

CHAPTER I

INTRODUCTION

1.1 Background of The Study

The ability to write conditional sentences in English is a crucial skill for EFL (English as a Foreign Language) students, as these structures are used to convey hypotheses, possibilities, and logical consequences in academic communication. Mastering these structures can improve students' writing skills in constructing more complex arguments and narratives. However, the syntax and meaning of conditional sentences tend to be complex, often posing a challenge for EFL learners. Recent research indicates that many EFL students experience significant difficulty with conditional clauses, with approximately 75% of respondents finding them very difficult or complicated[1]. This emphasizes the importance of creative learning methods to improve understanding and ability in constructing conditional sentences. Referring to Suraprajit [2], the complexity of conditional sentences in terms of form and function makes mastering this grammatical structure a challenge for EFL students. Error analysis research also shows that errors in the use of time in conditional sentences often occur, such as the application of the present progressive instead of the present simple tense in the if clause for the zero conditional type [2].

Problems with writing conditional sentences are also influenced by the use of teaching methods that tend to be conventional. In this approach, teachers often explain the material directly in the classroom and then distribute written assignments to be completed individually[2]. This learning style often leads to passivity in students, who focus solely on completing assignments without deeply understanding the material. Furthermore, due to limited classroom time, teachers face challenges in providing comprehensive feedback on students' writing, resulting in inefficient writing improvement and skill development. This aligns with findings showing that students in ESL/EFL contexts struggle with various aspects of grammar, including prepositional use, verb tenses, and sentence structure[3]. Learning grammar, in particular, is a difficult and

challenging task for many learners, as it hinders their ability to understand English as a whole and achieve better performance[4]

In line with technological advancements in education, the flipped classroom model has emerged as a potential solution to address these issues. The flipped classroom method transforms traditional teaching methods by presenting material outside the classroom through the use of digital media, such as educational videos or online modules [5]. As a result, class time can be used more effectively for discussion, practice, and deeper exploration of the material. In teaching conditional sentences, this approach provides students with the opportunity to learn basic concepts independently and utilize class time to practice writing and receive direct guidance from the teacher. Recent data analysis shows that the flipped classroom method has a positive impact (effect size = +0.68) on student achievement in English [5]. Research findings indicate that, overall, the flipped classroom method produces better learning outcomes than conventional teaching methods[6]. Other research also indicates that flipped classrooms can improve EFL students' writing complexity, accuracy, and fluency (CAF)[7].

However, implementing a flipped classroom without consistent supervision can create new challenges, such as a lack of active student participation in their own learning activities. Therefore, incorporating learning analytics is crucial for the flipped classroom model to function effectively. Learning analytics offers teachers the opportunity to collect and analyze data on how students learn, including how often they engage, how long they spend accessing materials, and how they complete practice exercises[8]. This information can then be used to design more specific learning activities tailored to student needs. Learning analytics has been shown to support personalized learning by: (1) gathering feedback on student progress, ability levels, learning styles, and emotions; (2) grouping students; (3) creating a feedback loop with continuously personalized resources; (4) predicting performance; and (5) providing real-time insights and visualizations of classroom interactions[9]. Customized feedback systems leveraging learning analytics and artificial intelligence have shown significant improvements in student learning outcomes[10].

The combination of a flipped classroom model with the help of learning analytics (Learning Analytics-Supported Flipped Classroom) has significant potential to improve the effectiveness of the learning process, especially in teaching conditional sentence writing. A learning analytics approach has been applied to investigate the elements that influence EFL students' speaking skills in flipped classrooms, demonstrating that data analytics can provide important insights for learning improvement[11]. Adaptive learning systems that use algorithms and data analytics to adjust learning methods according to the needs and performance of each individual student have been shown to be successful in increasing engagement and learning outcomes[12]. By integrating learning analytics, educators can identify student learning trends, provide appropriate interventions at the right time, and adjust teaching approaches based on real-time information[13]. Recent research suggests that AI-powered flipped learning, which incorporates AI-based tools into a flipped classroom model, can transform the way writing is taught by offering immediate, personalized feedback on grammar, mechanics, and style[14].

Although numerous studies have highlighted the success of the flipped classroom method in English language learning and the potential of learning analytics to support personalized learning, significant research gaps remain. First, there is a lack of studies on flipped classrooms in the EFL domain, particularly those focusing on writing skills[15]. Second, the use of learning analytics in the flipped classroom approach for teaching specific grammar, such as conditional sentences, is still very rare. Third, research conducted in Indonesia, particularly in high schools like SMAN 1 Bangsal, is still very limited. Therefore, this study aims to address these gaps by examining the impact of the Learning Analytics-Supported Flipped Classroom model on students' mastery of conditional sentence writing at SMAN 1 Bangsal. The hope is that this study will contribute both theoretically and practically to the development of more innovative and effective English language teaching methods, as well as offer insights into optimal ways to integrate technology to improve the quality of learning in the digital age.

To address the identified research gaps, this study presents several novel elements. First, it specifically focuses on mastery of conditional sentence writing, including the zero, first, second, third, and mixed conditional forms. This focus differs from most previous research, which tends to examine writing skills or grammar in general without emphasizing one specific grammatical aspect. Second, this study applies learning analytics through the 4W Reference Model, utilizing authentic data obtained from Google Classroom, such as learning material access history, quiz results, and assignment completion. This data is used as the basis for providing personalized and timely feedback throughout the flipped classroom learning process. To date, the application of the combination of flipped classroom and learning analytics based on the 4W Reference Model to conditional sentence writing learning has been scarce in previous research. Furthermore, this study also contributes empirical evidence from the context of public high schools in Indonesia, a relatively rare focus of research on flipped classrooms and learning analytics. To obtain a more comprehensive picture of the effectiveness of the applied learning model, this study evaluated student improvement based on four dimensions of writing: grammatical accuracy, contextual appropriateness, structural complexity, and integration in writing. This approach allowed for a more in-depth analysis of the aspects of conditional sentence mastery that experienced the most significant improvement. Thus, the results of this study are expected to not only enrich theoretical studies on the implementation of flipped classrooms supported by learning analytics in English language learning but also provide practical implications for educators in developing more innovative, adaptive, and effective learning strategies through the use of technology to improve the quality of learning in the digital age.

Based on the identified research gaps, this study aims to analyze the effect of implementing the Flipped Classroom model supported by Learning Analytics on students' mastery of conditional sentence writing at SMAN 1 Bangsal. Specifically, this study aims to answer the question of the extent to which the learning model is able to improve students' ability to write conditional sentences by measuring the development of writing skills after participating in the learning

process. The analysis is not only focused on improving overall learning outcomes, but also on identifying aspects of conditional sentence mastery that have experienced the most significant development, including grammatical accuracy, appropriateness of sentence use to context, structural complexity, and the ability to integrate various forms of conditional sentences into a complete and coherent piece of writing. In addition, this study also examines the contribution of the combination of pedagogical approaches in the Flipped Classroom model and the use of Learning Analytics in supporting the improvement of students' writing skills. Through this study, it is hoped that a more comprehensive understanding of the effectiveness of technology integration in English learning can be obtained, while also providing theoretical and practical contributions to the development of learning strategies that are more innovative, effective, and relevant to the needs of education in the digital era.

1.2 Research Significance

This research is significant in several ways. First, from a pedagogical innovation perspective, it provides empirical evidence on the effectiveness of combining learning analytics with a flipped classroom model in a specific grammar teaching context, which can serve as a model for developing innovative learning methods in the future. Second, from a technology integration perspective, it demonstrates how educational technology can be applied concretely to improve learning outcomes, particularly in Indonesia, where the use of technology in education is still in its infancy. Third, from an educational equity perspective, by using learning analytics for personalized learning, this research can provide insights into how technology can be leveraged to meet the learning needs of individual students and reduce gaps in language proficiency.

Furthermore, this research is also relevant in the context of curriculum development and teacher professional development. The findings can serve as a foundation for developing a more responsive and data-driven curriculum and offer a framework for teacher training programs integrating technology and learning analytics into their practice. From a research methodology perspective, this research will contribute to the development of instruments and methods that

can be used to assess the effectiveness of technology-based learning interventions, particularly in the context of teaching English as a foreign language writing. More broadly, this research is also important for efforts to improve the quality of students' mastery of grammar, considering that many errors are still found at the syntax and morphology levels among EFL students in Indonesia.

1.3 Research Limitations

This study is limited to the context of SMAN 1 Bangsal and focuses specifically on the teaching of conditional sentences; therefore, the findings should be generalized to other schools, educational levels, or grammar topics with caution due to possible differences in student characteristics, facilities, and learning culture. Conducted within one academic semester, the research cannot capture the long-term effects of the Learning Analytics-Supported Flipped Classroom model on students' retention and transfer skills. In addition, the relatively small sample size may limit the statistical power and broader generalizability of the results. The effectiveness of the model also depends on the availability of technological infrastructure, including internet access, devices, and a learning management system, as well as the digital literacy levels of both teachers and students

1.4 Definition of Terms

To make sure everything is clear and there's no confusion, this research defines some important terms used in the title and content of the study. The following definitions are based on the latest literature and will serve as the conceptual foundation for this research.

1.4.1 Learning Analytics

Learning Analytics (LA) is defined as "measuring, collecting, analyzing, and reporting data about learners and their contexts, in order to understand and improve learning and the environments where learning takes place[16]. In more technical terms, Learning Analytics is the use of data mining techniques on data from educational environments to address important

educational issues and to better understand students and the settings in which they learn [17]. In this study, Learning Analytics refers to the use of data and analytical algorithms to track students' learning activities, identify learning patterns, and provide insights that can be used to give personalized feedback and timely learning interventions [18]. Learning Analytics involves different methods to extract useful and actionable information from large datasets, with the goal of transforming education [19].

1.4.2 Flipped Classroom Model

The flipped classroom model is a teaching strategy and type of blended learning that aims to increase student engagement and learning by asking students to complete content learning outside of class, so that class time can be used for direct problem-solving, discussions, and active learning activities [20]. This model reverses the traditional order of lecture and practice by moving the introduction of course content outside of class, so that class time can be used for interactive problem-based activities [21]. In a flipped classroom, students watch online learning videos, work together in online discussions, or do research at home, while actively exploring concepts in class with the guidance of a mentor. This pedagogical model transforms assignments, including those traditionally viewed as homework, into in-class activities, with the goal of maximizing the unique advantages of the face-to-face classroom to support social learning[22]. Research analyzing multiple studies shows that flipped classrooms consistently increase student engagement, independence, academic achievement, peer interaction, and formative feedback[23].

1.4.3 Learning Analytics-Supported Flipped Classroom Model

The Flipped Classroom Model Powered by Learning Analytics is a systematic integration of flipped classroom methods and learning analytics technology to create a more responsive, adaptive, and data-driven educational ecosystem. In this approach, information derived from students' learning activities both when they access materials online outside of class and when

they engage in collaborative activities in the classroom is directly analyzed to provide educators with insights into student engagement patterns, conceptual understanding, and challenges they face[24]. This approach leverages the potential of learning analytics to deliver a more personalized flipped classroom experience, allowing teachers to adjust teaching methods based on factual data about student progress[25]. This integration creates a continuous feedback loop, where learning data is used to guide pedagogical decisions, which in turn generate new information for further analysis. The Flipped Classroom Model Powered by Learning Analytics represents a progression from traditional flipped learning to a more data-driven and student-focused approach[20].

1.4.4 Writing Mastery

Writing Mastery in EFL learning refers to an individual's in-depth knowledge and skill in using written language efficiently, appropriately, and in accordance with the intended communicative purpose. This concept of mastery differs from competence or skill because mastery reflects a broader level of mastery, encompassing both theoretical and practical aspects of writing skills [26]. Writing mastery encompasses a number of important aspects, such as: (1) proficiency in grammar and structure; (2) knowledge relevant to the subject; (3) fluency in producing texts; (4) vocabulary variety and accuracy; and (5) a clear writer's voice [27]. In this study, writing mastery of conditional sentences specifically refers to students' ability to use conditional sentences appropriately in a variety of written contexts, demonstrating a deep understanding of grammatical rules, sentence structure, effectiveness in the use of transitions and conjunctions, and the ability to apply these structures accurately in written communication [28]. Writing mastery also reflects students' self-confidence and self-belief in completing writing tasks of varying difficulty and complexity [29].

1.4.5 Conditional Sentences

A conditional sentence is a complex sentence form consisting of two elements: a condition and a consequence, which is used to describe a possibility or a hypothetical scenario. According to the Oxford Learner's Dictionary, a conditional sentence is defined as "a sentence that begins with if or unless and explains a condition," while the Cambridge Dictionary explains that it is "a sentence that often begins with 'if' or 'unless', in which one segment indicates something that depends on another part." In English, conditional sentences fall into several main categories: (1) Zero Conditional, this deals with general facts where a condition always leads to a certain outcome (if + present simple >> present simple); (2) First Conditional, this refers to a future state that is considered real or possible (if + present simple >> will + infinitive); (3) Second Conditional, this talks about a hypothetical or impossible situation in the present or future (if + past simple >> would + infinitive); (4) Third Conditional, this refers to a hypothetical condition in the past that never occurred (if + past perfect >> would have + past participle); and (5) Mixed Conditional, this integrates components from different conditional types to express complex temporal relationships. Understanding conditional sentences is crucial in EFL learning because this structure provides opportunities for learners to convey hypotheses, possibilities, logical consequences, as well as counterfactual situations in academic and professional communication contexts[30].