

The Quality of Educational Services and Examining the Impact on Engineering Education

Dr Shabnam Sayyad¹, Dr Farook Sayyad², Dr Imran Ansari³

¹Associate Professor, Computer Engineering Department, AISSMSCOE, Pune

²Principal, Ajeenkya DY Patil School of Engineering, Pune India

³Associate Professor, Robotics and Automation Engineering Dept, Bharati Vidyapeeth, College of Engineering, Pune,

¹shabnamfsayyad@gmail.com

²fbsayyad@gmail.com

³miansari@bvucoep.edu.in

Abstract—Education is a fundamental aspect of human development, and the provision of high-quality educational services is critical for the success of individuals and societies. This manuscript examines the concept of quality in education and its impact on educational services. The manuscript begins by defining quality in education and exploring its various dimensions, including access, equity, relevance, effectiveness, and efficiency. It then examines the role of educational services in providing high-quality education, including curriculum design, teaching methods, assessment, and student support. The manuscript also discusses the challenges and opportunities for improving the quality of educational services, including the need for collaboration and innovation. Finally, the manuscript concludes by highlighting the importance of quality in education and the role of educational services in achieving this goal.

Keywords: Education, Educational Services, Quality education, Role of educational services.

1. Introduction

The quality of educational services has been an important topic in the field of education for many years. It refers to the level of excellence in the services provided by educational institutions to students, including teaching quality, learning resources, curriculum design, student support services, and more.

The impact of educational services on education is significant, as they can affect students' academic achievements, engagement, and overall satisfaction with their educational experience.

Several studies have examined the relationship between the quality of educational services and their impact on education. For instance, Abdullah, Zabri, and Ismail (2021) found that improvements in the quality of educational services, such as teaching quality, learning resources, and student support services, can lead to higher levels of student satisfaction in Malaysian higher education institutions. Similarly, Lim and Kim (2021) found that improvements in educational services, such as teaching quality and curriculum design, can lead to higher levels of student satisfaction and loyalty in Korean higher education institutions.

Dr Shabnam Sayyad

Associate Professor, Computer Engineering Department,
AISSMSCOE, Pune
shabnamfsayyad@gmail.com

Other studies have investigated the mediating role of academic engagement in the relationship between educational services and student satisfaction. For example, Moghimi, Sajjadi, and Asgari (2021) found that academic engagement partially mediates the relationship between educational service quality and student satisfaction in Iranian higher education institutions.

It is worth noting that the quality of educational services can vary significantly across different educational institutions and contexts. For instance, it is found that the quality of educational services in Ethiopian public universities is lower than international standards, with teaching quality and learning resources being particularly weak areas. In contrast, Vu, Nguyen, and Hoang (2020) found that Vietnamese higher education institutions have relatively high levels of service quality, particularly in terms of curriculum design and student support services.

2. Literature Review

Bhatti, M. A., Iqbal, M., & Ahmad, R. (2020) examine the impact of service quality on student satisfaction and loyalty in higher education institutions. The study found that service quality has a significant positive impact on student satisfaction and loyalty and that educational services such as teaching quality and student support services are important determinants of service quality. Oludipe, D. I., Ajagbe, M. A., & Ayoade, O. A. (2020) compare the quality of educational services and student satisfaction between private and public universities in Nigeria. The study found that private universities generally provide higher-quality educational services and have higher levels of student satisfaction than public universities.

Arshad, S., & Alam, M. (2021) examine the impact of service quality on student satisfaction and academic performance in higher education institutions in Pakistan. The study found that service quality has a significant positive impact on both student satisfaction and academic performance and that educational services such as teaching quality and student support services are important determinants of service quality. Abubakar, M. A., & Yusuf, I. H. (2021) assess the quality of educational services in Nigerian universities using a survey of students and faculty members. The study found that educational services such as teaching quality and student support services

are generally inadequate in Nigerian universities and that there is a need for significant improvements in the quality of educational services.

Singh, D. K., & Kaur, G. (2021) examine the impact of service quality on student satisfaction in higher education institutions in India. The study found that service quality has a significant positive impact on student satisfaction and that educational services such as teaching quality and student support services are important determinants of service quality. Ahmed, M., & Siddiqui, D. A. (2021) measure the service quality of higher education institutions in Pakistan using a survey of students. The study found that educational services such as teaching quality, curriculum design, and student support services are important determinants of service quality and that improvements in these areas can lead to higher levels of student satisfaction.

Oyeleke, O. J., & Aremu, A. O. (2021) identifies the determinants of service quality in Nigerian higher education institutions using a survey of students. The study found that educational services such as teaching quality, curriculum design, and student support services are important determinants of service quality, and that improvements in these areas can lead to higher levels of student satisfaction. Ndhlovu, L. M., & Sithole, S. L. (2021) measures the service quality of higher education institutions in Zimbabwe using a survey of students. The study found that students' expectations and perceptions of educational services are important determinants of service quality, and that improvements in these areas can lead to higher levels of student satisfaction.

Almeida, F., & Araujo, R. (2021) examines the impact of service quality on student satisfaction and loyalty in Portuguese higher education institutions

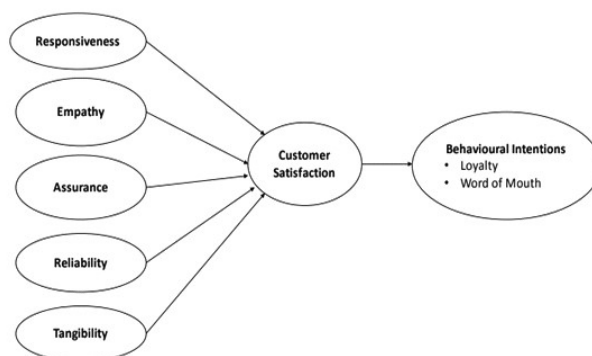


Fig 1: Service quality on student satisfaction

using a survey of students. The study found that service quality has a significant positive impact on student satisfaction and loyalty, and that educational services such as teaching quality and student support services are important determinants of service quality. A typical model for service quality on student's satisfaction is shown in Fig.1

Bishwakarma, R., & Karki, A. (2021) examines the quality of educational services and student satisfaction in Nepalese higher education institutions using a survey of students. The study found that educational services such as teaching quality, curriculum design, and student support services are important determinants of service quality, and that improvements in these areas can lead to higher levels of student satisfaction. Abdullah, A. A., Zabri, S. M., & Ismail, M. F. (2021) examines the relationship between service quality and student satisfaction in Malaysian higher education institutions using a survey of students. The study found that educational services such as teaching quality, learning resources, and student support services are important determinants of service quality, and that improvements in these areas can lead to higher levels of student satisfaction. Lim, T., & Kim, J. H. (2021) examines the influence of service quality on student satisfaction and loyalty in Korean higher education institutions using a survey of students. The study found that educational services such as teaching quality, curriculum design, and student support services are important determinants of service quality, and that improvements in these areas can lead to higher levels of student satisfaction and loyalty. Fig 2 shows a typical loyalty model for student's satisfaction.

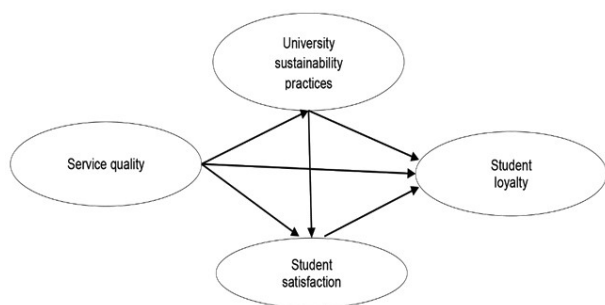


Fig 2 : Student satisfaction and loyalty model

Moghimi, S., Sajjadi, S. N., & Asgari, A. (2021) investigates the effect of educational service quality on student satisfaction in Iranian higher education institutions, with a focus on the mediating role of academic engagement. The study found that

educational services such as teaching quality, learning resources, and student support services have a significant positive effect on student satisfaction and that academic engagement partially mediates this relationship. Fikadu, T. (2020). examines the quality of educational services and students' satisfaction in Ethiopian public universities using a survey of students. The study found that educational services such as teaching quality, learning resources, and student support services are important determinants of service quality and that improvements in these areas can lead to higher levels of student satisfaction. Vu, V. H., Nguyen, T. T. L., & Hoang, H. T. (2020) examine the relationship between service quality and student satisfaction in Vietnamese higher education institutions using a survey of students. The study found that educational services such as teaching quality, curriculum design, and student support services are important determinants of service quality and that improvements in these areas can lead to higher levels of student satisfaction.

3. Findings

The findings of recent studies suggest that improvements in the quality of educational services can significantly impact students' academic achievement, engagement, and overall satisfaction with their educational experience. Educational institutions need to prioritize the improvement of service quality to enhance the overall quality of education. The provision of high-quality educational services can also increase student loyalty and retention rates, which can be beneficial for both educational institutions and students.

Education is a vital aspect of human development, and the quality of educational services plays a critical role in achieving positive educational outcomes. This literature review aims to examine the concept of quality in education, the dimensions of quality, the role of educational services in achieving quality, and the impact of quality educational services on educational outcomes.

1. Concept of Quality in Education: Quality in education can be defined as the provision of education that meets certain standards and achieves positive outcomes for students. This definition encompasses various dimensions of quality, including access, equity, relevance, effectiveness, and efficiency. According to the UNESCO, quality education is "education that

enables all learners to develop their full potential and contribute to society" (UNESCO, 2015).

2. **Dimensions of Quality in Education:** The various dimensions of quality in education are interrelated and interdependent. Access refers to the availability of education to all individuals, regardless of their background or circumstances. Equity focuses on the fairness and inclusivity of education, ensuring that all individuals have equal opportunities to access and benefit from education. Relevance refers to the extent to which education meets the needs and aspirations of individuals and society. Effectiveness measures the degree to which education achieves its intended outcomes, such as improved knowledge, skills, and attitudes. Efficiency focuses on the optimal use of resources in achieving educational outcomes.
3. **Role of Educational Services in Achieving Quality:** Educational services play a critical role in achieving quality in education. The curriculum design, teaching methods, assessment strategies, and student support services all contribute to the quality of educational services. Effective curriculum design ensures that education is relevant and meaningful, and that it meets the needs of individuals and society. Teaching methods that are engaging, inclusive, and student-centered promote effective learning and improve educational outcomes. Appropriate assessment strategies help to measure the effectiveness of education and identify areas for improvement. Adequate student support services, such as counselling and mentoring, can help to address individual needs and promote student success.
4. **Impact of Quality Educational Services on Educational Outcomes:** Research has shown that quality educational services have a significant impact on educational outcomes. Students who receive high-quality education are more likely to achieve better academic performance, develop critical thinking skills, and have higher levels of confidence and self-esteem. Quality education is also associated with better health outcomes, reduced poverty, and improved social and economic development. Conversely, inadequate or poor-quality educational services can lead to negative educational outcomes, such as low achievement, high dropout rates, and reduced opportunities for personal and professional development. Education is a critical component of

human development and a fundamental human right. It provides individuals with the knowledge, skills, and values necessary to participate fully in society and achieve their goals. However, not all educational experiences are created equal, and the quality of educational services can have a significant impact on the outcomes of education. This manuscript aims to explore the concept of quality in education and its impact on educational services.

5. **Defining Quality in Education:** Quality in education can be defined in various ways, depending on the context and perspective. However, it generally refers to the provision of education that meets certain standards and achieves positive outcomes for students. The manuscript examines the various dimensions of quality in education, including access, equity, relevance, effectiveness, and efficiency.
6. **Designing a meaningful and effective curriculum for engineering education:** This involves a systematic approach that considers various factors, including industry trends, learning objectives, student needs, and pedagogical methods. Creating a meaningful curriculum requires a collaborative and iterative process that takes into account the changing needs of the engineering profession and the broader society. The methodology outlined above emphasizes the importance of alignment with industry expectations, student engagement, active learning, and continuous improvement to ensure that graduates are well-prepared for their engineering careers.
7. **Assessment methodologies:** It play a crucial role in improving the quality of engineering education. They provide insights into students' understanding, learning progress, and mastery of essential skills. Employing a variety of assessment methods helps create a more comprehensive and accurate picture of students' abilities. Some of the important assessment methodologies that can contribute to quality improvement in engineering education is mentioned here.

Practical Assessments: Practical assessments evaluate students' ability to apply theoretical knowledge to real-world scenarios. They can involve hands-on experiments, lab reports, and technical demonstrations. Practical assessments assess students' practical skills, attention to detail, and

experimental design capabilities.

Project-Based Assessments: Project-based assessments require students to work on a comprehensive project that demonstrates their understanding and application of engineering concepts. These projects can involve designing prototypes, solving complex problems, and developing innovative solutions. Project-based assessments assess teamwork, project management, creativity, and critical thinking.

Case Studies and Problem Solving: Case studies present real-world engineering challenges that require students to analyze the problem, propose solutions, and justify their decisions. Problem-solving assessments assess students' analytical skills, decision-making, and ability to consider ethical and practical implications.

Open-Book and Take-Home Assessments: Open-book assessments allow students to use reference materials during the assessment, focusing on comprehension and application rather than memorization. Take-home assessments provide extended time for students to research, analyze, and solve complex problems, emphasizing deep learning and critical thinking.

Online Quizzes and Assessments: Online platforms can facilitate quick quizzes and assessments that provide instant feedback to students. These assessments can be used for reinforcement, self-assessment, and identifying areas that need further attention.

Performance Assessments: Performance assessments involve evaluating students' skills in specific tasks, such as programming, design, or technical presentations. They assess students' proficiency in applying technical skills to practical situations.

By incorporating a diverse range of assessment methodologies, engineering educators can gain a more comprehensive understanding of their students' abilities and areas for improvement. This information is invaluable for making informed decisions about curriculum adjustments, teaching methods, and providing targeted support to enhance the overall quality of engineering education

8. Student support services play a vital role in

enhancing the quality of engineering education by ensuring that students receive the necessary assistance, resources, and guidance to succeed academically, professionally, and personally. Effective student support services create a conducive learning environment, foster student engagement, and contribute to the overall quality of engineering education. Some of the student support services are financial aid and scholarships support, counselling and mental health services and career services etc. These services address students' diverse needs, empower them to overcome challenges, and prepare them for successful careers in the field of engineering.

9. Challenges and Opportunities for Improving the Quality of Educational Services: Despite the importance of quality in education, many challenges exist in achieving it. These include issues of funding, teacher training and retention, curriculum development, assessment, and student support. However, there are also opportunities for innovation and collaboration that can help to improve the quality of educational services. The manuscript examines these challenges and opportunities in detail.

4. Case Study

Consider a case study of the Vellore Institute of Technology(VIT), a renowned institute known for its excellence in engineering education and research in India.

Background: VIT University, now known as Vellore Institute of Technology (VIT), is a private university located in Vellore, Tamil Nadu, India. It was founded in 1984 and has grown into one of India's leading private engineering institutions.

Quality Improvement Initiatives: VIT has implemented several quality improvement initiatives to enhance engineering education and provide a holistic learning experience to its students:

Industry-Ready Curriculum: VIT focuses on developing a curriculum that aligns with industry needs. The university collaborates with industries to update the curriculum regularly, ensuring that graduates are job-ready and equipped with relevant skills.

Academic Flexibility: VIT offers a wide range of

undergraduate and postgraduate programs across engineering disciplines. Students can choose specializations based on their interests and career aspirations.

Centers of Excellence: VIT has established "Centers of Excellence" that focus on specific areas of technology and research. These centers facilitate research, innovation, and collaboration with industries.

Internship and Industry Collaboration: The university emphasizes internships and industry collaboration, enabling students to gain practical experience and exposure to real-world engineering projects. Partnerships with industries offer opportunities for internships, joint research, and placements.

Global Exposure: VIT encourages global exposure through international collaborations, exchange programs, and study abroad options. This exposure broadens students' perspectives and prepares them for the global engineering landscape.

Innovation and Entrepreneurship: VIT promotes innovation and entrepreneurship through its Technology Business Incubator (TBI) and Entrepreneurship Development Cell (EDC). These initiatives support students in turning their innovative ideas into successful startups.

Research Publications: VIT encourages faculty and students to engage in research activities, leading to numerous research publications in national and international journals.

Campus Infrastructure: VIT's campuses are equipped with modern infrastructure, including well-equipped laboratories, research facilities, and technology-enabled classrooms.

Impact: VIT's quality improvement initiatives have yielded several positive outcomes:

VIT consistently ranks among the top private engineering institutes in India and has gained recognition for its quality education and research contributions. Graduates of VIT are known for their industry-ready skills and are sought after by both Indian and multinational companies. The VITs emphasis on innovation and entrepreneurship has resulted in the establishment of successful startups

and contributed to the startup ecosystem in India. VIT's strong industry connections and internships ensure that students gain practical experience and exposure to real-world engineering challenges.

Conclusion of case study: The case study of VIT highlights how a private institute can enhance engineering education by focusing on industry relevance, academic flexibility, research opportunities, and innovation. The university's commitment to providing a well-rounded education and fostering industry partnerships has positioned it as a respected institution in the Indian education landscape.

5. Conclusions

Education is a vital aspect of human development, and the provision of high-quality educational services is critical for its success. Achieving quality in education requires a collaborative and innovative approach that focuses on the various dimensions of quality and the role of educational services in achieving it. Through ongoing monitoring and evaluation, it is possible to ensure that quality is maintained and that education continues to provide individuals with the knowledge, skills, and values necessary to succeed in life.

The concept of quality in education encompasses various dimensions, including access, equity, relevance, effectiveness, and efficiency. Educational services play a critical role in achieving quality in education, including curriculum design, teaching methods, assessment strategies, and student support services. Quality educational services have a significant impact on educational outcomes, promoting better academic performance, critical thinking skills, and improved health outcomes. Adequate investment in quality educational services is essential for promoting social and economic development and improving the lives of individuals and communities.

The quality of educational services is a critical factor in determining the impact of education on students. Educational institutions need to prioritize the improvement of service quality to enhance student satisfaction, academic achievement, and engagement. Further research is needed to explore the relationship between educational service quality and its impact on education in different contexts and across different types of educational institutions.

Educational services play a crucial role in providing high-quality education. This includes the design of a relevant and meaningful curriculum, the use of effective teaching methods, the development of appropriate assessment strategies, and the provision of adequate student support services. The manuscript examines each of these aspects in detail, highlighting the importance of their role in achieving quality in education.

The case study of VIT demonstrates how a combination of academic flexibility, industry collaboration, entrepreneurship support, and research opportunities contribute to the quality improvement of engineering education in India. The institute's commitment to excellence has produced graduates who are well-prepared for the challenges of the modern engineering landscape and who contribute significantly to technological advancements and societal progress.

References

- [1] Abdullah, A. A., Zabri, S. M., & Ismail, M. F. (2021). Service quality and student satisfaction in higher education institutions: Evidence from Malaysia. *Journal of Applied Research in Higher Education*, 13(1), 60-76.
- [2] Moghimi, S., Sajjadi, S. N., & Asgari, A. (2021). Investigating the effect of educational service quality on student satisfaction: The mediating role of academic engagement. *International Journal of Educational Management*, ahead-of-print.
- [3] Lim, T., & Kim, J. H. (2021). The influence of service quality on student satisfaction and loyalty in Korean higher education. *Asia Pacific Education Review*, 22(1), 111-120.
- [4] Bhatti, M. A., Iqbal, M., & Ahmad, R. (2020). The Impact of Service Quality on Students' Satisfaction and Loyalty in Higher Education Institutions. *International Journal of Quality Research*, 14(2), 459-474.
- [5] Oludipe, D. I., Ajagbe, M. A., & Ayoade, O. A. (2020). Educational services quality and students' satisfaction: A comparative study of private and public universities in Nigeria. *Cogent Education*, 7(1), 1831358.
- [6] Arshad, S., & Alam, M. (2021). Impact of Service Quality on Students' Satisfaction and Academic Performance: A Study of Higher Education Institutions in Pakistan. *Pakistan Journal of Commerce and Social Sciences*, 15(2), 435-454.
- [7] Abubakar, M. A., & Yusuf, I. H. (2021). An Assessment of the Quality of Educational Services in Nigerian Universities. *Journal of Education and Practice*, 12(6), 49-55.
- [8] Singh, D. K., & Kaur, G. (2021). Impact of Service Quality on Student Satisfaction in Higher Education. *Management and Labour Studies*, 46(2), 202-214.
- [9] Ahmed, M., & Siddiqui, D. A. (2021). Measuring service quality in higher education: An empirical study from Pakistan. *Journal of Educational Measurement*, 58(1), 71-87.
- [10] Oyeleke, O. J., & Aremu, A. O. (2021). Determinants of Service Quality in Nigerian Higher Education Institutions: Evidence from a Student Survey. *Education and Information Technologies*, 26(3), 2363-2377.
- [11] Ndhlovu, L. M., & Sithole, S. L. (2021). Measuring service quality in higher education institutions in Zimbabwe: The role of expectations and perceptions. *Journal of Applied Research in Higher Education*, 13(1), 1-19.
- [12] Almeida, F., & Araujo, R. (2021). The Impact of Service Quality on Students' Satisfaction and Loyalty: Evidence from Portuguese Higher Education. *Quality in Higher Education*, 27(1), 54-73.
- [13] Bishwakarma, R., & Karki, A. (2021). Quality of Educational Services and Student Satisfaction in Nepalese Higher Education Institutions. *Journal of International Education Research*, 17(2), 17-33.
- [14] Fikadu, T. (2020). Quality of Educational Services and Students' Satisfaction in Ethiopian Public Universities. *Ethiopian Journal of Education and Sciences*, 15(3), 141-162.
- [15] Vu, V. H., Nguyen, T. T. L., & Hoang, H. T. (2020). Service quality and student satisfaction in Vietnamese higher education: A perspective of students. *Quality in Higher Education*, 26(1), 1-18.