

Integrating Quality Function Deployment and Service Excellence for Educational Quality Enhancement in Higher Education

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Abstract:

This article aims to analyze the integration of quality function deployment (QFD) and excellent service in improving the quality of education at STT Migas Balikpapan. This research uses a qualitative case study type approach. Data collection techniques are carried out through observation, interviews, and documentation. Data analysis is carried out circularly, starting with data collection, presentation, reduction, and conclusion. The results of this research show that integration of quality function deployment (QFD) and service excellence in order to improve the quality of education at STT Migas Balikpapan is carried out through the identification of customer needs, the transformation of needs into action plans, alignment with superior service, continuous measurement, and evaluation. The results of this research can provide practical guidance for higher education institutions in improving the quality of their education in a way that is more focused, responsive, and oriented to the needs of students and industry. It is hoped that integrating QFD and excellent service can become the basis for educational renewal in similar universities.

Keywords: *Quality Function Deployment Principal, Excellent Service, Customer*

Abstrak:

Artikel ini bertujuan untuk menganalisis tentang integrasi quality function deployment (QFD) dan pelayanan prima dalam meningkatkan mutu pendidikan di STT Migas Balikpapan. Penelitian ini menggunakan pendekatan kualitatif jenis studi kasus. Teknik pengumpulan datanya dilakukan melalui observasi, interview dan dokumentasi. Analisis datanya dilakukan secara sirkuler, yang dimulai dari pengumpulan data, penyajian data, reduksi data dan diakhiri dengan penarikan kesimpulan. Hasil riset ini menunjukkan bahwa Integrase quality function deployment (QFD) dan service excellence dalam rangka meningkatkan mutu pendidikan di STT Migas Balikpapan dilakukan melalui; identifikasi kebutuhan pelanggan, transformasi kebutuhan menjadi rencana tindakan, penyesuaian dengan pelayanan unggul, pengukuran dan evaluasi berkelanjutan. Hasil dari penelitian ini diharapkan dapat memberikan panduan praktis bagi lembaga pendidikan tinggi dalam meningkatkan mutu pendidikan mereka dengan cara yang lebih terfokus, responsif, dan berorientasi pada kebutuhan mahasiswa dan industri. Integrasi QFD dan pelayanan prima diharapkan dapat menjadi landasan untuk pembaharuan pendidikan di perguruan tinggi sejenis.

Kata Kunci: *Prinsip Penerapan Fungsi Kualitas, Pelayanan Prima, Pelanggan*

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INTRODUCTION

In an era of rapid global change, higher education is crucial in preparing individuals to face the demands of an increasingly complex professional world (Ali, 2020; Kahar et al., 2021). The College of Oil and Gas Technology (STT Migas) in Balikpapan, as an institution specializing in energy and natural resources, is responsible for providing high-quality education relevant to industry needs.

The importance of ensuring the quality of education at STT Migas Balikpapan is focused on delivering learning material and involves student experience, efficiency of the educational process, and quality services. In this context, integration between Quality Function Deployment (QFD) and Service Excellence is a strategy that can significantly improve education quality.

Quality Function Deployment (QFD) is understood as a quality management methodology and tool used to design products or services that meet customer needs and expectations (Hasibuan et al., 2019; Ginting et al., 2020; Bahia et al., 2023). The main benefits of Quality Function Deployment are improving the suitability of products or services to customer needs, reducing defects or problems, optimizing efficiency, and minimizing costs. Meanwhile, service excellence provides excellent, high-quality, and very satisfying customer service (Sharma et al., 2020; Aladwan et al., 2021). This reflects a commitment to providing an exceptional customer experience, exceeding expectations, and ensuring customer satisfaction.

The Oil and Gas Technology College (STT Migas) in Balikpapan has a vital role in preparing professional candidates who are ready to face the challenges of the dynamic oil and gas industry. Improving services and quality at STT Migas Balikpapan is a crucial strategic basis to maintain the relevance and quality of education.

Quality of service and education is not only about delivering learning materials but also involves various aspects influencing student experiences and learning outcomes. Improved facilities, a curriculum relevant to industry needs, interaction between lecturers and students, and support for developing soft skills are essential elements in creating a superior educational experience.

Higher education has a central role in forming future leaders and positively contributing to the progress of society and the country. STT Migas Balikpapan, as a higher education institution, is also responsible for providing quality educational experiences to students. Efforts to improve the quality of education in higher education have become the main focus, in line with the demands of global competition and rapid technological developments.

Quality Function Deployment (QFD) is a technique that is becoming more acknowledged as a method for improving the quality of education. (Sari et al., 2020; Sabilah et al., 2023) Quality Function Deployment, or QFD, is a methodology that connects customer needs with the production process or the provision of services. When applied to higher education, quality function deployment (QFD) is

utilized to determine the needs of students and other stakeholders and translate these requirements into actionable plans for enhancing the quality of education.

Quality Function Deployment (QFD) helps the development team plan products and services by identifying customer demands and assessing attempts to meet them (Suyadi & Nurjannah, 2020). Indrianti (2020) stated that the QFD method, which integrates consumer voices and technical aspects, can be used to develop higher education website development strategies that improve IMC media effectiveness and Webometrics rankings. This strategy improves website quality sustainably. Sengazani Murugesan (2020) claimed QFD planning, operation, and execution might set postal end-user expectations. Pangestuningtyas (2021) said the Quality Function Deployment approach can determine consumer interest in Academic Units in business schools' service attributes and the company's development priorities.

Furthermore, Suyadi, S., & Nurjannah, H. (2020), through QFD, found that there are at least seven attributes that are priority needs of students that the campus must meet, namely adequate library facilities (books, journal proceedings, and articles), teaching. By the Semester Learning Plan (RPS), lecturers comply with the predetermined class schedule, the online Study Plan Card (KRS) filling process is easy for students, Academic administration staff is responsive in handling student complaints and requests regarding administrative services, Availability of parking facilities, Academic staff serve with sincerity, and be friendly and patient. Abdel-Basset (2019) said that the most preferred and the lowest preferred metrics in order to evaluate the sustainability of the supply chain strategy. Zaher (2020) said that the current curriculum needs to be improved to fulfill the employment market requirements and the lack of efficiency in connecting faculties' outputs with the needs of production and service organizations.

On the other hand, applying Service Excellence principles has proven its importance in creating positive experiences for customers or, in this case, students. The combination of QFD and Service Excellence can produce a holistic and integrated approach to improving the quality of education at STT Migas Balikpapan. In this context, curriculum development, provision of facilities, interaction between lecturers and students, and various other aspects can be better directed to meet student expectations and create an inspiring educational environment.

The novelty of this research lies in the approach that integrates Quality Function Deployment (QFD) and Service Excellence to improve the quality of education. This research brings the concepts of Quality Function Deployment and Service Excellence into an educational context. This integration brings an integrated approach that is rarely found in efforts to improve the quality of education. Overall, the integration of Quality Function Deployment and Service Excellence to improve education quality brings innovation in how education is managed and presented to the academic community. This provides the potential to improve learning outcomes, the student experience, and the reputation of educational institutions.

This article will explain how the integration between Quality Function Deployment and Service Excellence can become a strategic foundation for STT

Migas Balikpapan in its efforts to improve the quality of education. By understanding student needs as the main focus, it is hoped that universities can produce competent graduates who have character and are ready to face global challenges.

RESEARCH METHODS

This research uses a qualitative case study type approach. Case studies are chosen because this research allows careful investigation of a particular phenomenon or research subject in a natural context. This method involves a detailed analysis of a single or several cases to understand the characteristics, context, problems, and dynamics associated with the case (Moleong, 2019). In this case, the researcher tries to uncover the meaning behind implementing quality and excellent service functions to improve the quality of education at STT Migas Balikpapan.

The data collection method in this research consists of a series of steps. First, the interview method was used by applying a purposive sampling technique. Researchers conducted interviews with 12 informants who were carefully selected because they were considered to have strong knowledge related to the research topic so that the data obtained looked comprehensive, accurate, and trustworthy. The informants come from various roles in higher education, including heads of rectors, deans, heads of study programs, and lecturers. Second, researchers observed various activities related to implementing quality functions and excellent service to improve the quality of education at STT Migas Balikpapan. The aim is to gain a deep understanding of what happens and is expressed in the university's quality management. Third, researchers carry out documentation activities, such as collecting supporting data relevant to the research topic and analyzing the documents found.

In this research, data analysis begins when data collection begins and continues after the data collection phase within the specified period is complete. Data analysis activities are carried out continuously at each stage until the data feels complete and contains information. In this context, the research carried out three main stages: data reduction, presentation, and conclusion. The data reduction stage concerns summarizing, identifying key elements, and focusing on significant aspects, considering themes and data patterns. Data presentation, or the data display stage, involves how data is presented, such as narratives, tables, graphs, and similar formats (Sugiono, 2017). Meanwhile, the conclusion-drawing and verification stages involve making temporary initial conclusions that can change as more substantial evidence is discovered.

RESULTS AND DISCUSSIONS

Identify Customer Needs

Quality is the goal of the Tri Dharma of Higher Education activities at STT Migas Balikpapan. According to Yuniarti, as deputy head of academic affairs, universities with a good reputation for the quality of their education are more likely to attract the attention of qualified prospective students, competent teachers, and solid industrial partners. This increases the institution's competitiveness and potential to attract resources and investment (YN_Int1).

This is the basis for developing and improving the quality of higher education, where STT Migas Balikpapan is responsible for training professional candidates in the oil and gas industry, a crucial sector in the Indonesian economy. Good quality education ensures graduates are ready to face the demands of a competitive and complex job market.

To achieve this, the institution is trying to integrate Quality Function Deployment (QFD) and service excellence to improve the quality of education. QFD helps in identifying and understanding what customers want. This may include functional requirements, aesthetics, or the expected rate of the product or service.

Understanding customer needs is critical in improving quality at STT Migas Balikpapan or other educational institutions. The actions taken are: First, conduct a student satisfaction survey. Student satisfaction surveys conducted by institutions are understood as a medium for assessing and measuring student satisfaction with various aspects of their experience at an educational institution. The main aim of a student satisfaction survey is to obtain direct feedback from students on various aspects related to education, facilities, services, and environment at the educational institution.

According to Karnilla Willard, deputy head of Student Affairs and Cooperation at STT Migas Balikpapan, in conducting regular surveys of students, the questions in the survey must cover various aspects, such as teaching quality, facilities, academic support, and general services. Data from these surveys can provide valuable insight into what is essential to students and which areas need improvement (KW_Int2).

Second, Benchmarking is the process of comparing and analyzing an organization's performance, practices, or procedures with other organizations that are considered leaders or "roles" in higher education institutions or specific fields. The goal of benchmarking is to identify best practices, understand differences between an organization's performance, and adopt improvements to achieve higher levels of quality and efficiency.

Furthermore, Karnilla Willard emphasized that in carrying out benchmarking, STT Migas Balikpapan does at least several things, namely internal benchmarking, where the institution carries out internal benchmarking by comparing the performance of departments or study programs on campus. This can help identify differences in efficiency, quality of teaching, and service between different units on campus. Next is external benchmarking, where the institution compares itself with similar universities or educational institutions with a similar focus. This helps assess the extent to which STT Migas Balikpapan competes in terms of education and services.

According to several statements provided by informants, the quality improvement that the institution is carrying out by integrating Quality Function Deployment (QFD) and Service Excellence is being carried out in a planned and systematic manner. The Statutes guide it, the Master Plan for Higher Education Development, the strategic plan, and the operational plan of the institution, and it is being strengthened by implementation guidelines or Standard Operating Procedures (SOP).

Transforming Needs into Action Plans

Transforming needs into action plans at STT Migas Balikpapan refers to taking concrete steps to meet or overcome specific needs or challenges identified at the institution. Transforming needs into action plans involves the process of converting identified needs into concrete steps and strategies that will be taken to meet those needs. This is an essential step in Quality Function Deployment (QFD) or in the context of integrating QFD with Service Excellence to improve the quality of education. Integrating Quality Function Deployment (QFD) and Service Excellence in transforming needs into action plans is a powerful approach to improving the quality of education. The activities used by the university are as follows;

First, using service excellence principles to improve quality at STT Migas Balikpapan refers to an approach that emphasizes providing extraordinary service and prioritizing customer satisfaction, especially among students and other stakeholders. According to Karnilla Willard, as deputy head of Student Affairs and Cooperation at STT Migas Balikpapan, the principles implemented by the institution in carrying out service excellence include several key elements that play a role in creating a positive experience for customers and in improving the quality of education, which includes orientation. On customers, leadership, total involvement, and high commitment (KW_Int2). This also includes providing exceptional service to students, maintaining good communication, and ensuring a quick response to student needs and problems.

Second, total involvement of all existing personnel and good communication. Total involvement and communication in the perspective of Quality Function Deployment (QFD) and Service Excellence at STT Migas Balikpapan refers to two important, interrelated aspects to improve the quality of education and services. According to IF, total involvement means that all organizations, including lecturers, administrative staff, management, and other stakeholders, must be actively involved in improving the quality of education and services. This involvement is not limited to one or a few parts of the organization but includes the entire educational entity, from teachers to administrative personnel. Total involvement also means understanding and prioritizing student needs and finding ways to meet them. This includes listening to student and other stakeholder feedback.

Furthermore, Miftahul Huda, as a lecturer, added that to achieve all this, communication is needed. Effective communication is the essence of total engagement (MH_Int5). Universities must ensure that open and ongoing communication occurs between all parties in the organization. This includes vertical communication (from leadership to staff and vice versa) and horizontal communication (between departments and work units).

Integrating QFD and Service Excellence requires close involvement and communication throughout the educational organization. This helps ensure that all elements of the organization work together towards a common goal, namely improving the quality of education and student satisfaction. With total involvement and good communication, STT Migas can more effectively implement these principles and achieve the expected results.

Third, continuous implementation and monitoring. Implementation and monitoring from the perspective of Quality Function Deployment (QFD) and Service Excellence at STT Migas Balikpapan are two essential stages in improving education and service quality. Implementing QFD means taking concrete actions based on identified priorities. This includes implementing planned changes or improvements in educational processes and services. For example, suppose QFD has identified a need to improve the curriculum. In that case, implementation will involve changes in how the curriculum is taught, the development of new learning materials, or using more effective teaching methods. Implementing Service Excellence means implementing the principles of Service Excellence in every aspect of operations and services provided by STT Migas. This includes providing exceptional service to students, ensuring the quality of instruction, responsively meeting student needs, and designing a satisfying experience for all stakeholders.

Furthermore, QFD monitoring is critical to ensure that the changes implemented produce the expected results. This involves regular monitoring of established quality metrics. For example, if the goal is to improve the quality of teaching, metrics such as teaching evaluation results, student attendance rates, or student achievement can be monitored regularly. If there is a non-compliance with targets, corrective action can be taken. Meanwhile, monitoring service excellence involves continuously evaluating how services are provided and how the principles of Service Excellence are implemented. This includes collecting feedback from students and other stakeholders, monitoring customer satisfaction levels, and checking whether Service Excellence principles are implemented well in daily practice.

Changes and improvements must be based on data and feedback from the monitoring stage. Thus, implementation and monitoring are integral to achieving higher quality education and customer satisfaction at STT Migas Balikpapan.

Alignment with Superior Service

Alignment with superior service from the perspective of Quality Function Deployment (QFD) and Service Excellence at STT Migas refers to efforts to ensure that all aspects of education and services provided by this institution are entirely by the principles of superior service. This involves integrating QFD and Service Excellence principles to create a superior educational experience and meet the needs of students and other stakeholders.

Integration with Service Excellence involves providing exceptional service to students. This ensures that the entire educational process and student interactions are designed, considering the best service aspects. This includes new student admissions, academic support, career guidance, and daily interactions with faculty and staff.

Aligning with superior service in higher education involves designing and implementing strategies that ensure that every aspect of the service provided to students, lecturers, and other stakeholders reflects the highest quality and satisfaction standards. Based on the observations and interviews in the field, information was obtained that alignment with superior service at STT Migas can be seen in Figure 1.

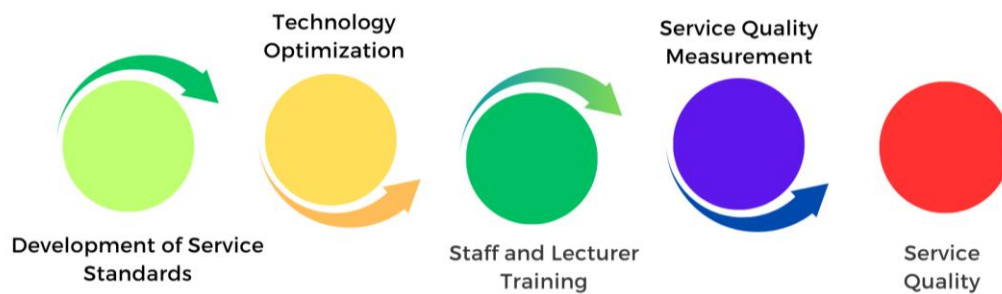


Figure 1. Alignment with Superior Service

First, developing service standards. According to Irma Andrianti, head of the Industrial Engineering study program, service standards are needed because they have several benefits and an essential role in various contexts, including in higher education tri-dharma activities. There are several strong reasons: measure and monitor performance, quality service, continuous improvement, customer satisfaction, compliance and fulfillment of accreditation requirements, and so on (IA_Int4).

Development of Service Standards from the perspective of Quality Function Deployment (QFD) and Service Excellence at STT Migas Balikpapan refers to efforts to determine and describe standards or guidelines that must be followed in providing quality services and meeting customer needs, especially students and other stakeholders.

In the context of QFD, developing service standards is an essential step to ensure that the identified quality characteristics align with customer needs (Timoshenko & Hauser, 2019; Pakurár et al., 2019). This involves mapping quality characteristics with essential elements in the student experience. For example, if the quality characteristic is "increased lecturer-student interaction," service standards may include the frequency of meetings between lecturers and students, the manner of communication, and the lecturer's responses to student questions.

Service Excellence encourages the development of very high service standards to create a superior experience for students and other stakeholders (Khurniawan et al., 2020; Alsheyadi et al., 2020). This standard includes principles that emphasize responsive, professional, friendly, and high-quality service. This involves establishing clear guidelines or standards about how services should be provided.

The development of service standards helps ensure that services at STT Migas Balikpapan align with the expectations of students and other stakeholders and by the principles of QFD and Service Excellence. This is an essential step in achieving higher educational quality and customer satisfaction.

Second technology optimization. Optimizing technology from the perspective of Quality Function Deployment (QFD) and Service Excellence at STT Migas Balikpapan refers to the use and application of technology to improve the quality of education and services and achieve excellence in providing services to students and other stakeholders.

According to Parji, as a lecturer, technology can be used to collect data about student preferences and needs efficiently. Online surveys, automated data

analysis, and data management systems are examples of the use of technology in the data collection stage of QFD (PJ_Int7).

Technology can be used to develop a more effective and relevant curriculum. This includes using online learning platforms, adaptive learning software, and digital resources (Apoki et al., 2019; Muñoz et al., 2022). In addition, technology can be used to provide responsive services. For example, providing information through online platforms, customer support services, or efficient appointment management systems.

In both QFD and Service Excellence perspectives, technology optimization aims to increase efficiency, effectiveness, and student satisfaction. This also helps educational institutions such as STT Migas Balikpapan to remain relevant in the digital era and provide a superior educational experience.

Third, staff and lecturer training refers to the education and development process of employees who work in educational institutions such as STT Migas Balikpapan, including administrative and teaching staff (lecturers). This training aims to improve their skills, knowledge, and competence in various aspects of their work.

Training helps staff and lecturers develop the skills to perform their duties better (Saputra, 2019; Martin et al., 2019; Niati et al., 2021; Risdiany, 2021). This includes communication skills, time management, technical abilities, etc. Through training, staff and lecturers can update their knowledge about the latest developments in education, teaching methods, technology, and curriculum. Lecturers can receive training on improving their teaching methods, creating more engaging material, and better-evaluating student performance. Administrative staff involved in services to students can receive training to provide better and more responsive customer service.

Training ensures staff and lecturers understand and comply with relevant policies and procedures. This is important in maintaining compliance with institutional regulations and meeting educational standards. Staff and lecturer training is integral to human resource management and organizational development in educational institutions (Hilal, 2021; Habibi, 2022). This helps improve the quality of teaching and services, supports staff development, and ensures that educational institutions remain competent and relevant.

Fourth, measuring service quality. This procedure is understood to evaluate and quantify the extent to which the services offered by an organization or institution meet or exceed the expectations of customers or other stakeholders in the business or institution. Measuring the quality of a service is done primarily to ensure that the service in question satisfies specific criteria, delivers an enjoyable experience, and accomplishes the objectives set out for it (Ali et al., 2021; Yullang, 2023; Kurniawan, 2023).

According to Elvis Ratta, a lecturer, measuring service quality helps identify areas where improvements are needed in education. This includes evaluating the quality of teaching, curriculum, facilities and infrastructure, and academic support. With data obtained from measurements, STT Migas can improve the quality of education provided (ER_Int9). By measuring service quality, institutions can also ensure that the educational services and facilities

align with student expectations. This is important to maintain student satisfaction and the institution's good reputation.

Measuring service quality does not only focus on students but also lecturer and staff satisfaction. Lecturers who are satisfied with the work environment and support from the institution have the potential to provide better teaching. Additionally, Measuring service quality creates a cycle of continuous improvement. Data obtained from measurements can be used to identify improvements that need to be made, and corrective actions can be taken to improve service quality continuously.

Alignment with superior service is an essential step in maintaining the quality of education and increasing the satisfaction of all stakeholders (Haerizadeh et al., 2019; Dinda, 2021). By ensuring that the services provided reflect professionalism and a commitment to quality, higher education institutions can build a good reputation and provide a meaningful educational experience for all parties involved.

Continuous Measurement and Evaluation

Research results show that this activity refers to the continuous and systematic practice of measuring, evaluating, and continuously improving the performance, results, or processes of an organization, program, or initiative. This approach is used to understand the extent to which an entity achieves specific goals and standards and to improve performance or results continuously.

Continuous Measurement and Evaluation in the Quality Function Deployment (QFD) and Service Excellence perspective refers to sustainable practices for measuring, monitoring, and evaluating service quality and the application of service excellence principles (Matorera, 2015; Altuntas & Kansu, 2020; Gavahi et al., 2023). This is a continuous effort to ensure service continues improving, meets customer expectations, and adheres to specific standards.

This activity allows the institution to ensure that the educational services provided align with the expectations of students and other stakeholders. This helps maintain and increase customer satisfaction levels. This activity includes using Key Performance Indicators (KPI), which can be used to monitor institutional performance in terms of service quality (Djuwita & Mulyati, 2017; Asih et al., 2020; Villazón et al., 2020). This may include KPIs such as response time, complaint rate, student-to-faculty ratio, or graduation rate. Results from continuous measurement and evaluation are used to identify areas of improvement. Organizations take continuous improvement actions to improve the quality of their services and meet or exceed customer expectations.

Continuous measurement and evaluation from a QFD and Service Excellence perspective is integral to a holistic approach to improving service quality at STT Migas. This helps ensure that institutions remain committed to continuous improvement and optimization of their services to meet the needs of customers and other stakeholders. Continuous measurement and evaluation help institutions ensure that they continue to improve the quality of education, meet customer expectations, and maintain a good reputation as a quality educational institution (Calma & Deane, 2020; Syukron, 2022). This also allows institutions to better respond to changes and challenges in the world of education.

From the findings mentioned above, this research provides a valuable contribution to the management of Islamic education, especially in the aspects of curriculum development, service provision, and meeting student needs. The integration of QFD and Service Excellence will enable STT Migas Balikpapan to design a curriculum that is not only relevant to industry needs but also in line with Islamic values. This research can guide the integration of Islamic ethics, social responsibility, and holistic learning principles into the curriculum.

CONCLUSION

From the research findings mentioned above, to improve the quality of education at STT Migas Balikpapan, the integration of Quality Function Deployment (QFD) and Service Excellence has become a very relevant and helpful approach. This integration combines QFD principles, which focus on identifying customer needs and developing products or services based on those needs, with service excellence principles emphasizing superior, responsive, and high-quality service.

The integration of QFD and Service Excellence underscores the importance of understanding and responding to the needs of students and other stakeholders. This is the basis for designing and delivering satisfying and relevant education. Integrating QFD and service excellence emphasizes continuously using feedback from students and stakeholders to improve education quality. Continuous evaluation is required to ensure compliance of services with established high standards.

Overall, integrating QFD and Service Excellence is a holistic approach that aims to create a high-quality educational experience at STT Migas Balikpapan. By understanding customer needs, applying the principles of superior service, and utilizing technology, institutions can continue to improve the quality of education and meet the expectations of students and other stakeholders.

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