Classroom facilities and learning quality: effects on student satisfaction in vocational education

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Abstrak

Penelitian ini bertujuan untuk mengetahui (1) pengaruh sarana prasarana kelas terhadap kepuasan belajar siswa, (2) pengaruh kualitas pembelajaran terhadap kepuasan belajar siswa, (3) pengaruh sarana prasarana kelas dan kualitas pembelajaran secara bersama-sama terhadap kepuasan belajar siswa kelas X Manajemen Perkantoran dan Layanan Bisnis di SMK Negeri 1 Banyudono. Penelitian ini menggunakan pendekatan kuantitatif dengan metode survei. Populasi penelitian berjumlah 72 siswa. Data dikumpulkan melalui angket yang telah diuji validitas dan reliabilitasnya, kemudian dianalisis menggunakan regresi linear berganda melalui SPSS. Hasil analisis menunjukkan bahwa Sarana Prasarana Kelas berpengaruh signifikan terhadap Kepuasan Belajar Siswa (thitung = 5,079; Sig. = 0,000), begitu pula Kualitas Pembelajaran (thitung = 4,669; Sig. = 0,000). Secara simultan, keduanya juga berpengaruh signifikan (Fhitung = 59,250; Sig. = 0,000) dengan nilai determinasi (R²) sebesar 0,632. Hasil penelitian ini yaitu (1) terdapat pengaruh signifikan antara sarana prasarana kelas terhadap kepuasan belajar siswa, (2) kualitas pembelajaran terhadap kepuasan belajar siswa, (3) sarana prasarana kelas dan kualitas pembelajaran secara bersama-sama terhadap kepuasan belajar siswa. Kesimpulannya, sarana prasarana yang memadai serta pembelajaran berkualitas dapat meningkatkan kepuasan belajar siswa.

Kata kunci: kegiatan belajar mengajar; kuantitatif; manajemen pendidikan; sekolah vokasi; SERVQUAL

Abstract

This study examined the effects of (1) classroom facilities and infrastructure on student learning satisfaction, (2) learning quality on student learning satisfaction, and (3) the combined influence of classroom facilities and infrastructure and learning quality on learning satisfaction among Grade X Office Management and Business Services students at SMK Negeri 1 Banyudono. Employing a quantitative approach with a survey method, this study utilized a total population of 72 students. Data were collected through validated and reliability-tested questionnaires and analyzed using multiple linear regression via SPSS. The analysis revealed that classroom facilities

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and infrastructure significantly influenced student learning satisfaction (t = 5.079, p < .001), as did learning quality (t = 4.669, p < .001). Simultaneously, both variables demonstrated a significant effect (F = 59.250, p < .001) with a coefficient of determination (R²) of .632. These findings indicate that (1) classroom facilities and infrastructure significantly influence student learning satisfaction, (2) learning quality significantly influences student learning satisfaction, and (3) both variables jointly and significantly affect student learning satisfaction. The results support the relevance of SERVQUAL theory in educational contexts, particularly regarding tangibles, responsiveness, and reliability dimensions. In conclusion, adequate facilities and infrastructure combined with quality learning can enhance student learning satisfaction.

Keywords: educational management; learning satisfaction; SERVQUAL; quantitative; vocational school

Pendahuluan

Vocational education in Indonesia faces new challenges post-COVID-19 pandemic, particularly in adapting practice-based learning amid facility limitations. Concurrently, the Industry 4.0 era demands that vocational high school (SMK) graduates possess skills adaptable to digital technology development, automation, and information-based services. These conditions underscore the importance of evaluating learning quality and facility availability to ensure that SMKs can produce skilled workers aligned with current industrial needs. As part of formal education, Vocational High Schools (SMK) play a strategic role in developing student competencies for workforce readiness. SMK Negeri 1 Banyudono, as a vocational education institution, demonstrates commitment to enhancing educational quality while supporting both academic and non-academic achievements to produce skilled and competent graduates.

According to Wibowo et al. (2018), achieving quality vocational school objectives requires attention to student learning outcomes. Within learning outcomes, student learning satisfaction warrants consideration as it represents a crucial aspect of education with significant impacts on motivation, learning results, and social relationships. Student learning satisfaction serves as an important indicator of effective educational processes. Astin (as cited in Feldman & Newcomb, 2020) noted that student learning satisfaction can enhance student engagement in learning processes, which subsequently contributes to better learning outcomes. Student learning satisfaction can be influenced by both internal and external factors. Internal factors include student interest, learning motivation, and self-efficacy. External factors encompass teacher-provided learning quality in classrooms, available classroom facilities and infrastructure, resource or environmental availability, and student involvement in learning processes (Wang et al., 2023).

Field realities often reveal gaps between idealism and practice. Through a preliminary study conducted using questionnaires with 28 students in Grade X Office Management and Business Services (MPLB) at SMK Negeri 1 Banyudono, researchers found that 22 students reported dissatisfaction and difficulties in receiving classroom instruction. Based on these data, 45.5% complained about uncomfortable learning conditions due to hot and odorous classrooms, 31.7% expressed concerns about teachers' unprofessional material delivery in classrooms, and 22.7% mentioned unsupportive peer environments.

Observations conducted during teaching assistance at SMK Negeri 1 Banyudono revealed classroom facility and infrastructure problems, including inadequate classroom equipment and supporting facilities such as fans, school environmental cleanliness, and learning support equipment completeness. Additionally, through interviews and field observations, researchers identified

learning dissatisfaction issues. Several students expressed dissatisfaction with teaching methods perceived as insufficiently varied and misaligned with student needs, thereby reducing student engagement during learning. Some students revealed that teacher material explanations occasionally did not align with assessed learning objectives in summative assessments, teacher explanations remained insufficiently clear and difficult for students to comprehend, teacher characteristics that intimidated students from asking questions caused comprehension blockages during learning activities, and created poor reciprocal interactions between teachers and students.

Adequate facilities and infrastructure can create conducive learning environments, while high learning quality can enhance interaction and student engagement. Research on educational facilities and infrastructure has been conducted by Amaliyah and Rosdiana (2023), who argued that facilities and infrastructure encompass physical and non-physical aspects constituting policy components aimed at improving and enhancing basic service quality in educational implementation. Furthermore, Regulation of the Minister of Education, Culture, Research and Technology of the Republic of Indonesia Number 22 of 2023 concerning Standards for Facilities and Infrastructure in Early Childhood Education, Basic Education Levels, and Secondary Education Levels explains that facility and infrastructure standards contain minimum standards that educational institutions must provide in implementing education (Kementrian Pendidikan, Kebudayaan, Riset dan Teknologi, 2023).

Beyond facilities and infrastructure as educational standard benchmarks, learning quality provided by subject teachers during learning activities represents another factor. According to Mystakidis et al. (2019), ideal learning quality constitutes a learning process that not only involves memorizing information or superficial facts but also provides deep and meaningful experiences for students. Quality learning must develop deep understanding in studied disciplines and encourage students to connect new knowledge with personal experiences, enabling them to find deeper meaning in learned material. This can include active student involvement in discussions and classroom activities, student ability to apply knowledge in real situations, student learning outcomes achievement, and relevance between material received by students during classroom learning activities (As et al., 2024).

Tarnanidis and Tarnanidis (2024) reported that their research on learning satisfaction using SERVQUAL theory demonstrated that learning satisfaction measurement indicated learning quality provided by teachers as the most dominant factor. Mauludin et al. (2024) showed that learning service levels and learning facilities significantly influenced student satisfaction. Arham et al. (2021) identified three factors significantly affecting student satisfaction: teaching quality as the most important factor for their satisfaction, followed by administration and facilities or infrastructure.

Previous research extensively employed SERVQUAL in higher education and general school contexts (Arham et al., 2021; Titin, 2023). However, SERVQUAL application in Vocational High School (SMK) contexts, particularly in Office Management and Business Services (MPLB) majors, remains limited. Additionally, classroom facility and infrastructure aspects and learning quality are rarely examined simultaneously in relation to student learning satisfaction. Therefore, this study attempts to fill this gap by analyzing the influence of classroom facilities and infrastructure and learning quality on student learning satisfaction at SMK Negeri 1 Banyudono.

Based on identified problem backgrounds, researchers were interested in conducting research on (1) the influence of classroom facilities and infrastructure on student learning satisfaction, (2) the influence of learning quality on student learning satisfaction, and (3) the combined influence of classroom facilities and infrastructure and learning quality on learning satisfaction among Grade X Office Management and Business Services students at SMK Negeri 1 Banyudono.

Research Method

This research was conducted with Grade X Office Management and Business Services (MPLB) students at SMK Negeri 1 Banyudono, Boyolali Regency, Central Java, from November to July 2025. The study focused on Grade X Office Management and Business Services (MPLB) students because this major directly relates to service aspects, administration, and classroom facility and infrastructure use, which constitute the primary research objects. Additionally, Grade X

selection was considered because students at this level are in early SMK learning adaptation stages, so their experiences regarding learning quality and facilities and infrastructure can provide more objective perspectives. The approach employed was quantitative with causal research type, aiming to determine the influence of two independent variables on one dependent variable, namely the influence of classroom facilities and infrastructure and learning quality on student learning satisfaction.

The independent variables in this study were classroom facilities and infrastructure (X_1) and learning quality (X_2), while the dependent variable was student learning satisfaction (Y). Classroom facilities and infrastructure were reflected through completeness, condition, and functional ease of facilities and infrastructure supporting classroom learning activities, such as desks and chairs, lighting, ventilation, classroom cleanliness, and learning media. Learning quality was assessed based on teacher performance and learning process implementation, encompassing teacher behavior, student behavior and learning impacts, learning climate, learning materials, learning media, and learning systems. Student learning satisfaction was reflected through assessments of learning comfort, material comprehension, learning motivation, perceptions of teacher performance, and perceived learning objective achievement based on five measurement dimensions in SERVQUAL theory: reliability, responsiveness, empathy, assurance, and tangibles.

Before data collection, researchers submitted research permission letters to schools and obtained ethical clearance from relevant institutions. Researchers also provided informed consent forms to each respondent, explaining research purposes and objectives, identity confidentiality guarantees, and respondents' rights not to complete questionnaires if unwilling to participate. To ensure instrument feasibility, pilot testing was conducted with 33 students outside the main sample to test research instrument validity and reliability. Pilot test results were not included in main analyses but served only as bases for instrument improvement. The main research population consisted of 72 Grade X MPLB students, all of whom were used as samples through total sampling technique. Research instruments were arranged as closed questionnaires based on 5-point Likert scales, ranging from "Strongly Agree" to "Strongly Disagree." Instrument development was based on indicators relevant to theory and previous research. Based on validity test results using Pearson correlation, 35 valid items were obtained, distributed as follows: 8 items for classroom facilities and infrastructure variables, 15 items for learning quality, and 12 items for student learning satisfaction. All variables also met reliability requirements, indicated by Cronbach's Alpha values above .60, so instruments were declared reliable and appropriate for main data collection.

The study population comprised all Grade X MPLB students at SMK Negeri 1 Banyudono in the 2024/2025 academic year, totaling 72 students. Because the population was less than 100, saturated sampling technique was used, whereby all population members became samples. Data analysis was performed using SPSS version 24 software. Analysis stages began with data tabulation and prerequisite analysis tests: normality, linearity, multicollinearity, and heteroscedasticity tests. Subsequently, multiple linear regression analysis was conducted to test simultaneous and partial influences between independent and dependent variables. The t-test and F-test were used to measure influence significance, while the coefficient of determination (R^2) and effective contribution and relative contribution analyses were used to examine each variable's contribution magnitude to student learning satisfaction.

Results and Discussion

Research Results

Based on descriptive statistical analysis results, the Student Learning Satisfaction variable showed a maximum score of 60 and minimum score of 24, with a mean of 42.07 and standard deviation of 6.516. The Classroom Facilities and Infrastructure variable had a maximum value of 40 and minimum of 12, with a mean of 28.40 and standard deviation of 5.156. Meanwhile, the Learning Quality variable showed a maximum value of 73 and minimum of 38, with a mean of 50.78 and standard deviation of 6.105. All data totaled 72 and were listwise valid.

Before regression testing, classical assumption tests were first performed. Normality test results indicated that data in each variable were normally distributed with a significance value of .200 ($p > .05$). Linearity test results showed that the relationship between Student Learning Satisfaction and Classroom Facilities and Infrastructure had a linearity significance value of $< .001$ and deviation from linearity of .131 ($p > .05$), so their relationship was declared linear. Similarly, the relationship between Student Learning Satisfaction and Learning Quality had linearity significance of $< .001$ and deviation from linearity of .131 ($p > .05$), also meeting linearity assumptions.

Multicollinearity testing showed that tolerance values for both independent variables were .641 ($> .10$) and VIF values were each 1.559 (< 10), so it could be concluded that multicollinearity symptoms did not occur in the regression model. Furthermore, heteroscedasticity testing using the Glejser Test showed that Classroom Facilities and Infrastructure significance value was .207 and Learning Quality was .670 (both $p > .05$), meaning heteroscedasticity did not occur in this regression model.

Table 1

t-Test Results

Coefficients[a]					
	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	2.368	3.998		.592	.556
Classroom Facilities and Infrastructure	.585	.115	.463	5.079	.000
Learning Quality	.454	.097	.426	4.669	.000

Table 1 shows that t-test results indicated Classroom Facilities and Infrastructure significantly influenced Student Learning Satisfaction with a t-value of 5.079 and significance of $< .001$ ($p < .05$). This significance value was less than .05, with t = 5.079 > t_critical = 1.994 (df = 72 – 2 – 1 = 69). This means there was a significant partial influence between the Classroom Facilities and Infrastructure variable (X_1) on the Student Learning Satisfaction variable (Y). Similarly, Learning Quality also had a significant influence with a t-value of 4.669 and significance of $< .001$. This significance value was also less than .05, with t = 4.669 > t_critical = 1.994. Because the significance value $p < .05$ and t > t_critical, H_0 was rejected. This indicates a significant partial influence between the Learning Quality variable (X_2) on the Student Learning Satisfaction variable (Y).

Table 2

F-Test Results

ANOVA[a]					
	Sum of Squares	df	Mean Square	F	Sig.
Regression	1905.266	2	952.633	59.250	.000[b]
Residual	1109.386	69	16.078		
Total	3014.653	71			

Table 2 shows that F-test results indicated both independent variables simultaneously significantly influenced the dependent variable, with an F-value of 59.250 and significance of $< .001$ ($p < .05$). Based on these results, the conclusion was drawn that H_0 was rejected, meaning there was a significant influence from the Classroom Facilities and Infrastructure variable (X_1) and Learning Quality variable (X_2) simultaneously (together) on Grade X Student Learning Satisfaction at SMK Negeri 1 Banyudono (Y).

Table 3
Multiple Linear Regression Analysis Results

	Coefficients[a]				
	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	2.368	3.998		.592	.556
Classroom Facilities and Infrastructure	.585	.115	.463	5.079	.000
Learning Quality	.454	.097	.426	4.669	.000

Based on Table 3, the multiple linear regression analysis results from this study were:

$$\hat{Y} = 2{,}368 + 0{,}585\ X_1 + 0{,}454\ X_2$$

From these results, it can be concluded that (1) the constant of 2.368 indicates that if X_1 and X_2 equal zero, the Student Learning Satisfaction variable (Y) value remains 2.368; (2) based on the Classroom Facilities and Infrastructure variable (X_1), regression test results showed the X_1 variable had a positive regression coefficient on the Student Learning Satisfaction variable (Y) with a value of 0.585, meaning if the X_1 variable value increased by 1 point, there would also be an increase in the Y variable of 0.585; (3) based on the Learning Quality variable (X_2), regression test results showed the X_2 variable had a positive regression coefficient on the Student Learning Satisfaction variable (Y) with a value of 0.454, meaning if the X_2 variable value increased by 1 point, there would also be an increase in the Y variable of 0.454. Regression analysis results showed that the constant of 2.368 indicated a basic student satisfaction level even without being influenced by facilities and infrastructure or learning quality variables. The Classroom Facilities and Infrastructure variable (X_1) had a positive regression coefficient of 0.585, meaning better facility and infrastructure conditions and utilization would significantly increase student learning satisfaction. Meanwhile, the Learning Quality variable (X_2) also provided a positive influence with a regression coefficient of 0.454, indicating that learning quality improvements, whether in methods, media, or evaluation aspects, also increased student satisfaction. Thus, both variables proved to contribute positively, though classroom facilities and infrastructure provided relatively greater influence compared to learning quality on student learning satisfaction at SMK Negeri 1 Banyudono..
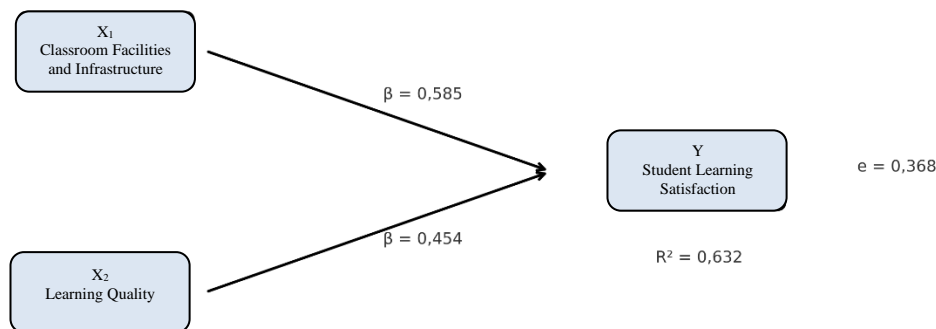
Table 4
Coefficient of Determination Results

	Model Summary[b]		
R	R Square	Adjusted R Square	Std. Error of the Estimate
.795[a]	.632	.621	4.010

Table 4 shows that the coefficient of determination (R^2) value was .632, meaning the Classroom Facilities and Infrastructure (X_1) and Learning Quality (X_2) variables together could explain Student Learning Satisfaction (Y) variable variance by 63.2%. Meanwhile, the remaining 36.8% was explained by other factors outside this regression model, such as learning motivation, parental support, school environment, or individual student factors not analyzed in this study.

To clarify inter-variable relationships, this study was also visualized in path diagram in figure 1 as follows:

Figure 1
Path Diagram of Research Results

This diagram illustrates the influence of Classroom Facilities and Infrastructure (X_1) and Learning Quality (X_2) on Student Learning Satisfaction (Y), with a determination contribution of 63.2% and the remaining 36.8% influenced by factors outside the model.

Discussion

Based on data analysis results using multiple linear regression methods, results showed positive and significant influences of classroom facilities and infrastructure (X_1) and learning quality (X_2) variables on learning satisfaction (Y) of Grade X MPLB students at SMK Negeri 1 Banyudono, with the following discussion:

The Influence of Classroom Facilities and Infrastructure on Student Learning Satisfaction

Based on t-test analysis results, there was a significant influence of the Classroom Facilities and Infrastructure variable (X_1) partially on Student Learning Satisfaction of Grade X MPLB students at SMK Negeri 1 Banyudono (Y). If classroom facilities and infrastructure are fulfilled and operate optimally, student learning satisfaction can be positively influenced. Conversely, if classroom facilities and infrastructure are not fulfilled and do not operate optimally, negative impacts on student learning satisfaction will occur.

The first hypothesis in this study was that classroom facilities and infrastructure influence learning satisfaction. This hypothesis was tested using the t-test and results showed t = 5.079 > t_critical = 1.994, with significance value < .001 (p < .05). Based on these results, H_0 was rejected and H_1 was accepted, so it can be interpreted that there was a significant partial influence between Classroom Facilities and Infrastructure on Student Learning Satisfaction. This finding aligns with previous research results by Amaliyah and Rosdiana (2023), namely there was a significant influence between Classroom Facilities and Infrastructure on Student Learning Satisfaction with t-value (8.190) > t_critical (1.989).

Based on data tabulation conducted by researchers, the item receiving the highest score was number 13 with a score of 292, namely in the Classroom Facilities and Infrastructure Completeness indicator containing the statement "Every student has sufficient desks and chairs in the classroom." This shows that students tangibly experienced adequate classroom facility and infrastructure

availability, so physical comfort aspects in the learning process were assessed as well-fulfilled. Conversely, the item receiving the lowest score was number 19 with a score of 229, located in the Classroom Facilities and Infrastructure Use indicator with the statement "Teachers always use projectors when explaining material." This shows that technology-based learning facility and infrastructure utilization in classrooms was still not optimal, possibly caused by equipment limitations, lack of electronic media usage habits, or teacher preferences for conventional methods.

This research finding supports SERVQUAL theory as stated in Tarnanidis and Tarnanidis's (2024) journal, that the tangible dimension in educational service quality includes physical facility availability and feasibility that directly affects student perceptions and satisfaction. Research results showed that adequate classroom facilities and infrastructure significantly contributed to student learning satisfaction improvement. This aligns with SERVQUAL theory principles that tangible aspects become initial indicators forming students' positive perceptions of overall educational service quality. Other research conducted by Amaliyah and Rosdiana (2023), Coronado et al. (2021), Sitorus et al. (2023), and Santoso and Putri (2020) stated that classroom facilities and infrastructure have positive relationships with student learning satisfaction; in other words, the better and more optimal available classroom facilities and infrastructure, the more satisfied students are in learning activities.

The Influence of Learning Quality on Student Learning Satisfaction

Based on t-test calculation results using SPSS 24 application, Learning Quality significantly influenced Student Learning Satisfaction. This was shown by t-test results indicating that $t = 4.669 > t\_critical = 1.994$ with significance value $< .001$ ($p < .05$). Based on these results, H_0 was rejected and H_2 was accepted, so it can be interpreted that there was a significant partial influence between Learning Quality on Student Learning Satisfaction.

From data tabulation results, the item receiving the highest score was item number 22 with a score of 269, namely in the Teacher Behavior indicator containing the statement "Teachers appear enthusiastic and spirited during teaching." This shows that students assessed teacher enthusiasm and spirit in teaching as very prominent and positive aspects, playing important roles in creating lively learning atmospheres, motivating, and increasing student engagement in classrooms. Meanwhile, the lowest score was found in item number 28 with a score of 204, namely in the Learning Climate indicator containing the statement "I feel tense or pressured when learning in class." This shows that most students did not experience tension or excessive pressure during learning processes, indicating that classroom learning climates were conducive, comfortable, and supported student involvement both emotionally and cognitively.

This research finding also supports SERVQUAL theory in Tarnanidis and Tarnanidis's (2024) journal, that responsiveness and reliability dimensions in educational service quality are reflected through learning quality provided by educators. Research results showed that learning designed with appropriate methods, clear material delivery, and teacher ability to respond to student needs and questions quickly provided significant influences on student learning satisfaction. This aligns with SERVQUAL principles emphasizing that educational service quality not only depends on physical facilities but also on interaction quality and educator competence in meeting student expectations. This research also supports SERVQUAL theory as explained in Rapa et al.'s (2025) journal, where learning quality closely relates to responsiveness and reliability dimensions. Responsiveness is reflected in teacher ability to respond to student needs quickly, provide clear explanations, and deliver material with appropriate methods. Meanwhile, reliability is seen from teacher consistency in carrying out learning processes, providing appropriate feedback, and maintaining regularity and reliability in delivering material. High teaching quality reflects educational services that are reliable and responsive to student expectations, ultimately positively impacting their learning satisfaction levels. This research also strengthens previous research conducted by Mukroni (2017), Mauludin et al. (2024), Bakti et al. (2024), Chalim (2018), Indarti et al. (2021), and Titin (2023) stating that learning quality has significant influences on student learning satisfaction. The existence of classroom learning quality influences on Grade X MPLB student learning satisfaction at SMK Negeri 1 Banyudono explains that the more optimal learning quality provided by schools, the more satisfied students will be with received learning.

The Combined Influence of Classroom Facilities and Infrastructure and Learning Quality on Student Learning Satisfaction

Based on F-test results obtained from multiple linear regression analysis, an F-value of 59.250 was obtained with significance value < .001. This value was compared with F_critical at 5% significance level ($\alpha = .05$) with $df_1 = 2$ and $df_2 = 69$, namely 3.13. Because F > F_critical and significance value (Sig.) < .05, it can be concluded that H_0 was rejected and H_3 was accepted. This means Classroom Facilities and Infrastructure and Learning Quality variables simultaneously significantly influenced Student Learning Satisfaction.

These results showed that both independent variables together contributed to student satisfaction improvement in learning processes. Adequate facility and infrastructure support and good learning quality were assessed by students as important factors influencing their comfort, motivation, and satisfaction while participating in classroom learning activities. This aligns with learning satisfaction concepts, where satisfaction is not only influenced by delivered material but also by supportive learning conditions and active teacher involvement in teaching processes.

This was supported by data tabulation results having the highest score, namely item number 3 in the Responsiveness indicator with a score of 283 containing the statement "Teachers are always ready to help if I have questions." This finding shows that students experienced responsive and supportive teacher presence during learning processes, creating open interactions and increasing student confidence in conveying questions or learning difficulties. Meanwhile, the lowest score was found in item number 12 with a score of 220, namely in the Tangible indicator containing the statement "Students have classrooms that are often dirty and uncomfortable for learning." Low scores on negatively nuanced statements indicated that most students disagreed with these conditions, meaning they assessed that classrooms were generally clean and comfortable for use in learning processes. Thus, student perceptions of physical learning space aspects were positive, and this also supported creation of conducive learning environments.

These analysis results strengthened Mauludin et al.'s (2024) research stating that learning service quality and learning facility availability simultaneously significantly influenced student satisfaction. Similarly, Sumarno et al.'s (2024) study proved that educational service quality, including physical facility aspects and teacher interactions, contributed tangibly to student learning satisfaction simultaneously. These findings support SERVQUAL theory in Irmawati et al.'s (2025) journal, namely that educational institution service quality is influenced by tangibles and service reliability dimensions, where adequate facilities and infrastructure and consistent and reliable learning processes become important indicators in forming student satisfaction. In this context, physical facilities such as comfortable classrooms, sufficient lighting, and available learning media reflect service quality in the tangible dimension, while teacher readiness and ability to deliver material systematically and responsively reflect the reliability dimension. These results affirm that student learning satisfaction is not only determined by single aspects but results from combinations between learning quality and classroom facility and infrastructure support that comprehensively support teaching-learning processes.

Conclusion

Based on research conducted with students at SMK Negeri 1 Banyudono, it can be concluded that Classroom Facilities and Infrastructure and Learning Quality positively and significantly influenced Student Learning Satisfaction both partially and simultaneously. Regression analysis results showed that one-unit increases in Classroom Facilities and Infrastructure and Learning Quality each contributed 0.585 and 0.454 units respectively to Student Learning Satisfaction improvement, with a constant of 2.368. This regression model had a coefficient of determination (R^2) value of .632, meaning 63.2% of Student Learning Satisfaction variation could be explained by two independent variables in the research, while the remaining 36.8% was influenced by other factors not examined. Contribution analysis showed that Classroom Facilities and Infrastructure provided an effective contribution of 33.3% and relative contribution of 52.7%, while Learning Quality provided an effective contribution of 29.9% and relative contribution of 47.3%. These

research results support SERVQUAL theory in Tarnanidis and Tarnanidis's (2024) journal, that tangible, reliability, and responsiveness dimensions simultaneously influence student satisfaction. Adequate classroom facilities and infrastructure and consistent learning quality proved to jointly increase student learning satisfaction. These analysis results strengthened Mauludin et al.'s (2024) research stating that learning service quality and learning facility availability simultaneously significantly influenced student satisfaction. Similarly, Sumarno et al.'s (2024) study proved that educational service quality, including physical facility aspects and teacher interactions, contributed tangibly to student learning satisfaction simultaneously. These results affirm that student learning satisfaction is not only determined by single aspects but results from combinations between learning quality and classroom facility and infrastructure support that comprehensively support teaching-learning processes.

Nevertheless, this research had limited scope, namely on Grade X student populations at SMK Negeri 1 Banyudono. Therefore, result generalization to other schools or different majors must be done carefully, considering facility and infrastructure conditions and learning quality can vary. Additionally, this research had limitations in examined variable scope, so further research is needed by considering other factors such as learning motivation, teacher roles, or social environments that might also influence student learning satisfaction.

Based on research findings, it is recommended that school principals focus on improving classroom cleanliness and comfort and facilitating technology-based teacher training programs. School committees are expected to strengthen support through continuous facility and infrastructure procurement and maintenance together with schools and parents. Teachers are advised to more optimally utilize digital learning media such as PowerPoint, videos, and interactive applications so learning becomes more varied and satisfying for students. Students are expected to also maintain school facilities and actively participate in learning to build conducive and sustainable learning experiences. Meanwhile, for subsequent research, other variables that can influence student learning satisfaction need examination, considering classroom facility and infrastructure and learning quality contributions only explained 63.2%.

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