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# THE ROLE OF INFORMATION TECHNOLOGY IN IMPROVING THE QUALITY OF COMMUNICATION IN EDUCATIONAL INSTITUTIONS

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#### **Abstract:**

The development of information technology (IT) has had a significant impact on various aspects of life, one of which is in the world of education. Information technology plays an important role in improving the quality of communication in educational institutions by accelerating the flow of information, expanding the reach of communication, and increasing interactivity between related parties, such as educators, students, and parents. This study aims to analyze the role of information technology in supporting the effectiveness of communication in educational institutions. The methods used are literature reviews and observations of the implementation of communication technology in several educational institutions. The results of the study show that the use of digital platforms, learning management applications, and social media can accelerate the process of delivering information, facilitate two-way communication, and increase collaboration between teachers, students, and parents. In addition, the use of technology can also enrich learning resources, support distance learning, and facilitate more transparent and accountable learning evaluations. In conclusion, information technology has a strategic role in improving the quality of communication in educational institutions, which ultimately contributes to improving the quality of education itself.

**Keywords:** Internal Quality Assurance System, Pesantren, Education Unit Accreditation Instrument

#### INTRODUCTION

The role of information technology (IT) (Maulidia, 2020) in improving quality is very significant in various fields, including education, health, business, and government. Technology generally enables faster, more efficient, and more accurate data processing, thus helping data-based decision making. For example, in the world of education, online learning platforms make it easier for students and teachers to access quality teaching materials without geographical boundaries. In the business sector, IT-based management systems help companies monitor performance, manage inventory, and design more effective marketing strategies. By utilizing IT, organizations can increase transparency, operational efficiency, and competitiveness.

According to (Ningsih et al., 2022) the success of implementing IT to improve quality cannot be separated from challenges, such as technological gaps, cybersecurity threats, and lack of understanding of technology among users. Therefore, a strategic approach is needed such as intensive training, strengthening infrastructure, and developing inclusive technology policies. With this support, information technology can be utilized optimally to produce sustainable positive impacts. Ultimately, IT is not only a tool, but also a catalyst for change that can improve the quality of services and products in various sectors of life.

Information technology (IT) plays a central role in improving quality in various

sectors, from education, health, business, to government. IT provides innovative solutions through process automation, in-depth data analysis, and faster communication. In the world of education, for example, e-learning platforms facilitate student access to quality materials, enable distance learning, and enrich the learning experience through interactive media. (Novi Ariyanti & Muhammad Anggung Manumanoso Prasetyo, 2021)

This contributes to improving the quality of education that is more inclusive and efficient. In the health sector, information technology helps improve the quality of services through electronic medical record systems, telemedicine, and health applications. With IT, patient data can be accessed in real time, facilitating more targeted diagnosis and treatment. In addition, IT also allows for the massive dissemination of health information to the public, thus supporting more effective disease prevention and health education efforts.

In the business world, (Maulidia, 2020) IT drives increased operational efficiency and product or service innovation. Companies can use resource management software to monitor performance, manage inventory, and design data-driven marketing strategies. In addition, IT enables personalization of customer service through analysis of consumer behavior data, thereby increasing customer satisfaction and strengthening brand loyalty. However, (E. R. Putri et al., 2024) the application of information technology is not free from challenges that need to be overcome to achieve maximum benefits. One of the main challenges is the gap in access to technology between urban and rural areas. In addition, threats to data security and user privacy are also a serious concern, especially with the increase in cyber attacks. Another factor that also influences is the lack of understanding and digital skills among some people, which hinders the adoption of technology evenly.

To optimize the role of information technology in improving quality, strategic steps are needed such as developing inclusive technology infrastructure, strengthening regulations related to cybersecurity, and training for users at various levels. (HASIBUAN, 2024) With this support, information technology can be a major driver in sustainable digital transformation. The end result is improved service quality, process efficiency, and competitiveness in various sectors, which ultimately supports economic growth and people's quality of life. (At et al., n.d.)

Previous research (F. R. Putri et al., 2024)/ on the role of information technology in improving the quality of communication in educational institutions has shown that information technology plays an important role in facilitating the communication process between various parties in the educational environment, such as between lecturers and students, administrative staff, and between educational institutions themselves. Technologies such as learning management systems (LMS), collaborative platforms, and digital communication applications enable more efficient and timely delivery of information, support better collaboration, and provide wider access to learning materials and feedback. Research by (Fatmawati, 2019) confirms that the effective implementation of information technology in schools can increase student engagement and facilitate the management of educational administration, while other studies by (Novi Ariyanti & Muhammad Anggung Manumanoso Prasetyo, 2021) show that the use of cloud-based communication applications contributes to more open and transparent communication, which can ultimately improve the quality of learning. Thus, information technology not only functions as a communication tool, but also as a connector that enriches the overall educational process.

This study aims (Yilfiana et al., 2021) to analyze the role of information technology (IT) in improving the quality of communication in educational institutions. Along with technological advances, educational institutions increasingly rely on various digital platforms to support communication between managers, teachers, students, and parents. In this study, a qualitative approach was used through interviews with managers and teachers and observations of IT use in several educational institutions. The results of the study show that IT has a significant role in accelerating communication flows, increasing transparency, and facilitating access to information. However, challenges such as limited access and digital skills are obstacles to its implementation. Therefore,

adequate training and infrastructure support are needed so that IT can be utilized optimally in improving the quality of communication in educational institutions.

#### RESEARCH METHODS

# 1. Type of Research

This research uses a qualitative approach with a case study method. The researcher chose several educational institutions as research objects to explore the use of IT in educational communication.

# 2. Data Collection Techniques

- o Interviews: In-depth interviews were conducted with educational institution managers, teachers, and parents of students to understand the use of IT in communication.
- o Observation: Direct observation of interactions that occur using digital platforms, such as class management applications or WhatsApp groups.
- o Documentation: Analysis of documents or communication materials that use IT, such as emails or announcements distributed through digital platforms.

## 3. Data Analysis

Data obtained from interviews and observations will be analyzed using a qualitative descriptive approach to explore the main themes related to the role of IT in communication in educational institutions.

## RESULTS AND DISCUSSION

Information technology (Faisal & Mayansara, 2024) is a tool used to process, store, and disseminate information digitally. In the context of education, IT includes various platforms such as learning management systems (LMS), email, instant messaging applications, and social media that are used to facilitate communication between various parties in educational institutions. Communication in educational institutions is very important in supporting the teaching and learning process. This communication is not only limited to interactions between teachers and students, but also involves the relationship between education managers and parents of students. The use of IT allows for faster, more transparent, and more accessible communication. The quality of communication in educational institutions affects the quality of learning, student satisfaction, and the effectiveness of implemented educational policies. Therefore, the proper use of IT can significantly improve the quality of this communication

#### The Role of IT in Improving Communication

The use of IT in educational institutions increases the speed, efficiency, and accuracy of information delivered. Platforms such as LMS (Learning Management System) allow teachers to send learning materials and assignments to students directly, while instant messaging applications facilitate communication between administrators, teachers, students, and parents. One of the main roles of information technology in improving communication in educational institutions is increasing the accessibility of information. Before IT, important information such as announcements, class schedules, and learning materials were often only delivered directly at school or via physical bulletin boards. (Aulia et al., 2024)

With (Sjioen et al., 2023) the existence of a learning management system (LMS) or instant messaging application, students and parents can now access information anytime and anywhere. This is very important especially for those who cannot come directly to school due to distance or busyness. One of the biggest contributions of information technology in education is increasing the accessibility of information that was previously limited by time and location. In the past, information such as announcements of class schedules, school activities, or exam information could only be accessed at school or through print media. However, with the presence of information technology, educational institutions can now use various digital platforms such as school websites, learning management applications (LMS), and communication groups on

messaging applications to easily access information anytime and anywhere. This is very helpful for students and parents, especially those who have geographical or time constraints to come directly to school.

Information technology also enables real-time information delivery to all parties involved in education, including school administrators, teachers, students, and parents. Learning management systems or special applications can provide direct notification to parents about their child's learning progress, such as exam scores or assignments to be completed. In addition, students can also easily access learning materials or exam questions from home or outside school hours, increasing learning flexibility. In this way, fast and direct access to information supports a more effective communication process and reduces delays in receiving information. (Ningsih et al., 2022)

Increased (Ummah, 2024) accessibility of information facilitated by information technology is very helpful in overcoming obstacles related to physical limitations, such as distance or time. For areas with limited educational infrastructure or in remote areas, IT allows students and teachers to stay connected without being limited by location factors. The use of mobile devices and web-based applications makes information more accessible, even for those in remote areas or outside school hours. This creates greater opportunities to improve the quality of education evenly, without the barriers to accessing information that may have existed before.

## **Increasing Communication Speed**

Information technology (Maulidia, 2020) also accelerates the flow of communication between parties involved in the world of education. Previously, communication between teachers, students, and parents took longer because it was done through letters or physical meetings. With technology, messages can be delivered directly via email, instant messaging applications, or online discussion forums. This speed allows urgent problems or needs to be addressed immediately, as well as increasing responsiveness in delivering important information. Information technology enables faster and more efficient communication compared to conventional methods such as physical letters or face-to-face meetings. With instant messaging applications such as WhatsApp, Telegram, or email, information can be delivered almost in real-time. For example, announcements regarding changes to exam schedules or reminders about school activities can be received directly by students and parents in seconds. This reduces the time it takes to deliver information and ensures that all parties receive important messages without delay.

Previously, (Ningsih et al., 2022) communication between teachers and students was often limited to class hours or through formal meetings that may take a long time. However, with information technology, teachers can directly contact students through learning platforms or messaging applications to give assignments, answer questions, or provide clarification on material. Likewise, students can directly convey their questions or difficulties, without having to wait for a face-to-face meeting. This speed of communication accelerates the learning process and allows for more dynamic interactions between students and teachers.

Information technology (Ningsih et al., 2022) also allows for faster dissemination of information with an integrated system. In the context of educational institutions, a learning management system (LMS) or dedicated application can automate the distribution of information to students and parents. For example, after an exam is completed, grades can be directly entered into the system and automatically notified to parents via email or application. This reduces the time required for processing and distributing information, and increases the speed of response to the needs of students and parents.

The speed of communication has also proven to be very useful in improving coordination between schools and parents of students. With the existence of web-based or mobile communication applications, parents can easily contact the school to get information regarding their child's development. In addition, the school can immediately provide information regarding school events, schedule changes, or emergency

conditions, so that parents can respond quickly. This speed of communication is very important to maintain a good relationship between the school and the family, and ensure that the information needed arrives quickly and accurately.

#### **Ease of Collaboration**

IT enables easier and more efficient collaboration between students, teachers, and parents. Digital learning platforms such as Google Classroom or Microsoft Teams allow teachers and students to collaborate on various assignments or projects. Students can share materials, discuss, and provide feedback in real time. Parents can also be more easily involved in their child's learning process through automatic updates provided by the school, such as exam results or assignment progress. (Rahayu & Trisnawati, 2022)

One of the biggest advantages of using information technology in educational institutions is the ease of collaboration between students and teachers. (Marpaung et al., 2023) With digital learning platforms such as Google Classroom, Microsoft Teams, or Moodle, students can collaborate with teachers and friends on various assignments or projects. Features such as online discussions, document sharing, and comments allow students to discuss and exchange ideas directly with each other, even outside of class hours. This creates a more interactive learning space and supports more effective collaboration-based learning. (Implementation of HUMAS, 2024)

Information technology (Danang Luthfiansyah et al., 2023) also supports collaboration in the form of joint projects between students. Cloud-based applications such as Google Drive or Dropbox allow students to work together on documents, presentations, or reports without having to meet physically. With these tools, students can edit documents simultaneously, provide feedback, and track changes made by their classmates. This advantage not only increases the effectiveness of collaboration but also teaches students about teamwork and project management skills that are very useful in the professional world.

Information technology not only facilitates collaboration within one educational institution, but also enables collaboration between institutions more widely. For example, schools or universities can hold virtual seminars, conferences, or workshops involving participants from various regions or even countries. Video conferencing platforms such as Zoom or Google Meet enable cross-geographic collaboration that was previously difficult. Thus, information technology expands the collaboration network that can provide students and teachers with the opportunity to share knowledge and experiences from various perspectives. (Hasan et al., 2023)

In addition, IT also facilitates collaboration between schools and parents in supporting students' educational development. Through the school application or portal, parents can easily monitor their child's progress, interact with teachers, and get information related to school activities. This communication facility allows parents to provide better and more targeted support in their child's education, both at home and in extracurricular activities. The collaboration formed between parents and schools is very important to create a more positive and supportive learning environment for students.

## **Transparency and Accountability**

Information technology increases transparency and accountability in educational communication. With an integrated digital system, school administrators, teachers, and parents can easily access data and information related to student learning progress. For example, parents can see their child's progress through an application that connects parents to the student's grade system or report. This encourages accountability because all parties can monitor progress and problems that arise in real time, and take corrective steps if necessary.

Information technology plays an important role in increasing transparency in educational institutions. With the existence of a learning management system (LMS) and web-based applications, information regarding the learning process, evaluation, and student development can be easily accessed by all parties involved (Hasan et al., 2023). For example, student test scores, assignments, and progress reports can be directly

published on an online portal that can be accessed by students, parents, and school administrators. This ensures that all information related to student education and development can be monitored clearly and without any doubt.

The use of information technology also allows for more structured and organized data management. With a digital system, all data related to students, such as absences, test scores, and attendance records, can be stored electronically in a secure and easily accessible database. School administrators and teachers can quickly view students' academic records, identify areas that need attention, and make more informed decisions based on the data. This increases the accountability of educational institutions because decisions made are based on accurate and accountable information.

In the field of financial management, (Fitri et al., 2021) information technology also increases accountability by making it easier to track educational institutions' expenses and income. A digital-based financial system allows school administrators to create more transparent financial reports, which can be accessed by authorized parties, such as the government, auditors, or supervisors. With an integrated system, every transaction can be recorded in detail and can be checked at any time. This ensures that education funds are managed properly and in accordance with the approved budget, and minimizes the potential for misuse.

One of the positive impacts of increased transparency and accountability through information technology is increased trust between all parties involved. Parents can easily access information about their child's progress, teachers can more easily provide constructive feedback, and school administrators can manage administration in a more open and honest manner. This trust is essential to creating positive relationships between schools, students, and parents, which in turn supports the creation of a healthier and more productive educational environment.

## **More Structured Communication**

The use of technology in educational communication allows for a clearer structure in the flow of information. In a digital-based system, each piece of information is categorized and arranged properly, making it easier to search and understand. For example, teaching can be done through a platform that presents learning materials in a structured order, and communication between teachers and between teachers and students becomes more focused and organized, avoiding overlapping information or loss of context.

One of the biggest positive impacts of the use of information technology in educational institutions is the digitalization of the administrative process. Before technology, many administrative documents such as registration forms, permits, and activity reports had to be filled out and processed manually using paper. With a digital document management system, all of this data can now be uploaded, stored, and accessed electronically. This reduces dependence on physical archives that are prone to loss or damage, and speeds up the search and management of administrative documents.

Information technology simplifies and speeds up the process of registering and accepting new students. By using online forms, prospective students can fill in their data without having to come to school. The registration application or portal also allows administrators to manage new student data more efficiently, such as data verification, administrative payments, and announcements of selection results. This system reduces the risk of data input errors that often occur in manual registration and speeds up the administration process.

In the traditional system, student attendance recording is done manually by teachers, which takes time and is at risk of recording errors. With information technology, attendance management can be done automatically using special software or web-based applications. Students simply scan their ID cards or use a mobile application to record their attendance. This attendance data is then automatically stored in the system, allowing administrators to monitor student attendance quickly and accurately, and reduce time-consuming administrative work.

Payment of school fees and other administration can now be done more easily and quickly through an online payment system. With an integrated payment application, parents of students can pay school fees, donations, or other activity fees directly through bank transfers or digital wallets. This system not only makes it easier for parents, but also simplifies school financial records. Every transaction is automatically recorded in the school's financial system, reducing the risk of human error and increasing efficiency in financial reporting.

Information technology allows teachers and school administrators to compile student academic reports more quickly and accurately. With a digital-based system, test scores, assignment results, and student progress records can be directly entered into the system and generate reports automatically. This process reduces the time required to calculate and write reports manually, and minimizes the possibility of errors. The resulting reports are also easier to share with parents or other relevant parties, by sending them via email or a special application. (Ningsih et al., 2022)

The process of managing class schedules and school activities has also become simpler with information technology. The schedule management application allows school administrators to automatically schedule lessons, exams, and extracurricular activities, taking into account the availability of classrooms and the availability of teachers. Students and parents can access the schedule online, reducing confusion. If there is a change in the schedule, an announcement can be sent directly to all parties involved via the application or school communication platform.

Information technology allows student data management to be simpler and more organized. Student personal data, academic history, health records, and other information can be stored in a centralized and secure database. Access to this data can be granted to authorized teachers and administrators using a protected login system. This not only speeds up the process of searching for student data, but also ensures that the data is always up to date and accountable. Thus, data management becomes more efficient and secure, and reduces the administrative burden which was previously very manual and time-consuming.

#### **Simplifying Administrative Processes**

Information technology simplifies administrative processes that usually take a long time. Digital systems that support communication between school administrators and educational staff can reduce administrative errors and optimize processes. For example, teacher leave applications, permit requests, or student attendance recording can now be done online, reducing the need for face-to-face communication or through paper forms. This provides more time to focus on more productive learning activities. (Al Givari, 2020)

#### Flexibility and Access to Education

With information technology, educational communication has become more flexible, allowing learning to take place outside of traditional school or classroom hours. Online learning platforms, webinars, or video conferences allow students to attend lessons or discussions even though they are not physically present at school. This opens up opportunities for students who are hindered by geographical or physical factors to stay connected to education without time or place constraints. IT not only benefits administrators or parents, but also empowers students and teachers in communication. Students can now be more active in communicating with their teachers and classmates through online forums, email, or chat applications. They can also gain direct access to various additional learning resources outside of school hours, increasing their autonomy in learning. On the other hand, teachers have the means to provide more personalized feedback to students through various digital media, supporting a more interactive and student-based learning process.

## Challenges in IT Implementation: Limited Technology Infrastructure

One (Hartanto, 2022) of the main challenges in implementing information technology in educational institutions is the limited technology infrastructure, especially in certain areas. Many schools, especially those in remote areas or areas with limited resources, still have difficulty providing adequate hardware, such as computers or mobile devices for students and teachers. Without adequate infrastructure, the use of IT in education is very limited, even though the benefits are enormous. This limitation hinders schools' efforts to provide technology-based learning facilities to improve the quality of learning. (Al Givari, 2020)

## **Unequal Internet Access**

In addition to the problem (Ningsih et al., 2022) of infrastructure, uneven internet access is also a major obstacle in implementing IT in educational institutions. In many areas, especially in rural areas or areas with less favorable economic conditions, stable and fast internet access is still very limited. This hampers the use of various online learning platforms, video conferencing, or cloud-based learning management systems that require fast and reliable internet connections. This inequality creates a gap in the quality of education between areas with adequate IT infrastructure and areas that are still lagging behind. (Novi Ariyanti & Muhammad Anggung Manumanoso Prasetyo, 2021)

# **Limited Digital Skills of Teachers and Parents**

Another challenge (Sarnoto, 2022) is the lack of digital skills possessed by many teachers and parents. Many teachers are not yet fully skilled in using technological devices and digital learning platforms, which can reduce the effectiveness of IT-based learning. In addition, parents who are not familiar with digital technology may find it difficult to monitor their children's educational progress through online learning management systems or communication applications used by schools. This limited digital skill requires continuous training and development so that all parties involved in education can utilize IT optimally. (Maulana & Pramusinto, 2020)

## Case Study: Schools with Adequate IT Infrastructure

A case study (Rahayu & Trisnawati, 2022) conducted in several educational institutions shows that schools with better IT infrastructure tend to have smoother and more effective communication. For example, schools that have implemented a webbased information portal can easily access and monitor student progress in real time. Parents can view their child's progress reports through this portal, while teachers can provide faster and more targeted feedback. Such a system allows for greater transparency and increases collaboration between schools and parents, which in turn has a positive impact on student achievement. (Joyontono., 2024)

## **Case Study: Use of Online Learning Platforms**

In several schools that implement online learning platforms, it was found that students were more active in participating in lessons. For example, in schools that use a Learning Management System (LMS), students can access learning materials, work on assignments, and interact with their teachers and classmates outside of class hours. This system allows for greater flexibility in learning and facilitates teaching with more diverse methods, such as learning videos, online quizzes, and interactive discussions. These schools showed significant improvements in student engagement and teachers' ability to provide more structured and responsive instruction. (Maulana & Pramusinto, 2020a)

#### Implementation of IT in Areas with Limited Infrastructure

Although (Maulana & Pramusinto, 2020) there are major challenges related to limited IT infrastructure in certain areas, several educational institutions have managed to overcome this obstacle through various innovations. Several schools in remote areas have begun to implement simple technological solutions, such as the use of mobile

applications that do not depend on fast internet connections or sophisticated hardware. For example, using learning applications that can be accessed via simple mobile phones allows students in areas with limited infrastructure to stay connected with learning materials and assignments. This shows that although there are major challenges, with creativity and innovation, the implementation of IT in education can still be realized, even with limited resources. (Prabandari et al., 2022)

#### CONCLUSION

Information technology (IT) has shown a very significant role in improving the quality of communication in educational institutions. With an IT-based system, the flow of communication between students, teachers, parents, and school administrators becomes faster, more efficient, and more structured. The use of digital platforms such as Learning Management Systems (LMS), web-based information portals, and communication applications allows information to be delivered clearly and on time, reducing miscommunication that often occurs in traditional communication. IT also facilitates coordination between the parties involved, ensuring that all important information, such as academic announcements, exam schedules, or student progress, can be easily accessed.

One of the main benefits of implementing IT is increased transparency in educational institutions. Digital systems allow for more open management of academic and administrative data, so that parents and students can easily monitor academic progress or activities at school. In addition, the use of technology facilitates access to information for all parties, including teachers, students, parents, and educational institution administrators. This creates a more inclusive educational ecosystem, where important information is not limited to just one party, but can be accessed openly and in real time by all authorized parties.

With information technology, collaboration between students, teachers, and parents can be done more easily and efficiently. IT-based applications allow for more flexible and efficient interactions, either through discussion forums, instant messaging, or video conferencing. Time management is also more effective, because announcements, assignments, or schedule changes can be delivered and accessed directly without having to wait for time-consuming physical announcements. In addition, the existence of an integrated task management system allows students and teachers to track academic progress in a more structured manner. (Mainassy & Cahyono, 2023)

Information technology (Fahrudin & Halwati, 2023) also supports improving the quality of teaching and learning in educational institutions. With the existence of a digital platform, teachers can deliver lesson materials more interactively and in a variety of ways, for example through learning videos, simulations, and online quizzes. Students can access lesson materials anytime and anywhere, giving them the opportunity to learn more flexibly and independently. This also opens up opportunities for teachers to provide faster and more constructive feedback, improving the overall learning process.

Although IT (Fahrudin & Halwati, 2023) brings many benefits, its application in education is not without challenges. Infrastructure limitations, unequal internet access, and lack of digital skills among teachers and parents remain significant barriers. In many areas, especially those located in remote or less developed areas, IT infrastructure is still very limited, making the implementation of technology-based learning difficult. In addition, digital skills training for teachers and parents is still minimal, which can reduce the maximum potential of technology. (Iqbal, 2023)

To ensure that IT can be optimally utilized, educational institutions must improve their technology infrastructure. Investment in adequate hardware and software, as well as the development of better internet connectivity, needs to be prioritized, especially in areas that are still lagging behind in terms of technology access. This infrastructure improvement will support the implementation of more effective IT-based learning and accelerate digital transformation in the education sector. Educational

institutions must work with the government and the private sector to provide the resources needed to improve this infrastructure. (Ningsih et al., 2022)

To optimize the use of IT in education, digital skills training for teachers and parents is essential. Teachers need to be trained to be able to use technology effectively in the teaching and learning process. In addition, parents must also be given an understanding of how to use IT to monitor their children's development, for example by using applications to check grades, attendance, and other academic reports. This training will ensure that all parties involved in education have adequate skills to make maximum use of technology and can support student learning in a more efficient way. (Elyus & Soleh, 2021)

Educational institution managers (Sarnoto, 2022) and the government need to develop policies that support the use of IT in education. These policies can include allocating a budget for the development of IT infrastructure, forming a curriculum that integrates technology in learning, and providing resources and technical support for teachers. In addition, the government must provide incentives or support for schools that are committed to implementing technology comprehensively in the education process. Supportive policies will accelerate the adoption of technology across educational institutions, ensuring that information technology becomes an integral part of the education system in Indonesia.

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