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Didaktika: Jurnal Kependidikan Vol. 14 No. 4 Nopember 2025

Quality Management of Indonesian Education Services in the Digital Era: A Systematic Literature Review

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Abstract

This research aims to analyze the quality of educational services in Indonesia in the digital era by highlighting the application of the SERVQUAL dimension in digital education quality management. The research method used is a systematic literature review based on the PRISMA protocol, by identifying and synthesizing 21 scientific articles published in 2020–2025 that are relevant and indexed nationally and internationally. The results of the study revealed that the use of digital technology contributes significantly to improving accessibility, administrative efficiency, and learning flexibility; However, service gaps are still found in the aspects of reliability and tangibles due to limited infrastructure and digital literacy. On the other hand, the dimensions of responsiveness, assurance, and empathy can be strengthened through educator training, strengthening digital governance, and providing personalized technology-based services. The implications of this study emphasize the importance of continuous innovation, data-driven quality measurement, and multi-stakeholder collaboration so that educational institutions are able to meet students' expectations and increase competitiveness; meanwhile, further research is suggested to highlight the personalization of AI-based services and the effectiveness of digital evaluation models across educational levels.
Keywords: *Service Quality Management, Educational Service, Digital Era*

Introduction

The Government of Indonesia has consistently shown a strong commitment to improving the quality of national education through transformative and adaptive policies. One of the strategic steps taken was the issuance of Government Regulation Number 19 of 2005 concerning National Education Standards, which was later updated to Government Regulation Number 13 of 2015 to adjust to the dynamics of educational needs and global developments ("Peraturan Pemerintah RI No 13 Tahun 2015," 2015). This regulatory update shows the government's response to the challenges and changes of the times for the realization of quality and competitive human resources. Improving the quality of education is an important foundation in preparing Indonesia for a competitive and dynamic future (Abels et al., 2021). With a good education, people can acquire the knowledge and skills necessary to actively participate in the process of economic, social, and cultural development (Shakilla, 2024). The vision to achieve quality human resources that are able to compete at the global level, makes education the main locomotive to realize this goal. Quality education not only encompasses the academic aspect, but also involves the continuous development of character, skills, and knowledge (Shen & Luo, 2022).

Education allows humans to be more creative, innovative and global, and the role of educational institutions has more value in the eyes of the public, in order to be better and able to improve the quality of skills and abilities for future regulations. So far, educational institutions must be able to quickly adapt and develop to the demands of the times (Badri & Azisi, 2024; Nisa Ainur et al., 2025). In improving the quality of educational services, satisfaction, expectations, and quality have a close relationship. As expressed by Jentot, stating that "quality

and customer satisfaction are the same thing." This means that no matter how well or expensive a product is produced or the service provided, everything becomes meaningless if it cannot make the customer feel satisfied (Irmawati et al., 2025; Jentot et al., 2022; Khalidah et al., 2025). Therefore, service providers have attention to customer satisfaction as a focus to set policy direction, by making efforts to improve the performance and management of the provider.

The fundamental essence of service management lies in the concept of service quality. Service providers measure service excellence as a benchmark in executing their management strategy, regardless of the category of goods and services, the stakeholders involved in the provision of services, or the methodology and framework of service delivery chosen (Asnawi & Supriyanto, 2022). The superior the quality of the service provided, the greater the level of customer satisfaction and loyalty to the service provider. In an empirical study conducted by Smiith and Ennew on the phenomenon of word of mouth among consumers of Islamic educational institutions, it was revealed that "consumers who show satisfaction with the quality of services provided by these institutions tend to pass on information to others" (D. K. Sari & Soliha, 2022; Wati et al., 2023; Wijaya et al., 2022).

Digital transformation has brought profound changes in the education sector in Indonesia, driving a paradigm shift in learning from traditional face-to-face models towards the massive use of digital technology. This transition process is triggered not only by the rapid development of information and communication technology, but also by the demands of adaptation to the global situation (Sassin, 2020). Such as the COVID-19 pandemic, which requires the implementation of distance learning in order to maintain the continuity of education. Digital transformation in Indonesia's education sector presents challenges and opportunities in improving the quality management of educational services. In this context, educational institutions together with educators and students are required to improve digital literacy, adjust learning methods, and optimize the use of various digital platforms so that the learning process continues to run effectively and with quality. Thus, the digital era marks an important phase in the development of Indonesian education characterized by innovation, flexibility, and openness to change (Wahyuni et al., 2025).

Given these dynamics, ensuring consumer retention and satisfaction with education has become an important aspect in learning service quality. Understanding and managing the quality of Indonesia's education services in this evolving digital landscape requires a comprehensive approach to address these diverse challenges and meet the growing expectations of stakeholders. In summary, while the Indonesian government has established a baseline policy for the quality of education, the digital era presents unique challenges that require a focused approach to quality management, especially in adapting to online learning, meeting student expectations, and ensuring effective service delivery to improve overall educational satisfaction and outcomes.

Method

The research method used in this study is systematic literature review (SLR) based on the PRISMA *(Preferred Reporting Items for Systematic Reviews and Meta-Analyses)* protocol as developed by (Page et al., 2021). This approach is designed to identify, select, and synthesize research findings related to the quality management of educational services in Indonesia in the digital era over the past five years. The data search process was carried out systematically using the Scopus database and Google Scholar using the Harzing's Publish or Perish application with structured keywords, such as "quality service management", "educational service", "Indonesia", and "digital era", and limited search results to relevant peer-reviewed articles. The article

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selection process follows the stages of the PRISMA diagram, starting from the identification of the initial number of articles, elimination of duplication and filtering based on titles and abstracts, feasibility review by reading the full text, to the determination of the final article which will be analyzed based on the inclusion and exclusion criteria that have been set (Simamora et al., 2024). Furthermore, data from the selected articles were systematically extracted to obtain information about the author, year of publication, methodology, main findings, and recommendations related to the quality management of digital-based educational services. The results of the synthesis are presented narratively and thethematically to describe trends, challenges, and recommendations for managing the quality of digital education services in Indonesia in a comprehensive and transparent manner (Puspita & Firdaus, 2024; Siringo Ringo, 2025).

According to (Sastypratiwi & Nyoto, 2020), The PRISMA technique consists of three stages, namely identification, screening, and feasibility, while the stages are described as follows:

1. Identification stage: Namely searching for articles using Harzing's Publish or Perish database application from Scopus and Google Scholar with structured keywords, such as "*service quality management", "educational service", and "digital era*". The authors limit the number of findings on Publish or Perish to a maximum of 200 findings on each keyword and vulnerable time from 2020-2025. Based on the filter, 636 articles were found.
2. Screening or data selection is the process of filtering the articles that are most suitable for the topic to be researched. There are several stages of screening that will be carried out by researchers, namely carrying out inclusion and exclusion criteria. The screening stage is carried out by evaluating articles using inclusion criteria covering the period from 2020-2025, articles indexed by Scopus, or Sinta, document types in the form of articles, articles in Indonesian or English, and articles that can be accessed freely.

Table 1. Article selection criteria

Inclusion Criteria	Exclusion Criteria
Articles published in the last 5 years (2020-2025)	Articles published outside the last 5 years (published outside 2020-2025)
Articles indexed Scopus, or Sinta	Not indexed by Scopus, or Sinta
Types of documents in the form of journal articles	Books, non-peer reviewed publications
Articles in Indonesian or English	Articles that are not in Indonesian or English
Articles are freely accessible	Articles are not freely accessible (limited/paid)

Based on these criteria, after the year restriction with articles published in the last 5 years, 163 articles were produced, which were included in the inclusion criteria, the rest were included in the exclusion criteria. Next, another extraction is carried out by looking at the entire content of the article, whether the article is in accordance with what is needed to discuss the research topic.

Eligibity and included is the adjustment or checking of data from the results after the identification and screening process by performing inclusion and exclusion criteria to perform data extraction. The feasibility step refers to the process of determining the suitability of the content of the article to be included in the research and in line with the research questions formulated. This stage involves checking the articles that have been found and only those that

meet certain criteria that are considered relevant and appropriate are included. At this stage, 21 eligible articles were identified that could be used in the study.

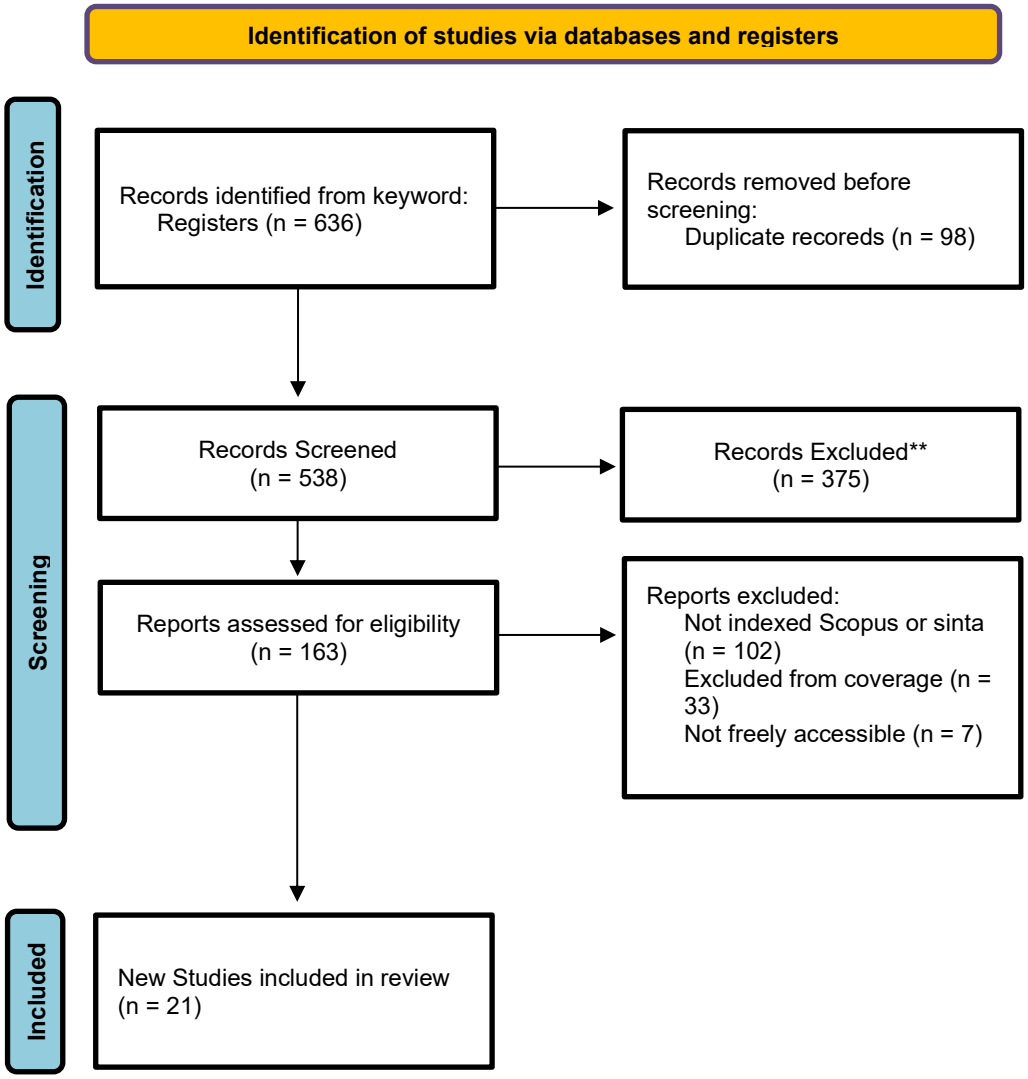

Figure.1 Article Search Selection Process using PRISMA

Results

Based on the search for articles through Harzing's Publish or Perish using keywords and following the PRISMA reporting system, the researcher found 21 research articles that met the criteria that will be analyzed in the discussion, where this article covers all topics that discuss the quality management of educational services. This finding is based on the results of research that has been carried out by the authors so that it will produce an in-depth analysis presented in the discussion of this writing. The data is presented in the article identity table as follows:

Table 2. List of Findings of PRISMA Method Journal Articles

No	Autor	Judul	Nama Jurnal	Type Publisher
1.	(Salamah et al., 2022)	Customer retention through service quality and	*Heliyon*	Q1

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		satisfaction: using hybrid SEM-neural network analysis approach.		
2.	(Rozak et al., 2022)	Empirical Evaluation of Educational Service Quality in the Current Higher Education System	*Emerging Science Journal*	Q1
3.	(King et al., 2022)	A Systematic Review of School Teleconsultation: Implications for Research and Practice	*School Psychology Review*	Q1
4.	(Sintasari & Afifah, 2022)	Strategi Manajemen Pemasaran Unggul Jasa Pendidikan di SMP Islam Terpadu Ar Ruhul Jadid Jombang	*Munaddhomah: Jurnal Manajemen Pendidikan Islam*	Q2/S2
5.	(Sari Dewi et al., 2021)	Nexus Between Quality Of Education, Student Satisfaction And Student Loyalty: The Case Of Department Of English Teacher Education At Universitas Islam Negeri In Indonesia	*International Journal for Quality Research*	Q3
6.	(Umkabu, 2023)	The ımpact of supervisory management and service-learning pedagogy on the development strategy of junior high schools	*Journal of Pedagogical Research*	Q3
7.	(Fauzi et al., 2023)	Indonesian Education Services Quality: The Influence of Leadership and Total Quality Management	*Pedagogika*	Q4
8.	(Wijana & Dwi Rusiawati, 2021)	Tingkat Kepuasan Mahasiswa terhadap Mutu Pelayanan Pendidikan.	*Jurnal Mimbar Ilmu*	S2
9.	(Ma'rufah, 2023)	Strategi Service Quality Sebagai Media dalam Menciptakan Kepuasan dan Loyalitas Pelanggan Jasa Pendidikan.	*EDUKASIA: Jurnal Pendidikan Dan Pembelajaran*	S2
10.	(Wasito & Baihaqi, 2023)	Quality of Educational Services and Experiential Marketing on Student Satisfaction and Its	*MIX: JURNAL ILMIAH MANAJEMEN*	S2

		Implications on Student Trust Evidence		
11.	(Husni et al., 2024)	Optimizing Academic Supervision to Improve the Quality of Education Services	*JPI (Jurnal Pendidikan Indonesia)*	S2
12.	(Azkiyah et al., 2020)	Pengaruh Kualitas Pelayanan Akademik Dan Promosi Terhadap Minat Siswa Baru Di Madrasah	*Nidhomul Haq : Jurnal Manajemen Pendidikan Islam*	S2
13.	(Murtini, 2025)	Determination of Consumer Satisfaction and Consumer Loyalty: An Analysis of Brand Image, Service Quality, Promotion and Price.	*Dinasti International Journal of Education Management And Social Science*	S3
14.	(Ayu Anggraini et al., 2024)	The Relationship Between The Quality Of Educational Services And The Level Of Parental Satisfaction In The Nu 5 Sukun Kepanjen Muslimat Kindergarten	*Dinasti International Journal of Education Management And Social Science*	S3
15.	(Triwijayanti et al., 2022)	Pengaruh Kualitas Layanan Pendidikan, Budaya Sekolah, Citra Sekolah Terhadap Kepuasan Orang Tua	*Scholaria: Jurnal Pendidikan dan Kebudayaan*	S3
16.	(Y. N. Sari & Abubakar, 2024)	Pengaruh Kualitas Layanan Pendidikan Terhadap Kepuasan Siswa : Perspektif dan Implikasi Praktis	*Didaktika: Jurnal Kependidikan*	S3
17.	(Suriadi et al., 2025)	Analysis of Student Satisfaction and Loyalty through Educational Service Quality and Lecturer Performance in Islamic University	*International Journal of Islamic Studies Higher Education*	S3
18.	(Kusnara, 2022)	Pengaruh Kualitas Jasa Pendidikan Tinggi, Manajemen Kerelasian Mahasiswa Terhadap Citra Universitas Widyatama	*Eqien-Jurnal Ekonomi dan Bisnis*	S3
19.	(Rokhani & Marlianingrum, 2021)	Pengaruh Kualitas Pelayanan Dan Kualitas Pembelajaran Daring	*Journal of Management :*	S4

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		Terhadap Kepuasan Mahasiswa Dimasa Pandemi Covid-19	*Small and Medium Enterprises (SMEs)*	
20.	(Murtafiah, 2023)	Manajemen Tatalaksana Lembaga Pendidikan Islam dalam Meningkatkan Mutu Pelayanan Pendidikan	*At-Tajdid : Jurnal Pendidikan dan Pemikiran Islam*	S4
21.	(Deviana et al., 2021)	Analisis Mutu Pelayanan Pendidikan Dengan Model Service Quality	*Jurnal Riset Entrepreneurship*	S4

This systematic research, which analyzed 21 scientific articles published in 2020-2025 based on the PRISMA protocol, revealed that the SERVQUAL model dominates the concept of quality management of educational services in Indonesia in the digital era, with tangible dimensions, reliability, responsiveness, assurance, and empathy as the main indicators. The use of digital technology significantly increases the accessibility of learning through e-learning platforms such as LMS and Zoom, administrative efficiency via integrated information systems, and the flexibility of the blended learning process, thereby strengthening student satisfaction and loyalty. However, service gaps are still identified in the reliability and tangible dimensions, caused by limited internet infrastructure and low digital literacy in rural areas and secondary schools.

The dimensions of responsiveness, assurance, and empathy show the potential to strengthen through digital competency training for educators, strengthening data-based governance, and personalizing services via online consulting applications and virtual mentoring. The integration of artificial intelligence in adaptive learning as well as digital academic supervision has been proven to increase stakeholder confidence in the reliability and security of educational data. This transformation not only responds to the post-COVID-19 pandemic demands, but also supports national policies such as Government Regulation Number 13 of 2015 concerning National Education Standards that are adaptive to global dynamics.

Key implications of the research emphasize the need for continuous innovation, real-time data-driven quality measurement, and multi-stakeholder collaboration between governments, educational institutions, and technology providers to close service gaps and improve the competitiveness of Indonesia's education. Educational institutions are recommended to implement periodic evaluations of the SERVQUAL gap to meet the expectations of students who are increasingly high in the digital era. Further research is suggested to explore the effectiveness of AI personalization across education levels as well as comparative digital evaluation models between provinces.

Discussion

Concept of Digital Education Service Quality

The concept of quality of digital education services refers to the ability of educational institutions to meet customer expectations through the integration of technology in the teaching, administration, and interaction processes, with the main dimensions of SERVQUAL adapted to the digital era such as tangible (digital infrastructure facilities), reliability (reliability of e-learning platforms), responsiveness (responsiveness to user needs), assurance (data security and virtual teacher competence), and empathy (attention personal through interactive features) (Ma'rufah, 2023; Triwijayanti et al., 2022). This approach emphasizes the difference between customer expectations (such as 24/7 accessibility and content personalization) and actual perceptions of

service, where high quality results in satisfaction that exceeds expectations and supports long-term loyalty. In the Indonesian context, this concept is relevant to address challenges such as limited digital infrastructure and post-pandemic adaptation, as discussed in a study on parental satisfaction with technology-based educational services (Wijana & Dwi Rusiawati, 2021).

The application of this concept in Indonesian education shows that the quality of digital services not only increases customer satisfaction, but also builds loyalty through positive experiences, such as the fulfillment of timely service promises and responsive technology support (Ayu Anggraini et al., 2024; Ma'rufah, 2023). Empirical studies confirm the positive relationship between service quality (including digital aspects such as e-learning) and satisfaction levels, where reliability and responsiveness dominate in creating a perception of high value for education stakeholders (Murtini, 2025; Triwijayanti et al., 2022). Furthermore, the quality of educational services is now increasingly viewed through the perspective of service quality, customer satisfaction, and loyalty, an approach that was previously not widely used in the realm of education but is now relevant to improve the competitiveness and sustainability of educational institutions in the midst of increasingly complex societal needs (Sari Dewi et al., 2021). This is in line with the demands of the digital era that emphasizes continuous improvement to overcome the gap between expectations and actual performance.

Implications for digital education service quality management in Indonesia include management strategies such as improving digital infrastructure, training personnel for hybrid services, and monitoring satisfaction through technology-based surveys, to achieve long-term customer loyalty (Murtini, 2025; Wijana & Dwi Rusiawati, 2021). This approach is supported by the finding that service quality contributes up to 60.7% to satisfaction, with other factors such as institutional image complementing the digital dimension (Ma'rufah, 2023; Triwijayanti et al., 2022). Therefore, education managers need to adopt an adaptive SERVQUAL model to ensure competitiveness in the digital age.

Model of Digital Education Service Quality

In the digital era, education quality management is undergoing a transformation through technology integration that encourages increased access, interaction, and satisfaction of education service users (Y. N. Sari & Abubakar, 2024). The quality of educational services in the framework of the SERVQUAL model is understood through five main dimensions (tangibility, reliability, responsiveness, assurance, empathy), namely tangibility which includes physical facilities and digital infrastructure, reliability that emphasizes the reliability of digital media-based services, responsiveness related to the ability to respond to the needs of students and parents online, assurance that reflects the guarantee of trust in the competence of educators on digital platforms, and empathy through personal attention embodied in online communication (Azkiyah et al., 2020; Rozak et al., 2022; Sari Dewi et al., 2021). The implementation of these dimensions is increasingly complex and dynamic in line with technological developments, increasing stakeholder expectations, and the need for digitization of education in schools, universities, and non-formal institutions (Ma'rufah, 2023; Rokhani & Marlianingrum, 2021). Recent research emphasizes that the quality of digital education is not only determined by teaching services, but also highly dependent on the use of information technology, the availability of online learning spaces, ease of access to learning resources, and the support of IT devices and services that are able to support the satisfaction and loyalty of education users (Rozak et al., 2022). The following is a discussion of the main dimensions of the quality of educational services from several articles that have been reviewed:

1. Tangibles: In the contemporary digital age, the accessibility of technology-driven resources, the reliability of internet connectivity, and the availability of up-to-date instructional materials are critical factors influencing the perception and evaluation of

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educational service quality (Rozak et al., 2022). The presence of supporting facilities and infrastructure, including laboratories, libraries, digital classrooms, e-learning platforms, telecommunication devices, and technological infrastructure, is a vital determinant of educational user satisfaction (Suriadi et al., 2025; Wijana & Dwi Rusiawati, 2021).

2. Reliability: The capacity of an educational institution to deliver consistent, timely, and commitment-aligned online and blended learning is a critical facet of educational service quality (Fauzi et al., 2023). The consistency in managing digital services, including the reliability of learning platforms, the precision of online lecture schedules, and the accuracy of academic and administrative information, serves as crucial indicators that shape students' perceptions and expectations regarding the quality of services offered by institutions (Fauzi et al., 2023; Wasito & Baihaqi, 2023).
3. Responsiveness: The accessibility of assistance and prompt responses from educators and institutions via diverse digital platforms, including chatbots, intelligent administrative systems, and online communication channels, is a significant component greatly esteemed in the contemporary digital age (Y. N. Sari & Abubakar, 2024). The responsiveness factor of the SERVQUAL model emphasizes the significance of vigilance and preparedness of educational institutions in delivering prompt and timely support to students (Rozak et al., 2022). Educational institutions must deliver responsive technical assistance and effective solutions for all online learning issues, via digital communication channels such as chat, email, and service ticketing systems, or through in-person encounters where necessary. The swiftness and attentiveness in addressing students' demands and grievances are the primary characteristics that shape the perception of the quality of educational services in the digital realm (Ma'rufah, 2023).
4. Assurance: Data security, educators' proficiency in technology utilization, and acknowledgment of digital curricula are fundamental to fostering students' trust in educational institutions during the digital age (Suriadi et al., 2025). The assurance factor of the SERVQUAL model highlights the significance of competence, credibility, security, and trust in the services offered by educational institutions. The professionalism of educators, the transparency and credibility of the online evaluation system, and the safeguarding of students' personal data are essential factors that influence students' confidence in the quality of educational services (Fauzi et al., 2023). This trust is further reinforced through educator certification, transparency in academic information, and responsible digital administration control (Wijana & Dwi Rusiawati, 2021).
5. Empathy: The capacity of educational institutions to offer personalized attention via online consultations, acknowledge diverse student requirements, and maintain flexibility in the learning process exemplifies the empathy factor of the SERVQUAL model in the digital age (Ma'rufah, 2023). A tailored service strategy, by comprehending the unique requirements of each student and offering customized academic assistance, is a crucial determinant in fostering student satisfaction and loyalty. The use of empathy is now manifested through online academic consulting services, digital mentoring programs, psychological support via applications, and institutional focus on diverse barriers to digital access (Wasito & Baihaqi, 2023). This component underscores the necessity for educational institutions to prioritize services that are responsive, inclusive, and adaptable to the unique features and requirements of students (Rozak et al., 2022).

Table3. Comparison of SERVQUAL Implementation in Digital Education

Dimensions	Indicators of the Conventional Era	Digital Age Indicators
Tangibles	Buildings, libraries, classrooms	E-learning platforms, internet, digital devices
Reliability	Teacher schedule, module quality	Accuracy of online classes, LMS system updates
Responsiveness	Face-to-face admin service	Online technical assistance, CS chat, instant queries
Assurance	Competencies of offline educators	Online certification, data security, digital SOPs
Empathy	Face-to-face counselling	Consultation via WA/Zoom, adapting to student needs

Each dimension supports each other in creating a superior learning experience in the digital era. Superior educational institutions are those that are able to close the gap between expectations and reality, and continuously innovate in technology-based services (Ma'rufah, 2023). Thus, the dimension of quality of educational services in the digital era is an integration between the five dimensions of SERVQUAL which are adapted to the principle of digitization of services, the use of technology as the main support, and the role of leadership and to ensure the responsiveness, reliability, and personalization of the learning experience optimally.

The role of digital technology in improving the quality of education services in Indonesia

Digital technology plays a strategic role in improving the quality of education services in Indonesia, from elementary school to tertiary level, with a significant impact on aspects of the learning process, administration, and the level of satisfaction of all education stakeholders (Azkiyah et al., 2020; Kusnara, 2022). Digital transformation initiated through the integration of digital devices and platforms, such as artificial intelligence-based learning systems, online applications, and digital campus ecosystems, has encouraged the creation of a more adaptive, inclusive, and efficient educational process. The use of technology allows for personalized, collaborative, and flexible learning, in addition to strengthening the education administration system in real-time and data-based, thereby supporting the active involvement of students and educators. Through national policies and multi-stakeholder collaboration, digital transformation in Indonesian education continues to be directed to expand access, improve quality, and ensure equality of education services throughout Indonesia (Husni et al., 2024; Rokhani & Marlianingrum, 2021; Umkabu, 2023).

1. Learning Process Transformation

Digital technology facilitates a major transformation in the learning process in educational institutions in Indonesia, from elementary to tertiary levels, with the integration of e-learning platforms, video conferences, online learning applications, and digital libraries that expand and facilitate students' access to materials flexibly and individualized (King et al., 2022; Umkabu, 2023). The use of Learning Management Systems (LMS), Zoom, Google Classroom, and similar applications creates the effectiveness of distance learning, simplifies the process of distributing materials, interactive discussions, and academic evaluations digitally, and spurs teacher and student innovation through synchronous and asynchronous learning (Murtafiah, 2023). Digitization of education is able to maintain the quality of services in times of crisis and introduces blended learning and full online learning that provides flexibility in teaching methods and schedules, while enabling efficient management of academic administration in recording attendance, assessment, and communication between lecturers and students, so that education

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becomes more responsive, adaptive, and competitive in the modern era (Rokhani & Marlianingrum, 2021; Rozak et al., 2022).

2. Improving the Competence of Educators

Digitalization facilitates continuous professional training and development for teachers and lecturers through webinars, online modules, and virtual discussion communities, which effectively enhance pedagogical competence and teaching innovation in the modern educational environment. The use of technology-based training platforms (such as LMS and MOOCs) allows educators to access training materials flexibly, across time and geographies, and actively interact in discussion forums and academic consultations. This competency improvement has a direct impact on the quality of learning services as well as student satisfaction and loyalty to educational institutions. The responsiveness of institutions in providing technical assistance, consulting, and academic guidance has also increased significantly through the optimization of digital media, thereby supporting the creation of adaptive, efficient, and competitive educational services in the digital era (Deviana et al., 2021; Suriadi et al., 2025; Umkabu, 2023).

3. Improving the Quality of Academic and Administrative Services

Digital technology encourages the efficiency of administrative services in the educational environment through the use of an integrated academic information management system, ranging from online registration services, digital payments, to academic consultation through interactive chat applications or digital dashboards. The implementation of this system not only speeds up and simplifies the service process, but also increases comfort, transparency, and reduces bureaucratic burdens for students and education staff (Husni et al., 2024). Through an accurate, complete, and up-to-date learning portal and information system, students can access various academic data to support a better and planned learning decision-making process. The design of the system that is easy to use, interactive, and innovative helps to enhance the enjoyable learning experience and motivates students' active involvement in academic activities (Salamah et al., 2022). Digital technology also strengthens all dimensions of educational service quality based on the SERVQUAL model: tangible aspects through information technology facilities, reliability with consistent digital system governance, responsiveness through fast online support, assurance through data security assurance and cyber protection, and empathy with personalization of student data-based services (Husni et al., 2024; Suriadi et al., 2025). Digital data documentation also facilitates the process of monitoring, evaluation, and effective data-based decision-making, so that education management can run more efficiently and responsive to the development of the needs of institutions and students (Murtafiah, 2023).

4. Policy and Practice Implications

Educational institutions in the digital era are required to create a balance between developing digital infrastructure and improving the quality of direct services, such as personalized learning and digital mentoring, through the integration of the latest technologies and training educators to be digitally competent (Ayu Anggraini et al., 2024; Umkabu, 2023). Digital-based education services demand continuous innovation in physical and virtual facilities, including the development of websites, learning applications, and an integrated digital campus ecosystem (King et al., 2022; Rokhani & Marlianingrum, 2021). Educational institutions must also be proactive in monitoring service quality, improving systems continuously, providing comprehensive digital assessments, and developing a two-way feedback system to ensure service quality is maintained (Rozak et al., 2022). Measuring the effectiveness of digital education services requires stakeholder involvement through continuous evaluation, online mentoring, and digital data-based decision-making, where periodic evaluation of service dimensions such as reliability, tangibles, assurance, responsiveness, and empathy is needed to maintain student satisfaction and learning effectiveness (Rozak et al., 2022; Y. N. Sari &

Abubakar, 2024; Sintasari & Afifah, 2022). The digital-based supervision approach and experiential learning design also contribute to improving the quality and competitiveness of educational institutions in the global realm (Umkabu, 2023). The use of technologies such as e-learning, Zoom, WhatsApp, and social media has been proven to strengthen the competitiveness of institutions, but the main challenge remains the digital literacy of teachers and students, as well as the availability of adequate networks (Ayu Anggraini et al., 2024). User experience is an important indicator that determines student and parent satisfaction, including smooth communication, data privacy security, and service responsiveness, while service gaps are often encountered in the reliability and tangible dimensions, namely the difference between students' expectations of digital facilities and their realization in the field, so that it requires service quality management efforts that are adaptive, innovative, and responsive to the dynamics of changing times (Kusnara, 2022; Wijana & Dwi Rusiawati, 2021).

Conclusion

The conclusion of a systematic study of the quality of education services in Indonesia in the digital era confirms that digital transformation brings challenges as well as significant opportunities for education quality management in the country. This study found that the success of educational institutions in providing quality services is highly determined by the integration of SERVQUAL dimensions (tangibility, reliability, responsiveness, assurance, and empathy) into the digital education ecosystem. Digital technology has been proven to facilitate flexible and adaptive learning, improve the efficiency of administrative services, and expand access to education for the wider community. However, the dynamics of technological change and stakeholder expectations require educational institutions to implement responsive and innovative quality management in order to meet the needs of students and increase the satisfaction and loyalty of education customers.

Thus, the answer to the formulation of this research problem lies in the importance of educational institutions to actively innovate continuously in technology-based services, strengthen digital literacy, and develop data-based evaluation and feedback systems to maintain consistency in service quality. The implications of this study demand more attention to the training of educators, the development of equitable digital infrastructure, and the strengthening of multi-stakeholder collaboration so that the goals of national education are optimally achieved. For further research, it is suggested to focus on optimizing learning personalization through artificial intelligence, evaluating the impact of education digitalization policies at various levels of education units, and comparative studies on the effectiveness of digital education service evaluation models in Indonesia.

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