ClassPoint, a web-based classroom management tool, aids in organizing assessments, analyzing data, and visualizing results (Roberts, 2023).

Integrating technology into education goes beyond simply using new devices and software; it necessitates a transformation in teaching and assessment approaches (Davis & Miller, 2024). Employing digital assessment tools, particularly for formative assessments, can minimize errors, accelerate evaluation processes, and provide quicker feedback to students, thus fostering a more effective and efficient learning atmosphere (Johnson, 2023).

However, many educators struggle with the knowledge required to leverage technology for enhancing formative assessment skills, which is exacerbated by insufficient training in educational technology, especially regarding AI tools. As a result, teachers' abilities in formative assessment often remain conventional and less interactive, particularly due to the significant administrative workload involving lesson planning, report writing, and other time-intensive tasks.

Given these challenges, this study seeks to examine the effectiveness of ChatGPT and ClassPoint technology in enhancing teachers' formative assessment skills, focusing on how educators develop formative questions and carry out assessments with these tools.

RESEARCH METHODS

This study used a quantitative approach with a pre-experimental, one-group pretest-post-test design ($O_1 \rightarrow X \rightarrow O_2$). This design was selected for its practicality in assessing intervention effects without the need for control groups, which was unfeasible due to the limited number of English teachers in the district.

Population and sample

The study population included all junior high schools (N=7) in the Budong-Budong subdistrict, Central Mamuju Regency. Through total sampling, all English teachers (N=9) from these schools were involved in the research, which took place from August to October 2024.

Research instruments

This study employed three instruments: 1) Competency Test: A test assessing teachers' skills in designing formative questions and conducting assessments, focusing on both question-creation and assessment implementation abilities. 2) Questionnaire: A Likert-scale questionnaire (1=Strongly Disagree to 5=Strongly Agree) measuring teachers' perceptions of ChatGPT's effectiveness in question creation, ClassPoint's utility in implementing assessments, integration efficiency, student engagement, and overall impact. 3) Assessment Rubric: An eight-criterion rubric evaluating teachers' competence on a 4-point scale (1=Poor to 4=Very Good), covering aspects such as question-creation method, multiple choice and essay questions, short-answer questions, question combination, assessment method, interactive elements, and feedback quality.

Data collection

The data collection process was carried out in three sequential phases.

In the first phase (pre-test), the researcher conducted an initial competency assessment to evaluate teachers' baseline abilities in creating and implementing formative assessments. This assessment was complemented by classroom observations to document current teaching practices and assessment methods. All relevant documentation was gathered and archived for later analysis.

The second phase involved the implementation of the treatment. During this stage, teachers were introduced to ChatGPT and ClassPoint technologies through structured training sessions. They received thorough training on both tools, followed by supervised practice sessions where they learned to effectively integrate these technologies into their assessment practices.

In the final phase (post-test), teachers participated in a post-intervention assessment to evaluate changes in their competencies related to formative assessment. Similar to the pre-test phase, classroom observations were conducted to record any modifications in assessment practices. Additionally, teachers filled out a comprehensive questionnaire aimed at assessing their perceptions of the effectiveness and impact of technology integration on their teaching practices.

Data analysis

Data analysis procedures were carried out using Excel Office 2021, employing both descriptive and inferential statistical methods. The descriptive analysis involved calculating measures of central tendency

(mean, median, mode), variability (standard deviation), and frequency distributions to characterize the distribution patterns of teachers' assessment competencies before and after the intervention. These measures provided a detailed overview of the data's characteristics and helped identify performance patterns among teachers across various assessment dimensions.

To determine the statistical significance of the intervention's effect, a paired t-test was employed to compare pre-test and post-test scores. The test statistic was computed as $t = \bar{D}/(SD/\sqrt{n})$, with $\bar{D}$ representing the mean difference between paired observations, SD indicating the standard deviation of differences, and n denoting the sample size. This analysis enabled the evaluation of whether the implementation of ChatGPT and ClassPoint significantly improved teachers' formative assessment competence.

RESULTS AND DISCUSSION

Based on comprehensive research into the effectiveness of ChatGPT and ClassPoint in enhancing formative assessment skills among junior high school teachers in Budong-Budong Subdistrict, Mamuju Tengah Regency, several important findings emerged.

The study indicated a significant improvement in teachers' assessment competencies after the introduction of these technologies. In the pre-test phase, teachers exhibited low competency levels in formative assessment, scoring between 11 and 18 points. Most educators relied on traditional, manual methods for creating and administering assessments, which proved to be time-consuming and inefficient. For instance, the average time taken to create multiple-choice questions exceeded 30 minutes, while crafting essay questions took between 35 and 50 minutes.

However, after undergoing training and utilizing ChatGPT and ClassPoint, teachers demonstrated a marked enhancement in their assessment capabilities. Post-test scores showed a significant increase, ranging from 29 to 32 points. The efficiency in producing assessment materials improved substantially—multiple-choice questions could now be developed in 10 to 15 minutes, essay questions in 15 to 20 minutes, and short-answer questions in under 10 minutes. This improvement was statistically significant, as evidenced by a t-test showing a t-statistic of -17.65 and a p-value below 0.05.

Teachers had overwhelmingly positive perceptions of these technologies, with an average agreement rate of 90% across various surveyed aspects. Notably, 93% of respondents expressed positive feedback regarding ClassPoint's effectiveness in facilitating formative assessments in the classroom. Teachers felt that ChatGPT assisted in generating more diverse and engaging assessment questions (89% agreement), while ClassPoint improved student engagement and streamlined feedback delivery (91% agreement).

The implications of these findings are noteworthy. Firstly, the integration of ChatGPT and ClassPoint effectively addresses the initial challenge of heavy administrative workloads faced by teachers. By significantly reducing the time required to create and implement assessments, educators can focus more on other vital teaching and learning aspects. These technologies not only enhanced efficiency but also improved the quality and variety of assessments, resulting in more engaging and interactive learning experiences.

Additionally, the study highlighted how these technologies align with contemporary educational needs, particularly within the "Merdeka" curriculum framework. The capability to quickly generate diverse questions and provide immediate feedback aligns with the curriculum's focus on adaptive and student-centered learning. The interactive features of ClassPoint played a crucial role in increasing student engagement and participation in the assessment process.

In contrast to previous research on educational technology implementation, this study illustrates a shift in integrating AI and interactive platforms into educational practices. Unlike earlier studies that concentrated on basic ICT integration or simple interactive tools, this research showcases the potential of combining AI (ChatGPT) with real-time assessment platforms (ClassPoint) to create a more comprehensive and effective assessment system.

However, the study also highlights several important considerations for the future deployment of these technologies. Continuous training and support for educators, ensuring equitable access to technology across schools and regions, and maintaining a balance between technological efficiency and personal teaching elements are essential factors to consider.

The long-term implications of this research point to a promising future for technology-enhanced assessment practices in education. The notable improvements in efficiency and quality suggest that tools like ChatGPT and ClassPoint could become integral to modern teaching methods. Nonetheless, their implementation should be approached thoughtfully, ensuring that technology complements rather than replaces the essential human elements of teaching and learning.

Furthermore, this research opens up new possibilities for personalized learning and differentiated instruction. The ability to swiftly generate varied assessment materials via ChatGPT, combined with ClassPoint's interactive features, enables educators to better cater to diverse learning styles and levels within their classrooms.

In conclusion, while the integration of ChatGPT and ClassPoint poses certain challenges, the advantages in enhancing formative assessment competencies are substantial. The significant gains in teacher efficiency,

along with improved assessment quality and student engagement, indicate that these technologies could play a crucial role in shaping the future of educational assessment practices. However, successful implementation will require ongoing support, careful integration, and thoughtful consideration of the opportunities and challenges these technologies present.

CONCLUSION

Based on the data analysis conducted in the study "The Efficiency of Using ChatGPT and ClassPoint in Improving English Teachers' Formative Assessment Competence," significant results were identified in enhancing teachers' formative assessment competence. This was demonstrated through statistical tests that revealed a meaningful difference between pretest and post-test scores.

The t-test analysis indicated a substantial increase, with the average pretest score rising from 15.13 to a post-test score of 31.13, accompanied by a p-value of less than 0.05. The mean difference of 15.98 points suggests that the implementation of ChatGPT and ClassPoint had a significant positive impact on teachers' formative assessment competence.

This improvement was evident in teachers' abilities to produce a more diverse range of questions and conduct more effective formative assessments. This aligns with the research objective of addressing the administrative workload that previously hindered innovation in the assessment process. Additionally, statistical data indicated consistent improvement across all assessment aspects, with the standard deviation decreasing from 2.26 in the pretest to 1.05 in the post-test, suggesting that the increase in competence was uniform among the respondents.

Regarding teachers' perceptions of using ChatGPT and ClassPoint, questionnaire results showed a very high level of acceptance, with an average approval rate of 90%. The absence of negative responses (0% disagreement) indicates a positive reception of the integration of this technology into the assessment process. The ease of use garnered the highest approval rate at 93%, indicating that both platforms are easily adoptable by teachers. Consistent positive responses ranging from 87% to 93% across all dimensions further affirm the overall usefulness of these platforms.

In conclusion, the alternative hypothesis (H1) is accepted, asserting that the efficiency of using ChatGPT and ClassPoint improves teachers' formative assessment competence. This enhancement is reflected not only in the numerical scores but also in the positive perceptions of the teachers regarding the use of these platforms.

The findings of this study provide empirical evidence that integrating AI technology and interactive learning platforms can effectively address the challenges posed by teachers' administrative workloads while enhancing the quality of formative assessments. This increased efficiency allows teachers to concentrate more on pedagogical aspects and the development of innovative assessment methods.

The successful implementation of ChatGPT and ClassPoint in improving teachers' formative assessment competence also highlights the potential for further advancements in using technology to support the learning process. These results pave the way for future exploration and development of similar technology integrations in educational contexts.

Overall, this study validates the efficacy of using ChatGPT and ClassPoint as reliable tools for enhancing teachers' formative assessment competence. This success lays a strong foundation for broader implementation and the development of similar strategies in other educational institutions.

RECOMMENDATIONS

Based on the research findings regarding the effectiveness of using ChatGPT and ClassPoint to enhance the formative assessment competence of junior high school English teachers, the following recommendations are proposed:

Recommendations for Schools

Schools should implement regular training sessions on the use of ChatGPT and ClassPoint, ensuring that teachers are well-equipped to utilize these platforms effectively. Additionally, schools should provide the necessary infrastructure to support technology integration and facilitate discussion forums among teachers to maximize the benefits of these tools in improving the quality of formative assessments.

Recommendations for Teachers

Teachers should actively optimize the use of ChatGPT and ClassPoint to create a diverse range of formative assessment instruments and conduct interactive assessments. Furthermore, they should engage in collaborative efforts to share best practices and experiences with their colleagues, fostering a supportive community for professional development.

Recommendations for Future Researchers

Future research should involve larger sample sizes and employ a mixed-methods approach over extended

durations to investigate specific aspects such as creativity in question creation, the quality of feedback provided, and the effectiveness of formative assessments in various learning contexts. This approach will provide a more comprehensive understanding of the impact of these technologies in educational settings.

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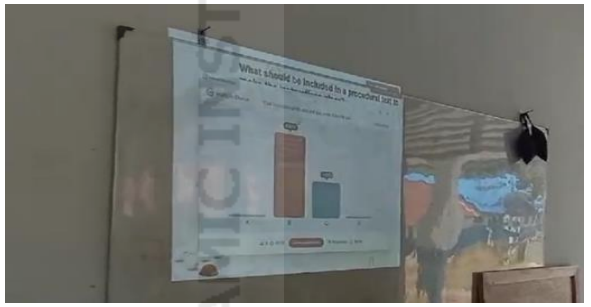
Appendix 12: Documentations of Pretest and Post-Test

1. Table A8: Documentation of Treatment, Pretest, and Post-test Activities at UPTD SMPN 1 Budong-Budong

No.	Activity	Description	Photo
I	Pretest	The researcher examined the teacher's formative assessment competency in creating 3 multiple-choice questions, 3 essay questions, 3 short answer questions, and 9 combination questions consisting of multiple choice, essay, and short answer. Then, the researcher assessed the teacher's formative assessment.	Figure A1:  Figure A2: 

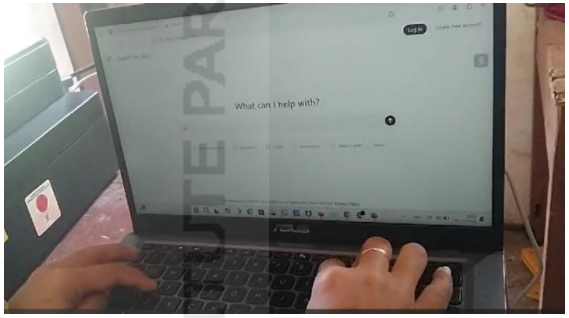
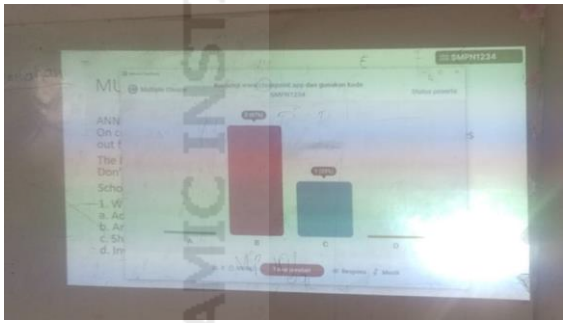
II	Treatment	The researcher trained the respondent using the AI technologies ChatGPT and ClassPoint	Figure A3:  Figure A4: 

III	Post-Test	The researcher examined the teacher's formative assessment competency in creating 3 multiple-choice questions, 3 essay questions, 3 short answer questions, and 9 combination questions consisting of multiple choice, essay, and short answer. And then, the researcher assessed teacher's formative assessment. Next, the researcher gave the respondent questionnaire to know the respondent's perception	Figure A5:  Figure A6:  Figure A7: 

2. Table A9: Documentation of Treatment, Pretest, and Post-test Activities at UPTD SMPN 1 Budong-Budong

No.	Activity	Description	Photo
I	Pretest	The researcher examined the teacher's formative assessment competency in creating 3 multiple-choice questions, 3 essay questions, 3 short answer questions, and 9 combination questions consisting of multiple choice, essay, and short answer. Then, the researcher assessed the teacher's formative assessment.	Figure A8:  Figure A9: 

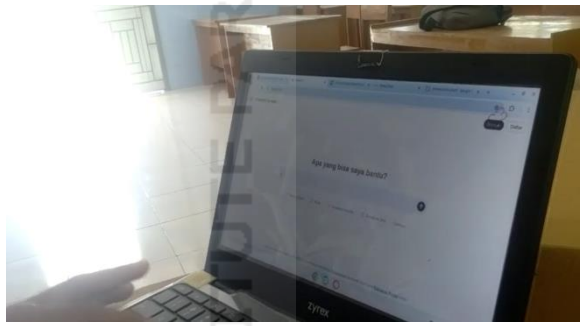
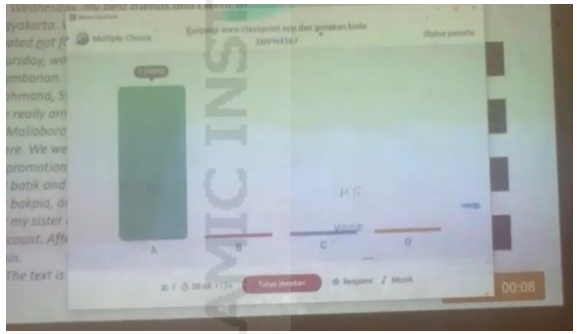
II	Treatment	The researcher trained the respondent using the AI technologies ChatGPT and Classpoint	Figure A10:  Figure A11: 

III	Post-Test	The researcher examined the teacher's formative assessment competency in creating 3 multiple-choice questions, 3 essay questions, 3 short answer questions, and 9 combination questions consisting of multiple choice, essay, and short answer. Then, the researcher assessed the teacher's formative assessment. Next, the researcher gave the respondent questionnaire to know the respondent's perception	Figure A12:  Figure A13:  Figure A14: 

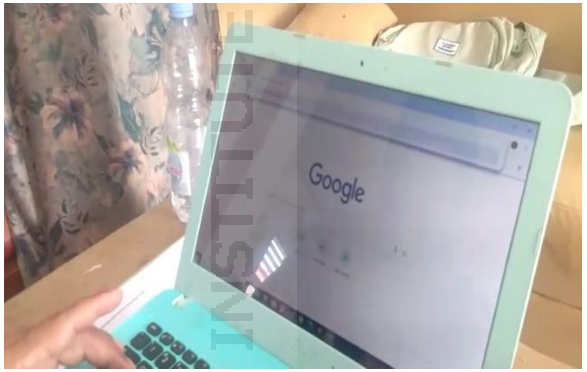
3. Table A10: Documentation of Treatment, Pretest, and Post-test Activities at UPTD SMPN 2 Budong-Budong

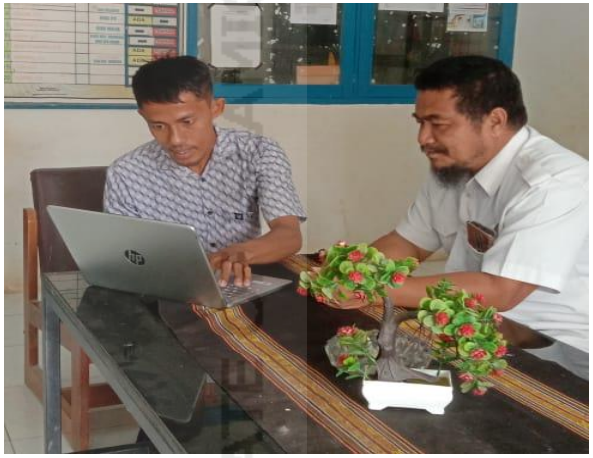
No.	Activity	Description	Photo
I	Pretest	The researcher examined the teacher's formative assessment competency in creating 3 multiple-choice questions, 3 essay questions, 3 short answer questions, and 9 combination questions consisting of multiple choice, essay, and short answer. Then, the researcher assessed the teacher's formative assessment.	Figure A15:  Figure A16: 

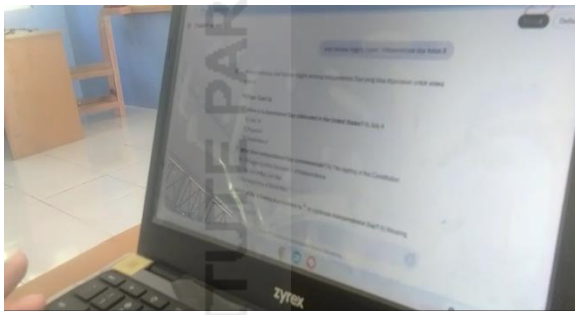
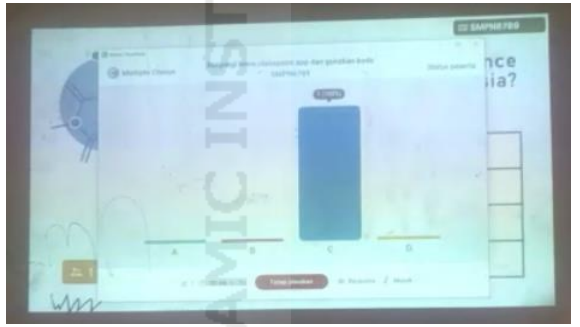
II	Treatment	The researcher trained the respondent using the AI technologies ChatGPT and ClassPoint	Figure A17:  Figure A18: 

III	Post-Test	The researcher examined the teacher's formative assessment competency by creating 3 multiple-choice questions, 3 essay questions, 3 short answer questions, and 9 combination questions consisting of multiple choice, essay, and short answer. Then, the researcher assessed the teacher's formative assessment. Next, the researcher gave the respondent questionnaire to know the respondent's perception	Figure A19:  Figure A20:  Figure A21: 

4. Table A11: Documentation of Treatment, Pretest, and Post-test Activities at UPTD SMPN 2 Budong-Budong

No.	Activity	Description	Photo
I	Pretest	The researcher examined the teacher's formative assessment competency in creating 3 multiple-choice questions, 3 essay questions, 3 short answer questions, and 9 combination questions consisting of multiple choice, essay, and short answer. Then, the researcher assessed the teacher's formative assessment.	Figure A22:  Figure A23: 

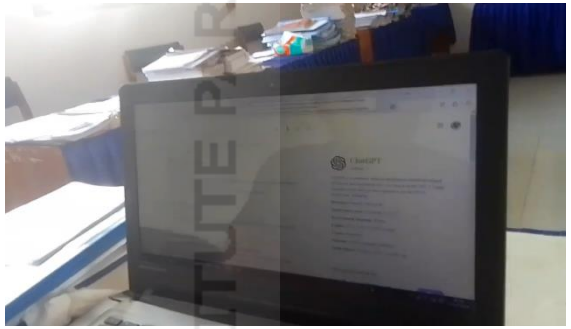
II	Treatment	The researcher trained the respondent using the AI technologies ChatGPT and ClassPoint	Figure A24:  Figure A25: 

III	Post-Test	The researcher examined the teacher's formative assessment competency by creating 3 multiple-choice questions, 3 essay questions, 3 short answer questions, and 9 combination questions consisting of multiple choice, essay, and short answer. Then, the researcher assessed the teacher's formative assessment. Next, the researcher gave the respondent questionnaire to know the respondent's perception	Figure A26:  Figure A27:  Figure A28: 

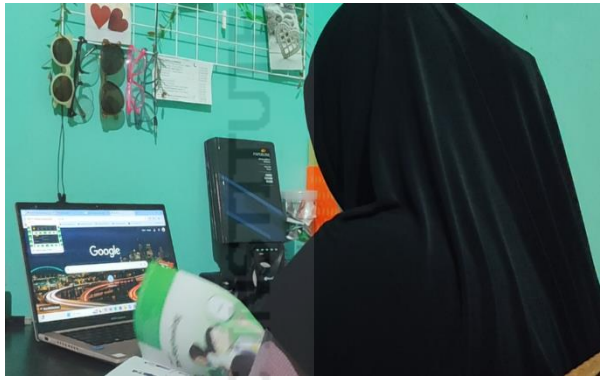
5. Table A12: Documentation of Treatment, Pretest, and Post-test Activities at UPTD SMPN 3 Budong-Budong

No.	Activity	Description	Photo
I	Pretest	The researcher examined the teacher's formative assessment competency in creating 3 multiple-choice questions, 3 essay questions, 3 short answer questions, and 9 combination questions consisting of multiple choice, essay, and short answer. Then, the researcher assessed the teacher's formative assessment.	Figure A29:  Figure A30: 

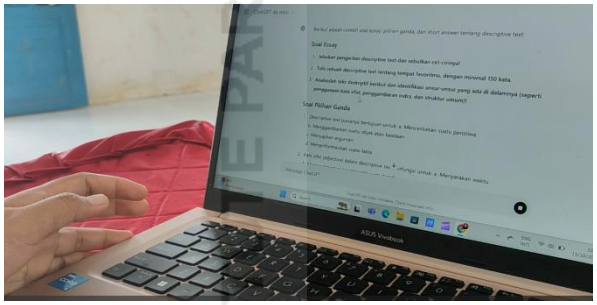
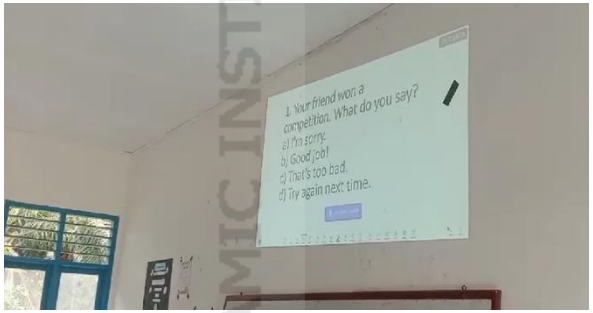
II	Treatment	The researcher trained the respondent using the AI technologies ChatGPT and ClassPoint	Figure A31:  Figure A32: 

III	Post-Test	The researcher examined the teacher's formative assessment competency in creating 3 multiple-choice questions, 3 essay questions, 3 short answer questions, and 9 combination questions consisting of multiple choice, essay, and short answer. And then, the researcher assessed teacher's formative assessment. Next, the researcher gave the respondent questionnaire to know the respondent's perception	Figure A33:  Figure A34:  Figure A35: 

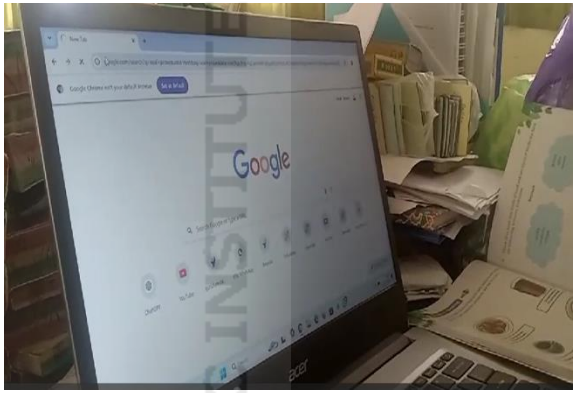
6. Table A13: Documentation of Treatment, Pretest, and Post-test Activities at UPTD SMPN 4 Budong-Budong

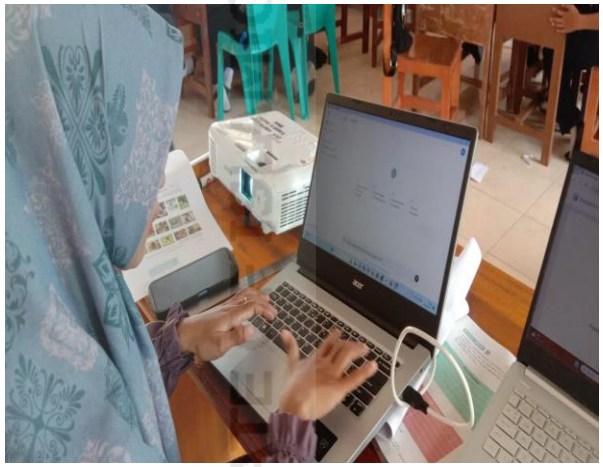
No.	Activity	Description	Photo
I	Pretest	The researcher examined the teacher's formative assessment competency in creating 3 multiple-choice questions, 3 essay questions, 3 short answer questions, and 9 combination questions consisting of multiple choice, essay, and short answer. Then, the researcher assessed the teacher's formative assessment.	Figure A36:  Figure A37: 

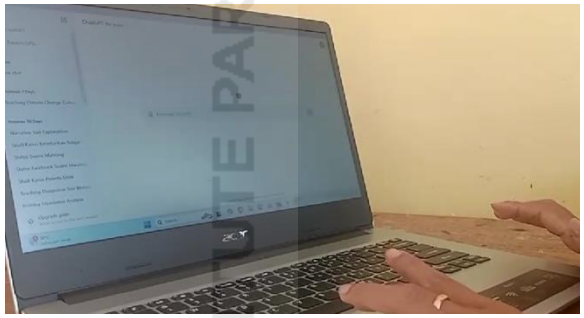
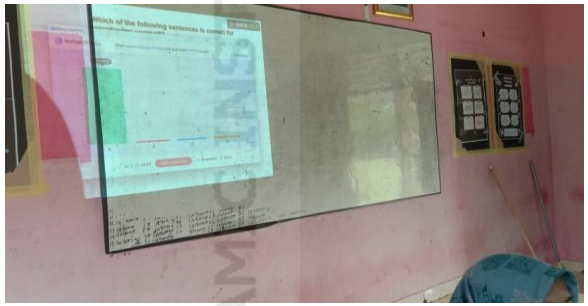
II	Treatment	The researcher trained the respondent using the AI technologies ChatGPT and ClassPoint	Figure A38:  Figure A39: 

III	Post-Test	The researcher examined the teacher's formative assessment competency by creating 3 multiple-choice questions, 3 essay questions, 3 short answer questions, and 9 combination questions consisting of multiple choice, essay, and short answer. Then, the researcher assessed the teacher's formative assessment. Next, the researcher gave the respondent questionnaire to know the respondent's perception	Figure A40:  Figure A41:  Figure A42: 

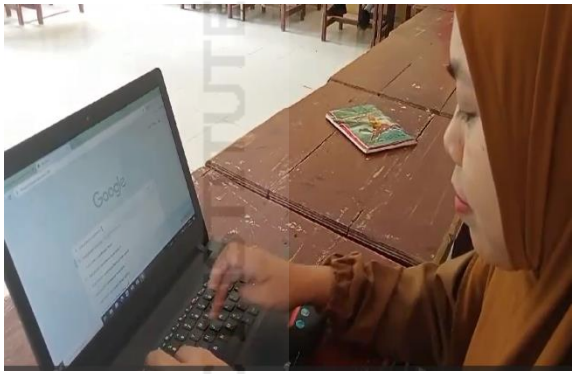
7. Table A14: Documentation of Treatment, Pretest, and Post-test Activities at UPTD SMPN 5 Budong-Budong

No.	Activity	Description	Photo
I	Pretest	The researcher examined the teacher's formative assessment competency in creating 3 multiple-choice questions, 3 essay questions, 3 short answer questions, and 9 combination questions consisting of multiple choice, essay, and short answer. Then, the researcher assessed the teacher's formative assessment.	Figure A43:  Figure A44: 

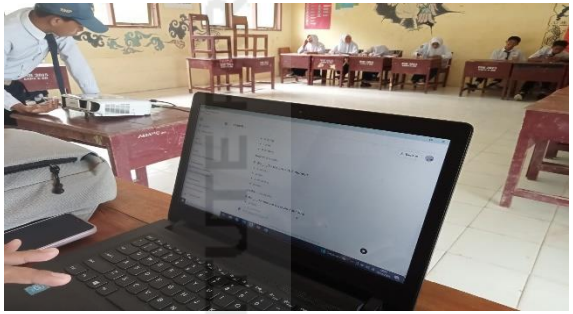
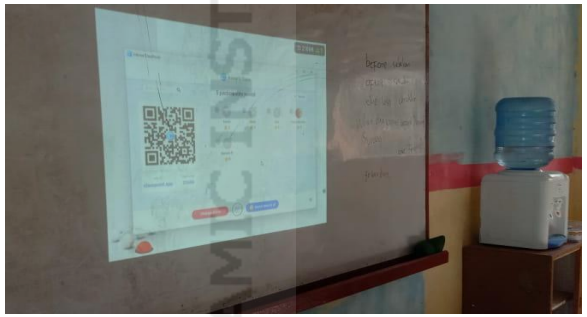
II	Treatment	The researcher trained the respondent using the AI technologies ChatGPT and ClassPoint	Figure A45:  Figure A46: 

III	Post-Test	The researcher examined the teacher's formative assessment competency by creating 3 multiple-choice questions, 3 essay questions, 3 short answer questions, and 9 combination questions consisting of multiple choice, essay, and short answer. Then, the researcher assessed the teacher's formative assessment. Next, the researcher gave the respondent questionnaire to know the respondent's perception	Figure A47:  Figure A48:  Figure A49: 

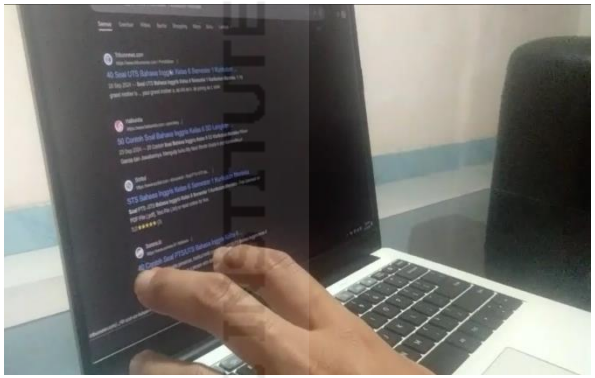
8. Table A15: Documentation of Treatment, Pretest, and Post-test Activities at UPTD SMPN 6 Budong-Budong

No.	Activity	Description	Photo
I	Pretest	The researcher examined the teacher's formative assessment competency in creating 3 multiple-choice questions, 3 essay questions, 3 short answer questions, and 9 combination questions consisting of multiple choice, essay, and short answer. Then, the researcher assessed the teacher's formative assessment.	Figure A50:  Figure A51: 

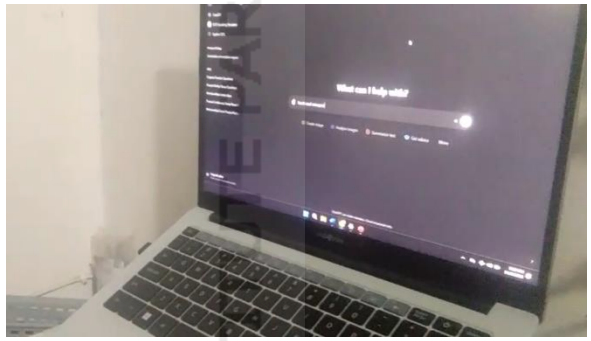
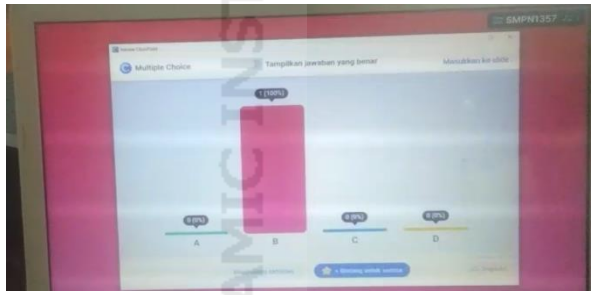
II	Treatment	The researcher trained the respondent using the AI technologies ChatGPT and ClassPoint	Figure A52:  Figure A53: 

III	Post-Test	The researcher examined the teacher's formative assessment competency by creating 3 multiple-choice questions, 3 essay questions, 3 short answer questions, and 9 combination questions consisting of multiple choice, essay, and short answer. Then, the researcher assessed the teacher's formative assessment. Next, the researcher gave the respondent questionnaire to know the respondent's perception	Figure A54:  Figure A55:  Figure A56: 

9. Table A16: Documentation of Treatment, Pretest, and Post-test Activities at UPTD SMPN 7 Budong-Budong

No.	Activity	Description	Photo
I	Pretest	The researcher examined the teacher's formative assessment competency in creating 3 multiple-choice questions, 3 essay questions, 3 short answer questions, and 9 combination questions consisting of multiple choice, essay, and short answer. Then, the researcher assessed the teacher's formative assessment.	Figure A57:  Figure A58: 

II	Treatment	The researcher trained the respondent using the AI technologies ChatGPT and ClassPoint	Figure A59:  Figure A60: 

III	Post-Test	The researcher examined the teacher's formative assessment competency by creating 3 multiple-choice questions, 3 essay questions, 3 short answer questions, and 9 combination questions consisting of multiple choice, essay, and short answer. Then, the researcher assessed the teacher's formative assessment. Next, the researcher gave the respondent questionnaire to know the respondent's perception	Figure A61:  Figure A62:  Figure A63: 

Appendix 13: T-Table

Table A17: T-Table List

Critical values of *t* for two-tailed tests

Significance level (α)

Degrees of freedom *(df)*	.2	.15	.1	.05	.025	.01	.005	.001
1	3.078	4.165	6.314	12.706	25.452	63.657	127.321	636.619
2	1.886	2.282	2.920	4.303	6.205	9.925	14.089	31.599
3	1.638	1.924	2.353	3.182	4.177	5.841	7.453	12.924
4	1.533	1.778	2.132	2.776	3.495	4.604	5.598	8.610
5	1.476	1.699	2.015	2.571	3.163	4.032	4.773	6.869
6	1.440	1.650	1.943	2.447	2.969	3.707	4.317	5.959
7	1.415	1.617	1.895	2.365	2.841	3.499	4.029	5.408
8	1.397	1.592	1.860	2.306	2.752	3.355	3.833	5.041
9	1.383	1.574	1.833	2.262	2.685	3.250	3.690	4.781
10	1.372	1.559	1.812	2.228	2.634	3.169	3.581	4.587
11	1.363	1.548	1.796	2.201	2.593	3.106	3.497	4.437
12	1.356	1.538	1.782	2.179	2.560	3.055	3.428	4.318
13	1.350	1.530	1.771	2.160	2.533	3.012	3.372	4.221
14	1.345	1.523	1.761	2.145	2.510	2.977	3.326	4.140
15	1.341	1.517	1.753	2.131	2.490	2.947	3.286	4.073
16	1.337	1.512	1.746	2.120	2.473	2.921	3.252	4.015
17	1.333	1.508	1.740	2.110	2.458	2.898	3.222	3.965
18	1.330	1.504	1.734	2.101	2.445	2.878	3.197	3.922
19	1.328	1.500	1.729	2.093	2.433	2.861	3.174	3.883
20	1.325	1.497	1.725	2.086	2.423	2.845	3.153	3.850
21	1.323	1.494	1.721	2.080	2.414	2.831	3.135	3.819
22	1.321	1.492	1.717	2.074	2.405	2.819	3.119	3.792
23	1.319	1.489	1.714	2.069	2.398	2.807	3.104	3.768
24	1.318	1.487	1.711	2.064	2.391	2.797	3.091	3.745
25	1.316	1.485	1.708	2.060	2.385	2.787	3.078	3.725
26	1.315	1.483	1.706	2.056	2.379	2.779	3.067	3.707
27	1.314	1.482	1.703	2.052	2.373	2.771	3.057	3.690
28	1.313	1.480	1.701	2.048	2.368	2.763	3.047	3.674
29	1.311	1.479	1.699	2.045	2.364	2.756	3.038	3.659
30	1.310	1.477	1.697	2.042	2.360	2.750	3.030	3.646
40	1.303	1.468	1.684	2.021	2.329	2.704	2.971	3.551
50	1.299	1.462	1.676	2.009	2.311	2.678	2.937	3.496
60	1.296	1.458	1.671	2.000	2.299	2.660	2.915	3.460
70	1.294	1.456	1.667	1.994	2.291	2.648	2.899	3.435
80	1.292	1.453	1.664	1.990	2.284	2.639	2.887	3.416
100	1.290	1.451	1.660	1.984	2.276	2.626	2.871	3.390
1000	1.282	1.441	1.646	1.962	2.245	2.581	2.813	3.300
Infinite	1.282	1.440	1.645	1.960	2.241	2.576	2.807	3.291

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-

PUBLISHED RESEARCH:

The Efficiency of Using ChatGPT and ClassPoint Online Apps in Improving English Teachers' Formative Assessment Competence