THE IMPACT OF TEACHING QUALITY ON STUDENT DEVELOPMENT IN TEACHING-LEARNING PROCESS

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***Abstract*—The significance of the Student Experience Survey (SES) in gathering student feedback to improve teaching quality, learning facilities, and overall support in higher education. It emphasizes the impact of teaching quality on student development and mentions previous studies on student satisfaction and learning outcomes at Binus University. Research aims to investigate the impact of teaching quality on student development at Bina Nusantara University. It will utilize the Likert scale to measure student satisfaction. The study will identify influential factors and indicators such as academic performance, skills, effective learning strategies, collaboration abilities, and motivation. Data will be collected through surveys, and data evaluation will ensure accuracy and reliability. The gathered data from 64 respondents at Binus University shows that all indicators are valid. Reliability analysis indicates high reliability for each latent variable. The results highlight the importance of teacher knowledge in measuring performance and the impact of facilities on technology utilization. Overall, the respondents prioritize the teacher''s teaching strategy as the most important factor in measuring teacher quality. Based on the analysis of the data, the respondents believe that in measuring the quality of teaching, the main factors are the expansiveness of the teacher's knowledge, the utilization of proper facilities for learning, and the use of proper teaching strategies by the teacher.**

Keywords—Teaching, Learning, Students, Facility, Digital Technology

I. INTRODUCTION

Student Experience Survey (SES) determines the student satisfaction index of their learning experience in higher education. This survey can help the university obtain student feedback about lecturer teaching quality, class facilities, and campus environment that supports the student's learning process. With it, learning institutions such as universities can use this information to adjust and improve the teaching quality, provide better learning facilities, and provide more effective support for students.

"The Impact of Teaching Quality on Student Development in Teaching-Learning Process" is essential as it directly impacts the quality of the provided education. According to Latip et al. [1], lecturer competency is one of the primary quality services students feel. Muzenda quoted by Murti [2] adds that lecturer quality affects students' academic performance. Among the things hoped for by this survey is to increase the quality of lecturer teaching methods, increase student accomplishments, increase the quality of education, and increase innovation in education.

Research has been conducted regarding Binus University students' satisfaction with the university in general. One of these studies was done by Reina [3] in her research titled "Faktor-Faktor yang Mempengaruhi Kepuasan Mahasiswa pada Universitas Bina Nusantara" using the correlation factor to determine that five variables, which are reliability, responsiveness, assurance, empathy, and tangibles, influence the satisfaction of students the university's service quality.

Another research regarding student satisfaction was conducted through a survey on the perceived learning outcomes for Binus Online Learning students by Ikhsan [4]. This research was conducted to study what affects an online student's learning outcome and satisfaction. Like the research conducted by this team, the survey is targeted towards Binus students but specifically towards Binus Online students. This survey is also conducted through a survey using the Likert scale as a measurement tool. This research determines that, among many

things, those variables that affect learning outcomes are instructor facilitation and instructor feedback affect learning outcome and student satisfaction.

II. LITERATURE REVIEW

Our first Latent is "Teaching Method Impact", Teaching is caused by the Lecturer and the Use of Technology and Facilities. This statement comes from Socio-Cultural Theory, a theory from Russia that Vygotsky put forward. Socio-Cultural Theory, cultural practices, activities, and conceptions mediate and organize human brain functioning at its core. This statement can also mean that learning-teaching activities affect a student's mentality. There are five indicators in this latent, and the first is "Student Score". According to Johnson [5] and Mayer [6], The best way is to promote their participation, and enhance their understanding of the subject topic. Research has shown that student-centered approaches such as inquiry-based learning, problem-solving activities, and collaborative group work can positively impact student scores. These methods encourage critical thinking, foster creativity, and improve knowledge retention. Contrarily, traditional lecture-style teaching, where students passively receive information, may generate lower scores as it limits active engagement and interaction between Teacher and Student. The second indicator, "Student skills," is a critical aspect of education, with different instructional approaches that can profoundly influence the development and enhancement of various student skills. Effective teaching methods foster the acquisition of essential skills such as critical thinking, problem-solving, communication, and collaboration. Research has shown that student-centered approaches, such as project-based learning, experiential learning, and active learning, strategy positively impact skill development [8]. These methods allow students to engage actively, apply their knowledge in real-world cases, and collaborate with peers, holistically nurturing their skill set. Effective learning strategies are essential in education, so we put it as the third indicator. Different instructional approaches can significantly influence students' ability to develop and employ effective learning strategies. Much research has already studied the relationship between teaching methods and the acquisition of strategic learning skills. Metacognitive instruction, self-regulated learning techniques, and explicit instruction on learning strategies, have positively impacted students' ability to plan, monitor, and reflect on their learning [11]. As highlighted in the following references, these methods provide students with the necessary tools and techniques to become more independent, self-directed learners. The fourth indicator is "Enhancement of Collaboration Skills," which is a vital aspect of education. Different instructional approaches can significantly influence students' ability to collaborate effectively with other students. Research has highlighted the relationship between teaching methods and developing collaboration skills. The students' ability to work collaboratively, communicate effectively, and contribute to team goals [14]. These methods allow students to practice and refine their collaboration skills, fostering a cooperative and inclusive learning environment. The last indicator, "Student Learning Motivation" is crucial in encouraging a positive learning environment. Different instructional approaches can significantly influence students' levels of motivation and engagement. Research has examined the relationship between teaching methods and student motivation. Active learning, inquiry-based approaches, and gamification, have greatly impacted student motivation by providing meaningful and engaging learning experiences [17]. These methods promote autonomy, relevance, and a sense of ownership over the learning process, enhancing students' intrinsic motivation and willingness to participate actively and persist in their studies. According to Rad [20], it is true that teachers are at the heart of every educational process in the classroom. The statement above emphasizes that the teacher is the core of learning activities in the classroom, so we include this in Latent 2A, namely "Lecturer Performance". According to Rahmatirad [21], Socio Cultural Theory believes that language can be acquired easily by allowing the students to socialize and interact either with other learners or with the speakers of the language they are learning. Interaction when learning is essential to the student to properly understand the study material. The sociocultural theory of learning emphasizes the need for scaffolding of information. This means teaching must be done step by step to build knowledge and skills. Teachers need to give proper examples or demonstrations to the students for skill improvement.

According to Ramli and Zain [22], The academic institutions should be aware of the facilities that are crucial and most important to students in the teaching and learning and also campus life that directly influences them in achieving excellence in academics. Facilities in the Teaching-Learning process are crucial for student development. Studies have shown that facilities are one of the most significant factors impacting and influencing student development for achieving academic achievement. Teachers also got a direct impact from the facilities around the academic institutions. Academic institutions should be aware of the importance of the facility in the Learning-Teaching environment. Therefore, we include "Utilization of Technology and Facility" in Latent 2B.

In Latent 2A, there are five indicators that have an impact on the “Lecturer Performance”. According to Habib & Shah [23], The results of the study showed that when teachers followed the curriculum, they were more effective in their teaching and were better able to meet the needs of their students. The study's findings demonstrated that teachers were more effective in their instruction and better able to satisfy the needs of their pupils when they adhered to the curriculum. Teachers' performance can be significantly impacted by learning according to the curriculum. The curriculum provides an explicit knowledge of what students should know and the expected outcomes, acting as a road map for teachers to follow. Based on all the reasons above, we include “Learning according to the curriculum” as the first indicator. According to Felder & Silverman [26], teachers aware of their learning style preferences are more likely to be effective communicators of subject matter to students with similar or dissimilar learning style preferences. The preferred manner in which a person learns and

comprehends new knowledge is referred to as learning style. It has been discovered that teachers' understanding of both their learning preferences and their pupils can significantly affect their instructional strategies and the results of their students. Teachers can modify their educational tactics to better match the needs of their pupils by analyzing their learning preferences. This is why we chose the “Teaching Style” as the second indicator. The third indicator is “Knowledge Insight”, Because according to Shulman [30], Teachers who possess deep knowledge insight are more effective in communicating with their students, understanding and addressing their misconceptions and difficulties. Information acquisition and application are crucial elements of effective teaching, which also directly affects teacher effectiveness. Teachers well-versed in their subject matter are better equipped to plan and carry out efficient sessions, provide students with accurate feedback, and promote deeper comprehension and critical thinking. Additionally, teachers who have a thorough understanding of their student's knowledge and skill levels are better able to tailor their instruction to each student's needs, which raises student achievement. The fourth indicator is “Understanding Student Personality”. We get this indicator through a quote from Kunter [32], Teachers who were more aware of their students' personalities were better able to build relationships with them, which in turn led to improved classroom behavior and academic performance. Understanding students' personalities and learning styles is essential to good teaching and affects teachers' effectiveness. Teachers may create a more pleasant and inclusive classroom atmosphere and encourage deeper engagement and motivation in their students by honing their ability to connect with and support their pupils. According to Xu and Hannaway [35], teachers with more experience were more effective in teaching math and English language arts than those with less experience. The study also found that experienced teachers better managed their classrooms, resulting in fewer disciplinary issues and disruptions. The teacher's expertise significantly influences the performance of teachers. It has been discovered that teachers with more experience are better at controlling their classrooms and are more successful teachers. Recent research has demonstrated teacher experience's beneficial effects on classroom performance. That is why we choose "Lecturer Experience" to be the fifth indicator.

In Latent 2B, the latent is “Utilization of Technology and Facility”. There are 5 indicators that proved to have an impact on “Utilization of Technology and Facility”. The first indicator is “Use of Digital Technology”, According to Kirschner and van Merrienboer [38], it highlights the importance of incorporating technology into teaching methods. The study found that technology-enhanced learning (TEL) can improve student learning outcomes, increase student engagement, and increase motivation. The use of digital technology has had a positive impact on teaching quality. It can improve student learning outcomes, increase engagement and motivation, facilitate collaboration among teachers, and help teachers to personalize their teaching methods. However, it is crucial to provide teachers with adequate training and support to integrate digital technology into their teaching practices effectively. The second indicator is "Sufficient Class Facility". According to Yeh and Liu [41], the classroom's physical environment affects teacher effectiveness and student behavior. According to the study, a classroom setting with good amenities and a suitable layout can enhance teacher effectiveness and have a favorable impact on student behavior. The classroom facilities can significantly impact the quality of instruction. According to studies, classrooms with the right equipment and design can boost teacher productivity, affect student behavior well, promote motivation and engagement among students, and result in higher levels of academic success and satisfaction with the learning process. The third indicator is "Use of Technology by Lecturer". According to Chen and Li [44], lecturers' usage of technology affected the learning outcomes of their students in one study. According to the study, using technology to enhance students' learning outcomes and academic performance, such as through multimedia presentations and online conversations, is beneficial. On the effectiveness of instruction, lecturers' use of technology in the classroom can have a significant impact. According to studies, incorporating technology can enhance student learning results, raise engagement levels, and foster collaboration. As a result, lecturers must use technology effectively to improve the caliber of their instruction and support successful learning experiences for their students. The fourth indicator is "Use of Class Facility", According to Esiobu et al. [47], The connection between teaching efficacy and classroom amenities. The study discovered that modern, well-kept classrooms significantly enhanced teachers' performance and job satisfaction. The availability and sufficiency of classroom facilities impact teaching effectiveness. According to studies, having access to well-equipped classrooms and classrooms with technology can favor student achievement, teacher effectiveness, and student engagement. Therefore, to improve the quality of instruction and foster practical learning experiences for their students, educational institutions must invest in modern, well-maintained classroom facilities. The fifth indicator is “Satisfaction of Technology and Facility”, According to Chen [50], Teachers who were satisfied with the technology and facilities were more likely to incorporate technology into their teaching practices, which improved student outcomes. The effectiveness of the technology and facilities utilized in the school substantially impacts how well lessons are taught. Giving instructors access to the right tools and resources can boost their satisfaction, motivation, and capacity to design exciting and successful student learning experiences.

III. METHODOLOGY

A. Research Scheme

This research aims to investigate the impact of teaching quality on student development in the teaching-learning process at Bina Nusantara University. Specifically, the study aims to explore the level of student satisfaction with the learning process at Bina Nusantara University using a Likert scale. Likert (1932,7) in his original paper, discussed the infinite

number of definable attitudes existing in a given person with the possibility of grouping them into "clusters" of responses. He further conversed about the assumption of his "survey of opinions" on which he provided his results and psychological interpretations[38]. In order to gather the necessary data, we have chosen to utilize the Likert scale method, which involves asking respondents to rate their level of agreement or satisfaction with a series of statements. For this study, we will use a Likert scale with a range of 1-6, where one represents "Strongly Disagree" and six represents "Strongly Agree". This approach will allow us to collect detailed and nuanced feedback from Bina Nusantara University students about their experiences with the teaching-learning process. It will help us to identify areas where improvements can be made to enhance the quality of education at the university. In this research, we also aim to identify the most influential factors that affect the quality of student learning in the teaching-learning process. The methodology employed for this research involves analyzing the impact of these factors using data collected through the Likert scale method distributed to Bina Nusantara University students. The research methodology can be seen in Figure 1

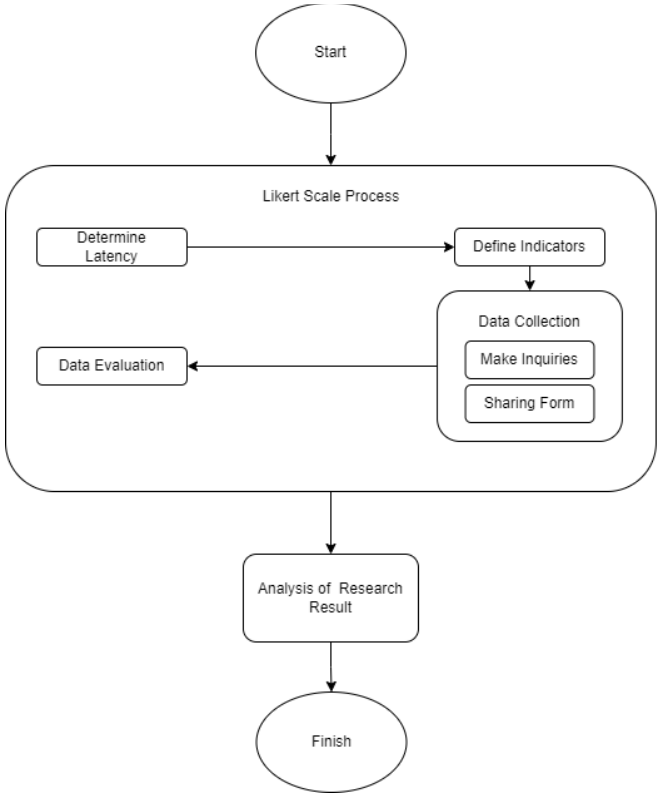

Fig 1. Research flow scheme

B. Research Object

The focus of this research is to examine the impact of teaching quality on student development in the teaching-learning process, as measured through the Likert scale. The study aims to identify the most significant factors that influence the quality of student learning based on the data collected.

C. Determine Latency

Latent variables are hypothetical constructs that cannot be directly observed or measured, but are inferred from observed measures[39]. Latent variables can be divided into two types, namely exogenous latent variables and endogenous latent variables. An exogenous latent variable is a type of latent variable that is unaffected by any other variables in the model or system under analysis. It is a variable that is independent of other variables in the model and its effects are felt on the model from outside[40]. "Teaching Method Impact" is an endogenous latent variable that is used. The impact of learning methods is used as a benchmark to determine the factors that influence student learning. An exogenous latent variable is a type of latent variable that depends on other variables in the model or system under analysis. It is a variable that is dependent on other variables in the model and its effects are felt within the model itself[41]. In the exogenous latent variable section, two latent variables are taken: "Lecturer Performance" and "Utilization of Technology and Facility". Both latent variables are derived from endogenous latent variables. Lecturer performance in teaching in the classroom is a serious consideration in determining students' learning performance. In addition, the utilization of technology and classroom facilities is a key factor that supports the optimal implementation of teaching and learning activities in the classroom. The latent can be seen in Table 1.

TABLE 1. LATENT VARIABLE

Endogenous Latent	Teaching Method Impact
Exogenous Latent	Lecturer Performance
	Utilization of Technology and Facility

D. Define Indicators

Indicators of a latent variable are observable measures that are used to estimate or represent the underlying construct of the latent variable. They are used as proxies for the construct that cannot be directly measured[42].

Indicators are essential components for evaluating the effectiveness of a particular system or procedure. In academic research, these indicators are used to evaluate the efficacy of various teaching and learning strategies. When evaluating the impact of teaching methods, latent indicators such as student academic performance, student skills, utilization of effective learning strategies, enhanced collaboration abilities, and student motivation can be considered. In addition, indicators such as curriculum adherence, teaching style, subject knowledge and expertise, comprehension of students' uniqueness, and teaching experience can be considered when evaluating instructors' performance. Similarly, the utilization of facilities and technology can be evaluated using indicators such

as student satisfaction with technology and facilities, classroom apparatus adequacy, instructors' technical proficiency, and use of digital technology. These metrics provide valuable information regarding the overall performance of instructors and the efficacy of their instructional strategies. By monitoring these indicators, it is possible to identify areas for improvement, leading to efforts to improve educational outcomes.

TABLE 2. INDICATORS

Teaching Method Impact	Student Score
	Student Skills
	Use of Effective Learning Strategy
	Enhancement of Collaboration Skills
	Student Learning Motivation
Lecturer Performance	Learning According to Curriculum
	Teaching Style
	Knowledge Insight
	Understanding Student Personality
	Lecturer Experience
Utilization of Technology and Facility	Use of Digital Technology
	Sufficient Class Facility
	Use of Technology by Lecturer
	Use of Class Facility
	Satisfaction of Technology and Facility

E. Data Collection

Data collection is a crucial aspect of any research project, as it forms the basis for the analysis and interpretation of results. According to Bryman and Bell (2019), data collection refers to the process of gathering information or data from various sources for the purpose of research. In academic research, data collection can be achieved through various methods such as surveys, interviews, observations, and experiments[43].

One of the methods of data collection that can be used is convenience sampling, which is a non-probability sampling technique. Convenience sampling involves selecting individuals who are readily available and easily accessible to participate in the survey. In this case, sending the survey to potential respondents through social media platforms would be an effective method, considering that students are frequent users of social media and can be easily reached through these channels. The target population for this survey consists of Bina Nusantara University students, and a total of 64 respondents were selected to participate in the study.

It is important to note that convenience sampling may introduce biases into the data, as the sample is not randomly selected and may not be representative of the entire population. However, in certain situations where obtaining a random sample is difficult or impractical, convenience sampling can provide valuable insights and serve as a starting point for further research.

F. Data Evaluation

Data evaluation is a critical step in research that involves verifying the accuracy, completeness, validity, and reliability of the collected data[44]. This stage of the research process is essential to ensuring that the obtained results are trustworthy and can be used to draw meaningful conclusions.

Any research project that involves assessing the precision and dependability of the gathered data must include a crucial phase called "Data Evaluation." This procedure seeks to uncover any bias or incorrect replies from the respondents as well as any inconsistencies or inaccuracies in the data. Researchers may offer suggestions based on the study results by examining the patterns and trends in the data and drawing useful conclusions. Data assessment, which uses different statistical approaches to assist assure the validity and trustworthiness of the data obtained, is a crucial part of any research endeavor.

IV. RESULT AND DISCUSSIONS

In examination of the gathered data, the survey collects a total of 64 respondents who are all students in Binus University. Following data gathering, the validation results for each latent are as shown in table 3 to 5:

TABLE 3. ENDOGEN VALIDATION

Indicator	Correlation	Table	Conclusion
Student Score	0.69718375	0.2461	Valid
Student Skills	0.88824144	0.2461	Valid

Use of Effective Learning Strategy	0.85102429	0.2461	Valid
Enhancement of Collaboration Skills	0.74682107	0.2461	Valid
Student Learning Motivation	0.81048889	0.2461	Valid

TABLE 4. LATENT 2A VALIDATION

Indicator	Correlation	Table	Conclusion
Learning According to Curriculum	0.67259761	0.2461	Valid
Teaching Style	0.72911025	0.2461	Valid
Knowledge Insight	0.76272902	0.2461	Valid
Understanding Student Personality	0.71193421	0.2461	Valid
Lecturer Experience	0.60644192	0.2461	Valid

TABLE 5. LATENT 2B VALIDATION

Indicator	Correlation	Table	Conclusion
Use of Digital Technology	0.82978621	0.2461	Valid
Sufficient Class Facility	0.86606597	0.2461	Valid
Use of Technology by Lecturer	0.8611248	0.2461	Valid
Use of Class Facility	0.79848585	0.2461	Valid
Satisfaction of Technology and Facility	0.84800253	0.2461	Valid

As shown above, all of the answers have been marked as valid based on the value of the rtable. Besides validity of each question, the questions of each latent are examined for its reliability. The results are as shown on table 6 to 8:

TABLE 6. ENDOGEN RELIABILITY

Indicator	Variance	Sum of Variance	Total Variance	Cronbach alpha	Reliability
Student Score	1.140625	4.65625	14.58630952	0.850974291	Very High
Student Skills	0.726190476				
Use of Effective Learning Strategy	0.83234127				
Enhancement of Collaboration Skills	0.95014881				
Student Learning Motivation	1.006944444				

TABLE 7. LATENT 2A RELIABILITY

Indicator	Variance	Sum of Variance	Total Variance	Cronbach alpha	Reliability

Learning According to Curriculum	0.630704365	4.054315476	9.761656746	0.730836657	High
Teaching Style	0.80952381				
Knowledge Insight	0.726190476				
Understanding Student Personality	1.157738095				
Lecturer Experience	0.73015873				

TABLE 8. LATENT 2B RELIABILITY

Indicator	Variance	Sum of Variance	Total Variance	Cronbach alpha	Reliability
Use of Digital Technology	0.884672619	4.054315476	9.761656746	0.730836657	High
Sufficient of Class Facility	0.682539683				
Use of Technology by Lecturer	0.721230159				
Use of Class Facility	0.612847222				
Satisfaction of Technology and Facility	0.670386905				

The reliability measurements show that all of the latents have high to very high reliability. This alongside the analysis of the validity of each question shows that the data is good and can be utilized.

The results show that several indicators have the highest influence on their respective variables. When measuring a teacher's performance, the result shows that while all variables are considered important in its measurement, the most important indicator is the expansiveness of the teacher's knowledge. Meanwhile, regarding the utilization of technology and facilities, the respondents believe that the facilities used such as the whiteboard and projectors, have the most impact although in general, all utilization of technology and facilities is considered important. In general, when measuring the quality of teachers, respondents believe that the most important factor is the teacher's teaching strategy.

V. CONCLUSION

The intention of conducting this research is to examine the impact of teaching quality on student development during the teaching and learning process by conducting a survey on Bina Nusantara University students and to determine the most significant and influential factors using the data. Based on the analysis of the data, the respondents believe that in measuring the quality of teaching, the main factors are the expansiveness of the teacher's knowledge, the utilization of proper facilities in learning, and the usage of proper teaching strategies by the teacher.

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